

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

)	
Hazardous and Solid Waste)	
Management System: Disposal of Coal)	
Combustion Residuals from Electric)	
Utilities; Amendments to the National)	Docket ID No.
Minimum Criteria (Phase One);)	EPA-HQ-OLEM-2017-0286
Proposed Rule)	
)	
83 Fed. Reg. 11,584 (Mar. 15, 2018))	
)	

COMMENTS OF EARTHJUSTICE, ENVIRONMENTAL INTEGRITY PROJECT, SIERRA CLUB, SOUTHERN ENVIRONMENTAL LAW CENTER, MOAPA BAND OF PAIUTES, WATERKEEPER ALLIANCE, INC., CLEAN WATER ACTION, NATURAL RESOURCES DEFENSE COUNCIL, COMITE DIALOGO AMBIENTAL, INC., DINÉ CITIZENS AGAINST RUINING OUR ENVIRONMENT, HOOSIER ENVIRONMENTAL COUNCIL, PRAIRIE RIVERS NETWORK, MONTANA ENVIRONMENTAL INFORMATION CENTER, TÓ NIZHÓNÍ ÁNÍ, KENTUCKY RESOURCES COUNCIL, POTOMAC RIVERKEEPER NETWORK, SOUTHERN ALLIANCE FOR CLEAN ENERGY, CITIZENS COAL COUNCIL, & ENVIRONMENTAL LAW & POLICY CENTER

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EXECUTIVE SUMMARY

Nearly forty years have passed since Congress first directed the U.S. Environmental Protection Agency (EPA) to develop regulations governing the disposal of coal combustion residuals (CCR), known commonly as coal ash. EPA did not do so until 2015. Now, only three years later, EPA proposes to eviscerate even the modest standards it put in place in 2015. Should the Trump rollback become law, there will be little left of federal safeguards that address the second largest toxic waste stream in the nation.

That proposed rollback, however, is fatally flawed, as EPA has not and cannot establish that its proposal is reasonable or would ensure the protection of public health and the environment. EPA fails to provide any basis for removing the bedrock protections of the 2015 rule. Therefore, the agency should withdraw its reckless and misguided 2018 Proposal, as finalization in anything like its current form would be arbitrary, capricious, and unlawful.

The threat to health and the environment posed by decades of largely unregulated disposal of coal ash is well-documented and indisputable. More than 100 million tons of coal ash is disposed of every year and is laden with arsenic, mercury, lead, radium, selenium, and numerous other heavy metals that pose serious threats to health and the environment. Yet for a century the utility industry has been allowed to dump this noxious waste in more than a thousand mostly unlined and largely unregulated landfills and coal ash slurry “ponds,” many holding billions of gallons of toxic sludge. The results of such coal ash mismanagement have, predictably, been disastrous. Hundreds of unlined slurry ponds and landfills littered across the country invariably leaked toxic pollution into groundwater and surface waters, exposing surrounding communities to highly elevated risks of cancer and other illnesses. And the earthen dikes holding up numerous impoundments, such as the Kingston coal ash slurry pond in Tennessee, have collapsed, inundating surrounding lands and waters with massive amounts of toxic sludge. In short, the widespread mismanagement of coal ash throughout the country has harmed, and continues to significantly harm communities, public health, and the environment.

After decades of delay and only after petitions and lawsuits by public interest groups and an Indian tribe demanding action, EPA in 2015 finally adopted the first-ever federal rule to address the health and environmental damage posed by coal ash. The 2015 CCR Rule, adopted pursuant to the Resource Conservation and Recovery Act (RCRA), represented a compromise with the electric utility industry whereby EPA opted to regulate coal ash as a non-hazardous waste under subtitle D of RCRA with “self-implementing” standards as opposed to a “special waste” under subtitle C with federally enforceable standards. While modest, the 2015 CCR Rule provides critical and long-overdue protections for vulnerable communities living near coal ash dumps, for our air, and for our nation’s waters, including those used for drinking water, recreation, economic activity such as fishing and tourism, and wildlife habitat. Those protections have been in effect for less than three years but already, improvements in coal ash management are evident.

The 2015 Coal Ash Rule also required, for the first time, groundwater monitoring and reporting requirements for over a thousand coal ash disposal sites across the country. These results were just recently publically posted, and they dramatically reveal that groundwater at almost all coal ash sites is contaminated by toxic chemicals above levels that EPA has deemed safe for drinking water. Because EPA did not afford the public an adequate comment period, we have not been able to evaluate the hundreds of thousands of pages of data posted by industry. Our analysis of about 100 representative sites in 29 states and Puerto Rico, however, yielded dramatic and alarming results. Most sites have unsafe levels of arsenic, often many times higher than the safe drinking water standard. Levels of cobalt, lithium, and sulfate are also far above health-based levels at most sites. One in five sites has unsafe levels of radium (radioactivity), and over a third have unsafe levels of molybdenum. Overall, 92 percent of sites have unsafe levels of at least one of the following constituents, arsenic, boron, cobalt, lithium, molybdenum, radium or sulfate. In other words, only 8 percent of coal plants in the database that we have analyzed have water that could be considered safe to drink.

Ignoring this new dramatic evidence of groundwater contamination, and the detailed record supporting the 2015 Rule, EPA is now proposing changes that would radically weaken the rule. All changes, save one, were made at the behest of industry groups that, in a blatant attempt at a second bite at the apple, filed petitions for reconsideration in May 2017. While EPA frames its 2018 Proposal as providing “flexibility” for utilities to comply with “alternative” standards, in reality EPA has proposed a series of broad loopholes that would render the 2015 Rule toothless. In doing so, the agency ignores the key justification for its adoption of the 2015 CCR Rule: that the lack of enforceable national minimum standards for the disposal of coal ash resulted in more than 1000 unsafe CCR disposal units that continue to threaten public health and the environment and which disproportionately injure low-income communities and communities of color.

Throughout these 300-page comments, we discuss in detail how the 2018 Proposal is unreasonable, unsupported, and fails to satisfy the protectiveness standard set forth in Section 4004(a) of RCRA, which requires EPA to ensure that there is “no reasonable probability of adverse effects on health or the environment.” Following is a summary of some of the key inadequacies in the proposal.

- Removing Drinking Water Protections: Given that nearly 90 percent of coal ash ponds are unlined and the tendency of most dumps to leak and release contaminants into the environment, the provisions of the 2015 Rule governing groundwater monitoring and cleanup are critically important. However, EPA has proposed to remove strict national groundwater protection and cleanup standards. EPA has proposed to permit “alternative risk-based groundwater standards” for boron, cobalt, lead, molybdenum, and lithium—to be set by individual states—or even the owners of coal ash sites themselves. This would allow different triggers for cleanup across the country and even the avoidance of cleanup altogether at some sites. In a profoundly immoral move, EPA has even proposed not to require that children’s health be taken into consideration in setting groundwater protection standards.

- Ignoring Dangerous Coal Ash Ponds and Spills: The proposal suggests that coal ash ponds that fail federal stability standards established by the 2015 Rule no longer have to close by a date certain and can continue to receive millions of tons of coal and wastewater. Further, the Trump proposal also provides that if another dike should breach, as occurred at the TVA Kingston Plant in Tennessee and the Duke Energy Dan River Plant in North Carolina, spilling billions of gallons of sludge into rivers, the owner/operator of the dam is no longer required to take immediate action to stop the spill.

- Allowing Coal Ash Disposal in Dangerous Areas: One of the most important, and commonsense, requirements of the 2015 Rule is that coal ash not be stored in locations that pose particularly significant threats to health and the environment in the event of a release—those locations close to drinking water aquifers, in wetlands, fault areas, seismic impact zones, and unstable areas. Despite the clear need for restriction of coal ash disposal in these five areas, EPA has suggested allowing unspecified “alternative, risk-based location restrictions,” ignoring the fact that the existing restrictions already provide plenty of flexibility for owners and operators. In addition, the proposal, without any justification, would extend the upcoming October 17, 2018 deadline for meeting the existing location restrictions, thus allowing coal ash that has been sitting in dangerous locations for decades to remain there even longer. EPA cannot justify these changes, and viewing them as anything other than giveaways to the utility industry strains credulity.

- Reducing the Effectiveness of Monitoring to Hide Contamination: EPA has suggested that the existing requirements governing where monitoring wells are placed need not be followed and that instead states, or owners and operators themselves, can establish alternative points of compliance distant from the coal ash dump. If finalized, these provisions would almost inevitably lead to mischief in the form of strategic placement of wells to avoid detection of contamination.

- Making Cleanups Dependent on the Whim of State Regulators or the Polluters Themselves: The Proposed Rule also would allow for complete exemption from the parts of the 2015 Rule that require cleanup when groundwater contamination is found. State regulators, or even the owner and operators of the dumps themselves, EPA suggests, could certify that cleanup is not necessary. In addition, where corrective action is taken, the 2015 Rule requires owners and operators to demonstrate that the groundwater is free of contamination for three consecutive years. The 2018 Proposed Rule would allow for an “alternative” length of time for such demonstration—as little as one year. Variance from these requirements is unwarranted and unsupported by evidence in the record.

- Hiding Long-Term Contamination by Reducing the 30-Year Post-Closure Care Period: Upon closure of a CCR disposal unit, the 2015 Rule requires groundwater monitoring and other post-closure care for 30 years—providing time to ensure that no future contamination of groundwater is likely to occur. EPA proposes to reverse course and allow states, to dramatically reduce the length of the post-closure care period. EPA suggests that a five-year period is sufficient. Such a brief period of post-closure

monitoring is far too short to guarantee detection of toxic pollution of drinking water from closed dump sites. Its only purpose is to let industry off the hook for cleanup.

- Inserting Political Influence into Coal Ash Decisions: Finally, many of the important technical determinations required under the 2015 Rule, including when corrective action is complete or whether it is needed at all, must be certified by a professional engineer. EPA proposes instead to allow certification by a state agency director—that is, a political appointee with potentially no technical or scientific expertise.

Numerous other provisions are baseless and dangerous. The proposal would eliminate the requirement that non-groundwater releases from coal ash disposal units are addressed immediately and adequately, would expand a narrow exception in the 2015 Rule that allows for additional time for closure of a CCR unit absent another option for disposing of the CCR where stormwater or other non-CCR wastestreams have been co-managed at the unit, and would allow for the use of CCR in the construction of cover systems. Again, EPA has not identified any evidence to show that these changes are reasonable or lawful.

In short, none of the proposed changes are supported by evidence in the record, and they cannot meet the standard of protectiveness in section 4004(a) of RCRA. The safeguards against the dangers posed by coal ash mismanagement established by the 2015 CCR Rule—including regular inspection of ash ponds, monitoring of groundwater, shutdown of leaking dumps, shutdown of dumps in dangerous locations, cleanup when contamination is found, safe closure, and public posting of monitoring and inspection results—are vitally important to the health and wellbeing of the communities in which coal ash disposal sites are located. EPA's 2018 Proposal would undermine those provisions, thereby greatly increasing the likelihood of harm to public health and the environment. Such a radical roll back is unreasonable, unjustified, and unlawful. As such, EPA should withdraw its 2018 Proposal.

Finally, we note that the 45 days provided by EPA for public comment on the 2018 Proposed Rule – which is half the length that EPA informed the D.C. Circuit Court of Appeals that it anticipated providing – is completely inadequate given the scope of EPA's proposal and the degree of public concern about the dangers posed by unsafe disposal of toxic coal ash. More than 100 public interest organizations filed a request for an extension of this comment period, which EPA denied. EPA also denied the request for additional public hearings on the proposal so that the voices of affected communities could be heard. This short comment period has impaired our organizations' ability to gather and submit additional data that would have assisted EPA's ability to make an informed decision in this matter. In particular, while we have endeavored to review the recently posted groundwater monitoring data, the reports are voluminous. EPA's refusal to afford the public the 90-day comment period that it previously said it would provide manifests the Agency's desire to fast-track the industry-demanded changes in time to allow utilities to avoid upcoming compliance deadlines in October 2018. It does not reflect an effort to provide for, encourage, and assist public participation, as is required

by law, and therefore provides yet another reason why EPA's 2018 Proposal should be summarily withdrawn.

I. FACTUAL BACKGROUND

A. CCR IS ONE OF THE LARGEST TOXIC INDUSTRIAL WASTE STREAMS IN THE UNITED STATES.

Coal-fired power plants in the United States burn more than 800 million tons of coal every year, producing more than 110 million tons of coal ash—which includes fly ash, bottom ash, scrubber sludge and boiler slag—in forty-seven states and Puerto Rico. 80 Fed. Reg. 21,302, 21,303 (Apr. 17, 2015). The majority of this massive wastestream either is mixed with water and transported to large surface impoundments (known commonly as “ponds”) or is deposited in dry landfills. *Id.* EPA’s Regulatory Impact Analysis for the 2018 Proposed Rule identified 747 coal ash surface impoundments and 286 coal ash landfills.¹

Coal naturally contains trace amounts of many hazardous chemicals, and these chemicals are concentrated in the solid waste when the coal is burned. 75 Fed. Reg. 35,128, 35,138 (June 21, 2010). In addition, Clean Air Act regulations have required coal plants to capture increasing amounts of harmful emissions at the smokestack, like mercury and other heavy metals, but these pollutants, particulates and sludge end up in the solid waste. *Id.* at 35,139. Consequently, coal ash is a toxic brew of carcinogens, neurotoxins, and poisons—including arsenic, boron, cadmium, hexavalent chromium, lead, lithium, mercury, molybdenum, selenium, and thallium. *See id.* at 35,139, 35,153, 35,168. When this dangerous waste is not disposed of properly, the toxic chemicals are re-released to air, groundwater, surface water, and soil.

B. MISMANAGEMENT OF CCR HAS CREATED A VAST UNIVERSE OF DANGEROUS DISPOSAL UNITS.

The hundreds of coal ash surface impoundments across the country hold their toxic sludge behind earthen dikes, often dozens of stories tall, with pits spanning hundreds of acres, impounding tens of millions of tons of liquid industrial waste.² Because of the wet handling and storage methods favored by industry, the great pressure (hydraulic head) of ash and water in these ponds can rapidly drive contaminated leachate into underlying soils or water. 80 Fed. Reg. at 21,357, 21,441. Both coal ash landfills and impoundments are likely to cause harmful contamination if operated without effective engineering controls, like impermeable liners, groundwater monitoring systems, and proper construction and maintenance to ensure structural stability. *Id.* at 21,327-28.

Until recently, most ash impoundments were constructed without a liner on the bottom that could prevent toxic chemicals from leaking into underlying groundwater. *Id.* at 21,324. EPA estimates that about 65 percent of existing surface impoundments have

¹ EPA, Regulatory Impact Analysis (RIA) for EPA’s 2015 Coal Combustion Residuals (CCR) Final Rule, Docket ID No. EPA-HQ-RCRA-2009-0640-12034, at 2-1, 4-9 (Dec. 2014) (hereinafter “RIA for the 2015 Rule”).

² *Id.* at 2-19.

no liner whatsoever.³ And EPA estimates that only six percent of the total coal ash disposed in surface impoundments is placed in impoundments that have “composite” liner systems, which consist of a layer of clay overlaid by a geomembrane, both of sufficient thickness and low permeability.⁴ As EPA has recognized, disposal of coal ash in landfills and impoundments that lack composite liners is a recipe for disaster because of the propensity of hazardous chemicals to leak out and migrate through groundwater and into nearby surface waters. *Id.* at 21,325.

EPA has documented 157 sites⁵ in 32 states where coal ash mismanagement has caused damage to human health and the environment. *Id.* EPA found that over 90 percent of the damage cases occurred at dumps with inadequate liners, and most of the harm occurred at impoundments with no liner at all. *Id.* at 21,458. EPA notes that the current number of damage cases underestimates the present risks because the majority of coal ash disposal sites are not monitored and there is a lag time between the disposal of coal ash and the migration and detection of hazardous chemicals. *Id.* Ultimately, EPA concluded that “both the specifics of the damage cases and the fact that they continue to occur provide strong evidence of the need for this rule.” *Id.* at 21,326. EPA’s Risk Assessment for the 2015 rule echoes the results of the damage cases by finding that one of the factors that most influences risk is whether the disposal pit is lined.⁶ The Risk Assessment concludes that contamination from coal ash in unlined impoundments results in unacceptable risks of developing cancer from exposure to arsenic and unacceptable risks of developing non-cancer illnesses from exposure to arsenic, lithium, molybdenum and thallium.⁷

The disposal of coal ash and water in massive, dammed surface impoundments also has led to catastrophic environmental destruction and substantial economic following the collapse of impoundments. 75 Fed. Reg. at 35,147. A dike collapse at Tennessee Valley Authority’s Kingston Fossil Plant in 2008 left 300 acres of riverfront flooded with more than a billion gallons of toxic sludge. 80 Fed. Reg. at 21,313, 21,457 n.219. The disaster swept houses off their foundations, necessitated a multi-year cleanup costing more than \$1.2 billion, and permanently displaced scores of families.⁸ There have been at least five other major coal ash spills involving the rupture of earthen dikes or pipe failures. *Id.* at 21,457, n.219. From 1999 through 2009, there were 35 coal ash spills at 25 different coal plants. *Id.* at 21,327. The largest of the four spills occurred in 2014,

³ *Id.* at 3-4 n.105; EPA, Human and Ecological Risk Assessment of Coal Combustion Residuals, Docket ID No. EPA-HQ-RCRA-2009-0640-11993, at 5-5, tbl. 5-3 (Dec. 2014) (hereinafter “Risk Assessment for 2015 Rule”).

⁴ RIA for the 2015 Rule at 3-13.

⁵ EPA’s damage case spreadsheet erroneously numbered two potential damage cases as number 16. Consequently, the total number of damage cases is actually 158. See EPA, CCR Damage Cases Database, Docket ID No. EPA-HQ-RCRA-2009-0640-12123; see also EPA, Damage Case Compendium EPA-HQ-RCRA-2009-0640-12118, -12119, -12120, -12121.

⁶ Risk Assessment for 2015 Rule at ES-7 (“Sensitivity analyses on liner type indicate that disposal of CCR wastes in unlined surface impoundments and landfills presents the greatest risks to human health and the environment.”); see also 80 Fed. Reg. at 21,451 (“[D]isposal of CCR wastes in unlined surface impoundments and landfills presents the greatest risks to human health and the environment.”).

⁷ Risk Assessment for 2015 Rule at 5-5 – 5-4, tbl. 5-3.

⁸ RIA for the 2015 Rule at 1-14.

when a pipe at an inactive impoundment at Duke Energy's Dan River Steam Station ruptured, causing a spill of approximately 39,000 tons of coal ash and 27 million gallons of wastewater into the Dan River. *Id.* at 21,327, 21,343, 21,457 n.219.

At least 50 coal ash impoundments are so large that EPA has classified their dikes as "high hazard," meaning that failure or misoperation is likely to result in loss of life.⁹ EPA has classified another 250 coal ash impoundments as "significant hazard," which means that their failure is likely to cause economic loss, environment damage, or disruption of lifeline facilities.¹⁰ The advanced age of the surface impoundments increased the risks of failure. According to EPA:

Surface impoundments are generally designed to last the typical operating life of coal-fired boilers, on the order of 40 years. However, many impoundments are aging; based on the subset of units for which age data were available, approximately 195 active surface impoundments exceed 40 years of age; 56 units are older than 50 years, and 340 are between 26 and 40 years old. In recent years, problems have continued to arise from these units, which appear to be related to the aging infrastructure, and the fact that many units may be nearing the end of their useful lives.

80 Fed. Reg. at 21,327. Older units are also more prone to leaking. Indeed, EPA concluded that "in the absence of any regulatory action, such units will leak in the near future, or are currently leaking, undetected, since groundwater monitoring is not installed at many of these older units." *Id.* In addition, "older units, which still comprise the majority of current units, continue to operate in a manner that poses risks to human health and the environment." 80 Fed. Reg. 21,452.

C. MISMANAGEMENT OF CCR POSES A SIGNIFICANT THREAT TO HUMAN HEALTH AND THE ENVIRONMENT.

In 2015, EPA concluded that "current management practice of placing CCR waste in surface impoundments and landfills poses risks to human health and the environment within the range that OSWER typically regulates."¹¹ 80 Fed. Reg. at 21,451. EPA explained that it was establishing minimum national standards governing the disposal of CCR in order to "reduce CCR contamination of groundwater and surface water; reduce future CCR impoundment structural failures (breakages); reduce continued public exposure to CCR fugitive dust; and correct negative externalities and inadequate and asymmetric information about CCR disposal risks" and that benefits of the rule would include reduction of cancer and illness as well as mitigation of IQ losses from mercury and lead exposure.¹²

⁹ See EPA, Coal Combustion Residuals Impoundment Assessment Report, Docket ID No. EPA-HQ-RCRA-2009-0640-3916.

¹⁰ See *id.*

¹¹ See also Risk Assessment for 2015 Rule at 6-11 ("EPA concludes that leaching from CCR waste management units has the potential to pose risk to both human and ecological receptors.").

¹² RIA for 2015 Rule at ES-2, ES5-ES-9.

According to EPA, “the totality of the information in the rulemaking record clearly demonstrates that the risks associated with the current management and disposal of CCR remain substantial.” 80 Fed. Reg. at 21,326. The cancer risks associated with exposure to coal ash contaminants are clear. *See id.* (“EPA’s risk assessment concluded that the cancer risks from unlined surface impoundments ranged from 3×10^{-4} for trivalent arsenic to 4×10^{-5} for pentavalent arsenic. . . . The risks associated with unlined landfills were also estimated to be significant, with cancer risks of 2×10^{-5} for trivalent arsenic.”). And because those cancer risks are based on national disposal practices, EPA notes that “risks at an individual site may be even higher based on individual site conditions, waste characteristics, and management practices.” *Id.* Unlined impoundments also pose a far greater risk of causing non-cancer illnesses than composite-lined impoundments. The risk of non-cancer illnesses is 800 times higher from exposure to arsenic, 400 times higher from molybdenum, 300 times higher from lithium, and 200 times higher from thallium exposure. *Id.* The 2015 Regulatory Impact Analysis concludes that unlined impoundments are more than 360 times more likely to contaminate groundwater over their lifetimes than composite-lined impoundments.¹³ By EPA’s own calculations, hundreds of existing impoundments will contaminate groundwater at some point in the future,¹⁴ and this contamination will endanger human health.¹⁵

EPA found that arsenic, lithium and molybdenum posed the greatest risks from surface impoundments, and identified the specific adverse health impacts associated with exposure:

Risks from arsenic ingestion are linked to an increase the risk of cancer in the skin, liver, bladder and lungs, as well as nausea, vomiting, abnormal heart rhythm, and damage to blood vessels. Risks from lithium ingestion are linked to neurological and psychiatric effects, decreased thyroid function, renal effects, cardiovascular effects, skin eruptions, and gastrointestinal effects. Risks from molybdenum ingestion are linked to higher levels of uric acid in the blood, gout-like symptoms, and anemia.¹⁶

D. MISMANAGEMENT OF CCR POSES A DISPROPORTIONATE THREAT TO LOW-INCOME COMMUNITIES AND COMMUNITIES OF COLOR.

By EPA’s own admission, coal plants—which are usually accompanied by coal ash ponds and dry coal ash landfills—are disproportionately located in impoverished areas. Commenters’ own environmental justice analysis of the national rule also found disparate impact. Nearly 70 percent of ash ponds in the United States are located in areas where

¹³ *Id.* at 5-22.

¹⁴ RIA for 2015 Rule at 5-22, 3-4 n.105.

¹⁵ Risk Assessment for 2015 Rule at 5-5.

¹⁶ *Id.* at 6-11.

household income is lower than the national median.¹⁷ In addition 65 percent of communities in which coal ash ponds are sited have above-average percentages of low-income families.¹⁸ Given the serious health threats posed by exposure to coal ash constituents, it is particularly troubling that coal ash impoundments are disproportionately located in low-income communities, where residents are more likely to rely on groundwater supplies and less likely to have access to medical insurance and care.

II. LEGAL BACKGROUND

A. THE REGULATION OF CCR UNDER RCRA WAS LONG OVERDUE

The regulation of coal ash under RCRA was long overdue, with the first rule addressing the toxic material finalized in 2015, nearly 40 years after RCRA was enacted. Every step along the way, industry attempted to obstruct efforts to protect health and the environment from this dangerous substance: by requiring seemingly endless study of its long-known impacts, by evading monitoring of groundwater that further reveals how toxic CCR is; and by limiting public knowledge of, and involvement in, design and operation of CCR units. Congress and EPA have, at times, succumbed to these efforts at obstruction. Indeed, the 2015 CCR Rule was only brought about after multiple lawsuits from citizens prompted courts to direct EPA to do its job.

Even with the 2015 CCR Rule in place, industry attacks on its critical protections continue. Since 2015, the rule has been the subject of an industry lawsuit challenging EPA's decision to require more stringent protections than industry wanted. In 2016, industry – well aware of states' history of failing to regulate, or enforce against, polluting CCR units¹⁹ – prevailed upon Congress to allow EPA to approve state programs to regulate CCR waste in lieu of the federal criteria.²⁰ And in 2017, industry sought – and was granted – EPA "reconsideration" of the rule, leading to EPA's issuance of the 2018 Proposal at issue here. Congress has spoken, however: the clear, applicable mandate of RCRA section 4004 is that CCR units must pose "no reasonable probability of adverse effects on health or the environment," 42 U.S.C. § 6944(a), and no proposal – such as this one – that fails to meet that stringent standard may be adopted.

¹⁷ Comments of Earthjustice, Environmental Integrity Project, Sierra Club, Natural Resources Defense Council, Southern Alliance for Clean Energy, Southern Environmental Law Center, Physicians for Social Responsibility, Clean Air Task Force, Kentucky Resources Council, Environmental Justice Resource Center (collectively "2010 Environmental Commenters"), Docket ID Nos. EPA-HQ-RCRA-2009-0640-6315 and related, at 196 & n.719 (Nov. 19, 2010) (hereinafter "2010 Environmental Comments") (attached) (citing 2000 census data).

¹⁸ *Id.* at n.720.

¹⁹ See Section XI, *infra*.

²⁰ Congress did specify, however, that state CCR programs may only be approved if they are "at least as protective as" the federal criteria set out in 40 C.F.R. part 257. 42 U.S.C. § 6945(d)(1)(B)(ii).

I. After decades of inaction, EPA issued the 2015 CCR Rule.

On April 17, 2015, EPA established the first-ever federal regulation of CCR under the Resource Conservation and Recovery Act (“RCRA”), 42 U.S.C. §§ 6901–6992k. *See* 80 Fed. Reg. 21,302. Those regulations (hereinafter “the 2015 CCR Rule”) were a long time coming.

Congress enacted RCRA in 1976²¹ to regulate the treatment and disposal of solid wastes in order to protect human health and the environment. Subtitle C of RCRA regulated hazardous wastes and directs to EPA to identify and list hazardous wastes. Disposal of all other solid wastes is regulated under subtitle D of RCRA. *Env’tl. Def. Fund v. EPA*, 852 F.2d 1309, 1310 (D.C. Cir. 1988).

After RCRA’s passage and pursuant to congressional directive, EPA published regulations in 1978 entitled “Proposed Guidelines and Regulations and Proposal on Identification and Listing.”²² In these regulations, EPA proposed deferring “applicability of most of the treatment, storage, and disposal standards for selected high-volume, relatively low risk waste categories until information is gathered and assessed to determine how they can best be handled.”²³ Thus, EPA stated that it would address so-called high volume, low risk wastes (mining waste, utility waste, gas and oil drilling muds, gypsum piles, and cement kiln dust)—which it termed “special wastes”—in later regulations, and it solicited information and comments that would assist the agency in developing substantive standards.²⁴

On May 19, 1980, these proposed regulations were promulgated as final regulations that listed specific types of hazardous wastes subject to subtitle C regulation under RCRA. EPA determined that the “special wastes” should be subject to the RCRA part 264 and 265 regulations (implementing subtitle C) without exemption.²⁵

Just before these regulations were scheduled to take effect, Congress enacted the “Bevill Exclusion” on October 21, 1980, as part of the Solid Waste Disposal Act

²¹ Pub. L. No. 94-580, 90 Stat. 2795 (1976) (codified as amended at 42 U.S.C. §§ 6901 to 6992k).

²² “Proposed Guidelines and Regulations and Proposal on Identification and Listing” for RCRA Subtitle C hazardous waste, 43 Fed. Reg. 58,946 (Dec. 18, 1978).

²³ *Id.* at 58,948.

²⁴ *Id.* at 58,992 (“A proposed rulemaking will be published at a later date regarding the treatment, storage and disposal of special waste. The Agency will be developing additional information in order to write substantive standards for special waste and hereby solicits information and comment from the public which may assist the agency in developing its proposals.”).

²⁵ 45 Fed. Reg. 33,154, 33,174–75 (May 19, 1980).

Amendments of 1980.²⁶ The Bevill Exclusion, found in section 3001(b)(3)(A)(i),²⁷ exempted large volume wastes generated by coal and other fossil fuel combustion from regulation under subtitle C temporarily while further studies were undertaken.²⁸ Namely, as section 8002(n)²⁹ required, the EPA was directed to conduct studies and submit a Report to Congress on the adverse effects to human health and the environment regarding ash disposal on a specified timeline.³⁰ Section 3001(b)(3)(c)³¹ specified that the EPA was required to promulgate regulations for these wastes or determine that no such regulations were needed in the six months following the study, hearings and public comment.³²

Congress required EPA to undertake a study of the coal combustion waste issue on a two-year time frame.³³ Two years after the Bevill amendment passed, EPA missed its October 31, 1982 deadline to complete the required report on fossil fuel combustion waste for Congress, and then missed its subsequent deadline to make a final regulatory determination on these wastes.³⁴ Six years after EPA missed its deadline, in February of 1988, EPA finally published and submitted a Report to Congress on Wastes from the Combustion of Coal by Electric Utility Power Plants.³⁵ The report only addressed wastes generated from the electric utility power plant coal combustion, and failed to address co-managed utility coal combustion wastes, other fossil fuel combustion wastes, and non-utility boiler wastes.³⁶ EPA also failed to complete its Regulatory Determination on coal combustion wastes at that time.³⁷

²⁶ Pub. L. No. 96-482, 94 Stat. 2334, Solid Waste Disposal Act, Section 3001(b)(3)(A)(i) (codified at 42 U.S.C. § 6921(b)(3)(A)(i)) (SWDA) (“Notwithstanding the provisions of paragraph (1) of this subsection, each waste listed below shall, except as provided in subparagraph (B) of this paragraph, be subject only to regulation under other applicable provisions of Federal or State law in lieu of this subtitle until at least six months after the date of submission of the applicable study required to be conducted under subsection (f), (n), (o), or (p) of section 8002 of this Act and after promulgation of regulations in accordance with subparagraph (C) of this paragraph: (i) Fly ash waste, bottom ash waste, slag waste, and flue gas emission control waste generated primarily from the combustion of coal or other fossil fuels.”).

²⁷ 42 U.S.C. § 6921(b)(3)(A)(i).

²⁸ *Id.*

²⁹ 42 U.S.C. § 6982(n).

³⁰ *Id.* at § 8002(n), 42 U.S.C. § 6982(n). The eight factors listed in SWDA Section 8002(n)(1)-(8) for study include: source and volumes of such waste, present disposal and utilization practices, potential danger to human health and the environment from disposal and reuse of the materials, documented cases where danger to human health or the environment from surface runoff or leachate has been proven, alternatives to current disposal methods, costs of such alternatives, impact of those alternatives on the use of coal and other natural resources, and the current and potential utilization of such materials.

³¹ 42 U.S.C. § 6921(b)(3)(C).

³² *Id.*

³³ SWDA, § 8002(n).

³⁴ EPA, Fossil Fuel Combustion Waste Legislative and Regulatory Timeline, <http://www.epa.gov/waste/nonhaz/industrial/special/fossil/regs.htm>; SWDA § 3001(b)(3)(C).

³⁵ EPA, *Report to Congress: Wastes from the Combustion of Coal by Electric Utility Power Plants* (EPA 530-SW-88-002) (Feb. 1988) (attached).

³⁶ EPA, Fossil Fuel Combustion Waste Legislative and Regulatory Timeline, <http://www.epa.gov/waste/nonhaz/industrial/special/fossil/regs.htm>.

³⁷ 75 Fed. Reg. at 35,136-37.

In 1991, due to EPA's continued failure to complete a Regulatory Determination on coal combustion wastes, a citizen group filed suit against the EPA.³⁸ On June 30, 1992, EPA settled the case, entering into a Consent Decree that established a schedule for EPA to complete the Regulatory Determinations for all coal combustion wastes. The Consent Decree divided coal combustion wastes into two categories: (1) Fly ash, bottom ash, boiler slag, and flue gas emission control waste from the combustion of coal by electric utilities and independent commercial power producers; and (2) all other waste governed by RCRA Sections 3001(b)(3)(A)(i) and 8002(n).³⁹ The Decree provided a specific timeline for development of the regulatory framework applicable to coal combustion waste.

On August 9, 1993, pursuant to this Consent Decree, EPA published its Regulatory Determination for the first category of wastes and concluded that regulation under subtitle C of RCRA for these wastes was not yet warranted.⁴⁰ For the second category of wastes, EPA decided that additional study was necessary. EPA prepared a report to Congress—again following court-ordered deadlines—that was submitted in March 1999.⁴¹

On May 22, 2000, twenty years after the Beville Amendment was enacted, EPA published a regulatory determination for this second category of coal combustion wastes.⁴² In this determination, EPA made the following findings:

- The wastes in this second category analyzed in the 2000 regulatory determination were nearly identical to the wastes analyzed in the first 1993 determination because the high volume wastes dominated the waste characteristics, even when co-managed with other waste. The wastes from the 1993 determination remained exempt though they were similar to the wastes currently being analyzed.⁴³ Thus, the “May 2000 Regulatory Determination addressed not only the remaining wastes, but effectively reopened the decision on CCRs that went to monofills,” which were addressed in the 1993 determination.⁴⁴
- “Public comments and other analyses... have convinced us that these wastes could pose risks to human health and the environment if not properly managed, and there is sufficient evidence that adequate controls may not be in place.”⁴⁵

³⁸ *Gearhart v. Reilly*, No. 91–2345 (D.D.C.).

³⁹ See EPA, *Report to Congress: Wastes from the Combustion of Fossil Fuels* vol. 1 (EPA 530-R-99-010) (Mar. 1999) (hereinafter “1999 Report to Congress v.1”), available at http://www.epa.gov/osw/nonhaz/industrial/special/fossil/volume_1.pdf (attached).

⁴⁰ 58 Fed. Reg. 42,466 (Aug. 16, 1993), <http://www.epa.gov/epawaste/nonhaz/industrial/special/mineral/080993.pdf>.

⁴¹ See 1999 Report to Congress v.1; EPA, *Report to Congress: Wastes from the Combustion of Fossil Fuels*, vol. 2 (EPA 530-R-99-010) (Mar. 1999), available at http://www.epa.gov/waste/nonhaz/industrial/special/fossil/volume_2.pdf (attached).

⁴² 65 Fed. Reg. 32,214 (May 22, 2000).

⁴³ *Id.* at 32,217.

⁴⁴ 75 Fed. Reg. at 35,137.

⁴⁵ 65 Fed. Reg. at 32,216.

Information on damage cases indicated a potential risk to human health and the environment.

- A more complete groundwater assessment was needed to determine the risk from arsenic.⁴⁶
- Improvements were being made in waste management practices due to increasing state oversight, although gaps remained in the current regulatory regime, which led it to retain the Bevill exemption.⁴⁷

On the basis of these findings, EPA found that national regulation of CCR was warranted.⁴⁸

Notwithstanding its conclusion that federal regulation was necessary, EPA took no steps to regulate coal ash until after the Kingston disaster in 2009. In October 2009, EPA sent a draft rule regulating coal ash as a hazardous waste to the Office of Management and Budget (“OMB”). EPA-HQ-RCRA-2009-0640-0013. The OMB delayed the draft rule for seven months and the resulting proposal included two main options: one that would treat coal ash as a hazardous waste under subtitle C of RCRA and one that would regulate coal ash as a non-hazardous solid waste under subtitle D of RCRA. EPA-HQ-RCRA-2009-0640-0012. EPA issued this “co-proposal” on June 21, 2010 – over 30 years after enactment of the Bevill Exclusion.⁴⁹

EPA received 425,170 comments on the proposed CCR Rule,⁵⁰ including, *inter alia*, requests from industry that proposed location restrictions be loosened and that owners/operators be permitted to establish “alternative” groundwater protection standards at CCR dumps.

Then EPA dawdled again. For several years after issuing the co-proposal, EPA took no action, leading some of the Commenters here to sue EPA for violating its obligations under RCRA. *See Appalachian Voices v. McCarthy*, 989 F. Supp. 2d 30 (D.D.C. 2013).

Pursuant to court order, EPA finally published the 2015 CCR Rule, which regulates CCR as a non-hazardous substance under Subtitle D of RCRA, on April 17, 2015. 80 Fed. Reg. at 21,302. The 2015 CCR Rule establishes national minimum criteria for existing and new landfills and surface impoundments, including location restrictions, design requirements, operating requirements, closure and post-closure requirements. *Id.* Some of its key protections include semi-annual groundwater monitoring requirements which trigger corrective action obligations at lined

⁴⁶ *Id.*

⁴⁷ *Id.* at 32,215.

⁴⁸ *Id.* at 32,221. Although EPA settled on regulating CCR under Subtitle D, the agency cautioned repeatedly that the “waste might present sufficient potential threat to human health and the environment to justify subtitle C regulation.” *Id.* at 32,218.

⁴⁹ 75 Fed. Reg. 35,128 (June 21, 2010).

⁵⁰ See <https://www.regulations.gov/docket?D=EPA-HQ-RCRA-2009-0640>.

impoundments and closure obligations at unlined ones; location restrictions to keep CCR units out of unstable areas, wetlands, faults areas, seismic zones and the groundwater table; structural stability criteria for impoundments; and comprehensive closure and post-closure requirements. *Id.* In explaining the bases for the rule, EPA firmly rejected numerous comments from industry, including comments that location restrictions should be loosened and that owners/operators should be allowed to establish “alternative” groundwater protection standards at CCR dumps.⁵¹

Because Subtitle D of RCRA does not authorize EPA to directly implement minimum national criteria for solid waste dumps nor to enforce such criteria, nor does it require states to “adopt or implement” EPA’s minimum criteria, EPA established the 2015 CCR Rule as a “self-implementing rule” enforced via citizen suits. *Id.* at 21,309, 21,311; *see also* 42 U.S.C. § 6972.

2. *Legal Challenges to the 2015 CCR Rule*

Soon after publication of the 2015 CCR Rule, both environmental organizations and industry brought legal challenges to the rule in the U.S. Court of Appeals for the D.C. Circuit. Environmental challengers argued, *inter alia*, that the 2015 CCR Rule falls short of the applicable mandates of RCRA section 4004 for protection of health and the environment by allowing unlined CCR surface impoundments to continue operating when mounting evidence shows that such impoundments leak and contaminate groundwater and surface water; by classifying CCR surface impoundments underlain by clay as “lined;” and by failing to regulate CCR dumps at retired power plants.⁵² Environmental challengers further argued that EPA violated RCRA’s public participation directives by failing to provide public notice of new or expanded CCR units.⁵³

Industry, represented by, among others, the Utility Solid Waste Activities Group (“USWAG”), argued that the 2015 CCR Rule regulates CCR too stringently. Bringing up a number of the same arguments that it already raised – and EPA rejected⁵⁴ – in comments on the proposed CCR rule, industry contended that, among other things, EPA should have set less stringent location standards and EPA should have allowed owner/operators of CCR units to set alternative compliance standards for groundwater monitoring and corrective action. In EPA’s response brief, the agency again rejected industry’s contentions, reiterating that industry’s preferred options – some of which are

⁵¹ *See* 80 Fed. Reg. at 21,361 (rejecting comments calling for EPA not to impose proposed location restrictions and explaining that, in EPA’s view, “application of the location standards to existing CCR surface impoundments is necessary to achieve the standard in section 4004(a). Absent these location restrictions, the risk of impacts to human health and the environment from releases from CCR units, including from the rapid and catastrophic destruction of CCR surface impoundments, sited in these sensitive areas would exceed acceptable levels.”); *id.* at 21,405 (explaining that EPA determined that allowing owners/operators to set alternative groundwater protection standards was inappropriate “as it was unlikely that a facility would have the scientific expertise necessary to conduct a risk assessment, and [it was] was too susceptible to potential abuse”).

⁵² Opening Brief for Environmental Petitioners, *Utility Solid Waste Activities v. EPA*, No. 15-1219, Doc. 1634025 (D.C. Cir Sept. 6, 2016) (attached).

⁵³ *Id.* at 47-51.

⁵⁴ *See, e.g.*, 80 Fed. Reg. at 21,361, 21,405.

now included in the 2018 Proposal – do not and cannot meet the applicable protectiveness standard of RCRA section 4004.⁵⁵ Those legal challenges were consolidated and have been fully briefed and argued, and are now awaiting decision.

3. *The WIIN Act*

In December 2016, Congress adopted the Water Infrastructure Improvements for the Nation Act⁵⁶ (hereinafter the “WIIN Act”). The WIIN Act amends RCRA by (a) authorizing EPA to approve state CCR permitting programs that are “at least as protective as” the federal criteria for CCR units under 40 C.F.R. part 257, 42 U.S.C. § 6945(d)(1)(B)(ii); (b) authorizing EPA to administer CCR permitting programs requiring compliance with the federal part 257 CCR criteria in any state that is not administering its own approved program, if Congress specifically appropriates funds for that purpose, *id.* § 6945(d)(2)(B); (c) directing EPA to establish CCR permit programs consistent with the federal part 257 CCR criteria in Indian country, *id.* § 6945(d)(5); and (d) authorizing, but not requiring, EPA to enforce the federal part 257 CCR criteria in states without approved programs, *id.* § 6945(d)(4)(A)(i). In states with approved CCR programs, the WIIN Act authorizes EPA to enforce only the program requirements, and only if the state so requests or if EPA determines that enforcement is necessary to ensure compliance with the program. *Id.* § 6945(d)(4)(A)(ii)-(B)(i).

The WIIN Act’s modifications remain hypothetical at this point. No state has yet received approval to administer its own CCR program, and EPA has only found that one state, Oklahoma, has even submitted a complete application for approval of its CCR program.⁵⁷ EPA has neither begun administering any CCR permit programs in non-approved states nor has it enforced any provisions of the 2015 CCR Rule, despite numerous violations of that rule already committed by utilities. *See* Section XI, *infra*. EPA has not even established a federal CCR permitting program on Indian Lands, where such programs have been mandatory since 2016 according to the WIIN Act. *See* 42 U.S.C. § 6945(d)(5).

4. *Industry petitions for reconsideration of the 2015 CCR Rule*

Industry has made yet another attempt to thwart regulation of CCR. Instead of waiting to see if the D.C. Circuit will reverse EPA on several key provisions of the 2015

⁵⁵ *See, e.g.*, Brief of Respondent Environmental Protection Agency, *Utility Solid Waste Activities v. EPA*, No. 15-1219, Doc. 1633777, at 72 (D.C. Cir. Sept. 6, 2016) (attached) (rejecting industry’s contention that it was inappropriate to subject new CCR landfills to seismic location restrictions and explaining that new landfills “can easily be constructed to meet the Rule’s engineering performance standards”); *id.* at 77-78 (rejecting industry’s contention that EPA should have allowed owners/operators to establish alternative protection standards for CCR contaminants lacking MCLs and explaining that “alternative health-based standard would necessarily require scientific expertise well outside of the normal expertise of a professional engineer, including, e.g., from toxicologists, hydrologists and other scientists”).

⁵⁶ Pub. L. No. 114-322, 130 Stat. 1628 (2016); codified at 42 U.S.C. § 6945(d).

⁵⁷ *See* EPA, “Oklahoma: Approval of State Coal Combustion Residuals State Permit Program,” 83 Fed. Reg. 2100 (Jan. 16, 2018). In January 2018, EPA proposed to approve Oklahoma’s CCR program, *id.*, but it has not finalized that approval.

CCR Rule, USWAG and AES Puerto Rico asked EPA to reverse itself by “reconsidering” many of the provisions of the rule.⁵⁸ USWAG’s petition asks EPA, among other things, to (a) allow the use of “alternative risk-based groundwater protection standards;”⁵⁹ (b) allow owners/operators to forego corrective action if taking such action would not result in “meaningful environmental benefit;”⁶⁰ (c) provide flexibility in the “point of compliance,” allowing monitoring wells to be sited away from the waste boundary where the pollution they reveal will have already spread; and (d) shorten the post-closure care period. Every single one of these proposals had been considered and rejected by EPA in issuing the 2015 CCR Rule.⁶¹ Notably, USWAG spent pages bemoaning the cost of complying with the 2015 CCR rule, but provided nothing more than conclusory statements – and no substantive evidence – that its proposal to loosen regulations and extend deadlines will satisfy the RCRA 4004(a) standard it acknowledges applies to CCR.⁶² AES’s petition for reconsideration – which asks EPA to limit regulation of piles of CCR such as the giant one it has amassed in Puerto Rico –

⁵⁸ See USWAG, “Utility Solid Waste Activities Group Petition for Rulemaking to Reconsider Provisions of the Coal Combustion Residuals Rule, 80 Fed. Reg. 21,302 (April 17, 2015), and Request to Hold in Abeyance Challenge to Coal Combustion Residual Rule, No. 15-1219, et al. (D.C. Cir.)” (hereinafter “USWAG Petition for Reconsideration”) (May 12, 2017), *available at* https://www.epa.gov/sites/production/files/2017-06/documents/final_uswag_petition_for_reconsideration_5.12.2017.pdf; AES Puerto Rico, “AES Puerto Rico LP’s Petition for Rulemaking to Reconsider Provisions of the Coal Combustion Residuals Rule, 80 Fed. Reg. 21,302 (Apr. 17, 2015), and Request to Hold in Abeyance Challenge to the Coal Combustion Residuals Rule, No. 15-1219, et al. (D.C. Cir.),” (hereinafter “AES Petition for Reconsideration”) (May 31, 2017), *available at* https://www.epa.gov/sites/production/files/2017-06/documents/2017.05.31_aes_puerto_rico_lps_petition_for_reconsideration_and_rulemak.pdf.

⁵⁹ See USWAG Petition for Reconsideration at 27-30.

⁶⁰ See *id.* at 30-32.

⁶¹ See 80 Fed. Reg. at 21,405 (rejecting the request to allow alternative groundwater protection standards because EPA determined “it was unlikely that a facility would have the scientific expertise necessary to conduct a risk assessment, and was too susceptible to potential abuse”); *id.* at 21,407 (rejecting proposal to allow owner/operators to forego corrective action because EPA determined it was “potentially subject to abuse”); *id.* at 21,426 (“By not allowing the post-closure care period to be shortened, EPA better ensures that the final cover system will be properly maintained. In addition, a mandatory 30 year period ensures that if problems do arise with respect to a final cover system, the groundwater monitoring and corrective action provisions of the rule will detect and address any releases from the CCR unit, at least during the post-closure care period.”); EPA, *Comment Summary and Response Document, Hazardous and Solid Waste Management System; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals from Electric Utilities; Proposed Rule (Docket # EPA-HQ-RCRA-2009-0640); Volume 9: Groundwater and Corrective Action*, at 46 (Dec. 2014), Docket ID No. EPA-HQ-RCRA-2009-0640-12132 (explaining that “[t]he objective of a groundwater monitoring system is to intercept groundwater to determine whether the groundwater has been contaminated by the CCR disposal unit. Early contaminant detection is important to allow sufficient time for corrective measures to be developed and implemented before sensitive receptors are significantly affected. To accomplish this, the rule requires that wells be located to sample groundwater from the uppermost aquifer *at the waste unit boundary*.”) (emphasis added).

⁶² See USWAG Petition for Reconsideration at 4 (asserting that requested revisions to 2015 CCR Rule would “ensur[e] that CCR disposal units are regulated in a manner meeting RCRA’s statutory standard of ensuring “no reasonable probability of adverse effects on health or the environment.”); 20 (“[T]hese changes will allow for implementation of the Rule’s requirements in a more balanced and cost-effective manner while meeting RCRA’s statutory standard of ensuring ‘no reasonable probability of adverse effects on health or the environment.’”).

essentially admits that its request will not protect health and the environment, as it does not even bother to argue that it will.⁶³

5. *The 2018 Proposal*

On March 15, 2018, EPA published the 2018 Proposal. 83 Fed. Reg. 11,584. Aside from the sole appropriate proposal to add boron to the list of assessment monitoring constituents, the 2018 Proposal would lift or weaken provisions involving nearly the entire gamut of protections afforded by the 2015 CCR Rule, just as USWAG requested in its petition for reconsideration. The 2018 Proposal would, among other things:

- allow states, and potentially owners/operators of CCR units, to establish “alternative” groundwater protection standards for certain constituents, without requiring *any* consideration whatsoever of what limits are necessary to protect children and infants from the grave risks CCR poses to them;⁶⁴
- allow states, and potentially owners/operators of CCR units, to reduce the post-closure care period below the 30 years required by the 2015 CCR Rule, despite the clear need to maintain post-closure care at least that long;⁶⁵
- allow states, and potentially owner/operators of CCR units, to avoid taking *any* corrective action to address contamination from CCR units, permitting continuing pollution of the environment without clear parameters for when such pollution might be acceptable;⁶⁶
- allow states, and potentially owner/operators of CCR units, to suspend groundwater monitoring if a showing is made that there is “no potential for migration” of contaminants from CCR units;
- allow owner/operators of CCR units to place additional CCR into those units when closing them, adding more leachable, long-lasting toxins to already-contaminated dumps;
- potentially allow states or owner/operators of CCR units to keep “alternative standards” they establish out from public view by slashing current requirements that key compliance demonstrations be posted on publicly-available websites;

⁶³ See AES Petition for Reconsideration.

⁶⁴ See Section XIV *infra* regarding alternative groundwater protection standards.

⁶⁵ See Expert Opinions of Mark A. Hutson, PG, *USEPA’s Proposed 2018 Modifications to the 2015 Final CCR Rules*, Parts I & II (Apr. 30, 2018) (hereinafter, “Hutson Expert Report,” “Hutson Expert Report Part I,” or “Hutson Expert Report Part II”) (attached), and Section XX *infra* regarding the length of the post-closure care period; see also 80 Fed. Reg. at 21,426 (“By not allowing the post-closure care period to be shortened, EPA better ensures that the final cover system will be properly maintained. In addition, a mandatory 30 year period ensures that if problems do arise with respect to a final cover system, the groundwater monitoring and corrective action provisions of the rule will detect and address any releases from the CCR unit, at least during the post-closure care period.”).

⁶⁶ See Section XV *infra* regarding proposal to allow “modification” of corrective actions; 83 Fed. Reg. at 11,600 (stating that “[t]he Agency understands and anticipates that states may have difficulties in defining ‘significant reduction of risk,’” but nonetheless declining to define that phrase).

- potentially allow unlined, leaking CCR impoundments to continue operating despite vast evidence that such impoundments pose grave risks to health and the environment;
- potentially allow states or owner/operators of CCR units to place groundwater monitoring wells beyond the waste boundary, meaning contamination would not even be detected until it had already spread into the environment; and potentially allow approved states or owner/operators of CCR units to establish “alternative” location restrictions, despite the overwhelming evidence that those mandated by the 2015 CCR Rule are necessary to protect human health and the environment.⁶⁷

B. THE WIIN ACT DOES NOT AUTHORIZE, MUCH LESS REQUIRE, THE CHANGES IN THE 2018 PROPOSAL.

As EPA recognizes,⁶⁸ RCRA section 4004(a) governs any proposal to regulate solid waste under Subtitle D, as EPA has proposed here. That provision directs EPA to “promulgate regulations containing criteria for determining which facilities shall be classified as sanitary landfills and which shall be classified as open dumps,” and specifies that, “[a]t a minimum, such criteria shall provide that a facility may be classified as a sanitary landfill and not an open dump *only if there is no reasonable probability of adverse effects on health or the environment from disposal of solid waste at such facility.*” 42 U.S.C. § 6944(a) (emphasis added). The protectiveness standard of RCRA Section 4004(a) bars EPA from taking into account costs or the “practicable capabilities” of owner/operators when promulgating the required criteria.⁶⁹

In the preamble to the 2018 Proposal, EPA repeatedly asserts that many of the proposed changes contained within the 2018 Proposal – particularly those that would allow states, and potentially owner/operators of CCR units, to set “alternative” performance standards for CCR units – are based on the WIIN Act.⁷⁰ But the WIIN Act

⁶⁷ See Section XII, *infra*, regarding location restrictions.

⁶⁸ See, e.g., 83 Fed. Reg. at 11,597 (“[T]he statutory structure adopted by Congress requires EPA to establish national minimum criteria that ensure there is ‘no reasonable probability of adverse effects on health or the environment.’”); *id.* at 11,587 (explaining that EPA “must demonstrate, through factual evidence available in the rulemaking record, that the final rule will achieve the statutory standard (‘no reasonable probability of adverse effects on health or the environment’”).

⁶⁹ See Final Brief of Respondent Environmental Protection Agency, *Utility Solid Waste Activities v. EPA*, No. 15-1219, Doc. 1633777, at 60-61 (D.C. Sept. 6, 2016) (explaining that “Congress directed EPA to provide that a facility is to be classified as a sanitary landfill, and therefore not as an open dump, ‘if there is no reasonable probability of adverse effects on health or the environment from disposal of solid waste at such facility,’ 42 U.S.C. § 6944(a), and to require the closure (or retrofitting) of any facility classified as an open dump. 42 U.S.C. § 6945(a). On their face, these provisions do not allow for or even imply that costs must – or even can – be considered.”); 83 Fed. Reg. at 11,597 (“The CCR regulations are based on RCRA section 4004(a), which requires the regulations to ensure ‘there is no reasonable probability of adverse effects on health or the environment from disposal of solid waste at such facility.’ 42 U.S.C. 6944(a). By contrast, EPA was authorized to ‘take into account the [facility’s] practicable capability’ in developing the part 258 regulations. 42 U.S.C. 6949a(c).”).

⁷⁰ See, e.g., 83 Fed. Reg. at 11,585 (“The Agency is proposing six alternative performance standards that would apply in participating states (*i.e.*, those which have an EPA-approved CCR permit program under the WIIN Act) or in those instances where EPA is the permitting authority. Those alternative performance standards would allow a state with an approved permit program or EPA to: (1) Use alternative risk-based

does not justify, much less authorize, the proposed changes put forward in the 2018 Proposal. To begin with, the WIIN Act does not alter the applicable statutory standard or otherwise authorize EPA to establish alternative standards that do not comport with section 4004(a). Nothing in the text of the WIIN Act even suggests as much. *See* 42 U.S.C. § 6945(d).

Nor does the WIIN Act create any need for the 2018 Proposal. The only thing the WIIN Act does is *allow* states to administer their own CCR programs as long as those programs are “at least as protective as” the part 257 minimum federal criteria. *Id.* § 6945(d)(1)(B)(ii). The WIIN Act does not require states to administer their own programs, and in fact, not a single state has yet received approval to administer its own CCR program and only one has submitted a complete application for such approval. Moreover, even if EPA receives sufficient congressional appropriations to begin administering federal permitting programs in one or more states, any such federal permits must require compliance with the same federal minimum criteria as set forth in the CCR Rule itself. *Id.* § 6945(d)(2)(B). In addition, the WIIN Act presumes that the federal minimum criteria will continue to apply in states where a permitting program has not yet been approved. *Id.* § 6945(d)(3). In short, nothing about the WIIN Act requires EPA to make any changes to the 2015 CCR Rule whatsoever, let alone justifies any weakening of its protections.

Rather than support the changes EPA proposes here, the WIIN Act indicates that the flexibilities EPA is proposing to afford states are contrary to Congress’ intent. Although the WIIN Act does allow EPA to approve state permitting programs that are “at least as protective as” the minimum federal criteria, 42 U.S.C. § 6945(d)(1)(B), (C), the WIIN Act presumes the continued existence of clear federal minimum criteria that would act as a baseline against which state programs can be measured. That presumption is no surprise, as it is precisely what RCRA section 4004(a) requires: EPA – not states – is to “promulgate . . . criteria for determining which facilities shall be classified as sanitary landfills and which shall be classified as open dumps.” *Id.* § 6944(a). EPA’s suggestion that it can effectively do away with federal minimum criteria in favor of unspecified, site-specific, “risk-based” standards determined by states is an unjustified and illegal delegation of EPA’s responsibility under the WIIN Act and RCRA section 4004(a) to promulgate and maintain minimum federal criteria that satisfy Section 4004(a).⁷¹ Any final rule that purported to allow state or federal permitting authorities to adopt unspecified “alternative” site-specific standards that differ from the requirements that

groundwater protection standards for constituents where no Maximum Contaminant Level exists; (2) modify the corrective action remedy in certain cases; (3) suspend groundwater monitoring requirements if a no migration demonstration can be made; (4) establish an alternate period of time to demonstrate compliance with the corrective action remedy; (5) modify the post-closure care period; and (6) allow Directors of states to issue technical certifications in lieu of the current requirement to have professional engineers issue certifications.”); *id.* (asserting that the “second category” of changes are “proposed in response to the WIIN Act”).

⁷¹ Indeed, EPA itself recognizes that its proposals include vague parameters, providing little guidance to states on how those standards must be set to comply with 4004(a). *See* 83 Fed. Reg. at 11,600 (stating that “[t]he Agency understands and anticipates that states may have difficulties in defining ‘significant reduction of risk,’” but nonetheless declining to define that phrase).

EPA, just three years ago, found to be necessary to satisfy the section 4004(a) standard would be unsupported by the record, arbitrary and capricious, and contrary to law.⁷²

The WIIN Act also provides no justification whatsoever for EPA's proposal to authorize owner/operators of CCR units to establish "alternative" site-specific standards for those units. The WIIN Act presumes that the federal minimum criteria will continue to apply in states where a permitting program has not yet been approved. *Id.* § 6945(d)(3). Such states are in precisely the same circumstances that they were in when EPA adopted the 2015 CCR Rule: the rule is self-implementing, with no permitting authority oversight. When evaluating whether to grant owner/operators of CCR units such authority for the 2015 CCR Rule, EPA repeatedly concluded that, without oversight from a permitting authority, the protectiveness standard of RCRA Section 4004(a) would not be met.⁷³ EPA came to the same conclusion in the context of the MSWLF Rule, upon which EPA bases many of the standards contained in the 2018 Proposal.⁷⁴

EPA has offered no evidence whatsoever that those conclusions are incorrect today. The fact that EPA now has enforcement authority in states without approved programs, *id.* § 6945(d)(4), certainly does not undercut them. That enforcement authority allows EPA to investigate and address violations after they have occurred, not to review and approve standards before the damage is done.⁷⁵ The fact that EPA has had such authority since 2016 but has yet to use it, despite numerous clear violations of the 2015 CCR Rule, further demonstrates that after-the-fact enforcement by EPA cannot be counted on to ensure the protectiveness standard of RCRA Section 4004(a) is met.

The possibility that EPA may, at some point, establish permit programs for CCR units in states without approved programs likewise does not counter that conclusion.

⁷² Neither the woefully deficient record EPA offers to support the 2018 Proposal, nor the far more thorough evaluation completed by EPA for the 2015 CCR Rule, supports the changes proposed herein. *See* 80 Fed. Reg. at 21,333 ("The combination of this regulatory structure and the need to demonstrate that the final rule achieves section 4004(a)'s protectiveness standard based on the record at the time the rule is promulgated also effectively limits EPA's ability to establish the kind of regulatory provisions commenters have requested (i.e., establish an alternative that allows a state permit program to approve a less stringent technical requirement based on site specific conditions). *Because . . . EPA is currently unable to reach a conclusion regarding the adequacy of state programs, EPA cannot demonstrate that such an alternative would meet the section 4004(a) standard.*") (emphasis added).

⁷³ *See, e.g.*, 80 Fed. Reg. at 21,405 (rejecting the request to allow owner/operators of CCR units to establish alternative groundwater protection standards because EPA determined "it was unlikely that a facility would have the scientific expertise necessary to conduct a risk assessment, and was too susceptible to potential abuse."); *id.* at 21,407 (rejecting proposal to allow owner/operators to forego corrective action because EPA determined it was "potentially subject to abuse").

⁷⁴ *See, e.g.*, EPA, "Solid Waste Disposal Facility Criteria: Final Rule," 56 Fed. Reg. 50,978, 51,061 (Oct. 9, 1991) (hereinafter "MSWLF Rule") (allowing suspension of groundwater monitoring only in approved states because EPA "recognizes the need for the State to review a no-migration demonstration"); *id.* at 51,086 (declining to allow MSWLFs to establish site-specific groundwater protection standards due to the self-implementing nature of the rule); *id.* at 51,101 (only allowing approved states to modify the 30-year post-closure care period for MSWLFs).

⁷⁵ *See id.* § 6945(d)(4)(A) (authorizing EPA to "use the authority provided by sections 3007 and 3008" to enforce the federal criteria); *id.* § 6927 (granting EPA inspection authority); *id.* § 6928 (authorizing EPA to issue orders "for any past or current violation" of RCRA).

EPA has no such permit programs yet and, in any case, any federal permits for CCR units must require compliance with the same federal minimum criteria as set forth in the CCR Rule itself. 42 U.S.C. § 6945(d)(2)(B). EPA's proposed change to the definition of "State Director" to provide EPA with the same "flexibilities" to propose alternative approaches to CCR regulation, *see* 83 Fed. Reg. at 11,597, is thus inconsistent with and not authorized by the WIIN Act. Any final rule issued based on the 2018 Proposal that purports to give EPA the same authority as states to pursue alternative approaches through a permitting program that deviate from the part 257 minimum federal criteria would thus be arbitrary, capricious, and contrary to law.

Accordingly, any final rule that authorizes owner/operators of CCR units in non-participating states or federal permitting authorities to establish "alternative" site-specific standards for such units would be unsupported by the record, arbitrary and capricious, and contrary to law.

III. THE ADDITION OF BORON TO THE LIST OF CONSTITUENTS IN APPENDIX IV OF PART 257 IS REQUIRED BY SECTION 4004(A) OF RCRA.

Commenters strongly support EPA's proposed addition of boron to Appendix IV of part 257, for all of the reasons articulated by EPA in the preamble to the 2018 Proposal:

- "Boron is one of nine determined to present unacceptable risks under the range of scenarios modeled" in EPA's Risk Assessment for the 2015 rule. 83 Fed. Reg. at 11,589.
- "Of these, boron is the only one associated with risks to both human and ecological receptors." *Id.*
- "Boron can pose developmental risk to humans." *Id.* It is worth repeating here that the EPA Regional Screening Level for boron – 4 mg/L – may not be adequately health-protective. The World Health Organization set a more recent (2017) guideline value of 2.4 mg/L to protect against developmental toxicity (e.g., low birthweight).⁷⁶
- "[Boron] can result in stunted growth, phytotoxicity, or death to aquatic biota and plants when released to surface water bodies." *Id.*
- "Boron is a [contaminant of concern] in more damage case (approximately [51 percent]⁷⁷ of the total) than any Appendix IV constituent with the exception of arsenic." *Id.*
- "The damage cases reflect a range of waste types disposed in both surface impoundment and landfills. These damage cases corroborate the findings of the

⁷⁶ World Health Organization, Guidelines for drinking-water quality, 4th edition, incorporating the 1st addendum (chapters), 323 (2017).

⁷⁷ In the first column of 83 Fed. Reg. at 11,589, EPA states that boron is a constituent of concern in "approximately 50 percent" of damage cases. In the second column of the same page, EPA states that boron is a constituent of concern in "approximately 51% of the total damage cases." Commenters have reviewed the damage cases and believe that the correct number is 51 percent.

[Risk Assessment] and also capture other scenarios that were not modeled in the [Risk Assessment], such as units that intersect with the groundwater table.” *Id.*

- “[O]ut of all the coal ash constituents modeled by EPA, boron has one of the shortest travel times, meaning that boron is likely to reach potential receptors before other constituents. As such, including it on Appendix IV would ensure corrective action occurs soon after a potential release,” which would “better protect human health and the environment by allowing for a response to contamination more quickly and preventing further and more extensive contamination, thereby limiting the exposures to human and ecological receptors.” *Id.*
- Boron is a “risk driver.” *Id.* EPA added other chemicals without Maximum Contaminant Levels to Appendix IV because they were “risk drivers.” It only makes sense to do the same with boron.
- “In response to [litigation over the 2015 CCR Rule] EPA reexamined its decision to remove boron [from Appendix IV] and concluded at that time that removing boron from Appendix IV had been inconsistent with other actions taken in the final rule. Specifically, fluoride had been included on both Appendix III and Appendix IV.” *Id.* at 11,588-89.

For all of these reasons, EPA’s coal ash regulations will only meet the RCRA protectiveness standard, and ensure that there is no reasonable probability of adverse effects, if boron is included in assessment monitoring and listed in Appendix IV.

Additional support for EPA’s proposal comes from chemical and physical analyses showing that boron will almost always be a pollutant of concern in the context of coal ash. This scientific literature is described in greater detail in the attached report by Dr. Avner Vengosh (hereinafter “Vengosh Expert Report”), who concludes that boron is a “sensitive diagnostic tool for detecting and quantifying coal ash contamination,” which supports EPA’s above-quoted conclusion that responding to boron contamination (through the regulatory procedures that follow from assessment monitoring) will ensure a cleaner environment and more rapid and cost-effective remediation.

Finally, EPA must also consider the new data generated by the 2015 CCR Rule and other new sources of data. EPA seeks comment on whether it is appropriate to rely on the Risk Assessment for the 2015 rule. 83 Fed. Reg. at 11,589. Commenters believe that the Risk Assessment for the 2015 rule, along with the known “damage cases” in the 2015 rulemaking record, is currently the only record evidence upon which EPA can rely. To the extent that EPA is asking whether, given the record as it stands now, EPA should rely on the Risk Assessment for the 2015 rule, then the answer is yes. However, Commenters also believe that it would be arbitrary and capricious for EPA to ignore the large volume of site-specific groundwater data that has become available since 2015. This includes data collected by nonprofit organizations and data collected by owner/operators pursuant to the requirements of the 2015 CCR Rule. *See* Section VII, *infra*.

The Environmental Integrity Project (EIP) maintains an online database of groundwater monitoring data near coal ash units.⁷⁸ As of mid-April 2018, the database consisted almost entirely of monitoring data generated before the groundwater monitoring reports required by the 2015 CCR Rule became available, generally from the 2010-2015 time period. Of the 128 sites in the EIP database, 101 were required to monitor for boron. EIP excluded five sites from an analysis performed for these comments due to data errors that EIP could not quickly resolve, leaving 96 sites. Boron data from the Environmental Integrity Project's Ashtracker database (attached) to this comment letter lists the 96 sites with reliable boron data, and shows, for each plant, the highest well-specific mean boron concentration. Sixty-one sites had at least one well with a mean boron concentration greater than the EPA Child Health Advisory of 3 mg/L. In other words, roughly 63% of the sites with boron data showed unsafe concentrations of boron in one or more wells.⁷⁹ This is consistent with EPA's finding regarding the coal ash damage cases, where the majority had boron as a contaminant of concern. *See* 83 Fed. Reg. at 11,589.

Of these sites where significant concentrations of boron were detected, the EIP database shows that dozens of them have very high onsite boron readings. Forty-one sites have at least one well with a mean boron concentration greater than 8 mg/L (or more than double the EPA Regional Screening Level). Eight sites have at least one well with a mean boron concentration greater than 40 mg/L (or more than ten times the EPA Regional Screening Level).

Maximum onsite groundwater concentrations have reached as high as 1,900 mg/L (at the Reid Gardner plant in Nevada), 260 mg/L (at the Big Bend plant in Florida), 153 mg/L (at the Colstrip plant in Montana), 136 mg/L (at the Seminole plant in Florida), and 113 mg/L (at the Trimble site in Kentucky). Mean boron concentrations have exceeded 100 mg/L in at least one well at four of these sites. *See* Boron data from the Environmental Integrity Project's Ashtracker database. These are significant because they exceed the 90th percentile impoundment porewater value that EPA used as a proxy for impoundment leachate in the Risk Assessment (97.8 mg/L). Risk Assessment for 2015 Rule at 3-3. Boron concentrations should attenuate between the raw leachate and the groundwater that is sampled some distance away from a source. This means that the leachate at the sites identified above almost certainly had much higher concentrations of boron than the monitoring wells, far greater than EPA's 90th percentile impoundment porewater estimate. The maximum groundwater values in EIP's database therefore suggest that EPA's use of impoundment porewater data for boron was not conservative (i.e., not unrealistically high), and may have underestimated boron concentrations in certain scenarios.

Another large source of data that EPA must consider before making an informed decision about revisions to the coal ash regulations stems from the 2015 CCR Rule. As

⁷⁸ <https://ashtracker.org/>

⁷⁹ EIP excluded five sites from its analysis because it found errors in either the source documents or in its database. If EIP includes these five sites in the denominator but not the numerator (i.e., assume that they do not have unsafe levels of boron), then the fraction of sites with one or more unsafe wells is 53%.

of March 2018, owners and operators of most coal plants have posted “annual groundwater monitoring and corrective action” reports pursuant to 40 C.F.R. §§ 257.90(e), 257.105(h)(1), and 257.107(h)(1). These reports should each include at least eight rounds of sampling for boron and other coal ash constituents pursuant to 40 C.F.R. § 257.94(b). EPA did not provide an adequate comment period, and the public has not had a chance to comprehensively evaluate the complete set of groundwater reports. However, we have had a chance to digitize, compile and analyze the groundwater monitoring reports from 101 sites. The new data, while limited to the subset of ash disposal areas that are regulated by the 2015 CCR rule, generally confirm our analysis of pre-existing data (described above). Specifically, of the 101 sites that EIP reviewed, 51 (50%) have at least one well with an average concentration greater than 3 mg/L, and eight (8%) have at least one well with an average concentration greater than 40 mg/L. Facility-level boron results, presented as the highest well-specific average boron concentration for each facility, are attached to these comments. *See* Groundwater Monitoring Data from Annual Groundwater Monitoring and Corrective Action Reports (attached).

In short, EPA now has access to a large volume of groundwater monitoring data showing that EPA’s Risk Assessment for the 2015 rule was correct in identifying boron as a coal ash constituent that poses unacceptable risks to human health and groundwater, but may have underestimated the prevalence and magnitude of boron contamination. All of the information before the Agency – its Risk Assessment, the “damage cases” that it compiled for the 2015 CCR Rule, the considerations that it articulated in the preamble to the 2018 Proposal, and now nationwide groundwater monitoring data – all point to the same conclusion: Boron contamination from CCR units is a widespread threat to health and the environment. EPA can only meet the RCRA section 4004(a) protectiveness standard by requiring the cleanup of any boron contamination through assessment monitoring. The Agency must place boron on the appendix IV list of assessment monitoring parameters.

IV. THE PROPOSED PERFORMANCE STANDARDS TO INCREASE AND MAINTAIN SLOPE STABILITY ARE NOT PROTECTIVE OF HEALTH AND THE ENVIRONMENT.

As set out below and in the submitted evaluation of Gordon J. Johnson, M.Sc. P.Eng. (AB)⁸⁰, this proposal fails to satisfy the standard of no reasonable probability of adverse effect on human health or the environment under Section 4004 (A) and has no rational basis.

The preamble to the 2018 Proposal indicates that the proposed changes exclude aspects of the impoundment where it is “infeasible, impractical or unsafe” to implement erosion protection measures. *See* 83 Fed. Reg. at 11,590. EPA cites as examples lined spillways, access roads, sluice pipes, and decant structures. *Id.* But these facilities, such as spillways and decant structures, are the types of structures that are susceptible to erosion and rely on protective measures to function during extreme events. In many

⁸⁰ Gordon J. Johnson, M.Sc. P.Eng. (AB), Burgess Environmental Ltd., Review of Proposed Changes to U.S. EPA CCR Regulations, Project #: SELC-003 (Apr. 26, 2018) (attached).

cases these structures are included in the impoundment designs specifically to prevent erosion.

No convincing reasons are provided for the proposed changes described in the preamble. The first reason provided is that “it may it is infeasible, impractical, or unsafe to maintain vegetation.” *Id.* If there are such cases, then the owner or operator should implement other methods of erosion protection that are practical, feasible, safe and effective. The second reason provided is that “the potential adverse effects to the integrity of the slope or pertinent surrounding area are limited by the nature of the structure.” *Id.* This statement has no clear meaning; erosion is a danger to dam stability and the proper operation of related facilities, and should be controlled. The final reason provided is that erosion would be identified by regular inspections. *Id.* at 11,590-91. But in fact, the erosion that would adversely affect a spillway or decant structure would typically occur rapidly during an extreme event. For example, spillways and decant structures are intended to safely convey flows during extreme events, such as the flows generated by the 1 in 1,000 years rainfall event, for structures determined to present ‘significant’ risk to the environment.

The proposed changes the preamble describes would also create an environment where proponents would expend effort and time arguing that their structures should be exempt from the requirements for erosion protection rather than focusing on designs that are protective of erosion.

V. EPA’S PROPOSAL TO EXEMPT NON-GROUNDWATER RELEASES FROM CORRECTIVE ACTION REQUIREMENTS FAILS TO MEET THE PROTECTIVENESS STANDARD OF RCRA SECTION 4004(A), IS ARBITRARY AND CAPRICIOUS, AND IS WITHOUT A RATIONAL BASIS.

In its new proposal to ease cleanup requirements for non-groundwater releases, EPA improperly trades critical health and environmental protections for the promise of quick cleanups by polluters. EPA’s 2015 CCR Rule requires owners and operators to take timely, stringent and protective response actions for all non-groundwater releases and deficiencies. *See* 40 C.F.R. §§ 257.83(b)(5), 257.84(b)(5), 257.90(d), and 257.96-98. In EPA’s 2018 Proposal, EPA’s stated intention is to exempt certain releases, namely non-groundwater releases that can be remediated in less than 180 days, from critical corrective action requirements. In truth, EPA’s proposal goes much further to weaken the entire corrective action scheme of the 2015 CCR Rule.

EPA’s mistakes are twofold. First, the Agency mistakenly believes that the 180-day limit to complete remediation effectively narrows the application of lesser standards to “releases that are expected to have limited potential for harm to human health and the environment.” 83 Fed. Reg. at 11,593. EPA assumes erroneously that the time necessary to remediate a spill is an accurate barometer of the severity of a release. EPA’s 2018 Proposal, however, does not accurately identify non-groundwater releases that reliably have limited adverse impacts. EPA provides no actual analysis of the health or

environmental impact of non-groundwater spills, their relative volumes, or the time required to remediate them. EPA ignores the fact that the extent of harm from CCR releases is not always related to the volume and the time required for cleanup. The severity of harm to health and environment from releases are determined by many factors, including the characteristics and toxicity of the CCR released, the proximity of human and environmental receptors, the difficulty of removal, the pathways for contaminant migration, cross media contamination, weather conditions, and the difficulty of source control following the release. EPA analyzes none of these critical factors. In addition, EPA considers only the releases from surface impoundments and fails to consider non-groundwater releases from CCR landfills, even though EPA has ample evidence that such releases occur.⁸¹ *Id.*

Secondly, EPA's proposal removes numerous essential corrective action requirements for all non-groundwater releases and other deficiencies. The 2018 Proposal amends several interconnected sections that address corrective action. In the process, EPA removes multiple critical safeguards, including requirements for immediate response and source control, public notice of the response plan, consultation with the public, remediation of groundwater impacts, and completion of the cleanup within a reasonable time. EPA fails to evaluate, justify, or even discuss how these reduced cleanup requirements impact the effectiveness of the response actions they will affect.

EPA's poorly conceived and ill-supported proposal to weaken cleanup requirements fails to meet the subtitle D standard of Section 4004(a) and is unsupported by record evidence. In the limited time EPA provided for comment, we were able to identify the following significant deficiencies with the proposal, as described below.

A. EPA'S PROPOSED AMENDMENT OF SECTIONS 257.83(B)(5) AND 257.84(B)(5) OF THE 2015 CCR RULE IS UNLAWFUL, ARBITRARY AND CAPRICIOUS, AND WITHOUT A RATIONAL BASIS.

EPA's proposed amendments of sections 257.83(b)(5) and 257.84(b)(5) of the 2015 CCR Rule create dangerous gaps in the requirements applicable to owners and operators of facilities where deficiencies are identified during annual inspections. Sections 257.83(b)(5) and 257.84(b)(5) require owners and operators to respond as soon as feasible to a "deficiency or release" identified during inspections of CCR landfills and surface impoundments, respectively. 40 C.F.R. §§ 257.83(b)(5) and 257.84(b)(5). The requirements for landfills and surface impoundments employ identical language stating, "[i]f a deficiency or release is identified during an inspection, the owner or operator *must*

⁸¹ See Earthjustice, Coal Ash Disposal and Reuse in Wisconsin, <https://earthjustice.org/sites/default/files/wi-coal-ash-factsheet-1111.pdf>, describing We Energies coal ash fill collapse. On October 31, 2011, a bluff collapsed at the We Energies Oak Creek Plant in Oak Creek, Wisconsin. Approximately 25,000 tons of CCR—along with mud, a pickup truck, dredging equipment, and other debris—spilled into Lake Michigan and its shoreline. Also, on January 25, 2005, at Rostrosky Ridge, Forward Township, PA, a ridge constructed of coal ash collapsed sending over 1,500 tons into a residential neighborhood. See <http://www.achd.net/air/pubs/pdf/Forward%20Fly%20Ash%20Study%202005.pdf>; see also EPA, Damage Cases: Fugitive Dust Impact, Docket ID No. EPA-HQ-RCRA-2009-0640-11992 (Dec. 18, 2014) (hereinafter "Damage Cases: Fugitive Dust Impact").

remedy the deficiency or release as soon as feasible and prepare documentation detailing the corrective measures taken.” Id. (emphasis added).

EPA’s 2018 Proposal replaces the language of those sections with, in its entirety, the following language: “[i]f a deficiency or release is identified during an inspection, the owner or operator must remedy the deficiency or release in accordance with applicable requirements in §§ 257.96 through 257.99.” 83 Fed. Reg. at 11,612. This change renders sections 257.83(b)(5) and 257.84(b)(5) far less protective for several reasons. First, EPA’s proposed amendments remove the requirement for an owner/operator to respond *as soon as feasible*, or by any deadline, to a problem that is not a “release.” Second, the proposed amendments remove the requirement for the owner or operator to prepare documentation detailing the corrective action taken for a deficiency that is not a release. Third, the proposed amendments relieve the owner or operator of the responsibility to respond as soon as feasible to any release discovered during an inspection of a landfill or surface impoundment. *Id.* Consequently, the 2018 Proposal lifts critical requirements for taking corrective action in a timely and accountable manner and therefore cannot meet the protectiveness standard of section 4004(a).

1. *The 2018 Proposal removes the requirement for an owner or operator to respond as soon as feasible, or by any time certain, to a deficiency discovered during an inspection of a CCR landfill or surface impoundment.*

The 2018 Proposal amends sections 257.83(b)(5) and 257.84(b)(5) to remove the requirement to respond to a non-release deficiency. While the new proposed sections require compliance with “the applicable requirements in §§ 257.96 through 257.99,” these sections address *only releases* from CCR units. Sections 257.96 through 257.99 do not apply to the many other deficiencies owners and operators may identify during annual inspections of surface impoundments and landfills. In other words, if the rule is revised as proposed, the change would effectively eliminate *any deadline or urgency* for remediation of deficiencies that owner/operators identify in inspections of CCR landfills and surface impoundments that do not involve releases.

For example, if an owner or operator identifies a tear in the liner of a CCR landfill or a crack in the dike of an impoundment, sections 257.83(b)(5) and 257.84(b)(5), as amended, would require no remedial action and certainly no immediate action. Pursuant to the 2018 Proposal, there would be no requirement to address these deficiencies, despite the time-sensitive and serious nature of the problems.

Clearly this radical change renders the rule unable to meet the protectiveness standard of RCRA section 4004(a). Further, because these changes are not supported by any evidence, and EPA fails to provide any evidence or even explanations to support them, the revisions are arbitrary and capricious and without a rational basis. In contrast, the preamble to the 2015 CCR Rule emphasizes both the importance of frequent inspections and the need to timely resolve deficiencies discovered during inspections to avoid larger catastrophic failures. For example, EPA stated, “routine inspections of all

CCR units are necessary to ensure that the units are safely operated and that issues that could disrupt the safety and continuing operation of these units are promptly identified and remediated.” 80 Fed. Reg. at 21,393. According to EPA, impoundment inspections are intended to detect, as early as practicable, signs of distress in a CCR surface impoundment that may result in larger, more severe conditions. They are also designed to identify potential issues with hydraulic structures that may affect the structural safety of the CCR surface impoundment and impact the hydraulic and hydrologic capacity of the impoundment. EPA stated, “[t]he early detection of signs of structural weaknesses is an essential preventative measure which helps to impede structural failure.” *Id.* at 21,394. Regarding annual inspections, EPA explained that these inspections “are focused primarily on the structural stability of the CCR surface impoundment.” *Id.* at 21,395. Finally, EPA emphasized, “if a deficiency is identified during an inspection, the owner or operator must take immediate measures to remedy the structural weakness or disrupting condition as soon as feasible.” *Id.*

Similarly, EPA found inspection of CCR landfills to be necessary to ensure protection of health and the environment. EPA patterned the landfill inspection requirements in the 2015 CCR Rule on the requirements for inspection of MSWLFs. 80 Fed. Reg. at 21,396. EPA concluded, “CCR landfills present at least the same level of risks as MSWLFs, and while the operations may differ, both operating systems are equally susceptible to malfunction.” *Id.* In the 2015 CCR Rule, EPA requires annual inspections “to assure that these units are designed, constructed, operated, and maintained throughout their operating life to ensure protection of human health and the environment.” *Id.* EPA specifically identified potential problems that must be examined during annual inspections before larger problems at the landfills occurred:

The Agency finds that annual inspections for these units are justified for a number of reasons. First, CCR landfills are large engineered units that require that a variety of design and operating parameters be assessed to assure that the CCR landfill is operating as designed. Of particular concern to the Agency is the fact that coal ash is a fine grained material that may have the potential to compact and clog leachate collection systems ... It is reasonable therefore that the rule requires annual inspections to assure that these liner and leachate systems are assessed to assure that they are performing their functions as designed. Second, a formal annual inspection would review data collected during weekly inspections and determine if any remedial actions are needed to address deficiencies.

Id. The 2018 Proposal’s omission of the requirement to actually remedy deficiencies found at both landfills and surface impoundments is thus directly contrary to EPA’s 2015 findings and is arbitrary and capricious.

2. *The 2018 Proposal removes the requirement for the owner or operator to prepare documentation detailing the corrective action taken for a deficiency that is not a release.*

The proposed amendment to sections 257.83(b)(5) and 257.84(b)(5) would remove entirely the requirement of owner/operators to “prepare documentation detailing the corrective measures taken” to correct a non-release deficiency discovered during an inspection. 40 C.F.R. §§ 257.83(b)(5) and 257.84(b)(5). The 2015 CCR Rule requires the owner or operator, following the completion of a corrective action, to place documentation in the operating record, provide notification to the state, and post the documentation to the owner/operator’s publicly accessible website. *See* 40 C.F.R. §§ 257.105(g)(7), 257.106(g)(6); and 257.107(g)(6). The 2018 Proposal does not require such actions be taken for non-release deficiencies. 83 Fed. Reg. at 11,612. Pursuant to the 2018 Proposal, it is likely that both the State and public would be totally unaware of potentially serious deficiencies found during the annual inspections of CCR landfills and surface impoundments.

This is directly contrary to the EPA’s intent in the 2015 CCR Rule. EPA emphasized the important role that public notifications play in ensuring that the rule meets the protectiveness standard of section 4004(a). EPA stated,

As repeatedly discussed throughout this preamble, under section 4004(a) EPA must be able to demonstrate, based on the record available at the time the rule is promulgated that the final rule provisions will achieve the statutory standard. EPA explained in the proposal that a key component of EPA’s support for determining that the rule achieves the statutory standard is the existence of a mechanism for states and citizens to monitor the situation, such as when groundwater monitoring shows evidence of potential contamination, so that they can determine when intervention is appropriate.

80 Fed. Reg. at 21,339. To illustrate the critical function of such posting requirements, one can look to the circumstances leading up to the TVA Kingston Fossil Plant spill. Prior to the spill, company engineers documented the weaknesses that eventually lead to the collapse of the dike in 2008.⁸² It was clear that TVA failed to take action in response to known, serious deficiencies.⁸³ Had these deficiencies been documented in publicly posted inspection reports and had the information been available to the public and state regulators, it is possible that the largest toxic waste disaster in U.S. history could have been prevented.

⁸² *See* Tennessee Valley Authority, Office of the Inspector General, Inspection Report: Review of the Kingston Fossil Plant Ash Spill Root Cause Study and Observations About Ash Management at 18-21 (July 23, 2009) (attached).

⁸³ *Id.*

Notice of whether deficiencies are timely and adequately repaired is critical to ensuring that correction active is completed. EPA's proposed changes to sections 257.83(b)(5) and 257.84(b)(5) thus render the 2018 Proposal inadequate to ensure satisfactory corrective action and thus unable to meet the section 4004(a) protectiveness standard. The proposed changes are arbitrary and capricious in light of the wide variety of deficiencies that owners and operators routinely encounter during inspections of CCR units that need immediate attention to protect health and the environment.⁸⁴ The 2018 Proposal's failure to require adequate corrective action renders the provision unable to ensure no reasonable probability of adverse effects on health and the environment.

3. *The 2018 Proposal amends sections 257.83(b)(5) and 257.84(b)(5) to relieve the owner or operator of the responsibility to respond as soon as feasible to any release discovered during an inspection of a landfill or surface impoundment.*

The 2018 Proposal's revision of sections 257.83(b)(5) and 257.84(b)(5) relieves the owner or operator of the requirement to respond "as soon as feasible" to any release discovered during an annual inspection of a CCR landfill or surface impoundment. Because the 2018 Proposal requires that these releases remain subject to "the applicable requirements in §§ 257.96 through 257.99," there would arguably be a requirement for a cleanup to eventually occur, in contrast to the total absence of a requirement for remediation for non-release deficiencies, explained in Section V.A.1, above. For reasons more fully explained below, sanctioning delay in the implementation of cleanup and source control is likely to increase the harm caused by CCR releases. EPA provides no justification for the lifting of the requirement. Therefore, the 2018 Proposal fails to satisfy the protectiveness standard of section 4004(a) and is arbitrary and capricious and without a rational basis.

B. EPA'S PROPOSED REVISION OF SECTION 257.90(D) FAILS TO MEET THE PROTECTIVENESS STANDARD OF RCRA SECTION 4004(A), IS ARBITRARY AND CAPRICIOUS AND LACKS A RATIONAL BASIS.

The 2015 CCR Rule specifically requires timely and effective corrective action in the event of a CCR spill. Section 257.90(d) of the 2015 CCR Rule requires:

In the event of a release from a CCR unit, the owner or operator must *immediately take all necessary measures to control the source(s) of releases* so as to reduce or eliminate, to the maximum extent feasible, further releases of contaminants into the environment. The owner or operator of the CCR unit must comply with all applicable requirements in §§ 257.96, 257.97, and 257.98.

⁸⁴ See annual inspection reports of existing CCR landfills and surface impoundments for 2016-2018, <https://www.epa.gov/coalash/list-publicly-accessible-internet-sites-hosting-compliance-data-and-information-required> (attached).

40 C.F.R. § 257.90(d) (emphasis added). EPA's 2018 Proposal amends section 257.90(d) and removes the requirement to "immediately take all necessary measures to control the source(s) of releases so as to reduce or eliminate, to the maximum extent feasible, further releases of contaminants into the environment." 83 Fed. Reg. at 11,612-13. Amended section 257.90(d) states, in its entirety, "(d) The owner or operator of the CCR unit must comply with all applicable requirements in §§ 257.96, 257.97, and 257.98, or, if eligible, must comply with the requirements in § 257.99." *Id.*

Thus, EPA's proposed amendment of section 257.90(d) removes the requirement for owner/operators of CCR units to "immediately take all necessary measures to control the source(s) of releases so as to reduce or eliminate, to the maximum extent feasible, further releases of contaminants into the environment." 40 C.F.R. § 257.90(d). In the revised section, there is no requirement for owner/operators to take immediate action, even following a catastrophic spill or any other release. 83 Fed. Reg. at 11,612-13.

EPA, however, drafted section 257.90(d) in the final CCR Rule to ensure that such immediate action is required following a catastrophic spill. In the preamble to the final rule, EPA explained:

EPA has added a new provision to § 257.90 to address the corrective action requirements that apply when CCR have been released into the environment, such as from the kind of structural failure that occurred with TVA's Kingston Fossil Fuel plant release, or from the kind of release that occurred in North Carolina at the Dan River.

80 Fed. Reg. at 21,399.

EPA provides no explanation for removing this very critical requirement for all CCR units. It is obvious that the failure of an owner/operator to take immediate measures to control the source of CCR releases following a spill is likely to have adverse effects on health and the environment. In some situations, this failure will have disastrous consequences. Uncontrolled releases from coal ash impoundments can result in over a billion gallons of toxic sludge and wastewater being released from a single source.⁸⁵ This proposed change is unlawful because it cannot meet the protectiveness standard of section 4004(a). Because EPA provides no rationale for this proposed change and because it removes, without explanation, a key protection of the 2015 CCR Rule, the proposed regulation is arbitrary and capricious, and without rational basis.

⁸⁵ On December 22, 2008, the dike failure of a coal ash impoundment at the TVA Kingston Fossil Plant in Harriman, Tennessee resulted in the release of over one billion gallons of coal ash slurry, affecting more than 300 acres, including residences and infrastructure. 80 Fed. Reg. at 21,313.

C. EPA’S PROPOSED SECTION 257.99 FAILS TO MEET THE PROTECTIVE STANDARD OF RCRA SECTION 4004(A), IS ARBITRARY AND CAPRICIOUS, AND LACKS A RATIONAL BASIS.

EPA’s 2018 Proposal introduces section 257.99 to establish a new set of corrective action standards for non-groundwater releases that can be remediated within 180 days. In numerous ways, this proposed section fails to meet the protectiveness standard of section 4004(a), is arbitrary and capricious, and lacks a rational basis, as described below.

1. *Section 257.99 fails to require that non-groundwater releases be immediately remediated and thus fails to meet the protective standard of RCRA Section 4004(a).*

EPA’s proposed section 257.99(b)(1) refers to a requirement in section 257.90(d) that, as described above, would no longer exist if EPA’s proposed revisions are finalized. EPA proposes to remove critical language from section 257.90(d) that requires an owner/operator to take immediate action to control a release of CCR. Proposed section 257.99(b)(1) states that upon detection of a non-groundwater release, the owner or operator must “[m]eet the requirement in § 257.90(d) to ‘immediately take all necessary measures to control the source(s) of releases so as to reduce or eliminate, to the maximum extent feasible, further releases of contaminants into the environment.’” Proposed section 257.99(b)(1), 83 Fed. Reg. at 11,614. As explained above, however, the 2018 Proposal deletes that precise language from section 257.90(d). 83 Fed. Reg. at 11,613.⁸⁶

Consequently, the proposed regulation fails to meet the protectiveness standard because it does not require an owner/operator to immediately take all necessary measures to control the source of the release so as to reduce or eliminate, to the maximum extent feasible, further releases of contaminants into the environment. For all the reasons discussed above, timely remediation of a CCR release is critical to ensuring no reasonable probability of adverse effects. Because EPA provides no rationale for this proposed change and because it removes, without explanation, a key protection of the 2015 CCR Rule, the proposed regulation is also arbitrary and capricious and without rational basis.

2. *Proposed section 257.99 fails to meet the protectiveness standard of RCRA Section 4004(a) because it does not require owner/operators to determine corrective measures by any date certain.*

EPA’s proposed section 257.99(a)(2)(i) requires an owner or operator to “[d]etermine the corrective measures that will meet the substantive standards in § 257.96(a) to prevent further releases, to remediate any releases and to restore the affected area to original conditions.” 83 Fed. Reg. at 11,614. However, section 257.99(a)(2)(i)

⁸⁶ Revised section 257.90(d) would simply state, “(d) The owner or operator of the CCR unit must comply with all applicable requirements in §§ 257.96, 257.97, and 257.98, or, if eligible, must comply with the requirements in § 257.99.” 83 Fed. Reg. at 11,613.

does not specify *when* such a determination must be completed. In contrast, section 257.96(a) of the 2015 CCR Rule, applying to non-groundwater releases, requires that an assessment of corrective measures be completed within 90 days. 40 C.F.R. § 257.96(a). EPA's failure to establish a deadline for completing the assessment of corrective measures is likely to delay the implementation of corrective actions. Delay in the implementation of response actions will cause adverse effects on health and the environment. Delay in controlling the source of a release can add substantially to the volume of the release and complicate or prolong remedial action, as well as allow hazardous substances to reach sensitive receptors. Therefore, this section fails to meet the protectiveness standard of section 4004(a). Further, EPA provides no explanation for neglecting to impose a deadline, and thus the proposal is arbitrary and capricious and without a rational basis.

3. *Proposed section 257.99(b)(3) fails to meet the protectiveness standard of RCRA section 4004(a) because it does not require the owner/operator to select a remedy "as soon as feasible," as required by section 257.97(a).*

In EPA's 2018 Proposal, section 257.99(b)(3) requires an owner or operator responsible for addressing a non-groundwater release to "select" a corrective action, but the proposed regulation is silent on when that selection must occur. In contrast, section 257.97(a) of the 2015 CCR Rule requires the owner or operator responsible for the release to select an effective corrective action "as soon as feasible." 40 C.F.R. § 257.97(a). This section, however, would not be applicable to non-groundwater releases pursuant to EPA's 2018 Proposal. Since the failure to require timely remedy selection is likely to delay the corrective action, EPA's proposed section 257.99(b)(3) fails to meet the protectiveness standard of section 4004(a). EPA provides no rationale for not requiring a selection "as soon as feasible," thus section 257.99(b)(3) is arbitrary and capricious, and not supported by the record.

4. *Proposed section 257.99(b)(4) fails to meet the protectiveness standard of RCRA section 4004(a) because it fails to ensure that groundwater will be remediated following a non-groundwater release.*

The 2015 CCR Rule established five standards that all corrective actions must meet in section 257.97(b). In EPA's 2018 Proposal, proposed section 257.99(b)(4) requires remediation of a non-groundwater release to meet only four of the five standards specified in section 257.97. 83 Fed. Reg. at 11,614. Pursuant to the 2018 Proposal, the remedy only has to meet the standards specified in sections 257.97(b)(1), (3), (4), and (5). *Id.* Notably, the Proposal does not require owner/operators to meet the standard set out in section 257.97(b)(2) of the 2015 CCR Rule. Section 257.92(b)(2) requires all remedies to "[a]ttain the groundwater protection standard as specified pursuant to § 257.95(h)." 40 C.F.R. § 257.97(b)(2). Removing this requirement for non-groundwater releases therefore provides inadequate protection to groundwater. EPA provides no rationale for removing this important corrective action requirement. EPA assumes, perhaps, that "non-groundwater" releases cannot adversely impact groundwater. This assumption,

however, is simplistic and incorrect. A CCR “non-groundwater” release to a wetland, for example, could rapidly contaminate the underlying groundwater. Yet, in that instance, the proposed rule would not require the impacted groundwater to attain the groundwater protection standard. 83 Fed. Reg. at 11,614.

In addition, as a related matter, in the event that groundwater is impacted, there is nothing in proposed section 257.99 that requires the owner or operator to demonstrate that the remedy is “complete” and achieves the factors set forth in section 257.98(c) relating to groundwater. Section 257.98(c)(1)-(2) of the 2015 CCR Rule requires owners and operators to meet the following requirements in order for remedies to be considered “complete”:

(1) The owner or operator of the CCR unit demonstrates compliance with the groundwater protection standards established under § 257.95(h) has been achieved at all points within the plume of contamination that lie beyond the groundwater monitoring well system established under § 257.91.

(2) Compliance with the groundwater protection standards established under § 257.95(h) has been achieved by demonstrating that concentrations of constituents listed in appendix IV to this part have not exceeded the groundwater protection standard(s) for a period of three consecutive years using the statistical procedures and performance standards in § 257.93(f) and (g).

40 C.F.R. § 257.98(c)(1)-(2). Again, it is possible that EPA assumes that a non-groundwater release cannot impact groundwater quality. As explained above, this premise is false. In light of this deficiency and EPA’s failure to ensure that corrective action addresses groundwater contamination from any release, the proposed regulation fails to provide the protection mandated by section 4004(a). Furthermore, EPA gave no explanation whatsoever as to why the response actions for non-groundwater releases do not have to meet this critical factor. Therefore, the proposed section is unlawful, arbitrary and capricious, and without any rational basis.

5. *Proposed section 257.99 fails to meet the protectiveness standard of RCRA section 4004(a) because it does not require the owner/operator to complete remedial activities within a reasonable period of time taking into consideration the factors set forth in section 257.97(d)(1) through (6).*

In the 2015 CCR Rule, section 257.97(d) requires an owner or operator to establish a schedule for timely implementation and completion of remedial action of all releases. The owner/operator responsible for the release must take a number of factors into consideration in the timing of the cleanup that ensure that remediation is done as quickly as possible so that the harm caused by the release is minimized. Section 257.97(d) requires the polluter to consider the following factors in determining the timing of cleanup activities:

- (1) Extent and nature of contamination, as determined by the characterization required under § 257.95(g);
- (2) Reasonable probabilities of remedial technologies in achieving compliance with the groundwater protection standards established under § 257.95(h) and other objectives of the remedy;
- (3) Availability of treatment or disposal capacity for CCR managed during implementation of the remedy;
- (4) Potential risks to human health and the environment from exposure to contamination prior to completion of the remedy;
- (5) Resource value of the aquifer including:
 - (i) Current and future uses;
 - (ii) Proximity and withdrawal rate of users;
 - (iii) Groundwater quantity and quality;
 - (iv) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to CCR constituents;
 - (v) The hydrogeologic characteristic of the facility and surrounding land; and
 - (vi) The availability of alternative water supplies; and
- (6) Other relevant factors.

Id.

In contrast, section 257.99 of EPA's 2018 Proposal does not require an owner/operator to complete corrective action within a reasonable period of time, taking into consideration the factors established in section 257.97(d)(1) through (6). The requirement to timely complete a corrective action is just as necessary for short-duration cleanups as longer ones. Just because a release can be cleaned up within six months doesn't mean that it isn't necessary to clean the release up in a much shorter period of time and to consider the factors set forth in section 257.97(d). Even a release of limited volume can cause harm to health and the environment, if remediation is not completed within a time that is reasonable in light of the critical factors identified in section 257.97(d)(1)-(6) of the 2015 CCR Rule.

Establishing a reasonable and time-bound schedule for cleanup is a critical part of ensuring that a non-groundwater release is remediated properly with the least impact to health and environment. Because the proposed regulation completely exempts owners and operators from this requirement, it cannot meet the protectiveness standard of section 4004(a). Furthermore, because EPA did not include in its proposal any rationale for exempting owners and operators from these requirements, the proposal is arbitrary and capricious and without rational basis.

6. *Proposed section 257.99 fails to meet the protectiveness standard of RCRA section 4004(a) because it does not require the owner/operator to take interim measures necessary to protect health and environment.*

Proposed section 257.99 would exempt the polluter from taking any interim measures following the non-groundwater release of CCR. 83 Fed. Reg. at 11,614. Yet the fact that a release may be addressed within six months does not mean that interim measures are not urgently needed. In the 2015 CCR Rule, section 257.98(a)(3) requires owners and operators responsible for a release to “[t]ake any interim measures necessary to reduce the contaminants leaching from the CCR unit, and/or potential exposures to human or ecological receptors.” 40 C.F.R. § 257.98(a)(3). Section 257.98(a)(3) requires interim measures to be consistent with the objectives of and contribute to the performance of the remedy. *Id.* Further, section 257.98(a)(3) requires that the polluter consider all of the following factors in determining whether interim measures are necessary:

- (i) Time required to develop and implement a final remedy;
- (ii) Actual or potential exposure of nearby populations or environmental receptors to any of the constituents listed in appendix IV of this part;
- (iii) Actual or potential contamination of drinking water supplies or sensitive ecosystems;
- (iv) Further degradation of the groundwater that may occur if remedial action is not initiated expeditiously;
- (v) Weather conditions that may cause any of the constituents listed in appendix IV to this part to migrate or be released;
- (vi) Potential for exposure to any of the constituents listed in appendix IV to this part as a result of an accident or failure of a container or handling system; and
- (vii) Other situations that may pose threats to human health and the environment.

Id.

EPA’s failure to require polluters to consider such protective interim measures renders the proposed regulation unlawful because it fails to meet the protective standard of section 4004(a). Further, EPA did not provide any justification for exempting owners and operators from these requirements. Consequently, the proposal is arbitrary and capricious, and lacks a rational basis.

7. *Proposed section 257.99 fails to meet the protectiveness standard of RCRA section 4004(a) because it does not require the owner/operator to implement other methods or techniques that could feasibly achieve compliance with the requirements, if an owner or operator of the CCR unit, determines, at any time, that compliance with the requirements of section 257.97(b) is not being achieved through the remedy selected, as required by 40 C.F.R. § 257.98(b).*

Section 257.98(b) of the 2015 CCR Rule requires that if an owner or operator implementing a remedy determines at any time that “compliance with the requirements of § 257.97(b) is not being achieved through the remedy selected, the owner or operator must implement other methods or techniques that could feasibly achieve compliance with the requirements.” 40 C.F.R. § 257.98(b). As described above, section 257.97(b) of the 2015 CCR Rule sets out five requirements that all remedies must meet, namely that they must:

- (1) Be protective of human health and the environment;
- (2) Attain the groundwater protection standard as specified pursuant to § 257.95(h);
- (3) Control the source(s) of releases so as to reduce or eliminate, to the maximum extent feasible, further releases of constituents in appendix IV to this part into the environment;
- (4) Remove from the environment as much of the contaminated material that was released from the CCR unit as is feasible, taking into account factors such as avoiding inappropriate disturbance of sensitive ecosystems; [and]
- (5) Comply with standards for management of wastes as specified in § 257.98(d).

Id.

In contrast, EPA’s 2018 Proposal does not require owners and operators undertaking corrective action for non-groundwater releases to comply with a requirement analogous to 40 C.F.R. § 257.98(b). EPA provides no reason why such a safeguard is not equally applicable to non-groundwater releases as to groundwater releases. The result is illogical and without rational basis. Under the proposed section 257.99, an owner/operator must complete the remedy for a non-groundwater release within 180 days. Consequently, it is arguably more essential that an owner/operator ensure that the remedy being implemented can feasibly achieve compliance within that timeframe. Thus, the requirement in section 257.98(b) of the 2015 CCR Rule to evaluate and determine the effectiveness of a corrective action is also essential for relatively short-term remedies of non-groundwater releases. Because EPA fails to apply this requirement to owners and operators implementing remedies for non-groundwater releases, the proposal does not meet the standard of protectiveness under section 4004(a). EPA’s failure to offer evidence of why this provision is not required renders the proposal arbitrary and capricious and without a rational basis.

8. *Proposed section 257.99 fails to meet the protectiveness standard of RCRA section 4004(a) because it does not require the owner/operator to comply with section 257.98(d), which requires all CCR managed pursuant to a remedy or an interim measure to be managed in a manner that complies with all applicable RCRA requirements. 40 C.F.R. § 257.98(d).*

In the 2018 Proposal, section 257.99 does not require the owner/operator to comply with section 257.98(d) of the 2015 CCR Rule, which requires all CCR managed pursuant to a remedy or an interim measure to be managed in compliance with all applicable RCRA requirements. 40 C.F.R. § 257.98(d). EPA provides no explanation why this provision is not applied to the cleanup of non-groundwater releases. Such cleanups may include significant volumes of CCR that may require removal and off-site disposal. Transport, storage and disposal of the waste must comply with applicable RCRA requirements to ensure no further releases occur and to ensure protection of health and the environment. The transport and disposal of CCR during cleanup has a high potential of being re-released and harming health and the environment. Harmful fugitive dust generation occurred during the cleanup of the 2008 spill at the TVA Kingston Fossil Plant in Harriman, Tennessee⁸⁷ and during the disposal of the CCR at its final destination at the Arrowhead Landfill in Uniontown, AL.⁸⁸ Thus, it is critical that the owner/operator be required to manage all CCR recovered pursuant to a remedy or interim measure for non-groundwater releases in a manner that complies with all applicable RCRA requirements. Because EPA's 2018 Proposal fails to require this, section 257.99 is unlawful, arbitrary and capricious, and without a rational basis.

9. *Proposed section 257.99 is arbitrary and capricious because EPA's choice of a time period of 180 days for remediation of non-groundwater releases that will be subject to exemption from corrective action requirements is not supported by the record.*

EPA offers no record evidence to support the removal of corrective action requirements for non-groundwater releases that are remediated within 180 days. In fact, EPA admits that it is unsure what length of time to choose for exempting remedial actions from stringent requirements, stating,

EPA seeks comment on whether 180 days is the appropriate timeframe in which an owner/operator would be expected to complete remediation of a non-groundwater release under this proposed provision, or whether a shorter deadline, *e.g.*, 120 days, or

⁸⁷ Sworn Declaration of R. Doug Hudgens, *Vanguilder v. Jacobs Engineering Group, Inc.*, No. 3:15-cv-00462-TAV-HBG, Doc. 129-7 (E.D. Tenn. Oct. 28, 2017) (attached); Affidavit of Dan. R. Gouge, *Vanguilder v. Jacobs Engineering Group, Inc.*, No. 3:15-cv-00462-TAV-HBG, Doc. 129-5 (E.D. Tenn. Oct. 28, 2017) (attached); Kingston Ash Release Response Project, Jan. 2013 Rev. 06, at Table 4-2: Fly Ash Constituent Information, *Vanguilder v. Jacobs Engineering Group, Inc.*, No. 3:15-cv-00462-TAV-HBG, Doc. 129-1 (E.D. Tenn. Oct. 28, 2017) (attached).

⁸⁸ Title VI Complaint, Alabama Department of Environmental Managing Permitting of Arrowhead Landfill in Perry County Alabama (Jan. 3, 2012) (attached).

a longer deadline, *e.g.*, 240 days, would be more appropriate for remediating non-groundwater releases that are expected to have minimal impact to human health and the environment.

83 Fed. Reg. at 11,593.

EPA has good reason to be befuddled. EPA did not conduct any analysis of releases and corrective actions to support this proposed rulemaking. EPA posits that perhaps the volume of the CCR release should be the determining factor, but then admits that the volume released may not be the correct measure, because even small amounts of CCR released from a surface impoundment may hint at a much larger problem. *Id.* About relatively small, non-groundwater releases, EPA states, “[t]hese types of releases can indicate concerns regarding the structural stability of the unit and that further assessment for structural stability issues is warranted, but they do not typically constitute a substantial release of constituents to the environment in and of themselves.” *Id.* Thus, even small releases from CCR impoundments may indicate a serious structural problem that may take much longer than 180 days to remediate and thus should not be subject to any exemption from corrective action requirements. The contradictory statements in EPA’s 2018 Proposal indicate that it is arbitrary and capricious and lacks a rational basis. EPA has itself identified scenarios where low volume releases may constitute evidence of serious threats to health and the environment, and thus this proposal cannot meet the section 4004(a) standard.

10. *Proposed section 257.99 fails to meet the protectiveness standard of RCRA section 4004(a) and is arbitrary and capricious and without rational basis because it does not require the owner/operator to notify the public prior to implementation of a remedy.*

Section 257.99 of EPA’s 2018 Proposal does not require the owner/operator to notify the public prior to implementation of a remedy. However, EPA has found notification requirements indispensable to assuring industry compliance with the 2015 CCR Rule. *See* discussion at Section XII, *supra*. An owner/operator’s public notification of its corrective action assessment and its choice of remedy helps to ensure that the cleanup will comply with the corrective action standards. *Id.* EPA provides no reason why an owner/operator cannot comply with transparency and reporting requirements, especially if the remedy is less complex due to the volume released, the aboveground nature of the release, and the limited time needed for remediation. In fact, EPA should amend public notification and posting requirements to more efficiently provide remedy information to the public by requiring contemporaneous posting and placement of documents in the facility operating record. Such a change in the posting requirement would enable the public to receive copies of documents immediately and avoid the 30-day delay allowed by the current rule. *See* 40 C.F.R. §§ 257.105, 257.106 and 257.107. This change would facilitate meaningful public participation and citizen enforcement, while meeting the statutory standards for health and environmental protection and public participation at RCRA sections 4004(a) and 7004(b), respectively. 42 U.S.C. §§ 6944(a) and 6974(b).

In its 2018 Proposal, EPA acknowledges the importance of timely public notification of corrective actions, stating, “EPA recognizes that requiring public notification after the fact is different than requiring public consultation before the remedy is completed, and that in some situations the difference can be quite significant.” 83 Fed. Reg. at 11,594. The following scenario of a large-volume spill into a river is illustrative of the potential problems caused by lack of notice and transparency. Twice in one year, Indianapolis Power and Light’s (IPL) Eagle Valley Plant in Martinsville, IN released very large volumes of CCR from its surface impoundments.⁸⁹ In both February 2007 and January 2008, the CCR surface impoundment released about 30 million gallons (approximately 125,000 tons) of coal ash sludge into the White River. *Id.* IPL completed no extensive remedial action to clean up the river after either spill.⁹⁰ This example indicates that for certain types of large-volume non-groundwater releases, an owner/operator may claim that remediation is unnecessary and cleanup can be completed within 180 days, because the owner/operator, in fact, intends to do very little cleanup. There is nothing in the current proposal that guarantees the public will be made aware of such a scheme or that allows citizens to take effective enforcement action to prevent its occurrence.

Because the 2018 Proposal does not allow timely public review of corrective action assessments and plans, the proposal will allow utilities to keep self-serving and inadequate remedial plans from the public. On the contrary, if the public receives proper notice of the release, the assessment of corrective measures, and the planned remedy, such plans can be meaningfully evaluated to assess compliance with corrective action standards. The failure of EPA’s proposal to require such public involvement is arbitrary and capricious, without a rational basis, and unlawful because the proposal fails to meet the protective standard of RCRA section 4004(a) and the requirement for public participation in RCRA section 7004(b), and fails to permit citizen enforcement of the standards of the CCR Rule pursuant to sections 7004(b) and 4005(a). 42 U.S.C. §§ 6944(a), 6945(a) and 6974(b).

11. *EPA’s 2018 Proposal reducing the corrective action requirements for non-groundwater releases in proposed section 257.99 fails to meet the protectiveness standard of RCRA section 4004(a) and is arbitrary and capricious and without rational basis because the definition of “non-groundwater release” includes catastrophic releases.*

EPA’s 2018 Proposal to reduce the corrective action requirements for non-groundwater releases that can be remediated within 180 days does not exclude catastrophic releases of the type that occurred at the TVA Fossil Plant in Kingston,

⁸⁹ See EPA, Information Request Responses from Electric Utilities, Responses From Electric Utilities to EPA Information Request Letter, <https://archive.epa.gov/epawaste/nonhaz/industrial/special/fossil/web/html/index-3.html> (attached).

⁹⁰ EPA commented about the two Eagle Valley spills, “In addition, the possible ecologic impacts of two consecutive, 30 million gallons each, of CCR slurry releases (in 2007 and 2008) by the Eagle Valley power plant in Indiana have not been assessed.” 80 Fed. Reg. at 21,457.

Tennessee and at the Duke Energy Dan River Generating Station in North Carolina. EPA proposes to add the following definition of “non-groundwater releases” to 40 C.F.R. § 257.53:

Non-groundwater releases mean releases from the CCR unit other than the releases directly to the groundwater that are detected through the unit’s groundwater monitoring system. Examples of non-groundwater releases include seepage through the embankment, minor ponding of seepage at the toe of the embankment of the CCR unit, seepage at the abutments of the CCR unit, seepage from slopes, ponding at the toe of the unit, a release of fugitive dust and releases of a ‘catastrophic’ nature such as the release of CCR materials from CCR surface impoundments from the Tennessee Valley Authority’s (TVA) Kingston Fossil Plant in Harriman, TN and the Duke Energy Dan River Steam Station in Eden, NC.

83 Fed. Reg. at 11,611. As described above, the rapid release of large amounts of material into surface water may make cleanup very challenging. The proposed definition of “non-groundwater releases” would enable an owner/operator to claim exemption from corrective action requirements for a spill of unlimited magnitude, with the result that the public loses the ability to review remediation plans applicable to major disasters. As discussed throughout this section, the requirements applicable to non-groundwater releases under this proposal are significantly reduced and fail to meet section 4004(a)’s protectiveness standard. Because the weak requirements described above could be applied to a spill of any magnitude, the proposal is unlawful. Further, because EPA omits any discussion of why or how the 2018 Proposal would be protective for large spills, the proposal is arbitrary and capricious and without a rational basis.

VI. PROPOSED MODIFICATION OF ALTERNATIVE CLOSURE REQUIREMENTS ARE ARBITRARY AND CAPRICIOUS AND FAIL TO MEET THE PROTECTIVENESS STANDARD OF RCRA 4004(A).

The 2018 Proposal seeks to expand the narrow exception to closure requirements that allows a CCR disposal unit to delay closure and continue to accept waste if no alternative CCR disposal capacity is available. In order to qualify for the existing narrow exception, an owner or operator must demonstrate that no capacity for the disposal of CCR other than the CCR disposal unit that is required to close is available *anywhere*—on-site or off-site and regardless of cost. 40 C.F.R. § 257.103. The 2018 Proposal grants an industry request that the exception also apply where owners or operators lack alternative disposal capacity for non-CCR wastestreams. In an attempt to justify the proposed expansion, EPA cites “risks to the wider community from the disruption of power.” 83 Fed. Reg. at 11,595. However, EPA fails to identify any evidence of such risks. Instead, it relies on less than four pages of half-baked, industry-sponsored findings of potential impacts to reliability that are so riddled with caveats and unreasonable assumptions as to render them meaningless, and two out-of-date reliability assessments.

Id. at 11,594, n.12. In addition, EPA has failed to identify evidence that any power plant in the country would be at risk of shutdown if its non-CCR wastestreams could no longer be disposed of in leaking unlined ash ponds or in CCR units that do not comply with location standards. Nor has EPA evaluated the risks associated with allowing owners and operators to continue dumping non-CCR wastestreams in those units, or provided any evidence or rational basis for why such an expansion of the alternative closure provisions would not violate the RCRA section 4004(a) protectiveness standard. Thus, the proposed changes to the alternative closure requirements should not be adopted.

A. THE EDISON ELECTRIC INSTITUTE FINDINGS CITED BY EPA DO NOT DEMONSTRATE THAT THE 2015 CCR RULE WILL RESULT IN RELIABILITY IMPACTS.

At the outset, it is worth noting that EPA has relied on what it refers to as “an executive summary of an EEI [Edison Electric Institute] reliability analysis” in support of the proposed changes. Unfortunately, EPA either fundamentally misunderstands or deliberately mischaracterizes the document on which it relies. The so-called “executive summary” is nothing more than a back-of-the-envelope type estimate of a reliability worst case scenario. Indeed, the sponsor of the findings readily admits that they represent a “very high level evaluation of potential reliability impacts” and that “[t]here is no larger report and there are no underlying data that EEI did not provide to EPA.”⁹¹ According to USWAG and EEI, “EPA’s proposed CCR Rule mischaracterizes the document.”⁹² And while EPA apparently comprehends some of the EEI/USWAG findings’ shortcomings— noting EEI’s own caution that “[t]hose reviewing the EEI findings should recognize that our findings were not part of any detailed planning study and provide a very high level review of possible worst case impacts on a regional level,” 83 Fed. Reg. at 11,596— EPA, nevertheless, proposes changes tailored to address the worst case scenario laid out by EEI and USWAG.

The EEI paper findings are not evidence of any reliability impacts that could be caused by the implementation of the 2015 CCR Rule in its current form. In addition to the EEI findings not being part of an actual reliability analysis (perhaps, *because* it was not based on such analysis), EEI identifies eight major caveats. While EPA noted two of EEI’s caveats and, indeed, acknowledged that “when taken as a whole, these worst-case assumptions result in an analysis that may overestimate the effects to the electricity grid,” 83 Fed. Reg. 11,597, it ignored the other six, taking the EEI findings at face value. These caveats are critical, however, not to mention understated. With or without its caveats, the EEI findings do not represent anything close to a reasonable assessment of the reliability impacts of the 2015 CCR Rule.

The EEI findings present an overly simplistic assessment using a reliability proxy known as “reserve margin,” which is the ratio of available capacity during peak hours to peak demand (both in megawatts), minus one, the resulting fraction representing the “reserves” held to compensate for unforeseen generation or transmission outages. The

⁹¹ E-mail from James Roewer, USWAG, to Jeremy Fisher, Sierra Club (Mar. 29, 2018) (attached).

⁹² *Id.*

North American Electric Reliability Corporation (NERC) establishes “reference” reserve margins for different regions of the United States as targets based on the characteristics of the electricity system. Reserve margins are used to assess potential reliability concerns on a macro scale, and utilities often use a reserve margin to plan for needed generation over long periods of time. While ensuring reasonable reserve margins is certainly a valid basis upon which to measure the reliability of the electricity system, EEI’s findings do not come close to demonstrating that there is any realistic chance that the 2015 CCR Rule would cause levels of available capacity to fall below the reserve margin in any NERC assessment area.

In the paper cited by EPA, EEI attempted to calculate a worst-case-scenario reserve margin by taking the amount of known peak available generation in the summer of 2017 and subtracting the capacity of every coal generating facility with an unlined impoundment.⁹³ This method unreasonably assumes not only that every coal plant with an unlined pond closes simultaneously, but that there is no replacement capacity built after the summer of 2017. As EPA recognizes, there is no expectation that all unlined ponds will be required to close or, even if they did all close, that all coal-burning units currently sending wastes to those ponds would be forced out of service because of the pond closures. In fact, while EEI’s worst-case-scenario assumes that the CCR Rule would somehow cause the retirement of 170,107 MWs of coal capacity throughout EPA’s RIA for the 2015 rule, conducted using industry-standard modeling techniques, estimated approximately 800 MW of incremental coal unit retirements attributable to the CCR Rule.⁹⁴ In other words, EEI’s “worst-case-scenario” is nothing more than a straw man that there is no reasonable expectation would ever occur.

In its third caveat, EEI notes that “no effort was made to consider the impact of ‘prospective reserves.’”⁹⁵ While EEI dismisses these prospective resources as “lacking firm transmission,” they are more appropriately considered indicative of the level of capacity being constructed at a given time. In fact, prospective reserves are a relatively conservative estimate of new impending generation. According to NERC, prospective resources “include[] operable capacity that could be available to serve load during the peak hour, but lacks firm transmission . . . [and] capacity that has been requested but not received approval for planning requirements.”⁹⁶ Prospective resources generally do not

⁹³ The EEI assessment also makes a fundamental mathematical error in calculating the impact of its wholly unrealistic assumption that all coal plants with unlined ponds would close and not be replaced. Reserve margin is calculated as peak available capacity divided by peak demand, minus one. But, rather than calculating a reserve margin with and without the coal-burning units with unlined CCR impoundments, EEI instead determines the fraction of generation that is represented by those units, and subtracts this percentage from the calculated 2017 reserve margin. In doing so, EEI confounds the denominator in their simple equation, dividing by peak available generation instead of peak load.

⁹⁴ RIA for the 2015 Rule, Appendix X, at 25, Exhibit B-4.

⁹⁵ Edison Electric Institute, Potential Electric Reliability Risks Due to Cessation of Power Generation as a Result of the Closure of Unlined Surface Impoundments Under 40 CFR Part 257.101 for the Failure to Meet Groundwater Protection Standards (July 2017), Docket ID No. EPA-HQ-OLEM-2017-0286-0022 (“July 2017 EEI Findings”).

⁹⁶ NERC, 2017 Long-Term Reliability Assessment (Mar. 1, 2018), 81, https://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_LTRA_12132017_Final.pdf (“2017 NERC”) (attached).

include resources that have not yet entered the interconnection queue, those which are typically more than two or three years out, or distributed resources (such as behind-the-meter solar). The composition of the US electric generating fleet is continuously in flux with new generation and distributed resources coming online on a regular basis, a fact ignored by EEI. Instead, EEI's worst case scenario depicts instantaneous unavailability of 170,107 MW of coal units in Summer 2017. Yet, EEI is the first to acknowledge that the chances of such instantaneous unavailability are exceedingly low: "EEI recognizes that the likelihood of all CCR impacted resources not meeting the EPA imposed compliance deadline is highly unlikely."⁹⁷

Indeed, EEI notes its failure to assess the changing state of the electricity grid—"EEI does not have sufficient insights to accurately predict the resource mix by fuel type beyond what has been provided in the NERC 2017 Summer Reliability Assessment."⁹⁸ The NERC 2017 Summer Assessment was published May 24, 2017. On March 1, 2018, NERC published the 2017 Long-Term Reliability Assessment, which shows the evolution of the electric sector based on currently queued retirements and new unit additions.⁹⁹ The Long-Term Reliability Assessment indicates, for example, that "MISO anticipates 4,517 MW of future firm capacity additions and uprates along with 4,106 MW of future potential capacity additions to be in-service and expected on-peak during the assessment period."¹⁰⁰ In addition, substantial new capacity—not yet in MISO's interconnection queue—will be brought online or mitigated through demand-side management programs.¹⁰¹

As noted in EEI's fourth and sixth caveats, Reserve Margin impacts were only considered during "On Peak" periods and the assessment was made only for the summer peak period.¹⁰² However, not all the regions identified by the assessment are summer peaking. For example, in the SERC-North (SERC-N, North Carolina) region, the utility has indicated that it is shifting to a winter planning due to the expansion of local solar resources. Duke Energy Carolinas 2017 Integrated Resource Plan indicates that "the significant penetration of solar resources . . . is the primary driver for the Company's shift to winter capacity planning."¹⁰³ NERC's Winter Reliability Assessment shows both 2,000 MW of incremental capacity in SERC-N above that indicated in the EEI study, and an available capacity well above net internal demand (*i.e.*, post demand response).¹⁰⁴

In addition to the numerous caveats to the paper, EEI's estimate appears to be strictly illustrative and does not follow reasonable utility practice with respect to either

⁹⁷ July 2017 EEI Findings at 2.

⁹⁸ *Id.*

⁹⁹ 2017 NERC.

¹⁰⁰ *Id.* at 42.

¹⁰¹ *Id.*

¹⁰² July 2017 EEI Findings at 2.

¹⁰³ Duke Energy Carolinas, North Carolina 2017 Integrated Resource Plan (Update Report) (Sept. 1, 2017), 8, <http://starw1.ncuc.net/NCUC/ViewFile.aspx?Id=05fb2b10-a879-4a9e-a881-f9cbb60a69a5> (attached).

¹⁰⁴ NERC, 2017/2018 Winter Assessment (Dec. 8, 2017), https://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_WRA_11202017_%20Final.pdf (attached).

resource planning or determination of resource adequacy. Importantly, EEI did not consider whether coal plants with unlined impoundments had alternative waste disposal options or whether those impoundments were likely to be required to close pursuant to the 2015 CCR Rule. Absent such consideration, predicting which generating units are likely to retire is impossible. As discussed above, EEI also failed to assess what new capacity was coming online, was likely to come online in the next few years, and would potentially be built by owners facing a near-term unit retirement. Finally, EEI failed to assess regional reserve sharing between utility regions, new transmission projects, and other mitigations for reliability.

In moving to provide a blanket exception to a class of electric generating units on the basis of reliability concerns, EPA has shifted into fundamental electricity system planning. Yet the demonstration offered by EPA in support of its resource adequacy frame is one that does not meet the minimum standards for evaluating utility resource adequacy. To perform the analysis correctly and evaluate whether any reliability concern might result from the CCR Rule, EPA would have had to construct an electric power system study wherein the parameters of the existing rule are assessed for resource adequacy purposes. The operative change in the 2018 Proposal is the application of alternative closure requirements to CCR units that lack alternative capacity for non-CCR wastestreams. To demonstrate the substantive need for alternative closure requirements based on the risk of multiple simultaneous generating unit closures, EPA would have needed to assess which units would likely qualify under proposed 40 C.F.R. § 257.103(b)(i), and that “no alternative disposal capacity is available” anywhere, on-site or off-site and regardless of cost. For those specific units, EPA would have needed to determine their latest possible closure date in the absence of the waiver, and affirmatively demonstrate that no replacement capacity could be brought online by that date. Finally, EPA would be required to show that if those specific units are retired and no replacements are built that reliability concerns emerge that cannot be mitigated through transmission or existing load control technologies. EPA failed to conduct any such analysis and, as such, there is simply no rational basis upon which to conclude that significant reliability impacts may reasonably be expected to occur.

B. OUTDATED RELIABILITY ASSESSMENTS CITED BY EPA DO NOT DEMONSTRATE THAT THE 2015 CCR RULE WILL RESULT IN RELIABILITY IMPACTS.

EPA’s own Regulatory Impact Assessment (RIA) for the 2015 CCR Rule concluded “that the rule will not raise significant concerns over regional resource adequacy or raise the potential for interregional grid problems.”¹⁰⁵ Nevertheless, EPA now ignores that conclusion and turns to seven-and-a-half-year-old and six-and-a-half-year-old assessments in an effort to show that the 2015 rule would result in reliability impacts. 83 Fed. Reg. at 11,596. These two NERC assessments were designed to evaluate the simultaneous imposition of multiple environmental regulations, many of which have since changed substantially. For example, the 2010 assessment examines the Maximum Achievable Control Technology (MACT) Standard, which has since been

¹⁰⁵ RIA for the 2015 Rule, Appendix X, at 25, Exhibit B-4.

replaced by the Mercury and Air Toxics Standard (MATS), and the Clean Air Transport Rule (CATR), which has since been replaced by the Cross-State Air Pollution Rule (CSAPR).¹⁰⁶

Importantly, the NERC 2010 and 2011 assessments (as well as a large cohort of other contemporary studies produced by consultants, non-profits, and trade groups such as EEI), were forward looking, designed to assess how impending regulations would impact the electricity sector when taken together. In 2018, the vast majority of the rules considered in the forward-looking assessments have been adopted and implemented. While the MATS rule required initial capital investments for compliance at some plants and, thus, was significant in a prospective manner in 2010, the rule imposes relatively little incremental cost on the US coal fleet today. Similarly, CSAPR imposes relatively little incremental cost on today's coal fleet. Accordingly, the 2010 and 2011 analyses are not useful for evaluating the impact of compliance with a single rule in 2018 and beyond.

Moreover, and of particular importance, the 2010 NERC assessment specifically cites the CCR Rule as being the least impactful rule under consideration at the time, noting that:

The CCR Rule alone is projected to have the least impact, triggering the retirement of up to 12 coal units (388 MW). Cost sensitivity assessment for CCR reveals that retirements could reach capacity of 2 GW (53 units) should costs exceed the assessment's Strict Case expenditure estimate by a factor of ten. While the resulting impacts of the CCR scenario may not have significant impacts to capacity by themselves, the associated compliance costs of CCR contribute to the Combined EPA Regulation Scenario.¹⁰⁷

While NERC's 2011 study does not break out the relative impact of individual rules, instead looking at the cumulative impact of a large slate of rules, even assuming the most stringent interpretation of the rules and looking at their combined impacts, NERC estimated 22,840 MW of coal unit retirements¹⁰⁸—*i.e.*, less than 14% of the coal capacity retirement that EEI assumed in creating its wholly unrealistic worst case scenario for the 2017 paper. Moreover, NERC assessed reliability impacts of the rules, and found no reliability violations in any region—including SERC-E, SERC-N, or MISO—despite the estimated retirements and even in the strictest 2018 compliance case.¹⁰⁹

Finally, EPA provides an inaccurate and misleading portrayal of the outdated NERC assessments. EPA cites those assessments in support of the claim that “other entities have found that the combination of several environmental regulations may nevertheless contribute to regional reliability issues.” 83 Fed. Reg. at 11,596. But the studies did *not* identify substantial reliability concerns and, in any event, are largely moot

¹⁰⁶ NERC, 2010 Special Reliability Assessment, Docket ID No. EPA-HQ-OLEM-2017-0286-0015 (Oct. 2010) (hereinafter “2010 NERC”).

¹⁰⁷ 2010 NERC at V.

¹⁰⁸ NERC, Potential Impacts of Future Environmental Regulations, Docket ID No. EPA-HQ-OLEM-2017-0286-0016, Table 34 (Nov. 2011).

¹⁰⁹ *Id.*, Table 45.

as the impact of the majority of the rules assessed seven years ago has already been felt and significant reliability impacts have not occurred.

C. EPA’S OWN ASSESSMENTS DO NOT DEMONSTRATE THAT THE 2015 CCR RULE WILL RESULT IN RELIABILITY IMPACTS.

In past Regulatory Impact Assessments, EPA has utilized the Integrated Planning Model (IPM), a regional-scale model of the utility system. While optimized for regulatory assessment purposes, IPM is fully capable of basic reliability assessments, including assessing fundamental load and resource balances. Indeed, in EPA’s RIA for the 2015 CCR Rule, “EPA modeled electricity impacts using the Integrated Planning Model (IPM). This model exercise showed minimal retirements or effects on total capacity over the timeframe modeled.” 83 Fed. Reg. at 11,596. In fact, the RIA for the 2015 rule, conducted using industry-standard modeling techniques, estimated approximately 800 MW of incremental coal unit retirements attributable to the CCR Rule¹¹⁰—a far cry from EEI’s 170,107-MW estimate. As EPA recognized, even that 800-MW estimate may have been overstated:

IPM may tend to slightly overestimate retirements occurring as a result of the 2015 CCR Rule. Because even these conservative impacts show very modest retirements (less than 1GW), which are balanced by additions of new generation (see Exhibit B-6), EPA concludes that the rule will not raise significant concerns over regional resource adequacy or raise the potential for interregional grid problems. EPA believes any remaining local issues can be managed through standard reliability planning processes.¹¹¹

The 2018 Proposal includes no explanation for EPA’s departure from the RIA for the 2015 rule’s reliability conclusions. Curiously, EPA goes even farther and feigns an inability to evaluate reliability impacts at all, stating that “[w]ithout the [full] EEI analysis, EPA can only conservatively assume, as industry does, that the three regions and sub-regions showing substantial impacts in the EEI analysis have such a demonstrated need.” 83 Fed. Reg. at 11,597. This is not true. “Without the [full] EEI analysis” (which, incidentally, EEI admits does not exist), EPA need not rely on “conservative” worst case scenario estimates. It can, in fact, use IPM to evaluate whether any region is likely to experience reliability impacts. In the alternative, if industry had any actual evidence that the 2015 CCR Rule would result in reliability impacts absent a five-year extension for the closure of unlined ponds found to be causing groundwater contamination, it could provide such evidence to EPA. It has not done so, opting instead only to submit four self-serving pages of industry “findings”.

¹¹⁰ RIA for the 2015 Rule, Appendix X, at 25, Exhibit B-4.

¹¹¹ *Id.*

D. THE PROPOSED CHANGES TO THE ALTERNATIVE CLOSURE REQUIREMENTS SECTION ARE NOT NEEDED TO ADDRESS RELIABILITY ISSUES.

As discussed above, EPA has failed to identify any legitimate reliability problems that could justify the delay of critical protections against the harms caused by unlined leaking ash ponds and ash disposal units located in unsafe areas. EPA asserts that it “is proposing to limit the new alternative closure requirements to facilities that have the potential to impact electric reliability”—that is, *any* facility located “in one of the three FERC regions that the EEI analysis concludes are likely to suffer substantial reliability impacts.” 83. Fed. Reg. at 11,596. But the EEI findings do not “conclude” that substantial reliability impacts are “likely.” Far from it, EEI was explicit in its recognition that “the likelihood of all CCR impacted resources not meeting the EPA imposed compliance deadline is *highly unlikely*,”¹¹² and even that caveat is seriously understated as the assumption that 170,107 MWs of coal units with unlined ponds would all retire as a result of the CCR Rule and no replacement capacity would be built is baseless. Even the USWAG letter that was the basis for these proposed changes cannot identify a single plant where closure of a coal ash pond would leave the operator without any option for non-CCR wastestream disposal. Of the 49 power plants USWAG identifies as having an unlined CCR impoundment where non-CCR wastes are managed, the letter gives no information regarding whether other onsite or offsite units are available or could become available to accept non-CCR wastes.¹¹³ In other words, no rational basis has been provided to conclude that the 2015 CCR Rule would leave a plant operator without disposal options for its non-CCR wastestreams, much less that plants that co-manage CCR and non-CCR wastes are at risk of closing. Nor has EPA provided any rational basis to conclude that any individual plant closings that may occur would put the electric grid at risk of reliability problems. Stated simply, there is no evidence that the 2015 CCR Rule is likely to cause reliability issues.

Moreover, EPA’s invocation of reliability concerns ignores the Regional Transmission Organizations (RTOs) and regional Reliability Coordinators operating in Midcontinent Independent System Operator (MISO), the Southeastern Electric Reliability

¹¹² July 2017 EEI Findings at 2 (emphasis added).

¹¹³ Letter from Jim Roewer, Executive Director, Utility Solid Waste Activities Group, to EPA (Dec. 12, 2016), (Docket ID No. EPA-HQ-OLEM-2017-0286-0021). While USWAG laments its members’ lack of contingency plans for dealing with inoperable surface impoundments, those utilities have had nearly three and a half years from publication of the 2015 CCR Rule during which to develop such plans. That they have chosen, instead, to sit on their hands does not justify a weakening of the rule. Moreover, many utilities have in fact pursued plans to close ash impoundments and transition management of non-CCR wastestreams, such as by seeking approval to construct new non-CCR process water ponds. *See, e.g.*, Direct Testimony of John N. Voyles, on behalf of Louisville Gas & Electric Company, at 13:18 through 21:13, Kentucky Public Service Commission, Case No. 2016-00027 (filed Jan. 29, 2016) (attached) (describing need for closure of impoundments at Mill Creek and Trimble County plants to meet CCR Rule requirements, and company’s plan to replace those impoundments with process water systems to manage non-CCR wastestreams); Direct Testimony of David A. Renner, on behalf of Duke Energy Indiana, Indiana Utility Regulation Commission, Cause No. 44765 (filed June 23, 2016) (attached) (describing company’s plans to close impoundments at Cayuga and Gibson plants and replace them with lined retention basins to manage non-CCR wastestreams).

Council-East (SERC-E), and the Southeastern Electric Reliability Council-North (SERC-N) and the fact that those entities maintain well-established mechanisms to determine if any given retirement, or series of retirements, will result in reliability concerns and to address any such concerns. Indeed, existing power markets are centrally attuned to ensuring reliable electricity service.¹¹⁴ Reliability is safeguarded not only by existing FERC requirements and NERC standards, which RTOs rigorously pursue, but by a series of dynamic processes to assess and respond to evolving conditions on the grid. Within the RTO, a series of both market and other mechanisms work together to ensure reliability. The energy, capacity, and ancillary service markets each play an important role in this task, along different timeframes.¹¹⁵ Individual RTOs have adopted other mechanisms to further support their reliability goals, including pay-for-performance, penalty rates for non-performance, reliability-must-run (RMR) contracts, and dual fuel incentives.¹¹⁶ For example, in the MISO region, operators of potentially retiring units submit an “Attachment Y” request to MISO to determine if the retirement of the unit will negatively impact system reliability.¹¹⁷ MISO then uses a model to stress test the system and determines if there are conditions in which the absence of a particular resource will cause reliability concerns.

This system of FERC requirements, NERC standards, and RTO power markets and reliability mechanisms and procedures have succeeded in preserving system reliability even as existing generating units have retired and been replaced by new capacity. Against this backdrop, EPA cannot justify an across-the-board exemption for facilities located in MISO, SERC-E, and SERC-N that lack alternative disposal capacity. Moreover, EPA cannot point to any evidence that the 2015 CCR Rule is likely to cause reliability problems. As such, the proposed expansion of the narrow exception to closure requirements in the 2015 CCR Rule is unsupported and unwarranted.

E. EPA’S PROPOSED MODIFICATION OF THE ALTERNATIVE CLOSURE REQUIREMENTS IS ARBITRARY AND CAPRICIOUS, WITHOUT A RATIONAL BASIS, AND FAILS TO MEET THE SECTION 4004(A) PROTECTIVENESS STANDARD.

When adopting the 2015 CCR Rule, EPA determined that leaking, unlined coal ash ponds must cease receiving CCR and must close or retrofit by dates certain in order to meet the RCRA Section 4004(a) protectiveness standard. *See* 40 C.F.R. § 257.101(a); *see also* 80 Fed. Reg. at 21,371 (“once a groundwater protection standard is exceeded (*i.e.*, the unit is leaking), without any type of liner system in place, leachate will flow through the unit and into the environment unrestrained and the only corrective action strategy that EPA can determine will be effective at all sites nation-wide requires as its

¹¹⁴ Synapse Energy Economics, Inc., Comments on the U.S. Dep’t of Energy’s Proposed Grid Resiliency Pricing Rule at E-5, FERC Docket RM18-1-000 (Oct. 23, 2017), <http://www.synapse-energy.com/sites/default/files/Grid-Resiliency-Whitepaper-As-Filed-17-085.pdf> (attached).

¹¹⁵ *Id.* at E-6.

¹¹⁶ *Id.* at E-6–E-7.

¹¹⁷ *See, e.g.*, MISO, Attachment Y Requests with Reliability Issues (Dec. 22, 2017), http://www.oasis.oati.com/woa/docs/MISO/MISODocs/Attachment_Y_Requests_with_Reliability_Issues.pdf (attached).

foundation the closure of the unit”). Similarly, EPA found that CCR impoundments violating location restrictions and located within five feet of aquifers or in floodplains, wetlands, fault zones, and seismic areas, and impoundments and landfills located in unstable areas must also close by dates certain to meet the protectiveness standard of section 4004(a). *See* 40 C.F.R. § 257.101(b)(1); *see also* 80 Fed. Reg. at 21,360 (“[T]he factual record supports the need [pursuant to section 4004(a)] for all of the location standards for existing surface impoundments imposed by this rule.”); *id.* at 21,359-68, and Section XIII, *infra*.

The alternative closure requirements of the 2015 CCR Rule provide a narrow exception to that closure mandate. Indeed, EPA estimated that no more than 61 plants out of a total of 478 plants¹¹⁸ would meet the criteria necessary to take advantage of alternative closure provisions, which allow for the continued disposal of CCR in a unit that is required to close. Those provisions do not allow for the continued disposal of non-CCR wastestreams. This makes sense; the alternative closure requirements were designed to balance risks, and the continued disposal of large volumes of wastewater only add significantly to the risks posed by leaking ponds or ponds located in unstable areas and other restricted locations. The 2018 Proposal, however, would unlawfully increase those risks and it would do so without justification, analysis, or record evidence.

1. *EPA has not evaluated the risk of allowing non-CCR wastestreams to be disposed of in leaking, unlined CCR ponds or in CCR units that do not comply with a location standard.*

EPA did not do any evaluation of the heightened risks associated with expanding the alternative closure provision to non-CCR wastestreams. As EPA itself recognizes, volumes of non-CCR wastestreams can be massive and in excess of CCR volumes. 83 Fed. Reg. at 11,595 (citing an industry report of a 47.99-million-gallon-per-day stormwater discharge). In the 2015 CCR rulemaking, EPA documented the risks associated with increasing the hydraulic head in a leaking or unsafely sited impoundments. 80 Fed. Reg. at 21,357 (where “significant quantities of CCR are impounded with water under a hydraulic head that will be managed for extended periods of time, . . . [t]his gives rise to the conditions that both promote the leaching of contaminants from the CCR and are responsible for the static and dynamic loadings that create the potential for structural instability”); *id.* at 21,442 (“the risks during the operating life of surface impoundments are greater because the higher hydraulic head drives leachate into underlying soils with greater force than gravity alone”). Now, without any analysis or explanation, EPA ignores those risks entirely.

Furthermore, in the weeks before EPA published the 2018 Proposed Rule, utilities across the country posted the results of initial monitoring of groundwater at and around coal ash disposal sites. These groundwater monitoring reports showed widespread exceedances of drinking water quality standards and on-site background contaminant levels. *See* Section VII, *infra*. Nevertheless, there is no indication that EPA considered those reports when drafting its proposed amendments to the alternative closure

¹¹⁸ RIA for the 2015 Rule at 9-38.

requirements or any other parts of the 2015 CCR Rule. The results of groundwater monitoring contradict EPA's conclusion that "the assumption that *all* unlined surface" impoundments leak above the groundwater protection standard is contrary to" the Risk Assessment for the 2015 rule and that "the assumption that all surface impoundments leak above groundwater protection standards is worst-case rather than a best estimate." 83 Fed. Reg. at 11,596 (emphasis in original). The recently posted groundwater data show that unlined surface impoundments are indeed leaking and that contaminants are present at concentrations above groundwater protection standards at most sites. *See* Section VII, *infra*. EPA failed entirely to consider the impact to health and the environment of allowing the continued disposal of significant amounts of waste in leaking units or vulnerable locations. As with all other revisions in EPA's 2018 Proposal, there is no amended risk assessment to support the modification. Therefore, the proposed modification is arbitrary and capricious, and lacks a rational basis.

2. *EPA's proposed modification to the alternative closure requirements fails to meet the protectiveness standard of section 4004(a) of RCRA.*

The requirement that leaking unlined surface impoundments and CCR disposal units located within five feet of aquifers or in floodplains, wetlands, unstable areas, fault zones, and seismic areas close by a date certain is one of the fundamental elements of the 2015 CCR Rule. Accordingly, the 2015 alternative closure requirements are constructed to limit the number of surface impoundments and landfills that are afforded additional time for closure.

Expanding the relatively narrow exception in the 2015 CCR Rule to allow unlimited volumes of non-CCR wastestreams (without CCR) would substantially broaden the universe of CCR units that could fall within the alternative closure exemption. This would consequently increase the probability that releases from such impoundments would occur over the five to 10 year periods that these impoundments could continue to receive wastewater. Unlike CCR, which can be disposed of in dry landfills, many non-CCR wastestreams—*e.g.*, stormwater, coal pile runoff, boiler blowdown, boiler cleaning wastes, demineralizer regeneration washwater, cooling tower blowdown, air heater washwater, and water treatment plant waste—are liquid, and, depending on their volumes, could no longer be co-managed with CCR if a facility switches to dry handling. The proposed modification would allow the continued operation of CCR surface impoundments, even if the impoundments are no longer needed for CCR disposal and are justified solely on the basis of wastewater disposal. Proposed section 257.103(b) and (d), 83 Fed. Reg. at 11,615. Thus a great number of leaking or poorly-sited surface impoundments could continue operating. Indeed, EPA estimates in its Regulatory Impact Analysis for the 2018 Proposal that 55 disposal impoundments and 358 storage impoundments—the majority of U.S. coal ash impoundments—will take advantage of this additional extension. *See* Section XXX, *infra*. These impoundments could continue to receive voluminous quantities of wastewater long after groundwater contamination is discovered, long after an owner/operator determined that the impoundment was operating in a location that presents unacceptable risks to health and the environment, and long after the impoundment is actually needed to dispose of CCR.

The increased likelihood of releases of CCR from these units would be substantial. According to available CCR Rule compliance documents, there are 243 surface impoundments at 105 coal plants operating in MISO, SERC-E, and SERC-N¹¹⁹ According to the certifications submitted by the owners of these plants, which account for 206 of the surface impoundments, 184 of them, or 89 percent, of these surface impoundments are unlined.¹²⁰ Consequently, these surface impoundments are likely already leaking CCR contaminants into the underlying groundwater. Deposition of additional large volumes of CCR and/or wastewater will increase the hydraulic head and therefore increase the likelihood of more releases.¹²¹ The addition of substantial volumes of CCR and/or wastewater are also likely to increase the rate and volume of such releases.¹²² Even if no additional CCR is added to the CCR impoundment, the addition of wastewater will still hasten increased contaminant transport to the underlying groundwater.¹²³ *Id.* Because the proposed modification will increase the release of CCR contaminants from the impacted CCR units, the proposed revision cannot meet the protectiveness standard of section 4004(a). Consequently, the proposed modifications to the alternative closure requirements should be abandoned.

F. THE PROPOSED CHANGES TO THE ALTERNATIVE CLOSURE REQUIREMENTS SECTION INTRODUCTORY LANGUAGE ARE INCONSISTENT WITH THE REST OF THE SECTION.

Whether a drafting error or a deliberate attempt to further weaken the 2015 CCR Rule, the 2018 Proposal includes changes to the introductory language of 40 C.F.R. § 257.103 that could be interpreted to allow owners or operators of CCR units that are subject to closure to continue receiving CCR in those units even if alternative disposal capacity for CCR is available as long as they demonstrate that they lack alternative disposal capacity for non-CCR wastestreams. As currently drafted, the 2018 Proposal provides:

The owner or operator of a CCR landfill, CCR surface impoundment, or any lateral expansion of a CCR unit that is subject to closure pursuant to § 257.101(a), (b)(1), or (d) may continue to receive CCR and/or non-CCR wastestreams in the unit provided the owner or operator meets the requirements of either paragraph (a), (b), (c) or (d) of this section.

83 Fed. Reg. at 11,615 (emphasis added).

The use of “and/or” is confusing and invites multiple interpretations. Any confusion would be obviated by abandoning the proposed amendments to the alternative

¹¹⁹ See U.S. Energy Information Administration, Electricity, Form EIA-860, Final 2016 data (Release Date: Nov. 9, 2017), <https://www.eia.gov/electricity/data/eia860/index.html> (attached).

¹²⁰ See Expert Report/Comments on Specific Issues Raised by EPA’s Proposed Revision to the CCR Rule (Phase One) (Apr. 30, 2018) (hereinafter “Sahu Expert Report”) (attached).

¹²¹ See Sahu Expert Report.

¹²² *Id.*

¹²³ *Id.*

closure provisions. However, if EPA does finalize the proposed expansion, in order to better align with the subparagraphs that follow, Section 257.103's introductory paragraph should be revised to reflect the requirement that a separate analysis of capacity availability be conducted for each distinct wastestream. The following suggested clarification would achieve that end:

The owner or operator of a CCR landfill, CCR surface impoundment, or any lateral expansion of a CCR unit that is subject to closure pursuant to § 257.101(a), (b)(1), or (d) may continue to receive CCR in the unit provided the owner or operator meets the requirements of either paragraph (a) or (c) of this section and may continue to receive non-CCR wastestreams in the unit provided the owner or operator meets the requirements of either paragraph (b) or (d) of this section.

As drafted, proposed paragraph (b) allows a CCR unit that is otherwise required to close to continue receiving non-CCR wastestreams if the owner or operator demonstrates that no alternative disposal capacity exists for those wastestreams. 83 Fed. Reg. at 11,615. That paragraph does not contemplate the continued disposal of CCR in the unit. Indeed, the existing alternative closure requirements were intended to be a narrow exception to an important public health protection—*i.e.*, the closure of leaking, unlined coal ash ponds and units located in unsafe areas. 80 Fed. Reg. at 21,371. Every additional ton of CCR that is disposed of in a leaking, unlined unit increases the probability of adverse effects on health or the environment. The fact that a disposal unit's closure may be delayed in order to accommodate non-CCR wastestreams with nowhere else to go does not justify an exemption of the requirement that an owner or operator cease placing CCR in the disposal unit if alternative capacity for disposal of the CCR is available.

VII. EPA FAILED TO CONSIDER THE NEW EVIDENCE OF GROUNDWATER CONTAMINATION FROM THE 2017 ANNUAL GROUNDWATER MONITORING REPORTS THAT IS DIRECTLY RELEVANT TO THE PROPOSED REVISION OF THE CCR RULE.

A. NEW GROUNDWATER MONITORING DATA INDICATE NATIONWIDE LEAKING TO GROUNDWATER OVER HEALTH PROTECTIVE LEVELS.

The 2015 CCR Rule was largely based on EPA's 2014 Risk Assessment, which made a series of assumptions about the construction of coal ash units, about the quality of the leachate from coal ash units, and about subsurface transport. Many of these assumptions were demonstrably unrealistic. For example, while EPA assumed that no coal ash units were in contact with groundwater, Commenters (and EPA) know that, in fact, many coal ash units are located at least partially below the water table, saturated with groundwater, and susceptible to ongoing leaching regardless of the presence or absence of an impermeable cover system. *See, e.g.*, 83 Fed. Reg. at 11,589 ("The damage cases reflect a range of waste types disposed in both surface impoundment and landfills. These damage cases corroborate the findings of the [risk assessment] and also

capture other scenarios that were not modeled in the [risk assessment], such as units that intersect with the groundwater table.”). *See also*, Sahu Expert Report.

EPA now has the ability to replace at least some of these assumptions with real data. As of March 2018, owners and operators of most coal plants have posted “annual groundwater monitoring and corrective action” reports pursuant to 40 C.F.R. §§ 257.90(e), 257.105(h)(1), and 257.107(h)(1). The Environmental Integrity Project submitted all of the reports to the docket for the 2018 proposal on April 26, 2018. These reports should each include at least eight rounds of sampling for boron and other coal ash constituents pursuant to 40 C.F.R. § 257.94(b). EPA did not provide an adequate comment period, and the public has not had a chance to comprehensively evaluate the complete set of groundwater reports. However, we have had a chance to digitize, compile and analyze the groundwater monitoring reports from 101 sites. These sites were selected arbitrarily, and should be considered a random subset of the universe of annual groundwater reports. The results are summarized in Groundwater Monitoring Data from Annual Groundwater Monitoring and Corrective Action Reports (attached) and Table 1, below.

Table 1 shows that the groundwater at almost all facilities is contaminated by at least one of the coal ash pollutants shown. Most sites have unsafe levels of arsenic. The same is true of boron, cobalt, lithium, molybdenum, and sulfate. One in five sites has unsafe levels of radium, and over a third of the sites have unsafe levels of molybdenum. Overall, 73% of sites have unsafe levels of either boron or sulfate (the two leading coal ash indicator pollutants), and 92% of sites have unsafe levels of at least one of the constituents in Table 1. In other words, only 8% of coal plants in the partial database that we have analyzed to date have water that could be considered safe to drink.

Table 1: Partial summary of annual groundwater monitoring and corrective action report data.

Constituent	Health threshold ¹²⁴	Number of facilities with one or more wells having an average concentration greater than the health threshold (% of total) ¹²⁵
Arsenic	0.01 mg/L	56 (57%)
Boron	3.0 mg/L	51 (50%)
Cobalt	0.006 mg/L	53 (54%)
Lithium	0.04 mg/L	64 (65%)
Molybdenum	0.04 mg/L	53 (54%)
Radium	5 pCi/L	18 (18%)

¹²⁴ These health thresholds are Maximum Contaminant Levels (for arsenic and radium), EPA Drinking Water Advisories (for boron, molybdenum, and sulfate) and EPA Regional Screening Levels using a Hazard Quotient of 1 (for cobalt and lithium), U.S. EPA, Drinking Water Standards and Health Advisories (2018), <https://www.epa.gov/sites/production/files/2018-03/documents/dwtable2018.pdf>, U.S. EPA, Regional Screening Levels (Nov. 2017), <https://semspub.epa.gov/work/HQ/197025.pdf>.

¹²⁵ Not every report includes data for all of the constituents shown. The number of sites monitoring a given constituent ranges from 89 to 93.

Sulfate	500 mg/L	63 (62%)
Boron or Sulfate		74 (73%)
Any of the above		93 (92%)

All of the above-listed constituents present significant risks to human health and, in some cases, to the environment. Arsenic is both a carcinogen – known to cause cancers of the lung, kidney, bladder, skin and other organs – and a neurotoxin.¹²⁶ One recent study in Maine found significant reductions in IQ and other endpoints in children exposed to 5-10 micrograms of arsenic per liter, a level that is below the Maximum Contaminant Level.¹²⁷ Boron has proven to be toxic to the developing fetus and the male reproductive system in animal studies.¹²⁸ EPA developed drinking water guidelines to protect against low birth weight and testicular toxicity; these include the Child Health Advisory of 3 mg/L.¹²⁹ In addition, boron “can result in stunted growth, phytotoxicity, or death to aquatic biota and plants” in surface water. 83 Fed. Reg. at 11,589. Cobalt is associated with heart disease, blood disease (polycythemia), neurological symptoms, and other endpoints.¹³⁰ Lithium causes adverse health effects in “several organs and systems,” including the kidneys and the neurological system.¹³¹ Molybdenum affects blood mineral balance and can lead to gout-like symptoms.¹³² Radium, as a radioactive element, is carcinogenic, known to cause bone, head and nasal passage tumors after oral exposure.¹³³ Sulfate concentrations above 500 mg/L in drinking water can cause diarrhea, which can lead to dangerous levels of dehydration in young children, and the EPA established a drinking water advisory at the 500 mg/L level.¹³⁴ The widespread contamination identified above is therefore associated with widespread and serious risk to both human health and the environment.

The attached report by Mark Hutson reviews a subset of the 101 sites referred to above. Hutson Expert Report Part II. As shown in that report, much of the known contamination at these facilities occurs in groundwater that is described as upgradient of regulated units. This upgradient contamination is, in most cases, the result of coal ash leachate from unregulated coal ash units at the facilities, including old, unlined landfills and impoundments that were abandoned before the effective date of the 2015 CCR Rule or the radial groundwater flow from the regulated unit being monitored. The upgradient

¹²⁶ U.S. EPA (1998), Integrated Risk Information System, Inorganic Arsenic, available at <http://www.epa.gov/iris/subst/0278.htm>; ATSDR (2007), Toxicological Profile for Arsenic; Grandjean and Landrigan (2014), Neurobehavioural Effects of Developmental Toxicity, *Lancet Neurol* 13:330-338.

¹²⁷ Wasserman et al. (2014), A Cross-Sectional Study of Well Water Arsenic and Child IQ in Maine Schoolchildren, *Environ Health* 13:23-32.

¹²⁸ See, e.g., U.S. EPA, Toxicological Review of Boron and Compounds (June 2004); Agency for Toxic Substances and Disease Registry, Toxicological Profile for Boron (November 2010).

¹²⁹ See U.S. EPA, Drinking Water Health Advisory for Boron (May 2008).

¹³⁰ See, e.g., ATSDR, Toxicological Profile for Cobalt (Apr. 2004). The most sensitive endpoint for intermediate oral exposure was polycythemia, which has been observed in humans.

¹³¹ U.S. EPA, Provisional Peer Reviewed Toxicity Values for Lithium, 18 (2008).

¹³² U.S. EPA, Integrated Risk Information System, Molybdenum (1992).

¹³³ See, e.g., D. Brugge and V. Buchner, Radium in the environment: Exposure pathways and health effects, 27 Rev. Environ. Health 1 (2012).

¹³⁴ See U.S. EPA, Drinking Water Advisory: Consumer Acceptability Advice and Health Effects Analysis on Sulfate (Feb. 2003).

contamination identified in the annual groundwater monitoring reports have several important implications for EPA oversight.

B. IN LIGHT OF THE NEW EVIDENCE, EPA MUST NOT WEAKEN THE 2015 COAL ASH RULE.

First, and most obviously, the 2018 proposal moves in exactly the wrong direction, increasing known risks in violation of the RCRA protectiveness standard. The data generated by the 2015 CCR Rule show that the current regulations, at both the state and federal levels, are not adequate to prevent the reasonable probability of adverse effects. The coal ash threat requires more regulatory oversight from EPA, not less. EPA is now proposing to relax the safeguards against a public health risk that the Agency has so far failed to adequately address. Exposing the public to increased risks in the face of overwhelming evidence that the risks are already too high is almost a caricature of arbitrary and capricious decision-making. And since the current regulatory structure fails the RCRA standard, a relaxed version of that structure will even more clearly fail. EPA must consider the newly available groundwater data before concluding this rulemaking, and must strengthen, not relax, its current regulations.

Second, it would be inappropriate for EPA to take statistical comparisons between downgradient and upgradient wells as face-value evidence of the presence or absence of risk from regulated coal ash units. If the groundwater upgradient of a given coal ash unit is already contaminated by coal ash, any additional contamination emanating from the regulated unit will be harder to statistically identify. Since contamination attenuates over space and time, groundwater in downgradient wells should be expected to have lower concentrations of coal ash constituents than upgradient wells, absent a contribution from the regulated unit. If the regulated unit does contribute additional contamination, it may increase downgradient concentrations to something less than, equal to, or only slightly higher than upgradient concentrations. The contamination will be there, but the statistical proof will not.

Third, despite the frequent contamination from unregulated coal ash and the statistical problem identified above, there is still widespread evidence that concentrations of coal ash constituents downgradient of regulated coal ash units are higher than upgradient concentrations. Owners and operators were required by the 2015 CCR Rule to determine whether there is a statistically significant increase over background values for coal ash pollutants. *See* 40 C.F.R. § 257.93(h). The determination of a “Statistically Significant Increase” (SSI) over background values is an important indication that the CCR unit is likely contaminating groundwater. As described in the Hutson Expert Report, the majority of SSI determinations found significantly increased boron and sulfate concentrations in downgradient wells. When considering other constituents in addition to boron and sulfate, almost three-quarters of the regulated units (72%) that completed a SSI determination found statistical evidence of downgradient groundwater contamination. Hutson Expert Report Part II.

Finally, these results come from a range of disposal units, including lined and unlined landfills and impoundments. The 2014 risk assessment found that the highest risks are expected to occur at unlined impoundments. Since unlined impoundments are only a subset of the units monitored in the dataset described above and in the Hutson Expert Report, the groundwater contamination identified here is lower than what one would find at unlined impoundments in isolation. Groundwater contamination at unlined impoundments will be more common and more severe. This has important implications for health and the environment because surface impoundments constitute about 75 percent of the total number of regulated CCR units.¹³⁵ Moreover, while EPA was simply estimating liner prevalence in the 2014 risk assessment, it now has unit-by-unit descriptions of construction history and liner conditions. To date, although not all facilities have reported liner status, owner/operators have confirmed that 87 percent of their impoundments are unlined. EPA has an obligation to use these data in its decisionmaking.

In summary, the new data that EPA must evaluate in order to have an adequate rulemaking record show that most coal plants have groundwater contamination caused by coal ash. The groundwater at most of these facilities is unsafe for human consumption and poses threats to both offsite residential receptors and ecological receptors. Given the long horizon of coal ash contamination identified in the 2014 risk assessment, in which peak exposure concentrations occur hundreds of years in the future, these sites also pose serious risks to future residential and ecological receptors. The threats come from multiple, co-occurring toxic constituents, which confirms that the most appropriate thresholds for noncancer health effects are EPA Regional Screening Levels using a Hazard Quotient of 0.1, which EPA directs to be used where there are multiple contaminants of concern, consistent with its guidance for risk assessment of chemical mixtures. *See* Section XIV. Although the contamination emanates from both regulated and unregulated coal ash dumps, the regulated coal ash units are, by themselves, causing unacceptable risks to human health and the environment. Finally, we are presenting a global summary. Elevated risks from specific scenarios, as identified by EPA in its 2014 risk assessment (e.g., risks specifically from unlined impoundments, or from flue gas desulfurization waste, etc.) can and should be analyzed from within the new groundwater monitoring database. EPA can and must make use of the newly available groundwater monitoring, construction history, liner design, and other documentation to evaluate the risks of coal ash disposal, to analyze the issues described above, and ultimately to ensure that its regulatory approach meets the RCRA protectiveness standard.

VIII. EPA’S RELIANCE ON THE MSWLF REGULATIONS TO SUPPORT CHANGES TO THE 2015 CCR RULE IS CONTRARY TO LAW AND ARBITRARY AND CAPRICIOUS.

For state CCR programs, EPA’s 2018 Proposal proposes six, self-implementing alternative performance standards that mirror 1991 standards for municipal solid waste landfills (MSWLFs). EPA also requests comment on allowing owner/operators of CCR units to select and implement the same alternative performance standards. 83 Fed. Reg.

¹³⁵ 2018 RIA at 2-1 and 4.9.

at 11,597-11,608. Notwithstanding EPA’s acknowledgment that CCR units are governed by RCRA section 4004(a) and must be regulated to ensure there is “no reasonable probability of adverse effects on health or the environment,” the standards EPA proposes do not, and were not designed to, satisfy that statutory requirement. As such, finalization of EPA’s 2018 Proposal to apply the MSWLF regulations to CCR units would be contrary to RCRA section 4004(a), and arbitrary and capricious.

First, the MSWLF regulations from which EPA has cherry-picked the “alternative” standards it proposes to apply to CCR units were issued pursuant to the entirely different, less protective statutory standard set forth in RCRA section 4010(c). Those MSWLF regulations reflect and incorporate a less-stringent “practicable capability” standard that is specifically not found in section 4004(a). Thus, applying the MSWLF standards to CCR units contravenes RCRA section 4004(a). Second, the rulemaking record for the MSWLF regulations does not support regulating CCR units in the same manner as MSWLFs. MSWLFs and CCR units differ significantly in terms of the risks they present. Therefore, the justifications offered for regulatory flexibility for MSWLFs simply do not apply to CCR units. And the risk analysis EPA conducted for MSWLFs provides no support for EPA’s claim that regulating CCR units similarly to MSWLFs meets the more protective section 4004(a) standard that governs regulation of CCR units. Third, the WIIN Act does not support applying MSWLF regulations to CCR units. Finally, the proposed standards fail to satisfy section 4004(a) and ensure that there will be “no reasonable probability of adverse effects on human health and the environment.”

A. EPA’S PROPOSED REGULATIONS ARE UNLAWFULLY AND ARBITRARILY BASED ON A STATUTORY STANDARD THAT IS LESS STRINGENT THAN THE STANDARD THAT APPLIES TO CCR UNITS.

1. *The statutory standard authorizing regulation of MSWLFs allows consideration of “practicable capability,” whereas the standard governing regulation of CCR units does not.*

As EPA recognizes, regulatory requirements for CCR units must satisfy the statutory standard set forth in section 4004(a) of RCRA, which provides that EPA:

shall promulgate regulations containing criteria for determining which facilities shall be classified as sanitary landfills and which shall be classified as open dumps At a minimum, such criteria shall provide that a facility may be classified as a sanitary landfill and not an open dump *only if there is no reasonable probability of adverse effects on health or the environment from disposal of solid waste at such facility.*

42 U.S.C. § 6944(a) (emphasis added). *See, e.g.*, 83 Fed. Reg. at 11,597 (“[T]he statutory structure adopted by Congress requires EPA to establish national minimum criteria that ensure there is ‘no reasonable probability of adverse effects on health or the

environment.”); *id.* at 11,587 (explaining that EPA “must demonstrate, through factual evidence available in the rulemaking record, that the final rule will achieve the statutory standard (‘no reasonable probability of adverse effects on health or the environment’). Under section 4004(a), the agency “is charged with issuing regulations to address all ‘reasonable probabilities of adverse effects’ (*i.e.*, all reasonably anticipated risks) to health and the environment from the disposal of solid waste.” 80 Fed. Reg. at 21,310. *See also* 83 Fed. Reg. 11,587 (noting that under section 4004(a) “the standards must account for and be protective of all sites, including those that are highly vulnerable.”)

The MSWLF regulations, codified at 40 C.F.R. part 258, were issued by EPA 27 years ago pursuant to the entirely different, less prescriptive statutory standard set forth in RCRA section 4010(c). In contrast to section 4004(a), section 4010(c) applies only to facilities that may receive hazardous household wastes or hazardous wastes from small quantity generators, and requires EPA to set criteria that “shall be those necessary to protect human health and the environment and *may take into account the practicable capabilities of such facilities.*” 42 U.S.C. § 6949a(c) (emphasis added). In other words, section 4010(c) is far less protective than section 4004(a) because the former allows for the “practicable capabilities” of the polluting facilities to play a role in determining how protective the standards need to be. As such, the statutory language of the two sections makes clear that standards established under section 4010(c) do not – at least in the absence of a showing of equivalent protectiveness that has not been made here – satisfy section 4004(a).

The legislative history of the two statutory sections sheds further light on the differences between them. One critical distinction highlighted in that legislative history is that, as made clear by the provisions’ plain language, costs may be taken into account under RCRA section 4010(c), governing regulation of MSWLFs, but not under RCRA section 4004(a), governing regulation of solid waste, including CCR units. *See* 42 U.S.C. § 6944(a); 130 Cong. Rec. S 13814 (daily ed. Oct. 5, 1984) (discussing MSWLFs, Senator Randolph stated: “(t)he requirements could also precipitate the closure of facilities with substantial capacity, but that are either unable or unwilling to accept new regulatory costs. By allowing the administrator to consider the practicable capability of solid waste disposal facilities, the Congress has expressed its desire to avert serious disruptions of the solid waste disposal industry.”).

The primary concerns of Congress in adopting RCRA section 4004(a), expressed repeatedly in the legislative history, were reducing waste and minimizing pollution to groundwater, surface water, and air from that waste. *See, e.g.*, H.R. REP. 94-1491, 37, 1976 U.S.C.C.A.N. 6238, 6275 (Sept. 9, 1976) (“the adverse impacts of open dumping include fire hazards; air pollution (including reduced visibility); explosive gas migration; [and] surface and ground water contamination”); H.R. REP. 94-1491, 38, 1976 U.S.C.C.A.N. 6238, 6276 (observing that “[o]ver 30 cases have been recorded where leachate from land disposal sites contaminated drinking-water wells” and describing those cases). Congress’ only discussion of cost in the section 4004(a) legislative history addresses the *cost savings* that protections against pollution would afford. *See* H.R. REP. 94-1491, 73, 1976 U.S.C.C.A.N. 6238, 6311-12 (noting the Committee’s finding that

“eliminating the source of underground water pollution appeared to be much more cost effective and less inflationary in the long term than the other available alternatives”).

This important difference between the two RCRA sections is also made plain by the history of the two provisions. RCRA § 4010(c), promulgated in 1984, directs EPA to “promulgate revisions of the criteria promulgated under section 6944(a)” for MSWLFs, but adds the clause allowing EPA to consider “the practicable capabilities of such facilities” in doing so. *Id.* If RCRA § 4004(a), promulgated in 1976, already allowed for consideration of “practicable capabilities” or costs, that added clause in RCRA § 4010(c) would be unnecessary and superfluous. EPA – as it must – recognizes this important difference.¹³⁶ In a brief to the D.C. Circuit Court of Appeals in the challenge to the 2015 CCR Rule, EPA explained:

[I]n establishing the requirements for municipal solid waste landfills, Congress expressly authorized EPA to consider “the practicable capability of such facilities.” 42 U.S.C. §6949a(c)(1). In contrast, here Congress directed EPA to provide that a facility is to be classified as a sanitary landfill, and therefore not as an open dump, “if there is no reasonable probability of adverse effects on health or the environment from disposal of solid waste at such facility,” 42 U.S.C. §6944(a), and to require the closure (or retrofitting) of any facility classified as an open dump. 42 U.S.C. §6945(a). On their face, these provisions do not allow for or even imply that costs must – or even can – be considered.

Id.

In enacting the WIIN Act, Congress did not alter the statutory standard applicable to CCR units. Nor did it otherwise authorize EPA to establish alternative standards that do not comport with section 4004(a).

2. *The MSWLF regulations were developed to, and do, take the practicable capability of MSWLFs into account.*

Throughout the MSWLF rulemaking, EPA made clear that the rule was based on the 4010(c) standard and considered the “practicable capability” of MSWLFs. *See, e.g.*, 53 Fed. Reg. 33,314 (explaining that “the provisions in today’s proposal are necessary for the protection of human health and the environment *and take into account the practicable capability of owners and operators of municipal solid waste landfills.*”) (emphasis added). EPA emphasized that its “primary goals in developing [the proposed MSWLF standards] were to develop standards that are protective of human health and the environment, *that are within the practicable capability of the regulated community*, and that provide State flexibility in implementation.” *Id.* at 33,323 (emphasis added).

¹³⁶ *See* Brief of Respondent Environmental Protection Agency, *Utility Solid Waste Activities v. EPA*, No. 15-1219, Doc. 1633777, at 60-61 (D.C. Sept. 6, 2016).

In proposing the MSWLF regulations, EPA interpreted the term “practicable capability” in section 4010(c) as follows:

The agency believes that practicable capability encompasses both technical and economic components. The technical component includes both the availability of technology for addressing a particular problem (i.e., technical feasibility), as well as the technical capability of the owner or operator to implement that technology. The economic component refers to the economic resources available to the owner or operator to implement the revised standards.¹³⁷

The final MSWLF Rule confirmed that section 4010(c) served as the statutory basis for the final MSWLF regulations and that the regulations accounted for “the practicable capability of owners and operators of MSWLFs,” including their “economic and technical capabilities.”¹³⁸ Because the MSWLF regulations reflect the RCRA section 4010(c) statutory standard and account for practicable capability, rather than the applicable, more-protective standard of RCRA section 4004(a), EPA’s proposal to apply them to CCR units is unlawful.

EPA acknowledges that the MSWLF regulations are based on RCRA’s section 4010(c) standard and that the section 4010(c) standard is materially different – and weaker – than the section 4004(a) standard that applies to CCR units. 83 Fed. Reg. at 11,597. EPA even admits that at least “some part 258 provisions may not fully support a determination that a particular provision meets the RCRA section 4004(a) standard or will be ‘at least as protective’ as EPA’s CCR regulations,” *id.*, and recognizes that “it does not have the discretion to include [consideration of ‘practicable capabilities’]” in developing regulations for CCR units. 83 Fed. Reg. at 35,207.¹³⁹

Yet EPA proposes to import several of the MSWLF regulations as the alternative standards for CCR units on the grounds that “[t]hese part 258 provisions in the MSWLF regulations were based solely on a finding that they would protect human health and the

¹³⁷ EPA, Proposed Solid Waste Disposal Facility Criteria, 53 Fed. Reg. 33,314, 33,325 (Aug. 30, 1988) (hereafter Proposed MSWLF Rule Preamble”); *see also id.* at 33,384 (“The cost and economic impact analyses also are a measure of the ‘practicable capability’ of facilities to comply with the proposed rule.”).

¹³⁸ *See* EPA, “Solid Waste Disposal Facility Criteria: Final Rule,” 56 Fed. Reg. 50,978, 50,985 (Oct. 9, 1991) (hereafter “MSWLF Final Rule Preamble”); *see also id.* at 50,978 (explaining that “consistent with the Agency’s interpretation of the statutory basis for today’s rule, EPA considered the practicable capability of owners and operators of MSWLFs”).

¹³⁹ EPA has not disavowed that statement or suggested that it can consider “practicable capability” (including costs, technical feasibility and related considerations) in setting standards for CCR units under section 4004(a). Such a position would be in conflict with the plain text of 4004(a), unreasonable, and arbitrary. But even if “practicable capability” could be considered here, it would be arbitrary and capricious for EPA to simply apply the MSWLF standards to CCR units because those standards are premised on the “practicable capability” of MSWLFs only. EPA cannot simply assume that CCRs – which, unlike MSWLFs, are not owned or operated by local governments with limited resources – have the same “practicable capability” as MSWLFs, and nothing in the record supports that assumption. In any event, EPA cannot base the final rule on any such interpretation without explaining its rationale and providing a new opportunity for public notice and comment.

environment, which” is the standard governing hazardous waste regulation under Subtitle C, and according to EPA in this rulemaking “is not appreciably different from the standard under RCRA section 4004(a).” *Id.* at 11,597 (citing 75 Fed. Reg. at 35,193). Based on that claim, EPA contends that the proposed “flexibilities” from the MSWLF regulations meet the applicable section 4004(a) standard. *Id.*

EPA’s contention is completely unsupported. For it, EPA cites just one page from the preamble to the 2010 Proposed CCR rule that, contrary to EPA’s contention, does not state, much less demonstrate, that the MSWLF requirements EPA proposes to apply to CCR units here were based “solely on a finding that they would protect human health and the environment.” In any event, EPA’s reliance on its 2010 description of the MSWLF rule, rather than the actual discussion supporting the MSWLF rule – which, as discussed above, clearly shows that it was based on section 4010(c) and considerations of practicable capability – is arbitrary. *Cablevision Sys. Corp. v. F.C.C.*, 597 F.3d 1306, 1310-11 (D.C. Cir. 2010) (action is arbitrary where agency “offered an explanation for its decision that runs counter to the evidence before the agency”).

Indeed, in issuing the MSWLF rule, EPA never stated that any of the rule’s requirements were “based solely on a finding that they would protect human health and the environment” in accordance with Subtitle C. To the contrary, the rulemaking shows that EPA specifically considered applying that Subtitle C standard but rejected the option because doing so was significantly more expensive (four times more) than the section 4010(c) approach it selected and was “beyond the bounds of ‘practicable capability.’” 56 Fed. Reg. at 50,978. As EPA explained:

[I]n evaluating and selecting the regulatory approach for [the final MSWLF rule], EPA attempted to strike the most appropriate balance between considerations of human health and environmental protection *and practicable capability*. EPA gathered and analyzed available information on the health and environmental benefits *and the cost and economic impacts* of the various options.

Id. (emphases added). *See also id.* at 50,984 (explaining that the final MSWLF rule “addresses all of the categories of control included in the subtitle c option, but is less stringent and, therefore, more flexible in several respects . . .”). The practicable capability of MSWLF owners and operators is thus reflected throughout the entire rule, including the provisions EPA now proposes to import from the MSWLF rule into CCR regulations. *See, e.g., id.* at 51,061 (explaining that, because EPA found that requiring groundwater monitoring in hydrogeologic settings that preclude migration of contaminants “*would place an additional financial burden on owners and operators* and would provide little or no additional protection to human health and the environment,” EPA would allow suspension of groundwater monitoring where the owner/operator demonstrated no potential for migration of pollutants from MSWLFs) (emphasis added); *id.* at 56,108 (noting that “the technical and economic resources of MSWLF owners and operators is limited in many cases,” and “providing flexibility on the boundary designation for ground-water monitoring can in some cases serve to reduce costs by

allowing the owner or operator to take advantage of a limited dilution and treatment zone in the ground water,” EPA allowed the point of compliance to be set “at a point beyond the [MSWLF] waste unit boundary.”); *see also id.* at 50,990 (explaining that the rule’s provision allowing states with approved programs to “shorten the MSWLF post-closure care period” helps address the resource concerns of small MSWLFs).

Even if EPA were correct (which it is not) that the provisions it proposes to import from the MSWLF rules were “based solely on a finding that they would protect human health and the environment,” 83 Fed. Reg. at 11,591, a finding that those standards sufficed to protect human health and the environment from MSWLFs does not establish that those standards ensure “no reasonable probability of adverse effects on health or the environment” from CCR units. As discussed in great detail herein, CCR units have significantly different characteristics and present significantly different risks than MSWLFs, the vast majority of which were not considered in EPA’s 1991 review of risks posed by MSWLFs. *See, e.g.,* Section B below. To simply assume, as EPA has, that the MSWLF regulations would be sufficiently protective as applied to CCR units defies 4004(a) and is arbitrary and capricious.

In summary, because the MSWLF regulations – including the very provisions EPA now proposes to apply to CCR units – reflect the RCRA section 4010(c) statutory standard and account for practicable capability, including technical feasibility and costs, rather than the applicable, more-protective standard of RCRA section 4004(a), EPA’s proposal to apply them to CCR units is unlawful.

B. THE RULEMAKING RECORD FOR MSWLFs DOES NOT SUPPORT REGULATING CCR UNITS IN THE SAME MANNER AS MSWLFs.

EPA’s proposal to revise the regulations governing CCR units based largely on MSWLF regulations, as well as the rulemaking record for those part 258 regulations, is arbitrary and capricious. EPA largely relies on the rulemaking record for the MSWLF regulations set out at 40 C.F.R. part 258, and the part 258 regulations themselves, to purportedly justify a number of changes it proposes to the 2015 CCR Rule. *See* 83 Fed. Reg. at 11,587 (stating that the changes associated with the WIIN Act “are based in large measure on the established record supporting the longstanding regulations for Municipal Solid Waste Landfills codified at 40 CFR part 258”); 83 Fed. Reg. 11,597 (“EPA evaluated whether there was sufficient evidence in the record for those [40 C.F.R. part 258] regulations to support incorporating either the part 258 MSWLF provision or an analogue into the part 257 CCR regulations.”). EPA’s proposed reliance on the MSWLF rulemaking record is unjustified by the facts and unsupported by the record.

First, MSWLFs have significantly different characteristics than CCR units and present substantially different risks than those units. Second, the proffered justifications for regulatory flexibility for MSWLFs do not apply to CCR units. Third, the risk analysis that EPA relied on in determining appropriate regulations for MSWLFs does not support regulating CCRs in the same manner as MSWLFs.

EPA's flippant notion that it can simply reference a 27-year-old rulemaking concerning very different solid waste disposal units to justify adding "flexibilities" to standards governing CCR units flies in the face of section 4004(a)'s standard and is arbitrary. In promulgating the 2015 CCR Rule, EPA conducted extensive research on the risks posed by CCR units and the damage they have already caused to Americans' health and environment. This effort was substantially aided by affected communities, states, hydrogeologists, professional engineers, environmental groups and many others, over the course of many years. That research revealed devastating harm to communities living near CCR units and the aquatic life, wildlife, and water resources near them. EPA appropriately recognized, following that research, that CCR units pose a very real and urgent threat to human health and the environment and must be subject to stringent protections to mitigate those threats:

EPA's damage cases and risk assessments indicate there is significant potential for CCR landfills and CCR surface impoundments to leach hazardous constituents into groundwater, impair drinking water supplies and cause adverse impacts on human health and the environment. Indeed, groundwater contamination is one of the key environmental and human health risks EPA has identified with CCR landfills and CCR surface impoundments. ... [I]n order for a CCR landfill or CCR surface impoundment to show no reasonable probability of adverse effects on health or the environment, a system of routine groundwater monitoring to detect any contamination from a CCR unit, and corrective action requirements to address identified contamination, are essential.

CCR Final Rule Preamble, 80 Fed. Reg. at 21,396; *see also id.* at 21,452 ("[T]he number of damage cases collected for this rulemaking (157) is by far the largest number of documented cases in the history of the RCRA program."). Nothing in the part 258 rulemaking record for MSWLFs changes those conclusions or justifies any weakening of national protections needed to mitigate the severe threats CCR units pose. EPA's proposal to rely on it is arbitrary, capricious, and contrary to law.

1. The risks posed by MSWLFs and CCR units are very different.

Comparing MSWLFs to CCR units is like comparing apples and oranges: the disposal units have significantly different characteristics, which have great bearing on risks they pose. These critical distinctions render regulating CCR units on the basis of the rulemaking record for MSWLFs arbitrary and capricious.

a. CCR units include many surface impoundments, while waste management units for municipal solid wastes are all landfills.

The first key distinction is that CCR surface impoundments are water-and-CCR-filled lagoons, whereas MSWLFs are, by definition, landfills. Often, enormous quantities of CCR are disposed in vast, usually unlined, water-filled impoundments.¹⁴⁰ In the

¹⁴⁰ Sahu Expert Report.

preamble to the 2015 CCR rule, EPA noted that in 2012, CCR was disposed in “over 735 active on-site surface impoundments, averaging over 50 acres in size with an average depth of 20 feet.” EPA, Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule, 80 Fed. Reg. 21,302, 21,303 (Apr. 17, 2015) (“2015 CCR Rule Preamble”). At least one quarter of impoundments exceeded that average size, with some CCR impoundments expanding over hundreds of acres. 2015 CCR Rule Preamble, 80 Fed. Reg. at 21,420. Of the 1033 total CCR units counted by EPA for this rulemaking, 747 of them – 72% – are CCR surface impoundments.¹⁴¹ MSWLFs, on the other hand, are landfills, not liquid-filled impoundments.

The distinction creates vast differences in terms of risk. As EPA has explained repeatedly – including in the preamble to the 2018 Proposal commented on herein – the water in surface impoundments creates a “hydraulic head” that force pollutants down into groundwater with much greater force than occurs in landfills such as MSWLFs. *See, e.g.*, 83 Fed. Reg. at 11,601 (“The part 258 regulations apply only to landfills, while the CCR regulations apply to both landfills and surface impoundments, the latter being of particular concern. *Surface impoundments by their very nature pose a potential for releases to groundwater that is different than landfills* (e.g., presence of a hydraulic head) that may impact the importance of source control for these types of units.”) (emphasis added); 2015 CCR Rule Preamble, 80 Fed. Reg. at 21,357 (explaining that “large quantities of CCR impounded with water under a hydraulic head . . . gives rise to the conditions that both promote the leaching of contaminants from the CCR and are responsible for the static and dynamic loadings that create the potential for structural instability.”); *id.* at 21,342 (“EPA’s risk assessment shows that the highest risks are associated with CCR surface impoundments due to the hydraulic head imposed by impounded water.”); 2010 Proposed CCR Rule Preamble, 75 Fed. Reg. at 35,154 (“[I]n the case of surface impoundments, the CCRs are managed with water, under a hydraulic head, which promotes more rapid leaching of contaminants into neighboring groundwater than do landfills.”).

EPA elaborated on this distinction in the preamble to the 2015 CCR Rule, pointing to evidence showing that CCR surface impoundments cause greater damage than landfills:

Unlike landfills, CCR surface impoundments contain slurried residuals that remain in contact with ponded waters until closure. In a statewide investigation of impacts to groundwater quality from CCR disposal sites, the Wisconsin Department of Natural Resources reported that closed sites which originally contained sluiced coal combustion residuals displayed extremely elevated mean arsenic levels (as high as 364 mg/l). The highest contaminant concentrations in the study were associated with sluiced CCR

¹⁴¹ According to the RIA, there are a total of 1033 on-site CCR landfills and surface impoundments subject to the CCR Rule, including 286 on-site CCR landfills, 117 on-site CCR disposal surface impoundments, 519 on-site CCR storage impoundments, and 111 on-site inactive CCR disposal impoundments. 2018 RIA at 2-1 and 4-9.

residuals. In addition, releases of toxic contaminants to surface water and groundwater from mostly unlined CCR surface impoundments and ponds are a relevant factor in 34 of 40 cases of proven damage to the environment (as well as in several cases of “potential” damage to the environment) from mismanagement of CCR. In many of these cases, effluent discharges from the surface impoundments caused significant ecological damage to aquatic life in nearby streams and wetlands

80 Fed. Reg. at 21,360-61.¹⁴² In short, the fact that CCR surface impoundments contain large quantities of CCR and wastewater changes the nature of the risk posed by these units. Consequently, these units pose risks that are both different and greater than MSWLFs. Relying on the rulemaking record for MSWLFs to regulate CCR impoundments, without additional fully supported reasoning and documentation as to why doing so is justified or satisfies the section 4004(a) protectiveness standard, is arbitrary and capricious.

b. CCR units are often larger and hold more solid waste than MSWLFs.

While the differences between CCR surface impoundments and MSWLFs are stark, there are also important differences between the MSWLFs EPA designed part 258 to regulate and CCR landfills¹⁴³ that render application of the MSWLF regulations to CCR landfills inappropriate. According to EPA, in 2012, CCR was disposed in “over 310 active on-site landfills, averaging over 120 acres in size with an average depth of over 40 feet.” 80 Fed. Reg. at 21,303.¹⁴⁴ The MSWLFs regulated by EPA when it promulgated 40 C.F.R. part 258 in 1991, in contrast, were far more numerous (over 6,000 at that time, by EPA’s estimate), and a majority of them (over 68 percent) were smaller than 50 acres. 56 Fed. Reg. at 50,986, 50,988.

The concentration of CCR in considerably fewer and larger landfills creates different risks than the thousands of small MSWLFs that EPA’s 1991 MSWLF rule was promulgated to regulate in 40 C.F.R. part 258. In EPA’s own words, “[t]he risks associated with the disposal of CCR stems from the specific nature of that activity; that is, the disposal of CCR in (often unlined) landfills or surface impoundments, with thousands, if not millions, of tons placed in a single concentrated location.” 80 Fed. Reg. at 21,327-28; *see also* EPA, Regulatory Impact Analysis for the Final Criteria for Municipal Solid Waste Landfills, at 17 (Dec. 1990) (hereinafter “MSWLF RIA”)

¹⁴² Consistent with this distinction, in the 2015 CCR Rule, EPA looked to, and adopted, closure and post-closure regulatory requirements for CCR surface impoundments not from the MSWLF regulations at 40 C.F.R. part 258, but rather from provisions governing “interim status hazardous waste surface impoundments,” codified at 40 C.F.R. part 265, and provisions applicable to “water, sediment, or slurry impoundments and impounding structures that are regulated by the MSHA,” codified at 30 C.F.R. Part 77, subpart C. 80 Fed. Reg. at 21,409-10.

¹⁴³ Commenters note that the universe of MSWLFs in 1991, at the time of rulemaking, may not reflect the universe of MSWLFs in 2018, 27 years after 40 C.F.R. Part 258 was promulgated.

¹⁴⁴ EPA’s more recent tally, included in the RIA for this rulemaking, found 286 on-site CCR landfills. 2018 RIA at 2-1 and 4-9.

(attached) (showing that there were very few large MSWLFs). As such, the rulemaking record for MSWLFs does not justify regulating CCR landfills – much less CCR surface impoundments – the same as MSWLFs.

**c. CCR units are often located adjacent to surface waters.
MSWLFs are not.**

Most CCR units are located adjacent to surface waters.¹⁴⁵ This proximity creates significant risk of harm from CCR units to those bodies of water, and the people and aquatic life that use them.

Fish and other aquatic life are particularly susceptible to harm from the metals contained in CCR and have already been harmed by CCR pollution on numerous occasions. In the preamble to the 2015 CCR Rule, EPA observed that “[d]amage cases impacting surface water that have also a documented ecologic impact comprise the largest subset of proven damage cases (over 40 percent).” 80 Fed. Reg. at 21,456. *See also* EPA Damage Cases; 2010 Proposed CCR Rule preamble, 75 Fed. Reg. at 35,171 (“For scenarios where species were exposed to constituents that had migrated from the groundwater to surface water and sediment, ecological risk exceedances were found for lead, selenium, arsenic, barium, antimony, and cadmium at the 90th percentile....”); Risk Assessment to 2015 Rule. Selenium pollution from CCR into surface waters is of grave concern for aquatic life:

Damage cases impacting surface water that have also a documented ecologic impact comprise the largest subset of proven damage cases (over 40 percent). The most prevalent COC here is selenium, the bioaccumulative effects of which have caused abnormal mortality rates and sublethal effects such as histopathological changes and damage to reproductive and developmental success, adversely impacting aquatic populations and communities of fish and amphibians.

80 Fed. Reg. at 21,456; EPA Damage Cases; Lemly, *An urgent need for an EPA standard for disposal of coal ash*, *Environmental Pollution* 191: 253-55 (2014) (attached); Vengosh, et al., *The Impact of Coal Combustion Residue Effluent on Water Resources: A North Carolina Example*, *Environmental Science and Technology* (2012) (attached); Rowe, et al., *Ecotoxicological Implications of Aquatic Disposal of Coal Combustion Residues in the United States: A Review*, *Environmental Monitoring and Assessment* 80: 207-76 (2002) (attached); National Research Council of the National Academies, *Managing Coal Combustion Residues in Mines* (2006) (attached).

¹⁴⁵ *See* 2015 CCR Rule Preamble, 80 Fed. Reg. at 21,451 (“It is common for coal-fired utilities to be located near water bodies, which are used as a source of cooling water and conveyance of waste.”); 2010 Proposed CCR Rule preamble, 75 Fed. Reg. at 35,133 (“A common industry practice . . . is to place surface impoundments right next to water bodies.”); Sahu Expert Report (explaining how the proximity of most CCR units to surface waters, which means many of those units are in floodplains, creates risks not present for most MSWLFs).

CCR units also pose serious threats to people who use or live near surface waters adjacent to CCR units. One key mechanism by which CCR contamination of surface water bodies threatens human health is via consumption of CCR-contaminated fish. EPA conducted a “screening analysis” of the impacts of CCR pollution and found that “[r]isks to human health resulted from ingestion of . . . fish” 80 Fed. Reg. at 21,450. EPA’s peer-reviewed risk assessment concerning potential human health risks via consumption of CCR-contaminated fish found that eating such contaminated fish could create “excess” cancer risk stemming from arsenic.¹⁴⁶ Selenium from CCR units may, as EPA noted, also pose a risk to health: “EPA has documented numerous damage cases where selenium in CCR wastewater discharge into surface waters triggered the issuance of fish-consumption advisories as well as selenium MCL exceedances in groundwater, suggesting that selenium concentrations in CCR wastewater constitute a human health risk.” 2015 CCR Rule Preamble, 80 Fed. Reg. at 21,456, n.212.¹⁴⁷

Another mechanism by which CCR units pose serious threats to human and aquatic life living in or near adjacent surface water bodies is via catastrophic collapse of CCR impoundments. EPA has concluded that catastrophic failures of CCR impoundments create “a great potential for loss of human life and environmental damage,” 80 Fed. Reg. at 21,327, highlighting the devastating failure of the coal ash impoundment at the Tennessee Valley Authority (TVA) Kingston Plant in Tennessee in December 2008, in which “over one billion gallons of coal ash slurry were released, affecting more than 300 acres, including residences and infrastructure.” 80 Fed. Reg. at 21,313; *see also* 75 Fed. Reg. at 35,149-50 (“Recent events also have demonstrated that, if not properly controlled, [CCR] wastes have caused greater damage to human health and the environment than EPA originally estimated [The impoundment collapse at the Kingston plant] disrupted power, ruptured a gas line, knocked one home off its foundation and damaged others.”).

MSWLFs, in contrast, are “distributed throughout the country, occurring in virtually every hydrogeologic setting” 53 Fed. Reg. at 33,318. Unlike coal-fired power plants, they do not require immense quantities of water for cooling, and thus need not be located adjacent to large water bodies, as so many CCR units are. As such, contamination of surface water from MSWLFs is not as great a concern relative to CCR units and was not of heightened concern to EPA when it adopted the 40 C.F.R. Part 258 regulations. EPA, in fact, neglected to evaluate the impacts to surface water in assessing the benefits of regulating MSWLFs.¹⁴⁸ In addition, MSWLFs generally do not pose a

¹⁴⁶ *See* 75 Fed. Reg. at 35,167, 35,171; Risk Assessment for 2015 Rule; *see also* EPA, Environmental Assessment for the Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category, Docket ID No. EPA-HQ-OW-2009-0819-6427, Sections 3 and 4 (Sept. 2015) (attached).

¹⁴⁷ *See* Damage Cases, Volume I at 11-13 (noting that the cooling lake adjacent to Duke Energy’s Gibson coal plant in Indiana, “formerly [] used by the public for fishing, . . . was closed to the public due to concerns about the high levels of selenium.”); *id.* at 154-55 (noting that “no hunting” signs were posted near the coal ash pond at the DOE Oak Ridge Y-12 plant “[b]ecause of concerns about human health” when fish in a quarry into which CCR was disposed had high rates of deformity and selenium levels that “equaled or exceeded consumption restriction advisory levels”).

¹⁴⁸ *See* MSWLF RIA.

threat of catastrophic collapse, and since they contain far less liquid, a large spill from a MSWLF would be rare.

In short, most CCR units are adjacent to surface water bodies and present a significant risk of harm to both human health and the environment stemming from that proximity. MSWLFs, in contrast, are often more distant from surface water bodies and thus pose lower risks to surface water bodies; moreover, EPA never evaluated what, if any, risks MSWLFs may pose to surface water bodies in adopting the 40 C.F.R. Part 258 regulations. Accordingly, it is arbitrary and capricious for EPA to regulate CCR units based on the rulemaking record for MSWLF regulations at 40 C.F.R. Part 258.

d. Many CCR units are dug below the water table.

Many CCR units are dug into and saturated in groundwater.¹⁴⁹ Most MSWLFs, in contrast, are not.¹⁵⁰ The closer the waste unit is to the groundwater, the faster contaminants will enter that groundwater, and the less likelihood that contaminants will degrade before entering the groundwater.¹⁵¹ Waste units that are saturated in groundwater thus present greater risks to groundwater – and to any surface waters that the groundwater may be hydrologically connected to – than waste units that are well above the water table.¹⁵² Because many CCR units are located in or very close to the water table, those CCR units present different risks to human health and the environment than MSWLFs that are not in close proximity to groundwater. It is, therefore, arbitrary and capricious for EPA to regulate CCR units, which are known to be in contact with the water table, based on the rulemaking record for MSWLF regulations, which were assumed not to be in contact with or in close proximity to groundwater.¹⁵³

e. CCR contaminants persist for centuries in the environment, while many contaminants in MSWLF biodegrade.

The metals contained within CCR do not degrade in the environment as many contaminants contained in MSWLFs do, creating risks to health and the environment that persist in the environment for centuries. In EPA's words, "the toxic constituents for CCRs are all toxic metals – antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, nickel, selenium, silver and thallium, which do not decompose or degrade with the passage of time. Thus, these toxic metals will persist in the environment for very long periods of time, and if they escape from the disposal site, will continue to

¹⁴⁹ See, e.g., Risk Assessment for 2015 Rule at 5-10 ("it is known from reported damage cases that some CCR WMUs come in direct contact with the water table for at least part of the year.").

¹⁵⁰ See Sahu Expert Report; see also MSWLF RIA at VI-14 (explaining that EPA determined the mean depth to groundwater from MSWLFs via a "statistical analysis of US Geological Survey (USGS) data," and setting the shallowest groundwater table at 15 feet below the surface);

¹⁵¹ See, e.g., MSWLF RIA at VI-14 ("[T]he depth to ground water determines the thickness of the unsaturated zone, an area in which significant pollutant retardation and degradation may occur"); Sahu Expert Report.

¹⁵² See, e.g., MSWLF RIA at VI-14; Sahu Expert Report.

¹⁵³ See Sahu Expert Report.

provide a potential source of long-term contamination.” 2010 Proposed CCR Rule Preamble, 75 Fed. Reg. at 35,169.

The contaminants in MSWLFs paint a very different picture. As hydrogeologist Mark Hutson explains in his attached report:

An important point of distinction between CCR and MSWLF closure sites is that more than 50% of MSWL landfilled waste is composed of biodegradable materials (Barlaz et al., 2010). Biodegradation and decomposition of the organic materials the MSWL materials are typically able to reduce the volume of remaining waste and the potential for release of contaminants into groundwater is much reduced (Kjeldsen et al., 2010). Unlike municipal solid waste, inorganic CCR does not biodegrade. CCR waste that is Capped-In-Place will remain in the unit and be capable of leaching contaminants into the groundwater at any time in the distant future that any type of cap begins to leak.¹⁵⁴

Moreover, the relatively few contaminants that are found in both MSWLF and CCR leachate act differently in the environment. The organic contaminants contained in MSWLFs impact the fate and transport of metals leaching out of those units, while CCR units do not contain organics, and thus the fate and transport of metals in CCR leachate are not similarly impacted. As explained in the Expert Report of Ranajit Sahu, the compositional difference between CCR leachate, which is “mainly metals,” and MSW leachate, which “includes substantial quantities of organic compounds,” “has implications for the local chemistry . . . such as differences in local pH, which can affect the partitioning of pollutants across valance states (such as arsenic or chromium) and leaching characteristics.”¹⁵⁵

In short, the persistent nature of CCR contaminants, and the different fate and transport of metals in CCR leachate versus MSWLF leachate, lead to CCR units posing different and longer-term risks to human health and the environment than do MSWLFs. Thus, the rulemaking record for MSWLFs does not support regulating CCR units similarly to MSWLFs. EPA’s reliance on that rulemaking record renders the 2018 Proposal arbitrary and capricious.

2. *The justifications offered for regulatory flexibility for MSWLFs do not apply to CCR units.*

The justifications offered for regulatory flexibility for MSWLFs at the time of adoption of the 40 C.F.R. Part 258 regulations are simply not applicable to CCR units today. In the preamble to the final 40 C.F.R. part 258 regulations, EPA asserted that the nation found itself “in the midst of a municipal solid waste disposal crisis,” in which production of waste was expected to greatly increase while capacity of MSWLFs decreased, as many existing MSWLFs reached capacity and new ones were slow to

¹⁵⁴ Hutson Expert Report.

¹⁵⁵ Sahu Expert Report.

open.¹⁵⁶ EPA found that eighty percent of MSWLFs were owned by local governments, and asserted that local governments faced many competing demands for limited funds, leaving them with little ability to address the municipal solid waste disposal crisis.¹⁵⁷ The majority of CCR units, in contrast, are owned by utilities or private corporations which cannot claim to face the same type of competing demands on their more-ample budgets than EPA concluded local governments faced.¹⁵⁸ To the extent there are any concerns about disposal capacity for CCR, those concerns have already been addressed in the 2015 CCR Rule;¹⁵⁹ the record does not justify any further accommodations.

In addition, at the time of the part 258 rulemaking, EPA forecasted that the toxicity of pollution from MSWLF units was likely to decrease. In the Preamble to Final MSWLF Rule, EPA explained:

Furthermore, the Agency has many reasons to believe that the quality of the leachate from MSWLFs will improve over time. Increasingly, communities are instituting household hazardous waste programs and removing toxics from waste prior to its disposal in a municipal landfill. In addition, the Agency expects there to be positive changes in leachate resulting from the 1986 lowering of the cut-off levels for small quantity generator waste and the addition of new RCRA hazardous waste listings and characteristics. The former would reduce the amount of small quantity generator hazardous waste that may be disposed of in MSWLFs while the latter would divert waste currently disposed of at subtitle D facilities to subtitle C facilities. Each of these measures should reduce both the number and the concentration of toxic constituents present in landfill leachates.

56 Fed. Reg. at 50,982. In contrast, as EPA is well aware, the toxicity of CCR is increasing as air pollution control technologies add more contaminants, including mercury, to CCR waste streams, and make metals in the ash more leachable.¹⁶⁰ Thus, another justification EPA relied on in adopting the standards for MSWLFs – specifically, the decrease in toxicity of MSWLFs that EPA forecasted when promulgating those

¹⁵⁶ MSWLF Final Rule Preamble, 56 Fed. Reg. at 50,980.

¹⁵⁷ *Id.*; see also EPA, Solid Waste Disposal Facility Criteria: Proposed Rule, 53 Fed. Reg. 33,314, 33,318-19 (Aug. 30, 1988) (hereafter “MSWLF Proposed Rule Preamble”).

¹⁵⁸ Moreover, as discussed herein and as EPA explained in its brief to the D.C. Circuit, see Final Brief of Respondent Environmental Protection Agency, *Utility Solid Waste Activities v. EPA*, No. 15-1219, Doc. 1633777, at 60-61 (D.C. Cir. Sept. 6, 2016), RCRA section 4004(a) does not allow for consideration of costs. Thus, even if utilities would experience economic hardship due to regulation of CCR units, that hardship – unlike hardships to MSWLF owners – could not be considered in developing the regulations.

¹⁵⁹ See CCR Final Rule Preamble, 80 Fed. Reg. at 21,423 (explaining that EPA was modifying closure requirements where there is a demonstrated absence of alternative disposal capacity); *id.* at 21,361 (explaining that EPA declined to apply certain location restrictions on existing landfills because “disposal capacity shortfalls . . . could result if existing CCR landfills in these locations were required to close . . .”).

¹⁶⁰ See, e.g., Susan A. Thornehoe, EPA, et al., *Evaluating the Fate of Metals in Air Pollution Control Residues from Coal-Fired Power Plants*, 44 *Envtl. Sci. Technol.* 7,351, 7,351 (Aug. 31, 2010) (attached), available at <http://pubs.acs.org/doi/pdfplus/10.1021/es1016558>; Ranajit Sahu, *Technical Report on Dry Sorbent Injection (DSI) and Its Applicability to TVA's Shawnee Fossil Plant (SHF)* (April 2013) (attached), at, e.g., 16, available at http://www.cleanenergy.org/wp-content/uploads/Final_Sahu_DSI_Report.pdf.

standards – is simply not present for CCR. Rather, the increasing toxicity of CCR indicates that more stringent standards are necessary, not less. The rulemaking record for the part 258 regulations governing MSWLFs does not support adopting similar alternative standards for CCR units.

In sum, the justifications offered for regulatory flexibility for MSWLFs at the time of adoption of the 40 C.F.R. Part 258 regulations are simply not applicable to CCR units today. Thus, it would be arbitrary and capricious for EPA to afford the same flexibilities to CCR units that it did for MSWLFs.

3. *The 1991 risk analysis conducted for the part 258 regulations does not support regulating CCR units in the same manner as MSWLFs.*

As explained in the Expert Report of Ranajit Sahu,¹⁶¹ the 1991 risk analysis that EPA relied on in promulgating the 40 C.F.R. Part 258 regulations for MSWLFs does not support regulating CCRs in the same manner as MSWLFs. The 1991 MSWLF risk analysis, which EPA termed a “benefits analysis,” was extremely narrow: the *only* impact it evaluated was risk to human health from drinking MSWLF-contaminated groundwater, and only if drinking water wells were within one mile of the MSWLF.¹⁶²

The “benefits” analysis for MSWLFs entirely failed to evaluate numerous risks to human health and the environment that CCR poses. EPA did not evaluate:¹⁶³

- Any risks to health or the environment stemming from contamination of surface water bodies;
- Any risks to aquatic life and wildlife, including threatened or endangered species;
- Any risks related to the waste unit being located in a floodplain;
- Any risks to human health from inhalation;
- Any risks to human health due to dermal exposure to waste or contaminated water;
- Any risks to human health or the environment from consuming contaminated fish, plants or other animals;
- Any risks to human health stemming from all contaminants contained in CCR that are not found in MSWLFs;
- Any risks to humans that are not adults;
- Any risks to human health or the environment that continue beyond 300 years.¹⁶⁴

¹⁶¹ Sahu Expert Report.

¹⁶² See 56 Fed. Reg. at 50,985 (“There are several limitations to the benefits analysis that should be recognized. Only benefits concerning ground-water contamination are considered—benefits from increased protection of surface water and air are not included.”); MSWLF RIA, at, *e.g.*, 17-19, 31, 36-37.

¹⁶³ See *id.*

¹⁶⁴ EPA’s benefit analysis for MSWLFs only analyzed “benefits” within 300 years; “benefits beyond 300 years are . . . not included.” 56 Fed. Reg. at 50,985. Setting aside whether this timeline is or is not appropriate for MSWLFs, limiting the time horizon to 300 years will not capture long-term risks of CCR pollution, which persists for centuries. See Hutson Expert Report; RIA for 2015 Rule at Tables 5-25 and 5-26.

Id. For CCR units, those risks are substantial, as discussed herein and as EPA's own evaluations have shown.¹⁶⁵

One critical set of risks that EPA did not address in the MSWLF rulemaking were risks to aquatic life and wildlife from surface impoundments. Those risks are significant. In the preamble to the 2010 Proposed CCR Rule, EPA explained:

Where species were directly exposed to [CCR] surface impoundments, the risk assessment found ecological risks due to selenium, silver, nickel, chromium, arsenic, cadmium, barium, lead, and mercury. . . . EPA's risk assessment . . . show elevated selenium levels in migratory birds, and elevated contaminant levels in mammals as a result of environmental uptake, fish deformities, and inhibited fish reproductive capacity. Because of the large size of these [surface impoundments], many being 100's of acres to one that is about 2,600 acres, receptors can often inhabit these waste management units.

EPA went on to cite numerous "references in the peer-reviewed scientific literature specific to CCRs managed in surface impoundments that confirm the 1998 risk assessment results and provide additional pertinent information of potential ecological damage." *Id.* at 35,171-72.¹⁶⁶

¹⁶⁵ See, e.g., 80 Fed. Reg. at 21,456 (observing that "[d]amage cases impacting surface water that have also a documented ecologic impact comprise the largest subset of proven damage cases (over 40 percent)."); *id.* at 21450 (EPA's screening analysis indicated that "[r]isks to human health resulted from ingestion of . . . fish . . ."); *id.* at 21,451 ("Risks to ecological receptors were identified from exposures to aluminum, . . . barium, beryllium, boron, cadmium, chloride, chromium, selenium and vanadium through direct exposure to impoundment wastewater. Risks to residential receptors were identified primarily from exposures to arsenic, lithium, and molybdenum in groundwater used as a source of drinking water, but additional risks from boron, cadmium, cobalt, fluoride, mercury and thallium were identified for specific subsets of national disposal practices."); 75 Fed. Reg. at 35,171 ("Air inhalation exposures [to CCR] may cause adverse human health effects, either due to inhalation of small-diameter (less than 10 microns) 'respirable' particulate matter that causes adverse effects . . . , which particles are associated with a host of cardio and pulmonary mortality and morbidity effects."); Screening Analysis in 2010 Proposed CCR Rule; "U.S. EPA 2010b" from 2010 Proposed CCR Rule, evaluating health impacts from breathing in CCR; EPA Damage Cases; Risk Assessment for 2015 Rule.

¹⁶⁶ The peer-reviewed scientific literature EPA cites includes, inter alia, Hopkins, et al., Reproduction, Embryonic Development, and Maternal Transfer of Contaminants in the Amphibian *Gastrophryne carolinensis*, *Environmental Health Perspectives*, Vol. 114 (5): 661-66 (May 2006) (attached); Rowe, et al., Ecotoxicological Implications of Aquatic Disposal of Coal Combustion Residues in the United States: A Review, *Environmental Monitoring and Assessment* 80: 207-76 (2002) (attached); Benson, et al. Heavy Metal Tolerance and Metallothionein Induction in Fathead Minnows: Results from Field and Laboratory Investigations, *Environmental Toxicology and Chemistry*, Vol. 4, 209-17 (1985) (attached); Coutant, et al., Chemistry and biological hazard of a coal ash seepage stream, *Journal WPCF*, 747-53 (Apr. 1978) (attached); Rowe, et al., Failed Recruitment of Southern Toads (*Bufo terrestris*) in a Trace Element-Contaminated Breeding Habitat: Direct and Indirect Effects That May Lead to a Local Population Sink, *Arch. Environ. Contam. Toxicol.* 40, 399-405 (2001) (attached); Lemly, Guidelines for Evaluating Selenium Data from Aquatic Monitoring and Assessment Studies, *Environmental Monitoring and Assessment* 28: 83-100 (1993) (attached); Sorensen, et al., Selenium Accumulation and Cytotoxicity in Teleosts Following Chronic, Environmental Exposure, *Bull. Environm. Contam. Toxicol.* 29, 688-96 (1982) (attached); and Sorensen, Selenium accumulation, reproductive status, and histopathological

The MSWLF benefits analysis did evaluate risk from two contaminants that are also present in CCR units, arsenic and antimony, but that analysis does not support a finding that the risks found from MSWLFs for those contaminants equal the risks they pose when leached from CCR units. The MSWLF benefits analysis evaluated factors specific to MSWLFs, taking into account, among other things, the leachate concentrations from MSWLFs, the fate and transport of contaminants from MSWLFs, and the location of MSWLFs.¹⁶⁷ Those factors are all different for CCR units. EPA's own analyses show the concentration of arsenic to be nearly 40 times higher in CCR leachate than in MSWLF leachate.¹⁶⁸ The transport of arsenic within the environment changes in the presence of organic chemicals,¹⁶⁹ which are present in MSWLF leachate but generally not CCR leachate.¹⁷⁰ And the MSWLF benefits analysis assumed all modeled MSWLFs were at least 15 feet above the water table,¹⁷¹ whereas many CCR units are dug into and saturated in groundwater,¹⁷² meaning contaminants from CCR units travel much less distance and time than those in MSWLFs before contaminating aquifers.

The MSWLF benefits analysis further fails to reflect the risks posed to human health by CCR units because it assumed adult-only exposure to MSWLF contamination and assessed risks solely from new MSWLFs.¹⁷³ Much of the risk from CCR is borne disproportionately by infants and children.¹⁷⁴ And as EPA discussed in detail in the 2015 CCR Rule Preamble, many CCR units are decades old,¹⁷⁵ and those units generally pose greater risks than new CCR units.¹⁷⁶ Thus, the 1991 MSWLF benefits analysis is an exceedingly poor match for estimating the types and magnitude of harm that CCR units

changes in environmentally exposed redear sunfish, Arch. Toxicol. 61: 324-29 (1988) (attached)). 53 Fed. Reg. at 35,171-72.

¹⁶⁷ See MSWLF RIA.

¹⁶⁸ See Risk Assessment for 2015 Rule at 3-3 and 4-5 (showing 90th percentile arsenic concentrations in CCR leachate at 0.78 mg/L); MSWLF RIA at VI-19 (stating that arsenic concentrations in MSWLF leachate are 0.02 mg/L (90th percentile)).

¹⁶⁹ Sahu Expert Report at 3.

¹⁷⁰ See, e.g., Sahu Expert Report at 3.

¹⁷¹ See MSWLF RIA at VI-14.

¹⁷² See, e.g., Risk Assessment for 2015 Rule at 5-10 ("it is known from reported damage cases that some CCR WMUs come in direct contact with the water table for at least part of the year."); Sahu Expert Report at 9-10.

¹⁷³ See MSWLF RIA at 17 and VI-4.

¹⁷⁴ See, e.g., Risk Assessment for 2015 Rule at 4-16 ("For drinking water ingestion, the highest cancer risks were for adults (Ages > 21 years), while the highest noncancer risks were for infants (Age < 1 year). For fish ingestion, the highest cancer and noncancer risks were for children (Ages 1 to < 2 years).").

¹⁷⁵ See, e.g., CCR Final Rule Preamble, 80 Fed. Reg. at 21,327 ("Most of the currently operating surface impoundments are between 20 and 40 years old.")

¹⁷⁶ See, e.g., 80 Fed. Reg. 21,303 ("CCR disposal currently occurs at over 310 active on-site landfills, averaging over 120 acres in size with an average depth of over 40 feet, and at over 735 active on-site surface impoundments, averaging over 50 acres in size with an average depth of 20 feet."); *id.* at 21326-27 ("Analysis of the information from the damage cases also demonstrates that unlined surface impoundments typically operate for 20 years before they begin to leak. Most of the currently operating surface impoundments are between 20 and 40 years old."); RIA for 2015 Rule at exhibits 3-B and 3-C, columns for 'required for existing' (assuming that 79% of existing impoundments and 46% of existing landfills are unlined or have unknown liner types).

may cause to health and the environment.^{177,178} The 1991 MSWLF benefits analysis cannot serve as a surrogate for a risk assessment for CCR.

This latter deficiency highlights yet another reason why it would be arbitrary and capricious for EPA to rely on the MSWLF benefits analysis: it is outdated. The nearly 30-year old MSWLF benefits analysis is a far cry from today's risk analyses. It is, as explained by expert Ron Sahu, "notably brief and simplistic."¹⁷⁹ Indeed, EPA did not even call it a risk analysis – the roughly 13 pages or so comprising it were included within the larger Regulatory Impact Analysis for the MSWLF Rule. *Id.* One particular shortcoming resulting from its age is that EPA did not model risk from MSWLFs because, at the time, EPA simply did not have the technical capability to do such modeling.¹⁸⁰ But EPA does have the capacity to model risks from existing CCR units; in fact, it did so in the rulemaking for the current CCR Rule in 2014.¹⁸¹

Because EPA could, today, conduct precisely the type of risk analysis for existing units that it was unable to conduct at the time of the MSWLF rulemaking in 1991, and the type of risk analyses acceptable today are far more comprehensive than the MSWLF analysis, EPA may not rely on that long-outdated analysis to support the 2018 Proposal. Reliance on outdated information runs afoul of the Administrative Procedure Act ("APA"), 5 U.S.C § 706(2). *See, e.g., Public Employees for Env'tl. Responsibility v. U.S. Fish & Wildlife Service*, 177 F. Supp. 3d 146 (D.D.C. 2016) (holding that agency decision to allow continued killing of cormorants was arbitrary, capricious, and contrary to law when it relied on unmodified 5-year-old study in making that decision); *see also Alliance to Save the Mattaponi v. U.S. Army Corps of Engineers*, 606 F. Supp. 2d 121 (D.D.C. 2009) (holding that agency's decision to issue a permit was arbitrary and capricious when it failed to support its conclusion in light of changed conditions since the analysis it relied upon was completed).

In sum, the "benefits" analysis for MSWLFs does not justify regulating CCR units similarly to MSWLFs. EPA's reliance on that highly specific risk analysis, without further, full support for regulating CCR units as proposed, would render a final rule arbitrary and capricious. Unless EPA provides new analyses, relying on updated science and understanding of specific health and environmental impacts from CCR, to thoroughly evaluate the protectiveness of allowing alternative standards for groundwater monitoring, pollution detection, cleanup, post-closure care, and all the other changes proposed for

¹⁷⁷ EPA acknowledged that the risk analysis underestimated the benefits of regulating existing MSWLFs. *See* MSWLF RIA, at 37 ("One other concern is that risk reduction is only modeled at new units. Additional risk reduction is also likely at existing units. If existing units were included, total risks and resource damage avoided would increase.").

¹⁷⁸ We do not intend to imply here that the Risk Assessment for the 2015 CCR Rule was without flaws. In fact, it had a number of shortcomings, as detailed further in Sahu Expert Report.

¹⁷⁹ Sahu Expert Report at 8.

¹⁸⁰ *See* MSWLF RIA at VI-7 ("We did not model the effectiveness of the regulatory alternatives at existing units, where some of the waste is already in place; this would have required us to model pollutant release and transport at a unit that has mixed designs (e.g., some unlined cells and some lined cells), which is currently beyond the capability of the Subtitle D Risk Model.").

¹⁸¹ *See* RIA for 2015 Rule.

CCR units in EPA's 2018 Proposal, and makes those supporting documents available for public review and comment, its Phase I rulemaking will be arbitrary, capricious, and contrary to law. See, e.g., *Public Employees for Envtl. Responsibility v. U.S. Fish & Wildlife Service*, 177 F. Supp. 3d 146 (D.D.C. 2016); *Alliance to Save the Mattaponi v. U.S. Army Corps of Engineers*, 606 F. Supp. 2d 121 (D.D.C. 2009); *Conn. Light & Power Co. v. Nuclear Regulatory Comm'n*, 673 F.2d 525, 530–31 (D.C. Cir. 1982) (“[I]t is especially important for the agency to identify and make available technical studies and data that it has employed in reaching the decisions to propose particular rules An agency commits serious procedural error when it fails to reveal portions of the technical basis for a proposed rule in time to allow for meaningful commentary.”).

C. EPA HAS UTTERLY FAILED TO SATISFY SECTION 4004(A) OF RCRA.

Despite EPA's acknowledgement that section 4004(a) is the statutory standard that applies to CCR units, EPA's proposed standards utterly fail to satisfy that standard. Instead, as detailed above, EPA's proposed standards reflect considerations of practicable capability under 4010(c) that do not, and cannot, apply to CCR units, and fail to account for the distinct characteristics of CCR, the risks posed by CCR units, and the harm caused by CCR. EPA has in no way demonstrated that its proposed standards ensure “no reasonable probability of adverse effects on health or the environment” from disposal at CCR units, as required by section 4004(a). Accordingly, EPA's proposed standards do not satisfy section 4004(a) and finalization of those standards would be arbitrary, capricious, and contrary to law.

It is important to note that the WIIN Act does not change the above conclusion. The WIIN Act does not alter the applicable statutory standard or otherwise authorize EPA to establish alternative standards that do not comport with section 4004(a). In fact, the WIIN Act further supports the conclusion that reliance on the MSWLF standards is improper here. The WIIN Act presumes the continued existence of clear federal minimum criteria that serve as a baseline against which state programs can be measured. See 42 U.S.C. § 6945(d)(1)(B), (C). EPA's suggestion that it can effectively do away with federal minimum requirements in favor of the unspecified, site-specific, “risk-based” standards it proposes to import from the MSWLF regulations is inconsistent with that presumption, further highlighting the impropriety of relying on the MSWLF standards for CCR units. Because, for all the reasons explained herein, EPA has failed to show that the rulemaking record for MSWLFs establishes that the 2018 Proposal is consistent with the WIIN Act and would meet RCRA section 4004(a)'s protectiveness standard – and nothing else in the record makes that showing – EPA's 2018 Proposal is unlawful and arbitrary and capricious.

IX. APPLICATION OF ALTERNATIVE PERFORMANCE STANDARDS DIRECTLY TO FACILITIES IN NONPARTICIPATING STATES WOULD FAIL TO ENSURE “NO REASONABLE PROBABILITY OF ADVERSE EFFECTS ON HUMAN HEALTH OR THE ENVIRONMENT” FROM SUCH FACILITIES UNDER RCRA SECTION 4004(A).

A regulatory change allowing any alternative performance standards to apply to facilities in nonparticipating states would be inconsistent with the plain language of the WIIN Act, would be inconsistent with the reasoning behind allowing any alternative standards to apply to MSWLFs when the 40 C.F.R. part 258 regulations were promulgated, is not supported by EPA in the record, and would fail to satisfy RCRA’s standard that EPA’s criteria for classifying units must “ensure” that there is “no reasonable probability of adverse effects on health or the environment from disposal of solid wastes at such facility.” 42 U.S.C. § 6944(a). In the 2018 Proposal, EPA stated that it “is seeking comment on whether it is appropriate and consistent with the WIIN Act for these alternative performance standards to apply directly to a facility in a nonparticipating State on the basis that the units in the nonparticipating states are subject to oversight by EPA through the enforcement authorities provided directly to EPA under the WIIN Act. 83 Fed. Reg. at 11,597-98. The answer to that question is no, as the oversight and enforcement authorities afforded EPA under the WIIN Act are insufficient to ensure that allowing owner/operators to select and implement their own site-specific standards will ensure no reasonable probability of adverse effects to health or the environment.

EPA seeks comment on whether facilities not operating pursuant to a permit issued by a State with an EPA-approved program or directly by EPA could have the flexibility to bend many of the thoroughly vetted national minimum criteria in the CCR Rule, 40 C.F.R. part 257. For example, EPA seeks comment on each of the following:

- whether facilities in nonparticipating states could “decide not to require cleanup of part 257 Appendix IV constituents released to groundwater” simply based on their own determination that “remediation is not technically feasible.” *See* 83 Fed. Reg. at 11,600.
- whether a facility, itself, should have “discretion not to require or perform source control measures, including closure, in certain situations.” *See id.*
- whether owners/operators themselves “subject to EPA oversight and public notice” (but not where EPA is acting as a permitting authority) should be allowed to establish their own alternative point of compliance with groundwater monitoring requirements. *Id.* at 11,602.
- whether, despite EPA stating that “[t]he Agency has limited the availability of the waiver [of groundwater monitoring requirements] because the Agency recognizes the need for the State to review a no-migration demonstration prior to granting a waiver,” it should nonetheless allow a facility to grant itself a waiver of groundwater monitoring requirements “without the intervention of a permitting authority.” *Id.*

- whether alternative, “risk-based” location restrictions (other than the restrictions currently contained at 40 C.F.R. sections 257.60 through 64) could also be applied directly to facilities in non-participating states. *Id.* at 11,598. EPA requests comment on this without providing any specific notice whatsoever of what criteria facilities might apply in deciding for themselves that they do not need to comply with the location restrictions. *See* Section XIII.

Problems with each of these proposed so-called alternative performance standards are discussed in other sections of these comments. In general, however, even if under the WIIN Act, it may be appropriate for a state permitting authority to authorize deviations from the CCR Rule’s minimum federal criteria under certain circumstances – and most importantly, only when EPA has approved such permitting approaches and found them to be “at least as protective as” minimum federal standards, 42 U.S.C. § 6945(d)(1)(B), (C) – nothing in the WIIN Act remotely authorizes the extension of standard-setting directly to the owner/operators themselves. In fact, EPA explicitly rejected such an approach when crafting the 2015 CCR Rule by rejecting outright that the 40 C.F.R. part 258 alternative performance standards applicable to a MSWLF unit could meet the protectiveness standard where criteria are self-implementing, and the record compels continued rejection of such a potentially dangerous change.

In order to protect public health and the environment, facilities in nonparticipating states must continue to be required to comply with all of the specific performance standards contained in the 2015 Rule. EPA established these requirements to serve as the national minimum criteria necessary to ensure that RCRA section 4004(a)’s protectiveness standard is met at each regulated facility. Allowing owner/operators to select and implement their own alternative standards would contravene the statute, is not supported by available data, would not be able to be adequately enforced at each facility, and would not ensure “no reasonable probability of adverse effects on health or the environment” from these facilities. Furthermore, the deficiencies that would result from allowing site-specific standards to apply to such facilities cannot be cured by any measure suggested by EPA in the preamble to the proposed rule. *See* 83 Fed. Reg. at 11,598. As such, the 2015 CCR Rule’s federal minimum criteria must continue to apply in their entirety to all CCR units in nonparticipating states.

A. THE WIIN ACT DOES NOT ALLOW FOR APPLICATION OF ALTERNATIVE PERFORMANCE STANDARDS TO FACILITIES IN NONPARTICIPATING STATES.

Alternative performance standards may not apply directly to facilities in nonparticipating states because the text of the WIIN Act expressly does not permit such an approach. Instead, the Act makes clear that the Part 257 performance standards must apply to such facilities, stating that:

The applicable criteria for coal combustion residuals units under part 257 of title 40, Code of Federal Regulations (or successor regulations

promulgated pursuant to sections 6907(a)(3) and 6944(a) of this title), *shall apply to each coal combustion residuals unit* in a State unless—

- (A) a permit under a State permit program or other system of prior approval and conditions approved by the Administrator under paragraph (1)(B) is in effect for the coal combustion residuals unit; or
- (B) a permit issued by the Administrator in a State in which the Administrator is implementing a permit program under paragraph (2)(B) is in effect for the coal combustion residuals unit.

42 U.S.C. § 6945(d)(3) (emphasis added).

According to its plain text, the default requirement is that the criteria contained at 40 C.F.R. part 257 “shall” – that is, *must* – apply to each CCR unit in a state.¹⁸² Inserting the option of site-specific alternative performance standards directly into the minimum federal criteria themselves (as opposed to allowing states to apply for EPA approval to issue permits containing alternative performance standards) and allowing them to be utilized directly by owner/operators (without any permitting authority overseeing them) would make a mockery of the statute. And it would make it nearly impossible for the public to determine which regulations—the ones from 2015 or the new alternative standards introduced by EPA—are the ones that “shall” apply or should be enforced. The WIIN Act did not intend for there to be alternative performance standards in the successor regulations, or else the statutory imperative that the criteria in the regulations “shall apply” would not make sense and would no longer become self-implementing, as there would be more than one option for which requirement would apply.

The WIIN Act provides for only one scenario under which standards other than the criteria of 40 C.F.R. part 257 could apply to each CCR unit, namely where a permit is in effect that was issued by a State permit program or other system of prior approval and conditions approved by the Administrator under 42 U.S.C. § 6945(d)(1)(B). This ensures that any deviations from EPA’s federal minimum criteria require approval by a State permitting authority that has direct oversight at the permitting stage. EPA’s suggestion that alternative performance standards may be applied to facilities in nonparticipating states is simply foreclosed by law.¹⁸³

¹⁸² See *Bennett v. Spear*, 520 U.S. 154, 172 (1997) (holding the imperative “shall” makes clear that the agency action specified is obligatory, not discretionary); see also *Alabama v. Bozeman*, 533 U.S. 146, 153 (2001) (“The word ‘shall’ is ordinarily the language of command.”) (internal quotations and citations omitted).

¹⁸³ In fact, even where a permit is in effect that was issued by EPA in a State where EPA is implementing a permit program under 42 U.S.C. § 6945(d)(2)(B), the statute still requires EPA to adhere to the specific criteria established by EPA in part 257, and does not offer allowances for EPA to deviate from those criteria in individual permits. Specifically, the WIIN Act requires that “the Administrator shall implement a permit program to require each coal combustion residuals unit located in the nonparticipating State to achieve compliance with applicable criteria established by the Administrator” under 40 C.F.R. Part 257 (or successor regulations). See 42 U.S.C. § 6945(d)(2)(B) (“[T]he Administrator shall implement a

B. EPA PROVIDES NO RATIONAL BASIS FOR APPLICATION OF ALTERNATIVE PERFORMANCE STANDARDS TO FACILITIES IN NONPARTICIPATING STATES AND MADE CLEAR WHEN FINALIZING THE 2015 CCR RULE THAT SUCH AN APPLICATION WAS INAPPROPRIATE.

EPA’s docket of supporting documents for this 2018 Proposal is sparse. Not a single document mentions, let alone provides support for, allowing alternative performance standards to apply to a facility in a nonparticipating state. In fact, EPA already explored—and rejected—the possibility of applying alternative performance standards directly to facilities when crafting the 2015 CCR Rule, and the 2018 Proposal fails to provide any rational basis—or any support at all—for reversing its position now.

EPA’s previous rejection of the application of alternative performance standards to facilities that operate “in the absence of a permit” was well-supported and thoroughly discussed in the preamble to the 2015 Rule. EPA explained in the preamble to the 2015 CCR Rule that it considered, but rejected as “impossible,” the application of “alternatives” available under the MSWLF regulations at 40 C.F.R. part 258 to CCR disposal regulations contained at 40 C.F.R. part 257 precisely because there is no regulatory authority overseeing implementation of the self-implementing 2015 Rule through an enforceable permit program. 80 Fed. Reg. at 21,396-97. EPA further explained that its requirements under 40 C.F.R. parts 258 and 264 have more flexibility because they “operate in a permitting context,” but contrasts that such alternative performance standards are “not available” in the absence of a guaranteed permit program:

[B]ecause the same guarantee of permit oversight is not available under the criteria developed for the proposal [to regulate CCR disposal], EPA proposed to establish a minimum requirement, based on the part 265 interim status regulations, which are self-implementing. Long experience demonstrates that these monitoring requirements will be protective of a wide variety of conditions and wastes, and that facilities can feasibly implement these requirements.

80 Fed. Reg. at 21,397. By contrast, in nonparticipating states, EPA made clear that alternative performance standards are not appropriate because “provisions allowing such modifications are particularly susceptible to abuse, since in many cases the provisions could allow substantial cost avoidance. *In the absence of a mandated state oversight mechanism to ensure that the suggested modifications are technically appropriate, these kinds of provisions can operate at the expense of protectiveness.*” 80 Fed. Reg. at 21,398 (emphasis added).

permit program to require each coal combustion residuals unit located in the nonparticipating State to achieve compliance with applicable criteria established by the Administrator” under 40 C.F.R. Part 257 (or successor regulations).). There is no basis under the WIIIN Act language in this section providing for even EPA to apply differing criteria when issuing permits than those set forth in the part 257 regulations.

EPA's 2018 Proposal seeks comment on whether, despite its clear determination on this topic in the 2015 CCR Rule, the agency should now allow for the same site-specific standards requested by industry during the 2015 rulemaking process. This proposed 180-degree reversal is not supported by the record, as there is no EPA analysis – let alone data, information, or evidence – showing how the protectiveness standard could suddenly be met by this proposed approach or why the reasons supporting EPA's 2015 determination not to allow for alternative performance standards to apply to these facilities would not equally apply now, only three years later.

C. EPA'S RULEMAKING RECORD FOR MSWLF REGULATIONS MAKES CLEAR THAT ALTERNATIVE PERFORMANCE STANDARDS MUST NOT APPLY TO FACILITIES THAT ARE NOT COVERED BY AN APPROVED PERMIT PROGRAM, AND THE SAME REASONING APPLIES TO CCR UNITS.

EPA's proposed rule repeatedly states that it is considering whether there is sufficient evidence to allow for alternative performance standards at CCR disposal units similar to those provided for in the MSWLF regulations contained at 40 C.F.R. part 258 following the WIIN Act. *See, e.g.*, 83 Fed. Reg. at 11,597.

However, the supporting documents for the part 258 rule make clear that even MSWLF facilities were required to comply with the technical self-implementing criteria unless the facility was operating in a State that had received program approval by EPA to issue permits using alternative standards in specific areas. For example, one such document, EPA's Technical Guidance, which was included in the docket for the 2018 Proposal, states:

If their permitting programs have been approved by EPA, States can allow the use of flexible performance standards established in 40 CFR Part 258 in addition to the self-implementing technical standards for many of the Criteria. Approved States can provide owners/operators flexibility in satisfying the location restrictions, operating criteria, and requirements for liner design, groundwater monitoring, corrective action, closure and post-closure care, and financial assurance. This flexibility allows for the consideration of site-specific conditions in designing and operating a MSWLF at the lowest cost possible while ensuring protection of human health and the environment. In unapproved states, owners/operators must follow the self-implementing technical standards.

See Office of Solid Waste and Emergency Response, EPA, Solid Waste Disposal Facility Criteria Technical Manual, EPA530-R-93-017, at v (Nov. 1993, rev. Apr. 13, 1998) (Docket ID EPA-HQ-OLEM-2017-0286-0007). The same MSWLF guidance document goes on to confirm that even States that have partial approval cannot grant flexibility regarding any standards outside of their specific approval areas, stating:

Regardless of a State's program approval status, landfill owners/operators must comply with the Criteria. States can grant flexibility to owners/operators only in the areas of their program that have been approved. For example, a state in which only the ground-water monitoring area of the permitting program has been approved by EPA cannot grant owners/operators flexibility to use alternative liner designs.

Id.

As EPA concluded in its adoption of the part 258 MSWLF regulations, authorizing owners and operators in non-approved states to select "alternative performance standards" would not meet the statutory standard of RCRA section 4010(c). *See, e.g.*, 56 Fed. Reg. at 50,993 (establishing minimum specifications, with no alternative standards, for composite liners to "ensure effective and protective implementation of this rule in States without approved programs where State oversight will not be present"); *id.* at 51,101 (explaining that EPA was allowing reduction in post-closure care period only in approved States because "the Agency is convinced that these decisions must be reviewed carefully and be subject to State review to ensure that units are monitored and maintained for as long as is necessary to protect human health and the environment."); *see also* 2010 Proposed CCR Rule Preamble, 75 Fed. Reg. at 35,194 (explaining that Part 258 "establish[es] alternate performance standards . . . relying on the oversight resulting from state permitting processes Indeed, EPA made clear in the final MSWLF rule that this was the reason that several of the individual performance standards in the existing 40 C.F.R. part 258 requirements are available only in states with EPA approved programs. *See, e.g.*, 56 Fed. Reg. 51,096 (authorizing alternative cover designs).").

EPA has provided no basis upon which to conclude that it should allow for alternative performance standards for CCR disposal in nonparticipating states when it concluded that it should not with regards to MSWLFs. In fact, there is even less of a basis for doing so with regards to CCR disposal because the statutory standard applicable to the part 258 MSWLF regulations is significantly different and less stringent than the standard applicable to the CCR disposal regulations. In particular, as EPA admits, Part 258 for MSWLFs allows EPA to "take into account the [facility's] practicable capability," whereas EPA under RCRA section 4004(a) must ensure "there is no reasonable probability of adverse effects on health or the environment." *See* 83 Fed. Reg. at 11,597. *See* Section VIII, *supra*.

Thus, it is clear, *a priori*, that under the stricter protectiveness standard applicable to the CCR disposal regulations, no alternative performance standard must be permitted to apply to facilities in unauthorized states.

This is especially true given that disposal of coal ash prior to the EPA's promulgation of the 2015 CCR Rule resulted in widespread damage to health and the

environment, with EPA confirming 159¹⁸⁴ damage cases resulting from coal ash disposal. In fact, EPA said in the 2015 Rule regarding this list of confirmed damage cases as of 2014 (which does not include any subsequently discovered damage cases and did not evaluate many damage cases) that “this is the largest number of damage cases in the history of the RCRA program.” 80 Fed. Reg. at 21,455. Certainly the waste with the largest number of damage cases in the history of the RCRA program needs to be afforded fewer – not more – “flexibilities” in order to ensure no reasonable probability of adverse effects to health or the environment.

D. UNITS IN NONPARTICIPATING STATES ARE NOT SUBJECT TO SUFFICIENT OVERSIGHT BY STATES OR EPA TO ALLOW FOR ANY DEVIATIONS FROM THE NATIONAL MINIMUM CRITERIA.

Neither States nor EPA have sufficient oversight over a CCR unit in a nonparticipating state to allow for any site-specific deviations from the CCR Rule’s federal minimum criteria. Facilities in nonparticipating states are not subject to sufficient state oversight at all; for it to be a nonparticipating state in the first place, either the State’s permit program (or other system of prior approval) was not approved by EPA, the State failed to submit proof of a permit program (or other system of prior approval) to EPA, the State provided notice that it would relinquish an approval to operate a program, or the State’s approved permit program (or other system of prior approval) was withdrawn by EPA. 42 U.S.C. § 6945(d)(2)(A). As such, the State would have no EPA-approved role in reviewing or approving federal CCR compliance at a site. The enforcement capability that a State would have after a violation has occurred (for example, using the citizen suit provisions of 42 U.S.C. § 6972) does not provide the same level of protection as oversight authority to review and prevent practices that would cause adverse effect to health or the environment prior to their occurrence. And, furthermore, the likelihood that a State that failed to secure or retain an approved permit program would instead chose to (and/or have the resources to) file federal enforcement actions to seek compliance at CCR units in the State is extremely low.

¹⁸⁴ EPA’s 2015 CCR Rule states that it confirmed 157 damage cases, but the accurate number is 159. However, EPA’s damage case spreadsheet erroneously numbered two potential damage cases as number 16. Consequently, while EPA’s rule and supporting documents state that there are 157 confirmed damage cases, there were actually 158 proven and potential sites listed on EPA’s database, as two potential damage cases were numbered 16. *See* Alexander Livnat, U.S. Environmental Protection Agency, CCR Damage Case Database, Technical Support Document on Damage Cases, Docket #EPA-HQ-RCRA-2009-0640, Docket ID No. EPA-HQ-RCRA-2009-0640-12123 (Dec. 18, 2014). In addition, EPA’s damage case Compendium included the Lemberger Landfill as a confirmed potential damage case, but this site was not listed on EPA’s CCR Damage Case Database. Therefore, the total number of damage cases confirmed by EPA in 2014 is 159. *See* Alexander Livnat, U.S. EPA, Damage Case Compendium, Technical Support Document, Volume IIA: Potential Damage Cases 142, Docket ID No. EPA-HQ-RCRA-2009-0640-12119 (Dec. 18, 2014). *See also* Alexander Livnat, U.S. EPA, Damage Case Compendium, Technical Support Document, Volume I: Proven Damage Cases 73, Docket ID No. EPA-HQ-RCRA-2009-0640-12118 (Dec. 18, 2014); Alexander Livnat, U.S. EPA, Damage Case Compendium, Technical Support Document, Volume IIB, Pt. 1: Potential Damage Cases, Docket ID No. EPA-HQ-RCRA-2009-0640-12120 (Dec. 18, 2014); Alexander Livnat, U.S. EPA, Damage Case Compendium Vol IIB, Pt. 2: Potential Damage Cases, Docket ID No. EPA-HQ-RCRA-2009-0640-12121 (Dec. 18, 2014).

EPA's oversight and enforcement authorities in nonparticipating states are limited, even following enactment of the WIIN Act, and are insufficient to ensure that the section 4004(a) protectiveness standard would be met if EPA allowed alternative performance standards to apply to facilities in nonparticipating states. The WIIN Act provides two specific avenues for EPA oversight and enforcement in a nonparticipating state. First, it authorizes EPA to implement a permit program to require each CCR unit in a nonparticipating state to achieve compliance with applicable criteria contained in 40 C.F.R. part 257 "[i]n the case of a nonparticipating State and subject to the availability of appropriations specifically provided in an appropriations Act to carry out a program in a nonparticipating state." 42 U.S.C. § 6945(d)(2)(B). However, once EPA begins implementing a state program, there would be no need for alternative performance standards to apply directly to a facility in a nonparticipating state as EPA could issue permits for such a facility.¹⁸⁵

In the absence of EPA implementation of a state's program, the WIIN Act also allows EPA to use its inspection and enforcement authorities under RCRA sections 3007 and 3008 to enforce the prohibition on open dumping, but this authority is also insufficient to protect public health and the environment from potential problems associated with allowing facilities in nonparticipating states to deviate from the minimum standards for several reasons. First, this enforcement option typically would only apply after a facility took an action in violation of EPA's regulations (i.e., once open dumping had already occurred). EPA is not authorized under this option to do anything proactively to prevent a facility from deviating from a standard in the first place unless the rule's alternative performance standards were to also require lengthy notice-and-comment periods after a facility released for the public a required demonstration of how an alternative standard could be at least as protective as federal minimum requirements but prior to actually implementing the proposed alternative standard. Without such a waiting period required in the rule, EPA would not be able to step in using its enforcement authority until after human health and the environment would already be at an increased risk due to the facility's implementation of deviations from federal minimum criteria.

Furthermore, even if there were a lengthy public notice period that allowed for EPA to use its authorities under RCRA sections 3007 and 3008 to inspect and enforce against alternative performance standards that did not meet regulatory standards, these inspection and enforcement authorities are not a practical, cost-effective, or efficient way to ensure compliance with standards and would require a vast expenditure of resources that EPA does not have. The large number of units and facilities covered by the CCR Rule, and large number of different potential deviations that could apply to each unit at each facility would result in a vast number of potentially unique, site-specific standards that would require an incredibly large output of federal resources for EPA staff to engage in meaningful inspections and oversight. According to the 2018 RIA, the rule covers 922 units at 414 plants. 2018 RIA at 2-1. If EPA promulgates a final rule with five categories of alternative performance standards potentially applicable to sites in nonparticipating states, that would mean EPA would have the burden of overseeing 4,610 potentially

¹⁸⁵ At the same time, as noted above, the WIIN Act does not allow EPA to issue any permits that deviate from the federal minimum criteria set forth in 40 C.F.R. part 257. *See* 42 U.S.C. § 6945(d)(2)(B).

unique, site-specific alternative performance standards at CCR units across 414 different plants, in 43 different states. *Id.* It is, as a practical matter, impossible that EPA would have the resources available to conduct regular inspections that ensure meaningfully protective oversight over potentially unique, site-specific alternative performance standards at this many units, especially given:

- The highly technical nature of each alternative standard;
- The amount of time and expertise needed to conduct a site-specific review for each site;
- The potential lack of notice of the specific standards that owner/operators are applying at each site;
- The lack of EPA resources currently dedicated to conducting these reviews; and
- The massive amounts of time and funding EPA would need to hire, train, and deploy across the country the dozens of inspectors that would be needed to adequately oversee the implementation of these site-specific standards.

Relying on EPA to use this authority to enforce alternative standards in nonparticipating states would require a significantly greater output of federal resources than would be required for EPA to simply enforce the national minimum criteria as they are written in the regulations because more time and expert review would have to be exerted evaluating individualized, site-specific standards at each facility and the technical bases that each facility relied upon for those standards than would be required to simply confirm whether or not uniform, bright-line contained within the federal minimum criteria are being met. This is exacerbated by the fact that, if EPA were to allow owner/operators to select and implement their own alternative performance standards for their CCR units, nothing in the 2018 Proposal would prevent owner/operators from selecting and implementing different standards for each CCR unit.

Relying on EPA to enforce federal CCR requirements at each of these units with the added burden of having to evaluate any alternative performance standards that could apply at each site would result in not only a much greater output of EPA resources but also a likely failure of EPA to timely conduct inspections of each CCR unit. This is especially true because, at the present time, every single one of the 922 CCR units covered by the 2015 CCR Rule is at a facility in a nonparticipating state because EPA has not yet approved any state permit programs under the WIIN Act. An EPA decision to allow any unit in a nonparticipating state to apply any site-specific deviations from the national minimum criteria established in 40 C.F.R. part 257 would clearly result in a greater probability of adverse effects on health and the environment at these sites when compared with not allowing such deviations from the minimum standards that EPA has determined are necessary to meet the RCRA section 4004(a) protectiveness standard.

E. THE OVERSIGHT DEFICIENCY THAT WOULD ARISE IF FACILITIES IN NONPARTICIPATING STATES WERE ALLOWED TO USE ALTERNATIVE STANDARDS THAT DEVIATE FROM THE TECHNICAL CRITERIA CANNOT BE CURED BY EPA ALSO ALLOWING ALTERNATIVE IMPLEMENTATION MEASURES TO APPLY TO SUCH ALTERNATIVE STANDARDS.

The lack of adequate state or federal oversight is a critical deficiency with allowing alternative performance standards to apply to CCR units in a nonparticipating state. This deficiency cannot be cured by any of the means EPA mentioned in the proposed rule or by any other measure. EPA is requesting comment on whether any of a number of “alternatives for implementing such flexibilities” might allow for the application of alternative performance standards at units in nonparticipating states, and the answer is, simply, no.

1. *The deficiency caused by allowing units in nonparticipating states to use alternative performance standards is not cured by submission of technical analyses.*

EPA seeks comment in the 2018 Proposal on whether submission of “appropriate technical analyses” could be one such “alternative[] for implementing” its alternative performance standards that would remedy the fact that such a decision would be subject to no regulatory approval process. 83 Fed. Reg. at 11,598. This measure would not allow for such alternative performance standards to meet the “no reasonable probability of adverse effects” standard for a unit in a nonparticipating state, because there is no State or EPA agency authorized or funded to review, condition, or approve such an analysis prior to a facility implementing such a flexibility in a nonparticipating state.

EPA’s resources to use its authorities under the WIIN Act to enforce the open dumping provisions at facilities in nonparticipating states without any alternative performance standards will be challenging enough, and the increased time it would take to evaluate site-specific standards and “detailed technical analyses” supporting such standards would mean an increased probability of harm to human health and the environment from such facilities. This is because by the time a facility – in the name of implementing an alternative performance standard – grants itself a waiver from corrective action, groundwater monitoring, or other requirements, and certainly by the time thereafter that EPA would have obtained, reviewed, and taken action on any technical analysis prepared by the owner/operator to justify using an alternative standard, significant damage to human health or the environment from any inadequately protective measures taken by the owner/operator may have already occurred.

This is clearly evident when considering EPA’s request for comments on whether facilities in nonparticipating states should be given the flexibility to “decide not to require cleanup of part 257 Appendix IV constituents released to groundwater” simply based on their own determination that “remediation is not technically feasible.” See 83 Fed. Reg. at 11,600. In this scenario, a unit could have been found to have already been releasing

levels of antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, fluoride, lead, lithium, mercury, molybdenum, selenium, thallium, or radium 226 and 228 combined—or all of these pollutants together—above groundwater protection standards, yet the owner or operator could be given the opportunity to avoid cleanup because “remediation is not technically feasible.” Even if the operator or an expert created a technical analysis to demonstrate their reasoning for employing this flexibility, by the time EPA used its authorities to inspect, review, and enforce in the case that cleanup was technically feasible, the pollutants would have more time to travel into the environment and more opportunities to reach, and adversely effect, potential human and ecological receptors. This poses a much greater risk to health and the environment than if owner/operators in nonparticipating states were required to comply with the part 257 minimum federal criteria, which EPA promulgated in 2015 to ensure that the RCRA section 4004(a) protectiveness standard is met at all sites.

2. *The deficiency caused by allowing units in nonparticipating states to use alternative performance standards is not cured by reliance on certification(s) by an independent professional engineer or any other technical expert(s).*

EPA also seeks comment on whether a unit in a nonparticipating state that is allowed to employ site-specific deviations from minimum federal criteria could meet the RCRA section 4004(a) protectiveness standard with reliance on certification by an independent professional engineer or other technical experts. *See, e.g.*, 83 Fed. Reg. at 11,598. However, again, without a State or EPA agency able to review or approve such a “certification” prior to implementation, and without designated authority and funding to engage in such review, the protectiveness standard cannot be met.

EPA even acknowledged when discussing one of the proposed alternative performance standards that “the Agency recognizes the need for the State to review” a facility’s determinations “*prior to granting a waiver.*” *See* 83 Fed. Reg. at 11,602 (discussing whether to allow a facility to waive groundwater monitoring requirements on the basis of their own no-migration demonstration independent of the approval of a permitting authority). However, EPA nonetheless is seeking comment on whether a technical expert’s demonstration could serve as an adequate substitute for the judgment of a permitting agency and still meet the section 4004(a) protectiveness standard, on the very issue for which this statement was made. Surely, a technical expert paid by a facility to make a “no-migration evaluation” that would support entirely suspending groundwater monitoring requirements cannot provide the same level of oversight as a State or EPA permitting authority, and EPA allowing a site, with only the approval of a “technical expert” and not the approved permitting authority, to suspend groundwater monitoring requirements—the lynchpin of the protective requirements in the 2015 CCR Rule—would not ensure the protectiveness standard was being satisfied. The same is true for all other regulatory requirements for which EPA is considering allowing direct application of alternative performance standards to a facility in a nonparticipating state.

3. *The deficiency caused by allowing units in nonparticipating states to use alternative performance standards is not cured by reliance on state environmental standards.*

EPA also requests comment on whether “reliance on state ground water standards” would cure the deficiency of inadequate oversight that would arise from allowing a facility in a nonparticipating state to apply “flexibilities,” and again the answer is no. 83 Fed. Reg. at 11,598. If a State is nonparticipating, it either did not set up a permit program, did not get its program approved by EPA, or had its program rescinded, and the likelihood of such a state agency stepping in to enforce state environmental standards is low. Plus, in any case, such enforcement would only happen after the facility had already took advantage of deviations from the federal minimum standards, leaving health and the environment at risk from releases of CCR contaminants such as arsenic, selenium, and lead that could result in significant harm occurring before an enforcement action could be taken.

Furthermore, states do not have adequate groundwater standards to supplant the CCR Rule’s requirements. Some states’ standards are non-existent and the standards that do exist are so varied and inconsistent that relying on such standards would be insufficient to ensure that the protectiveness standard is met. In fact, many states have no groundwater standards at all that are applicable, which was part of the impetus supporting the need for minimum federal criteria in the first place; for example, EPA’s 2010 Regulatory Impact Analysis for its proposed coal ash rule found that:

- 85 percent of the states surveyed failed to require groundwater monitoring and leachate collection at all surface impoundments (both new and existing);
- 45 percent of the states surveyed failed to require post-closure groundwater monitoring at coal ash surface impoundments; and
- 38 percent of the states surveyed failed to require groundwater monitoring at all coal ash landfills (both new and existing).

EPA, Regulatory Impact Analysis For EPA’s Proposed RCRA Regulation Of Coal Combustion Residues (CCR) Generated By The Electric Utility Industry, Docket ID No. EPA-HQ-RCRA-2009-0640-0003 (hereinafter “RIA for 2010 Proposed Rule”), at Appendix E, Baseline State Government Regulatory Requirements for CCR Disposal Units in Top-34 Coal Utility States (Apr. 2010). Even a state like Pennsylvania, which has extensive coal ash regulations, does not have maximum contaminant levels for cobalt, fluoride, lithium, or molybdenum, and has coal ash disposal regulations for surface impoundment that do not expressly require any monitoring of antimony, arsenic, beryllium, cobalt, fluoride, lithium, molybdenum, thallium, or radium 226 and 228 combined at coal ash impoundments and only require annual monitoring of barium, cadmium, chromium, copper, lead, mercury, selenium, silver and zinc. 25 Pa. Code § 289.264.

In addition, the widespread inadequacies of state ground water standards to prevent or remediate contamination from coal ash disposal sites was a primary factor in

EPA promulgating the 2015 CCR Rule in the first place, following high-profile catastrophes such as the TVA Kingston spill as well as the evidence of more than 150 other damage cases that were confirmed by EPA. *See* Section XI (providing a history of states' inadequate regulation). And, state programs that conform to EPA's regulations and meet the "at least as protective" standard can gain EPA approval under the mechanics of the WIIN Act. Allowing a facility in a nonparticipating state to rely upon state environmental standards that have *not* been approved as being "at least as protective as" federal minimum standards would only serve to circumvent the WIIN Act's requirements and thus be arbitrary, capricious, and contrary to law..

4. *The deficiency caused by allowing units in nonparticipating states to use alternative performance standards is not cured by notifications to EPA.*

Notification to EPA by a facility in a nonparticipating state would not cure the deficiency that there is insufficient oversight and enforcement authority by EPA in such a state to assure that that protectiveness standard of RCRA section 4004(a) is met. As noted above, EPA does not have funding or authority to pre-approve a deviation from federal minimum criteria that a facility wanted to employ, meaning that a facility could apply a site-specific standard and have it apply for a very long period of time before EPA had the resources available to look into it. For example, although Congress recently appropriated \$6 million to develop and implement a federal program for the regulation of coal combustion residuals in nonparticipating states, this funding would not be sufficient to cover all states throughout the country, all of which are currently nonparticipating. *See* Consolidated Appropriations Act, Pub. L. No. 115-141, 132 Stat. 348, Div. G, Tit. II (2018); *see also* 164 Cong. Rec. H2623 (daily ed. Mar. 22, 2018) (Joint Explanatory Statement from House and Senate Committees accompanying the legislation provides that, of the funds appropriated for RCRA programs, only \$6 million "should be allocated for the purpose of developing and implementing a Federal permit program for the regulation of coal combustion residuals ["CCR"] in nonparticipating states"), *available at* <https://www.congress.gov/crec/2018/03/22/CREC-2018-03-22-bk2.pdf>. Furthermore, EPA still must take many steps prior to actually implementing a permit program in a nonparticipating state. For example, EPA first needs to conduct a new notice-and-comment rulemaking to promulgate regulations for permit issuance and address other issues, which it has not yet even proposed to do, before it may begin implementing a federal CCR permit program in any non-participating state.

Notification to EPA would not suffice to cure the oversight deficiency that would be present if alternative performance standards were to apply to facilities in nonparticipating states. As noted above, this is clearly evident when considering EPA's request for comments on whether facilities in nonparticipating states should be given the flexibility to "decide not to require cleanup of part 257 Appendix IV constituents released to groundwater" simply based on their own determination that "remediation is not technically feasible." *See* 83 Fed. Reg. at 11,600. In this scenario, a unit could have been found to have been already been releasing levels of antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, fluoride, lead, lithium, mercury, molybdenum,

selenium, thallium, or radium 226 and 228 combined—or all of these pollutants together—above groundwater protection standards, yet the owner or operator could be given the opportunity to avoid cleanup because “remediation is not technically feasible.” Even if the operator or an expert provided notice to EPA, by the time EPA used its authorities to inspect, review, and enforce if it found that cleanup was technically feasible, the pollutants—which were already polluting groundwater above safe levels—would have only had more time to travel into the environment and more opportunities to reach, and adversely effect, potential human and ecological receptors. This clearly and unequivocally poses a greater probability of adverse effects on health and the environment than simply requiring all facilities in nonparticipating states to comply with the minimum federal criteria, and this is true regardless of whether the facility was required to notify EPA or not.

5. *The deficiency caused by allowing units in nonparticipating states to use alternative performance standards is not cured by posting of documentation on the facility’s publicly available website.*

EPA also questioned whether a facility’s posting of documentation on the facility’s publicly available website that it would be applying one or more alternative performance standard(s) would enable EPA to allow the application of such alternative standards to units in nonparticipating states. The answer, once again, is no. For the same reason as discussed above regarding sending a notification to EPA, this “alternative” means of implementing such alternative performance standards would not ensure that the statutory standard requiring no reasonable probability of adverse effects to health or the environment would be met. Notification—no matter the method—is wholly inadequate to remedy the potential for adverse effects that would result from allowing flexibilities in performance standards to apply directly to facilities that are not subject to the oversight of a permitting authority and permit program. While such notification could enable citizens, EPA, or a State to take enforcement action, the facility could nonetheless implement such deviations from the federal minimum standards without obtaining express approval and without careful review by a permitting agency, which presents more opportunities and time for a facility to leak pollutants into the environment at unsafe levels or otherwise pose a reasonable probability of adverse effects on health or the environment from disposal at such a facility.

F. EPA ACKNOWLEDGES THAT PROPOSED FLEXIBILITIES FOR SOME PERFORMANCE STANDARDS MUST BE REVIEWED CAREFULLY BY A STATE OR EPA (AND NOT APPLIED DIRECTLY TO A FACILITY IN A NONPARTICIPATING STATE), AND THAT IS TRUE FOR ALL POTENTIAL FLEXIBILITIES.

EPA acknowledges for some of its proposed flexibilities that a decision to apply an alternative performance standard must undergo review by a permitting authority prior to approval in order to meet the RCRA section 4004(a) protectiveness standard, and this is equally true for all of the CCR Rule’s requirements. It is inappropriate and would be legally, technically, and practically indefensible for EPA to allow application of any so-

called “alternative performance standards” or “flexibilities” from the regulatory requirements in its regulations for units in nonparticipating states. No remedial measures suggested by EPA or otherwise, either alone or applied all together, would be able to ensure no reasonable probability of adverse effects to health or the environment would occur a result of the application of alternative performance standards that deviated from technical standards promulgated by EPA at a facility or unit in a nonparticipating state.

X. THE 2018 PROPOSAL WOULD BE EXTREMELY AND IMPERMISSIBLY BURDENSOME TO ENFORCE.

A. ENFORCEMENT OF THE 2018 PROPOSAL WOULD PLACE AN IMPERMISSIBLE BURDEN ON CITIZENS AND THE COURTS.

When Congress enacted RCRA, it made very clear that citizens were to be afforded a key role in both the development of standards for the regulation of waste and in the enforcement of those standards. Congress codified this mandate in RCRA section 7004(b), which states:

Public participation in the development, revision, implementation, *and enforcement* of any regulation, guideline, information, or program under this Act shall be provided for, encouraged, and assisted by the Administrator and the States. The Administrator, in cooperation with the States, shall develop and publish minimum guidelines for public participation in such processes.

42 U.S.C. § 6974(b) (emphasis added). Citizen enforcement was also specifically provided for in RCRA’s citizen suit provision, 42 U.S.C. § 6972(a)(1), which authorizes citizens to bring suit for violations of any standard, regulation, and requirement that have become effective pursuant to the Act. Recognizing that EPA and state governments would not always be willing or able to enforce against polluters, and that ongoing pollution should be stopped as soon as possible, Congress provided for citizens suits to “function as a form of statutory enforcement in addition to, or in conjunction with, enforcement by an administrative agency or other governmental entity.” *Esso Standard Oil Co. (P.R.) v. Rodríguez-Pérez*, 455 F.3d 1, 5 n.2 (1st Cir. 2006). *See also Adkins v. VIM Recycling, Inc.*, 644 F.3d 483, 499 (7th Cir. 2011) (“Congress enacted the citizen-suit provisions of RCRA and other environmental laws because the world is not ideal, because government agencies face many demands on their resources, because administrations and policy priorities change, and because regulatory agencies are subject to the phenomenon known as ‘agency capture.’”).

Because Congress granted citizens this important enforcement role in RCRA, EPA may not effectively wipe out that role by making enforcement extremely burdensome for citizens.¹⁸⁶ Yet that is precisely what EPA proposes to do with the 2018

¹⁸⁶ *See, e.g., Nat. Res. Def. Council, Inc. v. U.S. E.P.A.*, 822 F.2d 104, 131 (D.C. Cir. 1987) (“[W]e remind the agency that it has no power to correct flaws that it perceives in the statute it is empowered to

Proposal. As EPA recognized, allowing site-specific, “risk-based” standards such as those EPA proposes to authorize here makes such standards very difficult for citizens to enforce.¹⁸⁷ Citizens would need to hire (often expensive) experts not only to prove violations of those site-specific standards, but even just to determine what constitutes a violation. This time-consuming, costly process would render citizen enforcement impossible for many, in clear violation of RCRA section 7004(b).

The heavy burden on citizens for enforcement translates into a heavy burden for courts as well. Enforcing site-specific, “risk-based” standards would make for very fact-intensive adjudications that require significant investment of judicial time and resources. Exacerbating the problem, courts would likely, in many cases, lack authoritative materials such as EPA rulemaking records or guidance, or decisions from sister courts, interpreting the same standards as a matter of federal law. Replacing uniform national standards with uniquely developed, site-specific approaches to regulation would significantly increase the burden on courts to adjudicate disputes over the meaning of such technically complex standards and to determine what constitutes a violation of those standards.

Were EPA to authorize owner/operators of CCR units to establish site-specific, “alternative” standards in states without approved CCR programs, the burden on citizens and courts would be even greater than in approved states. With no permitting authority overseeing the establishment of such standards, citizens would be faced with policing even the most minor, technical violations of those standards – both in how they are set, and violations thereof – through the blunt, and costly, instrument of litigation. And in such cases, courts would have no agency record to look to in evaluating the propriety of site-specific standards set by owner/operators of CCR units who, as EPA has acknowledged, have incentives to cut corners.¹⁸⁸

In short, the 2018 Proposal would make it extremely burdensome for citizens – and the courts they litigate in – to enforce standards critical to protecting human health and the environment. As such, the 2018 Proposal contravenes Congress’ clear aim,

administer. Its rulemaking power is limited to adopting regulations to carry into effect the will of Congress as expressed in the statute.”) (internal quotations omitted).

¹⁸⁷ See, e.g., 80 Fed. Reg. at 21,398 (“[G]iven the extremely technical nature of these requirements, EPA remains concerned that [alternative standards allowing “state regulators (or facilities) . . . to ‘tailor’ those requirements to sites] would render the requirements appreciably more difficult for citizens to effectively enforce.”).

¹⁸⁸ See, e.g., 80 Fed. Reg. at 21,371 (“[T]he regulatory structure under which this rule is issued effectively limits the Agency’s ability to develop the type of requirements that can be individually tailored to accommodate particular site conditions. Under sections 1008(a) and 4004(a), EPA must establish national criteria that will operate effectively in the absence of any guaranteed regulatory oversight (*i.e.*, a permitting program), to achieve the statutory standard of “no reasonable probability of adverse effects on health or the environment” at all sites subject to the standards. EPA was unable to develop a performance standard that would allow for alternatives to closure, but would also be sufficiently objective and precise to minimize the potential for abuse.”); *id.* at 21,398 (“EPA is concerned that provisions allowing [site-specific modifications to groundwater monitoring standards] are particularly susceptible to abuse, since in many cases the provisions could allow substantial cost avoidance.”).

manifested in RCRA sections 6974 and 7004(b), to ensure citizens play a key role in enforcing the statute.

B. THE 2018 PROPOSAL WOULD VIOLATE RCRA SECTION 4004(A) BY HINDERING ENFORCEMENT.

By severely hindering citizen enforcement, the 2018 Proposal would violate not only RCRA's public participation mandate in section 7004(b), but also the substantive statutory provision mandating regulation of CCR, RCRA section 4004(a). *See, e.g., McEvoy v. IEI Barge Servs., Inc.*, 622 F.3d 671, 674 (7th Cir. 2010) ("Setting standards is just the first step; without effective enforcement those standards would be so many words on a piece of paper.").

Under 4004(a), the CCR rule must ensure there is "no reasonable probability of adverse effects on health or the environment." 42 U.S.C. § 6944(a). When issuing the 2015 CCR Rule, EPA determined that the rule would not satisfy the statutory standard unless it included provisions that would enable enforcement by citizens and states. 80 Fed. Reg. at 21,338 ("[T]he Agency cannot conclude that the regulations promulgated in this rule will ensure that there is no reasonable probability of adverse effects on health or the environment unless there is a mechanism for states and citizens, as the entities responsible for enforcing the rule, to effectively monitor or oversee its implementation."); *id.* at 21,426-27 ("EPA believes that it cannot conclude that the RCRA subtitle D regulations will ensure that there is no reasonable probability of adverse effects on health or the environment, unless there are mechanisms for states and citizens to monitor the situation . . . so they can determine when intervention is appropriate.").^{189,190}

In states without approved CCR programs – which, right now, is *every* state – nothing has changed that alters that conclusion. Such states are in precisely the same circumstances that they were in when EPA adopted the 2015 CCR Rule: there is no permitting authority oversight, and the only mechanism to ensure the RCRA 4004(a)

¹⁸⁹ *See also id.* at 21,339 ("[A] key component of EPA's support for determining that the rule achieves the statutory standard is the existence of a mechanism for states and citizens to monitor the situation, such as when groundwater monitoring shows evidence of potential contamination, so that they can determine when intervention is appropriate. The existence of effective oversight measures provides critical support for the statutory finding").

¹⁹⁰ Notably, EPA came to a similar conclusion in the context of the MSWLF Rule, upon which EPA bases many of the standards contained in the 2018 Proposal. In adopting the 40 C.F.R. Part 258 standards for MSWLFs, EPA concluded that authorizing owners and operators in non-approved states to select "alternative performance standards" would not meet the statutory standard of RCRA 4010(c) due to the lack of oversight from a permitting authority. *See, e.g.*, 56 Fed. Reg. at 50,993 (establishing minimum specifications, with no alternative standards, for composite liners to "ensure effective and protective implementation of this rule in States without approved programs where State oversight will not be present"). Indeed, EPA made clear in the final MSWLF rule that this was the reason that several of the individual performance standards in the existing 40 CFR part 258 requirements are available only in states with EPA approved programs. *See, e.g.*, 56 Fed. Reg. 51,096 (authorizing alternative cover designs). If allowing owners and operators of MSWLF to set "alternative standards" does not meet the less-protective statutory standard of RCRA § 4010(c), as EPA correctly concluded, then authorizing owners and operators of CCR units to select the same alternative standards certainly does not meet the heightened protectiveness standard of RCRA 4004(a), applicable here.

standard is met is after-the-fact enforcement. Citizen suits remain one of the only mechanisms for enforcement – likely the primary one.¹⁹¹ Thus, for the same reasons (detailed above) that “alternative,” site-specific, “risk-based” standards did not meet the Section 4004(a) protectiveness standard when EPA issued the 2015 CCR Rule, such standards as those included in the 2018 Proposal likewise fail to meet that protectiveness standard today. Accordingly, any final rule that authorizes owner/operators of CCR units in non-participating states to establish “alternative” site-specific standards for such units would be unsupported by the record, arbitrary and capricious, and contrary to law.

Even in states with approved CCR programs, citizen enforcement remains critical. As discussed herein in Section XI of these comments, states have historically failed to adequately regulate and enforce against CCR units, and nothing indicates that that historical trend has changed. As such, it will undoubtedly be up to citizens to enforce the rule’s protections. Even when set by states, the site-specific, “alternative” standards that the 2018 Proposal authorizes will be extremely burdensome for citizens to enforce – and for courts to adjudicate – for the reasons discussed above. The 2018 Proposal would severely impede citizen enforcement in both approved and non-approved states, and is thus arbitrary, capricious, and contrary to law.

XI. EPA HAS FAILED TO SHOW THAT AUTHORIZING STATES TO ESTABLISH ALTERNATIVE PERFORMANCE STANDARDS MEETS THE RCRA SECTION 4004(A) PROTECTIVENESS STANDARD.

EPA has failed to show that its 2018 Proposal to authorize states to set alternative performance standards will meet the RCRA section 4004(a) protectiveness standard. The history of states’ failure to protect the health of their residents and the environment from coal ash pollution is long, extensive, and painful. State regulations have been grossly deficient to protect against coal ash pollution, lacking such critical protections as groundwater monitoring, location restrictions, adequate liner requirements, and fugitive dust protections, among others. Even when those provisions are in place, many states’ regulatory schemes are full of loopholes that put health and the environment at risk. In permits, states have repeatedly set site-specific standards for CCR units that fall short of required environmental and health mandates: they often fail to set limits on the discharge of dangerous pollutants at all, fail to set sufficiently stringent limits for those pollutants, or fail to adequately monitor how much CCR pollution is entering waterways. Where states have been presented with information about harm to human health or the environment from CCR units, they have often turned a blind eye or rubber-stamped inadequate plans that reduce pollution only minimally, if at all.

¹⁹¹ EPA now has enforcement authority in such states, in addition to citizens. *See* 42 U.S.C. § 6945(d)(4)(A) (authorizing EPA to “use the authority provided by sections 3007 and 3008” to enforce the federal criteria); *id.* § 6927 (granting EPA inspection authority); *id.* § 6928 (authorizing EPA to issue orders “for any past or current violation” of RCRA). However, notwithstanding having this authority since 2016, EPA has not once exercised it, nor is there any indication that it plans to do so. And even if it did, EPA has an obligation to ensure that citizen enforcement is not so burdensome as to render Congress’ citizen suit provision meaningless. *See Nat. Res. Def. Council, Inc.*, 822 F.2d at 131.

The results have been devastating. Disasters including the 2008 TVA Kingston ash pond collapse, the 2014 Dan River ash pond collapse, and the ongoing devastation from coal ash pollution in the Town of Pines, Indiana, all occurred on states' watch. The Damage Cases described in the rulemaking for the 2015 CCR Rule identified numerous water bodies deemed unsafe to fish due to CCR pollution; aquatic organisms and waterfowl deformed, left unable to reproduce, and killed by CCR pollution; voluminous coal ash spills; and drinking wells poisoned by CCR pollution. New information further confirms this damage: recently-released groundwater monitoring results reveal extensive toxic pollution at CCR units throughout the country.

This bleak record of state regulation of CCR units was one of the reasons why EPA issued the 2015 CCR Rule. *See* 80 Fed. Reg. at 21,326 (“the high degree of variation across state programs strongly supports the need for federal requirements to establish a consistent national standard of groundwater and human health protection”); *id.* at 21,324 (“Overall, the information from commenters and from EPA’s own review of state programs generally confirms EPA’s original conclusion that significant gaps remain in many state programs.”); *id.* at 21,325 (“All of this information suggests that . . . the concerns raised in the proposal regarding the protectiveness of state programs remain warranted.”).

Nothing in the record even suggests, much less establishes, that states are now poised to ensure that any and all “alternative performance standards” they would set under EPA’s 2018 Proposal will meet RCRA 4004(a)’s protectiveness standard of “no reasonable probability of adverse effects on health or the environment” Rather, the evidence shows that states continue to fail to ensure that CCR units have adequate protections in place, fail to enforce against CCR units when they ignore or fall short of mandated protections, and collude with owners/operators of CCR units to minimize citizen suits and associated penalties. Moreover, a number of CCR-producing states lack sufficient resources to ensure that adequate regulatory protections are developed, implemented, and enforced. EPA’s failure to show that authorizing states to set alternative performance standards for CCR units will meet the protectiveness standard of RCRA section 4004(a) renders the 2018 Proposal arbitrary, capricious, and contrary to law.

A. EPA HAS NOT SHOWN THAT STATES ARE WILLING TO SET ALTERNATIVE PERFORMANCE STANDARDS THAT MEET THE PROTECTIVENESS STANDARD OF RCRA SECTION 4004.

1. States regulatory schemes for CCR units are grossly inadequate and put human health and the environment at risk.

The deficiencies of state regulatory provisions to protect against harm to human health and the environment have been abundantly documented.¹⁹² The vast majority of

¹⁹² *See, e.g.*, 80 Fed. Reg. at 21,322-26, 21,386, and 21,456; RIA for 2010 Proposed Rule; 2010 Environmental Comments at 21-67, 104-108; Earthjustice, *State of Failure: How States Fail to Protect Our*

states have failed to require even the most basic protections at CCR units, including groundwater monitoring, adequate liners, location restrictions and fugitive dust protections, among others. Even where states do generally require such protections, many offer generous loopholes that put the health of persons living near CCR units, as well as the surrounding environment, at risk.

Perhaps the most glaring deficiency of state CCR regulatory programs is the lack of monitoring requirements to detect whether pollutants are leaching into groundwater. Following a comprehensive evaluation of state regulations concerning CCR, the 2010 Environmental Commenters found that “[o]nly 4 states (comprising less than 4 percent of the CCR generated in the U.S.) require groundwater monitoring at all new and existing landfills in their states,” while just “6 states (comprising 19 percent of the CCR generated in the U.S.) require groundwater monitoring at all new and existing surface impoundments.”¹⁹³ EPA’s own 2010 Risk Assessment came to similar conclusions, including a finding that 85 percent of states surveyed by the agency did not require groundwater monitoring and leachate collection at surface impoundments.¹⁹⁴

EPA’s additional review of state requirements, completed in advance of the 2015 CCR Rule, reconfirmed this troubling lack of groundwater monitoring. EPA found that states including “Mississippi, Montana, and Texas (the largest coal-ash producer) exempt the on-site disposal of CCR . . . from some or all key requirements, such as permits or groundwater monitoring. Such exemptions would cover most of the disposal of CCR within the state, as the majority of utilities dispose of their CCR on-site.” 80 Fed. Reg. at 21,324. EPA further found that states including Utah, Arizona and New Mexico have “no regulations applicable to CCR units or entirely exempt CCR from state regulations governing solid waste,” *id.*, while “[c]ertain states (*e.g.*, Indiana) consider surface impoundments as temporary storage facilities as long as they are dredged on a periodic basis (*e.g.*, annually). Under these states’ rules, such impoundments are exempt from any solid waste regulations that would require groundwater monitoring . . .” *Id.* at 21,456.

The 2010 Environmental Commenters and EPA found that states similarly fall short when it comes to requiring composite liners to prevent CCR pollution from leaching through the bottoms of CCR units. The 2010 Environmental Commenters found that just “5 of 37 states mandate the installation of composite liners at all new CCR landfills and only 4 of 37 states require composite liners at all new CCR surface impoundments.”¹⁹⁵ Seven states, they found, lacked any liner requirement at all for CCR landfills. *Id.* For surface impoundments, the 2010 Environmental Commenters found that 27 of the states they reviewed – including major CCR-generating states Texas, Ohio, and Kentucky – “have no liner requirement whatsoever for CCR surface impoundments.”

Health and Drinking Water From Toxic Coal Ash (Aug. 2011) (hereinafter “State of Failure”) (attached), available at https://earthjustice.org/sites/default/files/StateofFailure_2013-04-05.pdf.

¹⁹³ 2010 Environmental Comments at 27-28.

¹⁹⁴ RIA for 2010 Proposed Rule, at Appendix E, Baseline State Government Regulatory Requirements for CCR Disposal Units in Top-34 Coal Utility States.

¹⁹⁵ 2010 Environmental Comments at 33.

Id. EPA again came to similar conclusions, finding in the 2010 RIA that over half of the states surveyed by the agency did not require liners for CCR surface impoundments.¹⁹⁶

Another essential safeguard that states have failed to put in place are location restrictions for CCR units. In its 2010 RIA, EPA found that:

- Just five of the 25 states EPA reviewed limited siting of CCR impoundments below the water table, while eight of those states restricted such siting for CCR landfills;
- Just five of the states reviewed restricted siting of CCR impoundments in wetlands, while just 17 states restricted such siting for CCR landfills;
- Fewer than one-third of the states that EPA reviewed limited siting of CCR impoundments in floodplains;
- Just two states restricted siting of CCR impoundments in seismic zones or fault areas;
- Just five states restricted the siting of CCR impoundments in areas of unstable (karst) terrain, while 12 states restricted such siting of CCR landfills.

2010 Environmental Commenters found further deficiencies with regard to states' failure to limit the siting of CCR units in groundwater. Although mandating separation from the water table is one of the most basic tenets of proper waste management, the commenters found that "16 of 37 states place no restriction on the location of ash landfills with respect to the water table and 30 of 37 states place no restrictions with regard to the location of coal ash surface impoundments."¹⁹⁷

Still other critical protections that EPA and 2010 Environmental Commenters found that many states failed to require include, *inter alia*, safeguards against fugitive CCR dust,¹⁹⁸ leachate collection,¹⁹⁹ financial assurance,²⁰⁰ and safe closure of CCR units.^{201,202}

Even when states generally require some of those protective measures, many offer generous loopholes that put the health of people living near CCR units, as well as the surrounding environment, at risk. For example, numerous states authorize regulatory

¹⁹⁶ RIA for 2010 Proposed Rule, at Appendix E, Baseline State Government Regulatory Requirements for CCR Disposal Units in Top-34 Coal Utility States.

¹⁹⁷ 2010 Environmental Comments at 37.

¹⁹⁸ *Id.* at 35-36.

¹⁹⁹ *See id.* at 34-35; RIA for 2010 Proposed Rule, at Appendix E, Baseline State Government Regulatory Requirements for CCR Disposal Units in Top-34 Coal Utility States.

²⁰⁰ 2010 Environmental Comments at 38-39.

²⁰¹ *Id.* at 39-41.

²⁰² It is true that many of the requirements that states have failed to require, or from which they have exempted CCR units, are now mandated by the 2015 CCR Rule. However, the fact that a *self-implementing federal* rule may require those things, or that owners/operators of CCR units may comply with that self-implementing rule, does not change the fact that states have fallen woefully short when charged with overseeing and regulating CCR units themselves. As EPA suspected, *See* RIA for 2010 Proposed Rule at 124, many states have not updated their own requirements to mandate such protections.

agencies to waive, or grant exemptions from, groundwater monitoring requirements at CCR surface impoundments. 80 Fed. Reg. at 21,324 (listing Alabama, Florida, Georgia, Illinois, Indiana, Kentucky, North Carolina, North Dakota, Pennsylvania and West Virginia as states that offer such waivers). Exemptions from groundwater monitoring are, as EPA has explained, “likely to decrease the instances in which contamination above an MCL has migrated off-site will be detected.” *Id.*²⁰³ In other instances, where plumes of CCR contaminated groundwater have migrated past the site boundary and polluted private water wells, states have allowed owners/operators of CCR units to purchase the impacted properties and deem them “on-site,” thus subjecting the contaminated properties to different (generally less) corrective action than is required for “off-site” pollution. 80 Fed. Reg. at 21,456.

One particularly troubling regulatory loophole, offered by several CCR-producing states, effectively creates sacrifice zones for contaminated groundwater that the state allows to remain out of compliance with health-protective limits. As EPA explained in the preamble to the 2015 CCR Rule, states including Florida, Illinois, North Dakota, and Tennessee “authorize a buffer zone or a ‘zone of discharge,’ which allows the facility to defer remediation of groundwater contamination for some period of time, usually until the contaminant plume has migrated to the facility site boundary.” 80 Fed. Reg. at 21,324. In Illinois, sites with CCR-polluted groundwater may be designated as a “groundwater management zone” where the otherwise-applicable groundwater protection standards are lifted, sometimes for decades.²⁰⁴ In Florida, EPA found, “primary and secondary maximum contaminant levels (MCLs) do not apply even beyond the ‘zone of discharge,’ absent a specific order by state regulatory authorities.” 80 Fed. Reg. at 21,324.

States also create such sacrifice zones by granting variances from otherwise-applicable groundwater protection standards to CCR units, allowing them to pollute well in excess of levels determined to protect health.²⁰⁵ One example is the Lincoln Stone Quarry in Joliet, Illinois, where owners/operators of the Joliet coal-fired power plant (now refueled as a gas plant) dumped, and continue to dump, CCR generated at that plant since the 1960s.²⁰⁶ The Illinois Pollution Control Board granted then-owner Commonwealth Edison an “adjusted standard” in 1996, exempting the Lincoln Stone

²⁰³ See also *id.* at, e.g., 29-32.

²⁰⁴ See 35 Ill. Adm. Code § 620.250; *In re: Petition of Commonwealth Edison Co. for an Adjusted Standard from 35 Ill. Adm. Code Parts 811 and 814*, PCB No. AS 96-9, at 13 (Aug. 15, 1996) (attached); KPRG, Groundwater Monitoring Map for Joliet Lincoln Stone Quarry 2017 (attached) (showing continued existence of groundwater management zone at the site).

²⁰⁵ See 80 Fed. Reg. at 21,456 (“In other instances, states grant waivers to certain facilities that exceed health-based standards severalfold”).

²⁰⁶ See Earthjustice *et al.*, *Comments on Application for Significant Modification to Permit – Bottom Ash Disposal from Midwest Generation, LLC Stations; Joliet/Lincoln Stone Quarry; Midwest Generation, LLC; Joliet, Illinois*, at 1-4 (Oct. 12, 2017) (attached) (hereinafter “Joliet LSQ Comments”); see also Environmental Integrity Project, Earthjustice, and Sierra Club, *IN HARM’S WAY: Lack Of Federal Coal Ash Regulations Endangers Americans And Their Environment: Thirty-nine New Damage Cases of Contamination from Improperly Disposed Coal Combustion Waste*, at 41-47 (Aug. 26, 2010) (hereinafter “In Harm’s Way”) (attached), <https://earthjustice.org/sites/default/files/files/report-in-harms-way.pdf>.

Quarry from Illinois' groundwater protection standards.²⁰⁷ Groundwater monitoring since that time has shown concentrations of toxic CCR pollutants well in excess of health-based levels, including, among others, arsenic as high as .19 mg/l and boron as high as 17 mg/l in 2017.²⁰⁸

Other troubling waivers include those that exempt CCR units from otherwise-applicable disposal requirements, including liner standards, leachate collection requirements, and landfill cover requirements.²⁰⁹ These waivers may significantly compromise the safety of a waste disposal unit.²¹⁰ Such waivers have been liberally granted by states.²¹¹

2. *States have failed to protect health and the environment when setting standards analogous to those EPA proposes here.*

Abundant evidence shows that when states have been authorized to establish standards such as those EPA here proposes, they have either failed to do so at all, or failed to do so in a manner that protects human health and the environment. For example, the majority of states that generate large quantities of CCR have failed to establish *any* groundwater protection standards at all for CCR pollutants boron, cobalt, molybdenum, or lithium,²¹² and where standards have been set for those pollutants, they have varied widely.²¹³ States have, at great cost to communities, also failed to establish protective standards for the extremely toxic pollutant lead, also found in CCR. In a notice of intent to sue submitted on April 24, 2018, the Newark Education Workers Caucus and the Natural Resources Defense Council alleged that New Jersey has failed to designate certain parameters, including “optimal pH levels” and “optimal levels of corrosion-inhibiting chemicals,” which help ensure that corrosion treatment is working to minimize lead in tap water.²¹⁴ And in Michigan, officials’ failure to ensure an optimal level of corrosion indicator pH appears to be one factor leading to the crisis of lead-poisoned drinking water in Flint.²¹⁵

²⁰⁷ *In re: Petition of Commonwealth Edison Co. for an Adjusted Standard from 35 Ill. Adm. Code Parts 811 and 814*, PCB No. AS 96-9 (Aug. 15, 1996).

²⁰⁸ See Notice of Confirmed Exceedance, Lincoln Stone Quarry, at Table 1 (July 12, 2017) (attached).

²⁰⁹ See 2010 Environmental Comments at 27 (setting forth examples of where waivers may compromise the safety of CCR units).

²¹⁰ See *id.*

²¹¹ See Dep’t of Energy and EPA, *Coal Combustion Waste Management at Landfills and Surface Impoundments, 1994-2004*, Docket ID No. EPA-HQ-RCRA-2006-0796-0002, at tbl. 23 (Aug. 2006) (hereinafter “2006 DOE/EPA Report”) (attached) (showing that, of 52 requests for variances from CCR disposal requirements, 47 were granted by state regulators).

²¹² See, e.g., 327 IAC 2-11-6; Utah Admin Code R317-6-2; Ark. Admin. Code 014.03.4 Appendix 3.

²¹³ Commenters would have conducted a more extensive review of groundwater protection standards (or lack thereof) set by states, but the 45-day comment period did not allow for such a review. EPA should have performed, and should perform, such a review itself before issuing any final rule.

²¹⁴ See NRDC, “Notice of Intent to Sue under the Safe Drinking Water Act, 42 U.S.C. § 300j8(b)(1)(a) for failure to comply with regulations for the control of lead in drinking water in Newark, New Jersey,” at 9-10 (Apr. 24, 2018) (attached), https://assets.nrdc.org/sites/default/files/notice-intent-to-sue-sdwa-newark-20180424.pdf?_ga=2.148638130.446354385.1524689814-53181319.1523478527.

²¹⁵ See, e.g., Chemical and Engineering News, “How Lead Ended Up In Flint’s Tap Water: Without effective treatment steps to control corrosion, Flint’s water leached high levels of lead from the city’s

States fare no better with regard to cleanup standards. As discussed above, states including Florida, Illinois, North Dakota, and Tennessee allow for “buffer zones” or “zones of discharge”²¹⁶ that allow facilities to “defer remediation of groundwater contamination for some period of time, usually until the contaminant plume has migrated to the facility site boundary.” 80 Fed. Reg. at 21,324. In Illinois, for example, sites with CCR-polluted groundwater may be designated as a “groundwater management zone” where the otherwise-applicable groundwater protection standards are lifted or modified well above health-based standards, sometimes for decades.²¹⁷ Illinois has already established such groundwater management zones for numerous CCR units in the state, including but not limited to NRG’s Will County, Powerton, and Joliet power plants²¹⁸ And Michigan did not require cleanup of CCR-contaminated sediments in Lake Erie adjacent to the JR Whiting Generating plant because the CCR contaminants measured therein fell below the state’s sediment cleanup standards, even when multiple studies showed toxic concentrations of selenium in aquatic organisms and reduced numbers of fish and other aquatic biota in the area near the plant’s outfalls.²¹⁹

States’ records in setting other “alternative” standards that the 2018 Proposal would authorize them to establish are equally disastrous. When setting location standards was left to states, states utterly failed to protect communities and the environment. CCR units have been built over unstable karst geology, resulting in dangerous collapses of impoundments floors and severe contamination,²²⁰ because states have allowed them to be built there. CCR units have been built in gravel pits dug below the water table,

pipes,” (Feb. 11, 2016), <https://cen.acs.org/articles/94/i7/Lead-Ended-Flints-Tap-Water.html> (“The pH drop over time seems to indicate that plant operators in Flint didn’t even have a target pH as part of a corrosion plan, Edwards says.”).

²¹⁶ EPA explained in the Preamble to the 2015 CCR Rule that “A Zone of Discharge or Zone of Mixing is a three dimensional region containing groundwater being managed to mitigate impairment caused by the release of contaminants from a waste disposal site; by definition, it is inside the detection boundary area, hence it is exempt from compliance with MCL and SMCL standards (*e.g.*, in Florida, Illinois, South Carolina, Tennessee, North Carolina, and Pennsylvania).” 80 Fed. Reg. 21,454 n.203.

²¹⁷ See 35 Ill. Adm. Code § 620.250; *In re: Petition of Commonwealth Edison Co. for an Adjusted Standard from 35 Ill. Adm. Code Parts 811 and 814*, PCB No. AS 96-9, at 13 (Aug. 15, 1996); KPRG, Groundwater Monitoring Map for Joliet Lincoln Stone Quarry 2017 (showing continued existence of groundwater management zone at the site).

²¹⁸ See Letter from William E. Buscher, Manager, Hydrogeology and Compliance Unit, Groundwater Section, Bureau of Water, IEPA to John Kennedy, Senior Vice President, Generation, MWG (July 2, 2013) (attached); Letter from William E. Buscher, Manager, Hydrogeology and Compliance Unit, Groundwater Section, Bureau of Water, IEPA to Amy Hanrahan, Senior Environmental Manager, MWG (Aug. 8, 2013) (attached); Letter from William E. Buscher, Manager, Hydrogeology and Compliance Unit, Groundwater Section, Bureau of Water, IEPA to John Kennedy, Senior Vice President, Generation, MWG (Oct. 3, 2013) (attached).

²¹⁹ See EPA Damage Cases, Volume I: Proven Damage Cases, Dec. 2014, at 43-49.

²²⁰ See, *e.g.*, *Tenn. Clean Water Network v. Tenn. Valley Auth.*, 273 F. Supp. 3d 775 (M.D. Tenn. Aug. 4, 2017); see also 2010 Environmental Comments at 180 n.673 (“At least two of EPA’s damage cases occurred as a result of karst sinkholes, including the 2002 release of 2.25 gallons of ash and water when a sinkhole developed in an impoundment that eventually reached four acres in size at Georgia Power’s Plant Bowen, Cartersville, GA. 75 Fed. Reg. 35237.”).

wetlands, and other high risk locations – with disastrous results²²¹ – precisely because states have not prevented it. When states have been tasked with ensuring that groundwater monitoring is suspended only if there is “no potential for migration” of pollutants, as EPA here proposes and claims would very rarely occur, they have handed out numerous waivers – and it is not clear that those waivers were issued appropriately.²²² When states have been left to their own devices in setting post-closure requirements, they have fallen far short: Earthjustice’s 2010 analysis showed that just one of 37 states surveyed required 30 years of post-closure groundwater monitoring for CCR surface impoundments,²²³ despite the long-term potential – well beyond 30 years – for such units to leak.²²⁴ And when states have purportedly assured compliance with technical requirements by issuing certifications of compliance with those requirements, the certifications have proven to be not worth the paper they are printed on in many cases.²²⁵

Commenters would have undertaken an extensive review of current state requirements to better inform EPA of continuing deficiencies in state regulations pertaining to the above-noted standards, but the 45-day comment period simply did not allow for enough time to perform such a review. EPA, however, should have conducted such a review as part of this rulemaking, and should do so prior to finalizing any rule that authorizes states to set exactly the kinds of standards that, in the past, states have failed to establish at all or established in ways that do not come close to meeting the protectiveness standard of RCRA section 4004(a). Failure to do so would render the final rule arbitrary, capricious, and contrary to law.

3. *State permitting of CCR units has failed to ensure compliance with statutory mandates for protection of health and the environment.*

States’ record of setting site-specific environmental and health standards in permits for CCR units is similarly dismal. Many states are authorized by EPA to issue National Pollutant Discharge Elimination System (“NPDES”) permits to entities that discharge pollutants into surface waters in their state, pursuant to the Clean Water Act. The evidence demonstrates that, when given such authority, states have failed to set sufficiently protective limits for discharges from CCR units.

The Environmental Integrity Project, Earthjustice, Sierra Club, Clean Water Action, and Waterkeeper Alliance released a report on July 23, 2013 that surveyed EPA’s

²²¹ See EPA Damage Cases, Vol. 1, at 25-32 (describing harmful CCR contamination at Constellation Energy’s BBSS Sand and Gravel Quarries in Maryland) and 191-195 (describing groundwater contamination and damage to flora at the WEPCO Cedar-Sauk Landfill, a former sand and gravel pit, in Wisconsin); Joliet LSQ Comments; 80 Fed. Reg. at 21,363 (describing damage caused by disposal of CCR in a wetland area at the

Hyco Reservoir in Roxboro, North Carolina, where “[h]igh levels of the trace element selenium bioaccumulated in aquatic food chains (phytoplankton), poisoning invertebrates and fish in the lake, . . . causing reproductive failure and severe declines in fish populations in the late 1970’s and early 1980’s”).

²²² See Expert Report of Dr. Steven Campbell (hereinafter “Campbell Expert Report”) (attached).

²²³ See 2010 Environmental Comments at 41.

²²⁴ See, e.g., Hutson Expert Report.

²²⁵ See Section XXI, *infra*.

Enforcement and Compliance History Online (ECHO) database and power plant permits to evaluate agency compliance with the Clean Water Act at coal-burning power plants.²²⁶ Specifically, the groups reviewed the ECHO database discharge permits to determine how many plants that discharge coal ash or scrubber waste are required to comply with effluent limits and/or monitoring requirements for six representative metals—arsenic, boron, cadmium, lead, mercury, and selenium.²²⁷ The analysis shows that nearly 70 percent of power plant permits (188 out of 274) set *no limit* on how much of this dangerous pollution these plants can discharge.²²⁸ Only 86 of 274 plants were required to comply with at least one limit on arsenic, boron, cadmium, lead, mercury, or selenium.²²⁹ Only after EPA issued its long-overdue revision of the Steam Electric Effluent Limitations Guidelines (the “ELG Rule”) in 2015²³⁰ did states begin to revise power plant permits to address metals in CCR wastewater. However, state-issued NPDES permits continue to be deficient with regard to CCR waste streams for which the ELG Rule did not mandate new, more stringent limits.²³¹

When EPA and state administrative agencies have scrutinized state-issued NPDES permits for discharges from CCR units, they have repeatedly found that those permits did not afford the protections mandated by the CWA. In 2010, EPA issued a memo noting that many NPDES permits issued by states failed to “fully address water quality impacts” of CCR contaminants or to require adequate reporting of discharges of such contaminants.²³² In 2011 and 2012, EPA’s regional offices issued dozens of objection letters to at least ten states concerning their failure to perform proper Best Available Technology (“BAT”) determinations for CCR waste streams.²³³ And in 2014, the Illinois Pollution Control Board found that a state-issued NPDES permit for discharges from a CCR impoundment failed to provide for adequate monitoring of CCR contaminants.²³⁴

²²⁶ Environmental Integrity Project et al., *Closing the Floodgates: How the Coal Industry is Poisoning Our Water and How We Can Stop It* (July 23, 2013) (attached), available at http://www.environmentalintegrity.org/news_reports/documents/2013_07_23_ClosingTheFloodgates-Final.pdf.

²²⁷ *Id.* at 30.

²²⁸ *Id.* at 7.

²²⁹ *Id.*

²³⁰ See EPA, “Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category: Final Rule,” 80 Fed. Reg. 67,838 (Nov. 3, 2015).

²³¹ For example, North Carolina this year proposed a permit for the Marshall facility that would not require Duke Energy to limit its discharge of arsenic, mercury, and selenium pollution into Lake Norman, even though the Clean Water Act clearly requires otherwise.

²³² See Memorandum from James Hanlon, Director, Office of Waste Management to Water Division Directors, Regions 1 -10, regarding “National Pollutant Discharge Elimination System (NPDES) Permitting of Wastewater Discharges from Flue Gas Desulfurization (FGD) and Coal Combustion Residuals (CCR) Impoundments at Steam Electric Power Plants” (June 7, 2010) (attached), <https://www3.epa.gov/npdes/pubs/hanlonccrmemo.pdf>.

²³³ See Compilation of EPA Regional Office Interim Objection Letter and Comments (attached) (objecting to NPDES permits issued by Pennsylvania, Virginia, Arkansas, Indiana, Illinois, Wisconsin, Michigan, New Jersey, Tennessee and Texas).

²³⁴ See *Natural Resources Defense Council v. Ill. Envtl. Prot. Agency*, 2014 WL 2591592 (Illinois Pollution Control Board June 5, 2014).

There is a thinner record concerning the deficiencies of CCR disposal permits issued by state agencies, especially for surface impoundments, because most states do not issue such permits.²³⁵ However, two egregious decisions are noteworthy. First, at IPL's Eagle Valley Generating Station, the Indiana Department of Environmental Management (IDEM) allowed termination of groundwater monitoring for arsenic in 1989, after arsenic was detected in a groundwater monitoring well downgradient of the plant's unlined CCR impoundment. IDEM never reinstated the monitoring requirements for arsenic, despite the location of drinking water wells downgradient of the facility and despite being asked to do. Last month, IPL's "CCR Annual Groundwater Monitoring and Corrective Action" report revealed levels of arsenic 14.6 times the MCL in a downgradient monitoring well.²³⁶ Second, Illinois EPA granted Commonwealth Edison and its successors a permit to continue dumping coal ash into the Lincoln Stone Quarry in Joliet, Illinois, despite ongoing exceedances of health-based groundwater standards at that site.²³⁷

Despite evidence under both RCRA and CWA of poor state permitting programs, EPA has not examined the record of state agencies to determine the adequacy of their CCR disposal permits or their enforcement of those permits. There is nothing in the record that shows state regulators have issued effective, appropriate and protective disposal permits.

4. *States have failed, and continue to fail, to meaningfully enforce environmental and public health protections at CCR units that have ignored those protections altogether or fallen short of their mandates.*

States have an abysmal record of enforcement against CCR units. Time and time again, even when faced with clear evidence of harm to health or the environment, states have failed to take meaningful action to require owners and operators of CCR units to meet applicable standards, stop further contamination, or clean up the waters and lands they have already polluted.

The failure of states to enforce environmental and safety protection requirements at CCR units has been set out at length in numerous studies and reports, including in EPA's own compilations.²³⁸ EPA's "Proven Damage Cases" reveal many instances of states ignoring dangerous operating and design conditions at CCR units, leading to widespread groundwater and surface water pollution as well as catastrophic failures of CCR units.²³⁹ Examples include, but are not limited to, the Bruce Mansfield Power Station in Pennsylvania, where CCR polluted private wells; Duke Energy's Gibson Generation Station in Gibson County, Indiana, where CCR contaminated drinking water wells; the Glen Lyn Power Plant in Giles County, Virginia, where CCR pollution

²³⁵ See 2006 DOE/EPA Report.

²³⁶ See IPL, CCR Annual Groundwater Monitoring and Corrective Action (Jan. 31, 2018) (attached).

²³⁷ See Joliet LSQ Comments.

²³⁸ See, e.g., State of Failure; In Harm's Way; Environmental Integrity Project and Earthjustice, *Out of Control: Mounting Damages from Coal Ash Waste Sites* (Feb. 24, 2010) (hereinafter "Out of Control") (attached), <https://earthjustice.org/sites/default/files/library/reports/ej-eipreportout-of-control-final.pdf>; EPA Damage Case Compendium.

²³⁹ See EPA Damage Case Compendium (Dec. 18, 2014).

damaged the ecosystem and biota in surface water adjacent to the plant; the Colstrip Power Plant in Colstrip, Montana, where CCR contaminated drinking water wells; and TVA's Kingston plant in Tennessee, where a catastrophic failure of CCR impoundments inundated a river, homes, and businesses, causing severe damage to human health²⁴⁰ and the environment.²⁴¹ 2010 Environmental Commenters detailed numerous other instances of states failing to meaningfully address CCR pollution of groundwater and surface water when faced with clear evidence of that pollution.²⁴² They include, but are not limited to, Illinois, Ohio, Maryland, Michigan, North Carolina, South Carolina, Pennsylvania, Kentucky, and New York.²⁴³

Citizen enforcement suits have further revealed states' negligence with regard to enforcement of health and environmental protection standards at CCR units. Federal courts in North Carolina, Virginia, and Tennessee have found that utilities have long been violating environmental laws in their storage of coal ash and operation of CCR units, violations that were not addressed by state regulators, if at all, until citizens brought private enforcement actions. *See Tenn. Clean Water Network v. Tenn. Valley Auth.*, 273 F. Supp. 3d 775 at *44 (M.D. Tenn. Aug. 4, 2017); *Sierra Club v. Virginia Elec. & Power Co.*, 2:15-cv-112 (E.D. Va. Mar. 23, 2017); *Cape Fear River Watch, Inc. v. Duke Energy Progress, Inc.*, 25 F. Supp. 3d 798, 808-09 (E.D.N.C. 2014), amended, No. 7:13-CV-200-FL, 2014 WL 10991530 (E.D.N.C. Aug. 1, 2014). In other instances, utilities faced with citizen enforcement suits for violating environmental laws resolved those suits through settlement, warding off possible rulings that their CCR pollution, left unaddressed by the state, violated such laws.²⁴⁴

Oklahoma and North Carolina are just two of many examples of states with troubling histories of failing to protect communities and the environment from toxic CCR pollution. Oklahoma officials have long known about dangerous CCR pollution at AEP's Northeastern coal plant in Oologah. Testing of groundwater at that site starting ten years ago revealed dangerous concentrations of arsenic, lead, barium, chromium, selenium, thallium, and other coal ash pollutants.²⁴⁵ And, though AEP built a "slurry wall" and

²⁴⁰ *See, e.g.*, USA Today, *180 New Cases of Dead or Dying Coal Ash Spill Workers, Lawsuit Says*, March 28, 2018, available at <https://www.knoxnews.com/story/news/crime/2018/03/28/tva-coal-ash-spill-cleanup-roane-county-lawsuits-dead-dying-workers/458342002/>.

²⁴¹ *See id.* at 11-17, 51-63, 95-106, 140-154 and 177-81.

²⁴² *See* 2010 Environmental Comments at, *e.g.*, 55-66, 104-08.

²⁴³ *Id.*

²⁴⁴ *See, e.g.*, Earthjustice, "Settlement Approved to Stop Ohio River Pollution Caught on Camera: The Louisville Gas and Electric company will have to stop allowing toxic waste from its Mill Creek coal plant to flow into the Ohio River," (Dec. 16, 2016), available at <https://earthjustice.org/blog/2016-december/settlement-approved-to-stop-ohio-river-pollution-caught-on-camera>; Consent Decree, *Sierra Club v. Louisville Gas & Electric*, No. 3:14-CV-391-H (W.D. Ky. filed Dec. 14, 2016) (attached); Southern Environmental Law Center, "Conservation Groups Obtain Agreement Requiring Coal Ash Removal from Duke Energy's Buck Plant," (Oct. 5, 2016), available at <https://www.southernenvironment.org/news-and-press/press-releases/conservation-groups-obtain-agreement-requiring-coal-ash-removal> (noting that "North Carolina's Department of Environmental Quality is not a party to that litigation and is not a party to the settlement")

²⁴⁵ *See* In Harm's Way at 149-54.

“grout curtain” along one side of the CCR landfill in 2012-2013,²⁴⁶ those barriers have not stopped the escape of pollution. The 2017 testing of groundwater monitoring wells located just beyond the grout curtain show unsafe levels of arsenic, boron, molybdenum, and radium, and high concentrations of coal ash constituents cobalt, fluoride, sulfate, and TDS.²⁴⁷ Yet Oklahoma has not required AEP to do anything more to stem the flow of these dangerous pollutants out of its coal ash dumps.

Oklahoma’s failure to address devastating coal ash pollution at a vast coal ash minefill dump in Bokoshe is even more revealing of the state’s failure to protect its residents and environment. That dump – called the “Thumb’s Up Ranch” dump, operated by a company formerly known as “Making Money Having Fun LLC”²⁴⁸ – is known to be causing severe air pollution in the town, where rates of respiratory ailments and other maladies are reportedly very high. In a 2016 report on the ash dump, NPR noted that “[f]or years, people in Bokoshe saw the gray dust from the [coal ash dump] coat almost every surface in town. Gardens withered and crops died, residents say. Cows grew sick; calves were stillborn. Residents say ailments among their neighbors — from migraines to nosebleeds, heart conditions and respiratory problems — seemed to become commonplace.”²⁴⁹ Despite those reports, Oklahoma failed to respond to residents’ calls for action to halt this pollution.²⁵⁰

North Carolina’s history of inadequate enforcement of CCR pollution is possibly even more dramatic than that of Oklahoma. It involves a catastrophic failure of one CCR impoundment,²⁵¹ the continued poisoning of drinking water sources from many others,²⁵² a major utility admitting to federal crimes for dangerous mismanagement of its coal ash

²⁴⁶ See Terrecon Consultants, “Report 1 - Groundwater Monitoring Network for CCR Compliance, Public Service Co. of Oklahoma, Northeastern 3 & 4 Power Station,” at 2 (Oct. 2017) (attached) (hereinafter “AEP GW Report, Landfill and AEP GW Report, Bottom Ash Pond”), available at <http://www.aep.com/about/codeofconduct/CCRRule/docs/2017/GroundWater/NE-LF-GWMN-101717.pdf>.

²⁴⁷ See AEP GW Report, Landfill and AEP GW Report, Bottom Ash Pond.

²⁴⁸ See, e.g., <https://earthjustice.org/blog/2011-march/tr-ash-talk-making-money-having-fun>.

²⁴⁹ See NPR, “Coal Ash Bedevils Oklahoma Town, Revealing Weakness of EPA Rule,” June 30, 2016, available at <https://stateimpact.npr.org/oklahoma/2016/06/30/coal-ash-bedevils-oklahoma-town-revealing-weakness-of-epa-rule/>.

²⁵⁰ See *id.* (“Records show citizens logging complaints about the ash clouds for 11 years before environmental officials finally forced the pit operator to adopt a dust-suppression plan. Much of that plan reflects what the company promised years earlier — not just to neighbors but to state regulators, who, in 1999, issued their first violation notice over the dust. The state has dismissed most alleged violations and has never imposed a fine.”); 80 Fed. Reg. at 21,386 (noting that, during public hearings preceding the 2015 CCR Rule, stakeholders including Susan Holmes of Bokoshe — who had “photographic evidence” of fugitive CCR dust pollution in the town — “called for federal oversight to address those instances where complaints were seemingly ignored by state regulators and/or where state administrative enforcement measures failed to compel the utilities to effectively amend their dust emission control management practices.”)

²⁵¹ See, e.g., EPA Damage Case Compendium, Volume I: Proven Damage Cases, at 79-82; EPA, “Eden, NC Coal Ash Spill: Administrative Settlement Agreement and Order on Consent for Removal Action” (attached), available at <https://www.epa.gov/sites/production/files/2014-06/documents/signed-eden-ash-spill-aoc-04-2014-3762.pdf>

²⁵² See, e.g., Chicago Tribune, “Duke pleads guilty in federal court for coal ash crimes,” May 14, 2015, available at <http://www.chicagotribune.com/business/ct-duke-energy-coal-ash-settlement-20150514-story.html>.

dumps,²⁵³ findings of collusion between Duke Energy and the state government to limit the public's ability to bring Duke Energy to court for that mismanagement,²⁵⁴ and even accusations by top state scientists that the state lied to CCR-impacted communities about the safety of their drinking water.²⁵⁵

The longstanding pattern of state failure to enforce environmental and health protections at CCR units continues. States' failure to enforce the 2015 CCR Rule is a clear example. More than two and a half years have passed since the 2015 CCR Rule went into effect in October 2015. During that time, CCR unit owners and operators have committed numerous violations of that rule. For instance, in clear violation of the 2015 CCR Rule, Duke Energy failed to publish inundation maps for CCR impoundments across the company's entire coal footprint – for units in Indiana, Kentucky, Florida, North Carolina, and South Carolina.²⁵⁶ In Oklahoma, the owners/operators of several CCR units failed to perform required groundwater monitoring by the 2015 CCR Rule's clear deadline, while others failed to post other documentation online, as required.²⁵⁷ In Illinois, one utility ignored the 2015 CCR Rule's mandates by failing to publish groundwater monitoring results for Appendix IV constituents in the annual groundwater monitoring reports for its CCR units.²⁵⁸ Utilities across multiple states – including but

²⁵³ Specifically, the operating companies of Duke Energy in 2015 pleaded guilty to 9 different crimes committed at coal ash facilities across North Carolina, including offenses of which the state regulators had been aware but had never taken effective action to stop or prosecute. *See id.*

²⁵⁴ *See Yadkin Riverkeeper, Inc. v. Duke Energy Carolinas, LLC*, 141 F. Supp. 3d 428, 442 (M.D.N.C. 2015) (“The Court is unable to find that DENR was trying diligently or that its state enforcement action was calculated, in good faith, to require compliance with the Act.”);

²⁵⁵ *See* Charlotte Observer, “State epidemiologist quits, well-testing squabble between scientists, McCrory’s administration intensifies” Aug. 10, 2016, available at <http://www.charlotteobserver.com/news/local/article94899332.html>

²⁵⁶ *See, e.g.,* Earthjustice, *Groups To Sue To Compel Duke Energy To Stop Withholding Required Toxic Waste Spill Safety Information: The nation’s largest utility must provide critical safety information for communities*, dated Sept. 20, 2017, available at <https://earthjustice.org/news/press/2017/groups-to-sue-to-compel-duke-energy-to-stop-withholding-required-toxic-waste-spill-safety-information-0>. Duke Energy capitulated just two days later, agreeing to post the required maps. *See, e.g.,* James Bruggers, *Courier Journal*, “Duke Energy reverses itself on safety plan secrecy after pressure from environmental groups,” September 22, 2017, available at <https://www.courier-journal.com/story/tech/science/environment/2017/09/22/duke-energy-reverses-safety-plan/693822001/>.

²⁵⁷ *See* Earthjustice et al., *Comments on Oklahoma: Approval of State Coal Combustion Residuals State Permit Program*, 83 Fed. Reg. 2100 (January 16, 2018), Docket ID No. EPA-HQ-OLEM-2017-0613, at 15-18 (Mar. 19, 2018) (attached).

²⁵⁸ *See* City Water Power and Light, “Coal Combustion Residuals Surface Impoundments: Annual Groundwater Monitoring and Corrective Action Report Year Ending December 31, 2017” (attached), available at <https://www.cwlp.com/CCRPDFHandler.ashx?imgID=29>; City Water Power and Light, “Coal Combustion Residuals Landfill: Annual Groundwater Monitoring and Corrective Action Report Year Ending December 31, 2017” (attached), available at <https://www.cwlp.com/CCRPDFHandler.ashx?imgID=31>.

not limited to Illinois,²⁵⁹ Kansas,²⁶⁰ Missouri,²⁶¹ Pennsylvania,²⁶² Florida,²⁶³ and North Dakota²⁶⁴ – failed to post liner design certifications, in direct violation of the 2015 CCR Rule. Yet notwithstanding these many significant violations, commenters are not aware of *any* state enforcement actions against owner/operators of CCR units for noncompliance with the 2015 CCR Rule.

Indeed, collusion between utilities owning CCR units and state governments continues, sometimes in full daylight. Oklahoma has made its allegiance to CCR polluters explicit: a representative of the state Department of Environmental Quality (“DEQ”) informed the state’s Environmental Quality Board in 2016 that protecting industry from citizen enforcement was a primary aim of DEQ’s proposal to adopt the state’s CCR regulations.²⁶⁵ In Virginia, public records and press reports revealed that Dominion paid to fly the director of the state’s [agency] to the Masters Golf Tournament during a period when his agency had before it important issues relating to coal ash at Dominion facilities, as well as its ongoing regulatory responsibility.²⁶⁶

5. *States have failed to prevent, and continue to fail to prevent, devastating harm to human health and the environment caused by CCR.*

The combination of states’ failure to adequately regulate CCR units, set sufficiently protective permit limits, cleanup standards, and other standards for CCR units, and enforce environmental and health standards at CCR units has had enormously adverse consequences for human health and the environment. In December 2008, the dike of the TVA Kingston impoundment collapsed, leading the nominee for EPA Administrator to pledge in her confirmation hearings to put in place a federal coal

²⁵⁹ See CCR documentation for NRG Energy, Inc., CCR impoundments at the Powerton, Waukegan, Will County and Joliet coal plants in Illinois, available at <https://www.nrg.com/legal/coal-combustion-residuals.html>.

²⁶⁰ See CCR documentation for Kansas City Power & Light Co.’s La Cygne coal plant in Kansas, available at <https://www.kcpl.com/ccr>.

²⁶¹ See CCR documentation for Kansas City Power & Light Co.’s Montrose coal plant in Missouri, available at <https://www.kcpl.com/ccr>.

²⁶² See CCR documentation for NRG Energy, Inc., CCR impoundment at the New Castle and Cheswick coal plants in Pennsylvania, available at <https://www.nrg.com/legal/coal-combustion-residuals.html>.

²⁶³ See CCR documentation for Gainesville Utility Co.’s Deerhaven coal plant, available at <https://www.gru.com/MyHome/Content/DeerhavenGeneratingStation/CCRComplianceDocumentation.aspx>.

²⁶⁴ See CCR documentation for Otter Tail Power Co., SP-170 CCR impoundment, available at <http://www.ccr-cs.net/slag-pond-sp-170/>.

²⁶⁵ See Minutes, Environmental Quality Board, at 23 (Feb. 19, 2016) (attached), available at <http://www.deq.state.ok.us/mainlinks/eqbinfo/Approved%20EQB%20minutes%202%2019%2016%20on%209%2013%2016.pdf> (DEQ official Jeffrey Shepherd reporting that DEQ decided to promulgate the state coal ash regulations “after internal discussions and stakeholder meetings revealed clear reasons for doing so. The reasons include: . . . [t]he DEQ has been told by industry that complying with the state rules may offer some protection from citizen suits . . .”).

²⁶⁶ See, e.g., WTVR TV, “Head DEQ official accepted Dominion gifts, including paid trip to Master’s tourney,” Mar. 15, 2016, available at <http://wtvr.com/2016/03/15/head-deq-official-accepted-dominion-gifts-including-paid-trip-to-masters-tourney/>.

combustion residuals rule. Then in 2014, another coal ash catastrophe took place, when Duke Energy's Dan River facility failed and dumped tens of thousands of tons of coal ash and millions of gallons of coal ash polluted water into the Dan River in two states. As noted above, a federal criminal investigation, the press, and private enforcement proceedings revealed that state regulators had been aware of the risks at the Dan River site for years and yet had not forced Duke Energy to address them.

Myriad less well-known, but no less devastating, examples of CCR units harming the communities and environment have occurred on states' watch. EPA's damage cases – the largest number of damage cases every found under RCRA²⁶⁷ – provide some of those examples. Environmental groups' investigations have shone the light on many others.²⁶⁸ And the recently-released groundwater monitoring data is revealing many, many more, as both environmental groups and EPA expected²⁶⁹ and as discussed herein.

The unescapable conclusion of this longstanding history of state failure to properly regulate, permit, and enforce against CCR units, and the continuing harm being done to human health and the environment as a result, is that states have been, and continue to be, unwilling to ensure that their residents and environment are adequately protected from CCR pollution, as required by RCRA section 4004. EPA's proposal to grant states the authority to set "alternative protection standards" for CCR units is, thus, arbitrary and capricious.

B. EPA HAS NOT SHOWN THAT STATES ARE ABLE TO SET ALTERNATIVE PERFORMANCE STANDARDS THAT MEET THE PROTECTIVENESS STANDARD OF RCRA SECTION 4004(A).

Even if states demonstrated a willingness to assure "no reasonable probability of adverse effects on health or the environment" from CCR units, the evidence shows that many lack the resources to do so. Oklahoma is a perfect example. The state is in the throes of a severe financial crisis. On February 8, 2018, National Public Radio reported that Oklahoma's budget crisis is so dire that around a fifth of Oklahoma's schools "now hold classes just four days a week," and in 2017, "Highway Patrol officers were given a mileage limit because the state couldn't afford to put gas in their tanks."²⁷⁰ Oklahoma news channel KFOR reported on February 20, 2018, that a bill to raise revenue failed to

²⁶⁷ 80 Fed. Reg. at 21,456 ("[W]hen 'potential' damage cases are considered, the totals rise to 157; this is the largest number of damage cases in the history of the RCRA program.").

²⁶⁸ See, e.g., State of Failure; In Harm's Way; Out of Control.

²⁶⁹ See 80 Fed. Reg. at 21,456 ("In reality, the damage case record represents only a subset of those CCR waste units that have effective groundwater monitoring. [The pattern has been that] . . . once monitoring is put in place, new damage cases quickly emerge."); 2010 Environmental Comments at 99-100 ("Rather than being an artifact of past practices, damage is an ongoing reality at operating units, both new and old The conditions that spawned these damage cases—mismanagement of coal ash in unlined or inadequately lined landfills, pond and pits—are practices that continue today. Placement of CCR in wetlands, water tables, and unlined gravel pits are unfortunately 21st century disposal practices.").

²⁷⁰ Rachel Hubbard, "Tax Cuts Put Oklahoma In A Bind. Now Gov. Fallin Wants To Raise Taxes," NPR, Feb. 8, 2018, available at <https://www.npr.org/2018/02/08/584064306/tax-cuts-put-oklahoma-in-a-bind-now-gov-fallin-wants-to-raise-taxes>.

pass, and the state is now cutting costs left and right.²⁷¹ The historic teachers' strike that recently ended in the state highlights the depths of this crisis. The *New Yorker* reported on April 4, 2018, that "education funding per student in the state has been cut by twenty-eight per cent in the past ten years, the largest cuts of any state in the country, and . . . classes are taught by a string of emergency-certified teachers and short-term substitutes."²⁷²

State agencies are being hit hard by Oklahoma's financial crisis,²⁷³ and DEQ is no exception. DEQ "ha[s] seen sharp budget cuts in recent years, which have forced the agenc[y] to cut back on staff."²⁷⁴ One of the areas hit hardest by those cuts is protection of Oklahoma's waters. Think Progress explained in January 2018:²⁷⁵

[O]versight of [Oklahoma] waterways and water pollution is funded by state dollars, not federal funds, meaning budget cuts will likely have a direct impact on the state's ability to monitor potential water contamination from coal ash disposal. Years of budget cuts have already caused the state Department of Environmental Quality to close 17 of its field offices, leaving it with just 22 around the state. It has also seen its force of inspectors shrink from 89 to 58.

The impact of funding cuts was reiterated by DEQ Deputy Director Jimmy Givens, who told NPR in 2016 that cuts in state funding "disproportionately affect DEQ programs that make sure local water supplies are safe to drink, and that wastewater discharged from municipal and industrial sources isn't polluting the environment."²⁷⁶ Indeed, funding cuts to DEQ have already forced the agency to abandon plans to clean up open dumps and work to protect drinking water.²⁷⁷ DEQ's most recent annual report

²⁷¹ Bill Miston, "House passes funding bill for last year's budget, cutting \$44M in agency appropriations," KFOR, Feb. 20, 2018, available at <http://kfor.com/2018/02/20/house-passes-funding-bill-for-last-years-budget-cutting-44m-in-agency-appropriations/>.

²⁷² *New Yorker*, *Striking Oklahoma Teachers Win Historic School-Funding Increase and Keep On Marching*, April 4, 2018, available at <https://www.newyorker.com/news/news-desk/striking-oklahoma-teachers-win-historic-school-funding-increase-and-keep-on-marching>.

²⁷³ See *id.* (reporting that Oklahoma legislators are slashing funding for state agencies "by roughly \$44.6 million for the final three months of the FY 2018 budget") and Sean Murphy, "Oklahoma plans across-the-board cuts to close budget hole," Feb. 15, 2018, available at <https://www.seattletimes.com/nation-world/oklahoma-plans-across-the-board-cuts-to-close-budget-hole/> (reporting that the \$44.6 million chopped from state agency budgets results from across-the-board cuts of approximately two percent per state agency).

²⁷⁴ Think Progress, "Pruitt's EPA wants to let states handle coal ash. Oklahoma shows why that's so dangerous," Jan. 18, 2018, available at <https://thinkprogress.org/oklahoma-state-coal-ash-epa-333e6061fc7d/>.

²⁷⁵ NPR, "State Budget Agreement Brings Sharp Funding Cuts to Agencies Overseeing Oklahoma's Environment," May 16, 2016, available at <https://stateimpact.npr.org/oklahoma/2016/05/26/state-budget-agreement-brings-sharp-funding-cuts-to-agencies-overseeing-oklahomas-environment/>.

²⁷⁶ *Id.*

²⁷⁷ See, e.g., OK Energy Today, "DEQ Wonders How Budget Cuts Will Affect Its Abilities," June 1, 2017, available at <http://www.okenergytoday.com/2017/06/deq-wonders-budget-cuts-will-affect-abilities/>; Koco News 5, "State budget crisis forces DEQ to delay cleanup projects," July 7, 2016, available at <http://www.koco.com/article/state-budget-crisis-forces-deq-to-delay-cleanup-projects/4310550>; The

notes that several positions have gone unfilled due to the funding shortages and states that, “Should state or federal funding substantially decrease, DEQ would have to further reduce activities and/or secure additional fee funding.”²⁷⁸ A law further cutting DEQ’s budget – and that of other state agencies – was enacted on February 27, 2018.²⁷⁹

Oklahoma is not alone. Kentucky,²⁸⁰ Illinois,²⁸¹ Kansas,²⁸² and many other states are in full-blown budget crises or face major budget shortfalls.²⁸³ The economic woes facing so many states strongly indicate that, even if states were willing to set properly protective standards for CCR units – as discussed at length above, they are not – they simply do not have the resources to do so. Indeed, lack of resources has been cited by states in the past as a reason why they could not adequately review, or establish, appropriate pollution standards for CCR units.²⁸⁴ Nothing in the record demonstrates that states have the resources necessary to meet the statutorily-mandated protectiveness standard of RCRA section 4004 in this instance. As such, EPA’s 2018 Proposal to allow states to set “alternative protection standards” for CCR units is arbitrary and capricious.

XII. THE INTERNET POSTING REQUIREMENTS OF THE 2015 CCR RULE MUST REMAIN.

The 2015 CCR Rule’s information disclosure requirements consist of three principal mandates. *See* 80 Fed. Reg. at 21,427. The owner or operator of a CCR unit must, first, maintain in the facility’s operating record documentation of compliance with specific provisions of the 2015 CCR Rule, 40 C.F.R. § 257.105(c); second, provide timely notification to the State Director or appropriate Tribal authority that such

Journal Record, “Cut in DEQ budget means fewer cleanup projects,” June 20, 2014, *available at* <http://journalrecord.com/2014/06/20/cut-in-deq-budget-means-fewer-cleanup-projects-capitol/>.

²⁷⁸ DEQ Annual Report 2017, at 18 (attached), *available at* <http://www.deq.state.ok.us/mainlinks/reports/2017AnnualReport/2017%20DEQ%20Annual%20Report.pdf>.

²⁷⁹ Sean Murphy, “Governor signs bill imposing cuts to Oklahoma agencies,” Feb. 27, 2018, *available at* <https://www.seattletimes.com/nation-world/governor-signs-bill-imposing-cuts-to-oklahoma-agencies/>.

²⁸⁰ *See* US News, “Kentucky Governor Says State Budget ‘Won’t Be Pretty,’” Dec. 21, 2017, *available at* <https://www.usnews.com/news/best-states/kentucky/articles/2017-12-21/kentucky-governor-says-state-budget-wont-be-pretty>.

²⁸¹ *See* Business Insider, “Illinois is struggling to dig out of the nation’s worst budget crisis,” Oct. 10, 2017, *available at* <http://www.businessinsider.com/illinois-is-struggling-to-dig-out-of-the-nations-worst-budget-crisis-2017-10>.

²⁸² *See, e.g.,* The Atlantic, “‘You Better Learn Our Lesson!’ Kansas Republicans say they are worried that Congress and the Trump administration will repeat the mistake they made in enacting budget-busting tax cuts,” Oct. 11, 2017, *available at* <https://www.theatlantic.com/politics/archive/2017/10/tax-trump-kansas/542532/>.

²⁸³ *See, e.g.,* Washington Post, “It’s not just New Jersey and Illinois — many states are facing budget trouble,” July 7, 2017, *available at* https://www.washingtonpost.com/national/its-not-just-new-jersey-and-illinois-many-states-are-facing-budget-trouble/2017/07/07/220061dc-6196-11e7-a4f7-af34fc1d9d39_story.html?noredirect=on&utm_term=.2be9a8657909.

²⁸⁴ *See, e.g.,* Comments by Kansas Dept. of Health & Env’t., Docket ID No. EPA-HQ-OW-2009-0819-3922, at 6 (attached) (“States have neither the luxury nor the resources to collect and evaluate the data EPA has collected to address a handful of NPDES permits they administer. . . . Due to the ever dwindling staffing and resources available to states, EPA should be making the call regarding BAT for the FGD wastewater.”).

documentation has been placed in the facility's operating record and made publicly available, *id.* § 257.106(g); and third, establish and maintain a publicly accessible internet site where documentation of compliance is timely posted for public review, *id.* § 257.107. Under any revision of the 2015 CCR Rule, EPA must ensure that the posting requirements and other information disclosure requirements set forth in the final rule continue to keep the public informed as to facilities' compliance efforts and enable citizen enforcement of the rule. The requirements are a statutorily necessary component of the rule and are essential for public participation and citizen enforcement. Yet, EPA has requested comments on "whether the facility or owner operator should be required to post the specific details of the modification of the performance standard to the facility's publically accessible website or require any other recordkeeping options." 83 Fed. Reg. at 11,598. Any curtailment of the posting or other information disclosure requirements would violate the protectiveness standard of section 4004(a) and, because EPA has not provided a rational basis for such a change, would be arbitrary and capricious.

A. THE POSTING REQUIREMENTS ARE A STATUTORILY NECESSARY COMPONENT OF THE 2015 CCR RULE.

The information disclosure and online posting requirements of the CCR rule are necessary in order to satisfy the protectiveness standard of section 4004(a) and the public participation standard of section 7004(b). Indeed, EPA's stated purpose in creating these disclosure mechanisms was, in part, to satisfy the statutory mandates of RCRA. Any abridgment of the posting and disclosure requirements would, therefore, would be arbitrary and capricious and run afoul of RCRA.

Under section 4004(a), the CCR rule must ensure there is "no reasonable probability of adverse effects on health or the environment." 42 U.S.C. § 6944(a). EPA determined that the rule would not satisfy the statutory standard unless it included provisions that would enable enforcement by citizens and states. 80 Fed. Reg. at 21,338-39, 21,426-27. Thus, in order to meet the standard, EPA found it was necessary to create "mechanisms for states and citizens to monitor the situation . . . so they can determine when intervention is appropriate." 80 Fed. Reg. at 21,427; *see also id.* at 21,338. Under this rationale, EPA set forth the rule's information disclosure requirements, encompassing recordkeeping, public notification, and online posting of compliance information. 80 Fed. Reg. at 21,338-39, 21,426-27.

These information disclosure mechanisms are further required under the public participation mandate of section 7004(b). Section 7004(b) states:

Public participation in the development, revision, implementation, and enforcement of any regulation, guideline, information, or program under this chapter shall be provided for, encouraged, and assisted by the Administrator and the States. The Administrator, in cooperation with the States, shall develop and publish minimum guidelines for public participation in such processes.

42 U.S.C. § 6974(b). Posting of compliance documents provides the public access to information about compliance and enables the public to remain informed about, as well as participate in, the implementation and enforcement of the CCR rule. *See* 80 Fed. Reg. at 21,427. Without such mechanisms of disclosure, public participation would be hindered.

Public participation and citizen enforcement are necessary components of the CCR rule, independent of the enforcement role played by states. Indeed, EPA intended for the public to play these roles both in those states that assumed responsibility for enforcement and in those that did not. *See* 80 Fed. Reg. at 21,399. Specifically, EPA addressed the adoption by states of approved CCR regulatory programs. *See id.* EPA called for enforcement by citizens *alone* in situations where a state fails to timely adopt and implement an approved CCR regulatory program. 80 Fed. Reg. at 21,339. In such cases, citizen enforcement is necessitated by the “absence of a state regulatory authority.” *Id.*; *see also id.* at 21,311. Even where states do adopt and implement such a regulatory program, the information disclosure mechanisms remain in place so that citizens may continue to participate in implementation and enforcement of the rule *concurrent* with the state program of enforcement. *See* 80 Fed. Reg. at 21,338. EPA made no distinction between the disclosure mechanisms that RCRA requires in the citizen enforcement and concurrent enforcement scenarios. *See* 80 Fed. Reg. at 21,338-39. *See* 80 Fed. Reg. at 21,426-27 (“EPA believes that it cannot conclude that the RCRA subtitle D regulations will ensure that there is no reasonable probability of adverse effects on health or the environment, unless there are mechanisms for states and citizens to monitor the situation . . . so they can determine when intervention is appropriate.”); 80 Fed. Reg. at 21,338 (“[T]he Agency cannot conclude that the regulations promulgated in this rule will ensure that there is no reasonable probability of adverse effects on health or the environment unless there is a mechanism for states and citizens, as the entities responsible for enforcing the rule, to effectively monitor or oversee its implementation.”). This is consistent with the statutory scheme devised by Congress, under which citizen suits “function as a form of statutory enforcement in addition to, or in conjunction with, enforcement by an administrative agency or other governmental entity.” *Esso Standard Oil Co. (P.R.) v. Rodríguez-Pérez*, 455 F.3d 1, 5 n.2 (1st Cir. 2006). Therefore, regardless of the enforcement role played by states, the CCR rule’s posting and disclosure requirements are required under RCRA in order to enable citizen participation and enforcement. *See* 80 Fed. Reg. at 21,427; *see also id.* at 21,338. EPA’s determination that the online posting and other information disclosure requirements are statutorily necessary remains valid, even after passage of the WIIN Act. To the extent that EPA created the information disclosure mechanisms to address potential enforcement gaps resulting from the self-implementing structure of the CCR rule, those gaps still remain even after the WIIN Act. Under that line of reasoning, EPA determined that the statute’s self-implementing structure created a risk of abuse by owners that further necessitated the creation of mechanisms of citizen and state enforcement. *See* 80 Fed. Reg. at 21,427 (“EPA also believes that the recordkeeping and notification requirements will minimize the danger of owners or operators abusing the self-implementing system . . .”).²⁸⁵

²⁸⁵ Separately, EPA justified the posting and other disclosure requirements as consistent with the “increasingly common and important” use of disclosure to “achieve regulatory objectives,” as explained in

Because the WIIN Act does not mandate state CCR permit programs, the risk of abuse inherent in the CCR rule's self-implementing structure remains present. Even in states that do create CCR permit programs, public participation and citizen enforcement concurrent with state enforcement continue to be required in order to satisfy the protectiveness standard of section 4004(a) and the public participation standard of section 7004(b). Therefore, any curtailment of the posting and other disclosure requirements would fail to satisfy RCRA's protectiveness and participation mandates.²⁸⁶ Moreover, it would be arbitrary and capricious because EPA has failed to provide a rational basis for such a change.

B. THE POSTING REQUIREMENT IS CRITICAL FOR CITIZEN ENFORCEMENT AND PUBLIC PARTICIPATION.

The online posting requirement and other information disclosure requirements are critical for enabling public participation and citizen enforcement of the CCR rule. These requirements ensure transparency so that citizens may participate in the regulatory process, monitor compliance and timely intervene where there is evidence of violations of the CCR rule. In the absence of these transparency mechanisms, numerous impediments to obtaining compliance information make it difficult, if not impossible, for citizens to participate or to fulfill their enforcement role.

The online posting requirement in particular is crucial to facilitate public participation and citizen enforcement. Online posting "enhance[s] the protectiveness" of the CCR rule by giving citizens access to "comprehensive documentation of compliance." *See* 80 Fed. Reg. at 21,331, 21,426. For example, in cases where there is evidence of potential contamination, having access to this documentation allows citizens and states to "monitor the situation" so that they can determine "whether enforcement is warranted" and "when intervention is appropriate." 80 Fed. Reg. at 21,339. In the absence of such a requirement, the public would face substantial impediments to monitor facilities' compliance with the CCR rule. First, citizens are unable to timely obtain such information directly from the facilities because "[u]nlike a federal or state regulatory authority, private citizens cannot access a private facility to conduct inspections." 80 Fed. Reg. at 21,339. Nor are citizens, in practice, able to obtain the relevant documentation from state authorities that are in possession of facility information. As described in comments on EPA's CCR State Permit Program Interim Final Guidance Document ("CCR Guidance"), numerous accounts demonstrate that obtaining files from certain states is extremely costly or logistically infeasible.²⁸⁷

2010 guidance issued by the Office of Management and Budget (OMB) and cited by EPA. 80 Fed. Reg. at 21,339 (citing Cass R. Sunstein, Office of Management and Budget, Administrator, Memorandum for the Heads of Executive Departments and Agencies, Disclosure and Simplification as Regulatory Tools (June 18, 2010) (attached)). In addition, EPA reasoned that disclosure further incentivizes compliance because reporting is subject to penalties for providing false information under 18 U.S.C. § 1001. *See* 80 Fed. Reg. at 21,339. Both of these rationales remain valid.

²⁸⁶ The enforcement gaps that remain after the WIIN Act are exacerbated because of states' consistent history of failing to adequately regulate CCR. *See* Section XI, *supra*.

²⁸⁷ Comment Letter from Lisa Evans, Earthjustice, *et al.*, to EPA, Docket ID No. EPA-HQ-OLEM-2017-0458-0045 (Oct. 16, 2017) (attached).

- In Arizona, in response to a request by Environmental Integrity Project (EIP), the state estimated the cost of providing recent groundwater monitoring files for a single facility, Cholla, would total \$3,265, plus shipping, plus a \$5 charge to scan the files to disk.²⁸⁸
- In Texas, in response to a similar request by EIP, the state estimated the cost of providing recent groundwater monitoring files for two plants, Pirkey and Martin Lake, would total \$504, plus shipping costs.²⁸⁹
- In Georgia, EIP was informed by the state that file requestors can obtain copies of coal ash files only by visiting the agency and copying the files in person.
- In Maryland, similarly, the state allows file requestors to obtain copies of coal ash files only by visiting the agency and copying the files in person. In addition, file requestors are subject to a 30-day waiting period in order to view those files.
- In Pennsylvania, where most coal ash is generated in the southwest of the state, the Department of Environmental Protection's Southwest Regional Office typically allows file requestors to review groundwater monitoring data only by visiting the agency and reviewing the files in person. The waiting time for getting an appointment to review those files has been known to reach six weeks, a period of time significantly longer than the typical 30-day public comment period for most permits. Further, copy costs are 25-cents per page, although certified copies cost upwards of a dollar and maps cost \$5 each.
- In Indiana, the Indiana Department of Environmental Management ("IDEM") claims to make files publicly available online through its "virtual file cabinet." However, many documents are not posted online and, in practice, the online system is so poorly organized that files are extremely difficult, if not impossible, to locate. The Hoosier Environmental Council and Waterkeeper Alliance, Inc. has reported that searches are impeded in part because files are misidentified. For example, records for Indianapolis Power and Light's Harding Street power plant cannot be located by searching for "Indianapolis Power & Light," however they can be located by searching for "Indiana Power & Light." Options for locating such files using alternative search criteria are quite limited because files are not organized by subject matter and are only loosely organized by date. Moreover, IDEM's reliance on obscure acronyms makes it difficult for a layperson to identify the desired document from the set of search results, let alone enter search parameters in the first place. In practice, a user often must open every document in a potentially lengthy list of search results in order to find the one sought.

²⁸⁸ Email from Monique Delgado, Arizona Dep't Env'tl. Quality, to Kira Burkhardt, EIP, Re: FOIAs (Mar. 2, 2016) (attached).

²⁸⁹ Letter from Bethany Yager, PIR Coordinator, Texas Council on Env'tl. Quality, to Kira Burkhardt, EIP, Re: Rn's 100214287, 101246502, 102583093, TCEQ Public Information Request number 27087 (Apr. 29, 2016) (attached).

- In North Carolina, public interest groups, including Southern Environmental Law Center, report that coal ash information that is subject to state-mandated reporting is supposed to be available to the public through the webpage of the North Carolina Department of Environmental Quality, yet it is not. Instead, the data are buried on a separate website that is unreachable from the agency's public website.²⁹⁰
- In Wyoming, according to a recent press account, environmental regulators are considering charging fees for electronic records requests, with staff time priced at \$40 an hour for upper-level employees, \$30 an hour for IT personnel and \$15.50 for clerical staff.²⁹¹

Without the online posting and other information disclosure requirements set forth in the 2015 CCR Rule, public participation and citizen enforcement would be severely impeded. The financial and administrative burden required in order to obtain by other means the information that is currently available by virtue of the posting requirement would discourage public access to compliance information, curtail public participation in implementation of CCR rule requirements, and significantly hinder citizen enforcement of those requirements. Given the importance of sustained monitoring and timely intervention, the citizen enforcement provisions of the 2015 CCR Rule would be, for all intents and purpose, eviscerated.

C. TO ENABLE CONTINUED PUBLIC PARTICIPATION AND CITIZEN ENFORCEMENT, THE SPECIFIC DETAILS OF THE MODIFICATION OF THE PERFORMANCE STANDARD SHOULD BE MAINTAINED IN THE FACILITY'S OPERATING RECORD AND POSTED TO THE FACILITY'S WEBSITE.

To enable timely citizen enforcement of the 2015 CCR Rule, any revision of the 2015 CCR Rule must be subject to online posting and other information disclosure requirements equal to those set forth in the existing rule. Several of the revisions to the 2015 CCR Rule proposed by EPA involve determinations, data gathering, certifications, or other information that should be timely made available to the public through online posting. As described below, these matters should be subject in their entirety to the posting and other information disclosure requirements set forth in the rule.

1. Alternative groundwater protection standards

EPA proposes to allow owners of CCR units to substitute a "risk-based" alternative groundwater protection standard for the standards currently in place. 83 Fed. Reg. at 11,598-600. Under the proposal, owners would be required to document in the annual groundwater monitoring and corrective action report required by 40 C.F.R. §§

²⁹⁰ North Carolina Department of Environmental Quality, <http://edocs.deq.nc.gov/WaterResources/Browse.aspx?startid=221,202&cr=1>.

²⁹¹ See "Enviro agency considers charging for public record requests," (Sept. 21, 2017), <https://www.eenews.net/greenwire/2017/09/21/stories/1060061337>.

257.90(e) or 257.100(e)(5)(ii) the constituents and levels for which an alternative groundwater protection standard has been established by the State Director. 83 Fed. Reg. at 11,613 (proposed 40 C.F.R. § 257.95(j)(3)). Under the current rule, these reports are subject to online posting, recordkeeping, and notification requirements. *See* 40 C.F.R. § 257.90(f); *see also* 257.105(h)(1), (i)(1)-(3); 257.106(h)(1), (i)(1)-(3); 257.107(h)(1), (i)(1)-(3). Under any revision of the 2015 CCR Rule, EPA should continue to require inclusion in the annual groundwater monitoring and corrective action reports of any alternative groundwater protection standards. In addition, the annual groundwater monitoring and corrective action reports should remain subject in their entirety to the disclosure requirements, including the online posting requirement.

2. *Modification to corrective action remedy*

EPA proposes to modify the current regulations at 40 C.F.R. §§ 257.97 and 257.98 by allowing owners to make a determination, under certain circumstances, that no corrective action is necessary. 83 Fed. Reg. at 11,600-01. Under the current rule, information relating to the selection of a corrective action is subject to the recordkeeping, notification, and internet requirements in the existing 2015 CCR Rule. *See* 40 C.F.R. §§ 257.105(h)(12), (13); 257.106(h)(12), (13); 257.107(h)(9), (10). Under any revision of the 2015 CCR Rule, any information relating to the selection of a corrective action or the determination that no corrective action is necessary should remain subject in its entirety to the disclosure requirements, including the online posting requirement.

3. *Modification of groundwater monitoring requirements*

EPA proposes to suspend the current groundwater monitoring and corrective action requirements if the owner can demonstrate no potential for migration of hazardous pollutants. 83 Fed. Reg. at 11,601-03. Under the current rule, information relating to groundwater monitoring and corrective action are subject to the posting and other information disclosure requirements in the existing 2015 CCR Rule. *See* 40 C.F.R. §§ 257.97(a) & (e), 257.98(e) & (f); *see also* 40 C.F.R. §§ 257.105(h)(12), (13); 257.106(h)(9), (10); 257.107(h)(9), (10). In addition, under the proposed revisions, the required “no-migration” demonstration would be subject to the posting and other information disclosure requirements. 83 Fed. Reg. at 11,616 (proposed 40 C.F.R. §§ 257.105(h)(14), (15); 257.106(h)(12), (13); 257.107(h)(11), (12)). Under any revision of the 2015 CCR Rule, all information relating to groundwater monitoring and corrective action, including the no-migration demonstration proposed by EPA, should remain subject in its entirety to the posting requirement and other information disclosure requirements.

4. *Alternate period of time to demonstrate compliance with corrective action*

EPA proposes to allow an alternative length of time for owners to demonstrate non-exceedance of groundwater protection standards after the triggering of an assessment monitoring program. 83 Fed. Reg. at 11,603. Under the existing 2015 CCR Rules,

information relating to compliance with groundwater standards during assessment monitoring is subject to the online posting and other information disclosure requirements. *See* 40 C.F.R. § 257.98(e), (f); *see also* 40 C.F.R. §§ 257.105(h)(13); 257.106(h)(10); 257.107(h)(10). In addition, under the proposed revisions, documentation of the completion of corrective action within the alternative length of time is subject to the online posting and other information disclosure requirements. 83 Fed. Reg. at 11,616 (proposed 40 C.F.R. §§ 257.105(h)(16); 257.106(h)(13); 257.107(h)(13)). Under any revision of the 2015 CCR Rule, all information relating to corrective action and assessment monitoring, including the demonstration of completion of corrective action proposed by EPA, should remain subject in its entirety to posting requirements and other information disclosure requirements equal to or greater than those that are set forth in the existing 2015 CCR Rule.

5. *Length of post-closure care period*

EPA proposes to allow an alternative length of time for owners to conduct post-closure care of closed CCR units. 83 Fed. Reg. at 11,603-04. Under the existing 2015 CCR Rules, information relating to post-closure care is subject to the online posting and other information disclosure requirements. *See* 40 C.F.R. § 257.104(f); *see also* 40 C.F.R. §§ 257.105(i); 257.106(i); 257.107(i). In addition, under the proposed revisions, the demonstration and performance data supporting a reduced post-closure care period is subject to the online posting and other information disclosure requirements. 83 Fed. Reg. at 11,616 (proposed 40 C.F.R. §§ 257.105(i)(14); 257.106(i)(14); 257.107(i)(14)). Under any revision of the 2015 CCR Rule, all information relating to the determination of the length of the post-closure care period, should remain subject in its entirety to posting requirements and other information disclosure requirements equal to or greater than those that are set forth in the existing 2015 CCR Rule.

6. *Allowing directors of participating states to issue certifications in lieu of requiring a professional engineer certification*

EPA proposes to replace requirements of professional engineer certification by allowing state directors to certify that regulatory criteria have been met. 83 Fed. Reg. at 11,604-05. Under the existing 2015 CCR Rule, engineer certifications are subject to the online posting and other information disclosure requirements. *See* 40 C.F.R. §§ 257.105(f)(1) & (3), (h)(3) & (4), (i)(5) & (6), (j)(4); 257.106(f)(1) & (2), (h)(2) & (3), (i)(5) & (6), (j)(4); 257.107(f)(1) & (2), (h)(2) & (3), (i)(5) & (6), (j)(4). Under any revision of the 2015 CCR Rule, state director certifications, as well as all supporting information, should be subject to posting requirements and other information disclosure requirements equal to or greater than those that are set forth in the existing 2015 CCR Rule.

7. *Revisions to allow the use of CCR during certain closure situations*

EPA proposes to allow the use of CCR in the construction of final cover systems for CCR units closing pursuant to 40 C.F.R. § 257.101. 83 Fed. Reg. at 11,605-08.

Under the current 2015 CCR Rule, information relating to the closure of CCR units is required to appear in a written closure plan, which is subject to the online posting and other information disclosure requirements. *See* 40 C.F.R. §§ 257.105(i)(4); 257.106(i)(4); 257.107(i)(4). Under any revision of the 2015 CCR Rule, any information related to use of CCR in cover systems should be subject to posting requirements and other information disclosure requirements equal to or greater than those that are set forth in the existing 2015 CCR Rule.

Unless the alternative performance standards are subject to online posting and information disclosure requirements equal to or greater than the requirements set forth in the existing rule, citizen enforcement will be significantly impeded. As stated above, under EPA's stated rationale for the creation of transparency mechanisms to enable citizen enforcement, any alternative performance standard that is not subject to such mechanisms would cause the 2015 CCR Rule to fall short of the statutory standard in section 4004(a) of the Act.

D. EPA'S VAGUE REQUEST FOR COMMENTS ON THE CCR RULE'S POSTING AND OTHER INFORMATION DISCLOSURE REQUIREMENTS DOES NOT PROVIDE ADEQUATE NOTICE AND AN OPPORTUNITY TO COMMENT.

EPA's request for comments on the online posting and other information disclosure requirements are so vague that they violate the notice and comment requirements, 5 U.S.C. § 553. Under the APA, the agency must provide the public with prior notice and an opportunity to comment on a proposed rule. *See id.* Here, EPA has sought comment on "whether the facility or owner operator should be required to post the specific details of the modification of the performance standard to the facility's publically accessible website or require any other recordkeeping options." 83 Fed. Reg. at 11,598. But the agency has provided no detail on what alternatives it is considering.

Based on such a vague call for public comments, EPA cannot issue a final rule. As the D.C. Circuit explained in an analogous case:

EPA also argues that it gave general notice that it might make unspecified changes in the definition of small refinery. This purported notice, however, is too general to be adequate. Agency notice must describe the range of alternatives being considered with reasonable specificity. Otherwise, interested parties will not know what to comment on, and notice will not lead to better-informed agency decisionmaking.

Small Refiner Lead Phase-Down Task Force v. EPA, 705 F.2d 506, 549 (D.C. Cir. 1983) (internal citations omitted); *see also Shell Oil Co. v. EPA*, 950 F.2d 741, 760–61 (D.C. Cir. 1991) ("As we have already observed, the EPA 'cannot bootstrap notice from a comment.'" (quoting *Small Refiner*, 705 F.2d at 549)); *McLouth Steel Prods. Corp. v. Thomas*, 838 F.2d 1317, 1323 (D.C. Cir. 1988) ("Because the notice was

inadequate, EPA's consideration of the comments received in response thereto, ... no matter how careful, cannot cure the defect.”) (internal citations omitted).

E. CONCLUSION

In sum, the 2015 CCR Rule’s disclosure mechanisms—specifically, the online posting and other information disclosure requirements—are required in order to satisfy RCRA’s public participation and protectiveness standards. Any curtailment of these mechanisms would hinder public participation in the implementation and enforcement the CCR rule. Moreover, EPA has failed to provide a rational basis for altering these mechanisms, therefore any revision would be arbitrary and capricious. Finally, if EPA does revise the posting requirement or other disclosure requirements, it cannot do so on the basis of its vague call for public comment.

XIII. EPA SHOULD NOT CHANGE THE LOCATION RESTRICTIONS.

A. EPA SHOULD NOT CHANGE THE SUBSTANCE OF THE LOCATION RESTRICTIONS.

1. *EPA has not identified any new evidence that undermines the agency’s prior conclusion that the location restrictions are necessary to ensure no reasonable probability of adverse effects.*

During the CCR rulemaking, EPA found that a majority of states lacked regulations preventing CCR units from being sited in specific locations that pose particularly significant threats to human health and the environment in the event of a CCR release. *See* Section XI. To remedy this problem, in the 2015 CCR Rule, EPA found that the five location restrictions are necessary to satisfy the protectiveness standard in RCRA section 4004(a), 42 U.S.C. § 6944(a). The location restrictions deemed necessary for CCR units apply to placement above the uppermost aquifer and restrictions on siting CCR units in wetlands, fault areas, seismic impact zones, and unstable areas. *See* 40 C.F.R. §§ 257.60-64.

EPA provided clear justification for the location restrictions in the final rule, stating:

To ensure there will be no reasonable probability of adverse effects on health or the environment from the disposal of CCR in CCR landfills, CCR surface impoundments, and all lateral expansions of CCR landfills and CCR surface impoundments (together ‘CCR units’), this final rule establishes five location restrictions.

80 Fed. Reg. at 21,304. EPA explained further that, “[a]bsent these location restrictions, the risk of impacts to human health and the environment from releases from CCR units, including from the rapid and catastrophic destruction of CCR surface impoundments,

sited in these sensitive areas would exceed acceptable levels.” *Id.* at 21,361. Below, we summarize the record evidence supporting each of the location restrictions.

f. Placement Above the Uppermost Aquifer

This location restriction is based on evidence that “[p]lacement of CCR into un-engineered, unlined units in permeable strata has plainly led to adverse impacts to groundwater.” 80 Fed. Reg. at 21,362. Numerous proven damage cases involved coal ash placed close to, at, or below the water table. *See* Compendium of Damage Cases, Volume I (Dec. 18, 2014), Docket ID No. EPA-HQ-RCRA-2009-0640-12118 at 89 (e.g., proven damage case number 17 at the Swift Creek Structural Fill Site where CCR placed only one foot above the water table), at 161 (proven damage case number 28 at the Trans-Ash, Inc. Coal Combustion Waste Landfill, where coal ash was placed in direct contact with groundwater), at 201 (proven damage case number 38 at the WEPCO Highway 59 Landfill where CCR was placed below the water table and ash was in direct contact with groundwater); *see also* 2010 Environmental Comments at 92-93 (e.g., the Cardinal Fly Ash Reservoirs in Ohio were in direct contact with the groundwater, leading to contamination of the groundwater from arsenic and other chemicals from the fly ash).

EPA established the “minimum buffer of five feet” above the uppermost aquifer based on “EPA’s research,” as well as the fact that:

several states consider five feet between the base of the surface impoundment and the top of the uppermost aquifer to be the minimum distance that is protective of human health and the environment. These are California, Michigan, Nebraska, New York, West Virginia, and Wisconsin. The Agency has concluded from geographic and climatic spacing of these states that the hydrogeologic conditions within them encompass the range of conditions found in the United States. Therefore, EPA is finalizing a minimum buffer of five feet instead of two feet.

80 Fed. Reg. at 21,361-62.

g. Wetlands

The restriction on citing CCR units in wetlands is based on “several damage cases, including 30 cases of ‘proven’ damage to the environment that involve aquatic disposal of CCR, 14 of which involve impacts to wetlands from release of CCR.” 80 Fed. Reg. at 21,363. EPA found that the cost of damage cases where wetlands were contaminated “could be considerable.”²⁹² *Id.* In light of the significant environmental damage resulting from CCR releases to wetlands, “discharges to wetlands of pollutants that can be reasonably avoided should be avoided.” *Id.* at 21,365.

²⁹² Additional evidence of the high cost of damage cases impacting wetlands is discussed in A. Dennis Lemly, *Wildlife and the Coal Waste Policy Debate: Proposed Rules for Coal Waste Disposal Ignore Lessons from 45 Years of Wildlife Poisoning*, *Environ. Sci. Technol.* 2012, 46, 8595–8600 (attached).

h. Fault Areas

The restriction on siting certain CCR units in fault areas is based on well-documented risks that a seismic event will damage a CCR unit, resulting in leaks and spills. As EPA noted:

Stresses produced during earthquake motion can cause serious damage to landfill integrity via seismically induced ground failure and associated rupture of liner systems and subsequent damage to leachate collection systems. Or if the unit is unlined, seismic motion could disrupt landfill caps and foundation soils that impede migration of percolating water. Potential damage to CCR units resulting from structures located across a fault include surface breakage, cracks and fissures between fill and confining slopes, slope failure via landslides, liquefaction-induced lateral spreading and settlement of the pile, disruption of surface water and drainage control systems, and rupture of leachate collection systems.

80 Fed. Reg. at 21,365.

i. Seismic Impact Zones

The restriction on locating certain CCR units in seismic impact zones is based on evidence similar to the considerations supporting the restriction on siting CCR units in fault areas. EPA found that a “CCR unit design must remain capable of preventing harmful release of CCR, leachate, and contaminants both during and after the seismic event.” 80 Fed. Reg. at 21,366-67.

j. Unstable Areas

Ensuring that CCR units are not located in unstable areas is critical to preventing spills and leaks of coal ash. Movement of surface and subsurface materials can damage key components of CCR units, including liners, as EPA noted:

Liners and leachate collection systems require a firm, secure foundation to maintain their integrity, and may be disrupted as a result of uneven settlement induced by hydrocompaction. Similarly, sudden differential movement resulting from CCR placement and the consequent exceedance of the weight-bearing strength of subsurface materials in unstable areas can destroy liners and damage the unit’s structural integrity, resulting in catastrophic release of CCR.

80 Fed. Reg. at 21,367. *See also* 75 Fed. Reg. at 35,201 (“EPA’s damage cases have provided indirect evidence of the kind of environmental and human health risks that would be associated with failure of the structural components of the surface impoundment from subsidence or other instability of the earth at a CCR disposal unit.”); *id.* (“EPA believes that, to provide a reasonable probability of preventing releases and consequent damage to health and the environment from CCRs released from landfills or

surface impoundments, limits on the siting of such disposal units [in unstable areas] is appropriate.”).

EPA found that the restriction on siting CCR units in unstable areas was so necessary to prevent environmental and health harms that the agency extended this restriction to existing CCR landfills (while exempting existing CCR landfills from all of the other location restrictions).²⁹³ Specifically:

The Agency is finalizing, as proposed, the unstable area location restriction for existing CCR landfills because the record clearly shows that failure of CCR units in these areas (e.g., due to instabilities in Karst terrains) have and in all likelihood would continue, in the absence of the restrictions in the final rule, to result in damage caused by the release of CCR constituents, affecting both groundwater and surface waters. As the Agency stated in the proposed rule, the impacts resulting from the failure of CCR units from location instability are of far more concern than any disposal capacity concerns resulting from the closure of existing CCR units in unstable areas.

80 Fed. Reg. at 21,361.

EPA has failed to identify any new evidence that contradicts the agency’s previous findings that each of the five location restrictions is necessary to meet the standard in 42 U.S.C. § 6944(a). As a result, any change in the location restrictions would be unsupported by the record and lack a rational basis, and therefore would be arbitrary and capricious and violate 42 U.S.C. § 6944(a).

2. *To the extent the agency is relying on the record for the MSWLF rule, EPA has failed to consider material differences between MSWLFs and CCR disposal units, particularly surface impoundments.*

Elsewhere in the 2018 Proposal, EPA claims that the record for the 1991 regulations governing disposal in municipal solid waste landfills supports the proposed changes to the CCR Rule. However, it would be arbitrary and capricious for EPA to rely on the MSWLF rulemaking record to support changing the location restrictions for CCR units, given the material differences in risk posed by MSWLFs and CCR units, particularly CCR surface impoundments.

Municipal solid waste landfills are not permitted to contain the large amount of liquid wastes found in CCR surface impoundments, as the MSWLF regulations restrict the amount and type of liquids that may be disposed of in municipal solid waste landfills.

²⁹³ EPA identified at least one proven damage case resulting from the siting of a CCR surface impoundment in an unstable area. EPA describes the CCR release from an unlined surface impoundment (SI) at Plant Bowen in Cartersville, GA: “On July 28, 2002, a sinkhole developed in the SI that ultimately reached four acres in area. An estimated 2.25 million gallons of ash/water mixture was released to a tributary of the Euharlee Creek, containing 281 tons of ash.” 75 Fed. Reg. at 35,237.

See 40 C.F.R. § 258.28. By contrast, a significant portion of CCR is disposed of in wet form in surface impoundments. In fact, the universe of CCR units is composed of 1033 disposal and storage units, of which 72 percent are wet impoundments.²⁹⁴ 2018 RIA at 2-1. In the 2015 CCR Rule, EPA repeatedly found that because of several factors, such as hydraulic head, wet disposal of coal ash presents significantly higher risks of contamination than dry disposal. *E.g.*, 80 Fed. Reg. at 21,360 (“[T]he risks associated with CCR surface impoundments are substantially higher than the risks associated with CCR landfills, by approximately an order of magnitude.”). Setting aside the differences between the contaminants present in MSWLFs versus CCR units, the fact that MSWLFs handle waste predominantly in dry form, whereas many CCR units handle waste in wet form, means that CCR surface impoundments pose much greater risk of more rapid and cataclysmic releases and much different risks to human health and the environment than do MSWLFs. For a more detailed discussion of the different risks posed by CCR, *see* Section VIII, *supra*; Hutson Expert Report; Sahu Expert Report.

In the 2015 CCR Rule record, EPA acknowledged the material differences between MSWLFs and CCR units, particularly CCR surface impoundments. For example, when designing the location restriction regarding seismic areas, EPA noted that “there is little data on seismic stability and performance from industrial solid waste landfills with geosynthetic liners or units with water-saturated CCR waste. The Agency, therefore, remains concerned over the potential instability of engineered disposal units, and particularly CCR surface impoundments, under seismic loadings.” 80 Fed. Reg. at 21,365.

The proposed rule contains no discussion of the substantial differences in risk posed by CCR surface impoundments compared to MSWLFs. Given that EPA has not accounted for these material differences, it would be arbitrary and capricious to change the location restrictions for CCR surface impoundments based on the record for the MSWLF rule. In particular, EPA has provided no evidence that the location restrictions for MSWLFs will ensure that there is no reasonable probability of adverse effects from CCR units, particularly surface impoundments, as required by 42 U.S.C. § 6944(a). *See* Hutson Expert Report; Sahu Expert Report.

3. *Given that the CCR Rule’s location restrictions are virtually identical to the location restrictions in the MSWLF Rule, EPA cannot rely on the MSWLF record to change the location restrictions.*

Even if it were appropriate to look to the MSWLF Rule to support changes to location standards for CCR (it is not, for the reasons explained above), the MSWLF Rule would not support any such changes. Four of the five location restrictions in the CCR Rule are virtually identical to the location restrictions in the MSWLF Rule. Indeed, the language in the CCR Rule location restrictions is taken nearly verbatim from the

²⁹⁴ According to the RIA, there are a total of 1033 on-site CCR landfills and surface impoundments subject to the CCR Rule, including 286 on-site CCR landfills, 117 on-site CCR disposal surface impoundments, 519 on-site CCR storage impoundments, and 111 on-site inactive CCR disposal impoundments. 2018 RIA at 2-1 and 4-9.

comparable location restrictions in the MSWLF Rule. *Compare* 40 C.F.R. § 257.61 (CCR wetlands restriction) *with id.* § 258.12 (MSWLF wetlands restriction); *id.* § 257.62 (CCR fault areas restriction) *with id.* § 258.13 (MSWLF fault areas restriction); *id.* § 257.63 (CCR seismic impact zones restriction) *with id.* § 258.14 (MSWLF seismic impact zones restriction); *id.* § 257.64 (CCR unstable areas restriction) *with id.* § 258.15 (MSWLF unstable areas restriction). The only difference for these four restrictions is that the CCR Rule has a presumption against location in unstable areas, but allows an alternative demonstration to be made, *id.* § 257.64 whereas the MSWLF Rule contains only the demonstration requirement, *id.* § 258.15. However, the demonstration regarding location in unstable areas uses nearly identical language in the CCR and MSWLF rules.

Given that the CCR Rule already contains provisions that are virtually identical to the location restrictions in the MSWLF Rule, the rulemaking record for the MSWLF Rule cannot support changing the location restrictions to include provisions that do not appear in the MSWLF Rule. As mentioned above, the CCR Rule's location restrictions already contain alternative performance standards that can be met in lieu of each of the restrictions, and these alternative standards come directly from the MSWLF Rule. EPA's proposal to add "alternative, risk-based location restrictions" would go beyond what the MSWLF Rule contains, and the MSWLF rulemaking record plainly cannot support provisions that were not actually adopted in the MSWLF Rule. EPA's proposal fails to offer any evidence that would support finding that alternative, risk-based location restrictions satisfy the protectiveness standard in 42 U.S.C. § 6944(a). In addition, in light of the evidence that CCR units, particularly CCR impoundments, pose greater and different threats to human health and the environment than MSWLFs, EPA's proposal to set standards even less stringent than the MSWLF standards is arbitrary and capricious and violates 42 U.S.C. § 6944(a).

B. BEFORE MAKING ANY CHANGES TO THE LOCATION RESTRICTIONS, EPA MUST CONSIDER THE NEW EVIDENCE OF RISK AND HARM FROM EXISTING CCR UNITS.

As a result of the 2015 CCR Rule, considerable additional information about CCR units has become available to EPA. Yet in the preamble or record of the 2018 Proposal, EPA has failed to take into account any of the following sources of new evidence concerning the elevated risk and harm from CCR units, including: (1) the inspection reports of CCR landfills and surface impoundments conducted pursuant to 40 C.F.R. §§ 257.74 and 257.84; (2) the absence of liners compliant with the criteria in 40 C.F.R. § 257.71, as evidenced by the reporting of owners and operators of CCR surface impoundments²⁹⁵; (3) hazard potential classification assessments of surface impoundments conducted pursuant to 40 C.F.R. § 257.73(a)(2); (4) the Emergency Action Plans required by 40 C.F.R. § 257.74(a)(3); (5) the history of construction compilations completed pursuant to 40 C.F.R. § 257.74(c); (6) the structural stability assessments and safety factor assessments conducted pursuant to 40 C.F.R. § 257.73(d) and (e); (7) the records of compliance with the hydrologic and hydraulic capacity requirement for CCR surface impoundments pursuant to 40 C.F.R. § 257.82; and (8) the

²⁹⁵ See Sahu Expert Report.

groundwater monitoring data in annual groundwater monitoring reports indicating the release of CCR contaminants, completed pursuant to 40 C.F.R. § 257.90(e).²⁹⁶ EPA has failed to assess the available information concerning the universe of CCR units, the nature of the threats posed by such units, the compliance status of the units, and the evidence of actual harm caused by the release of CCR constituents to groundwater. EPA must evaluate this information prior to making any revisions to the 2015 CCR Rule, such as the proposed changes to the location restrictions, that would reduce health and environmental protections.

For example, prior to the reporting required by the 2015 CCR Rule, EPA did not know the exact number of unlined CCR surface impoundments. The 2015 CCR Rule required all owners and operators of existing surface impoundments to document by October 17, 2016, whether the unit was constructed with a liner. 40 C.F.R. § 257.71. Whether a unit is lined is critical to determining the likelihood that a surface impoundment will leak hazardous contaminants to groundwater. The risk of such leaking and the likelihood of harm are higher in certain environments, such as where the bottom of the impoundment is near groundwater, in a wetland, or in an unstable area. Thus, the evidence from the reported data that almost all surface impoundments are unlined must inform EPA's decisionmaking concerning location restrictions.²⁹⁷ However, no such data are presented by EPA in the proposal, and there is no indication that EPA actually considered this new, critical information. For each of the sources of information noted above, one can draw the same conclusion that EPA failed to consider data highly relevant to the proposed rulemaking. Failure to consider such readily available data, which the Agency required to be produced pursuant to the 2015 CCR Rule, renders EPA's proposal arbitrary and capricious.

C. IT WOULD BE UNLAWFUL TO WEAKEN THE LOCATION RESTRICTIONS TO INCLUDE ADDITIONAL RISK-BASED PERFORMANCE STANDARDS.

1. *The location restrictions already offer owners and operators the flexibility to meet alternative performance standards, and any more flexibility would fail to ensure no reasonable probability of adverse effects.*

There is no justification for changing the location restrictions to allow alternative, risk-based location restrictions, *see* 83 Fed. Reg. at 11,598, because the Rule already allows this. The proposed rule gives the mistaken impression that the location restrictions impose one-size-fits-all requirements, when in fact each of the five restrictions provides tailored exemptions from the restriction. As EPA has stated, each location restriction “is not a ban, but a minimum national performance standard,” providing owners and operators with the flexibility to demonstrate that they meet the

²⁹⁶ All of the above-described information is posted on the publicly accessible websites of the owners or operators of the CCR units, pursuant to 40 C.F.R. § 257.107.

²⁹⁷ For additional discussion regarding the high percentage of unlined surface impoundments, *see* Sahu Expert Report.

performance standard even if they are located in sensitive areas where placement of CCR would otherwise be prohibited. Response to Comments, Vol. 4 at 8-9, Docket ID No. EPA-HQ-RCRA-2009-0640-12127. Excerpted below are the provisions in the current CCR rule allowing owners and operators to demonstrate that they meet the performance standard:

(1) Placement above uppermost aquifer, § 257.60(a)

A facility must meet the location restriction “or must demonstrate that there will not be an intermittent, recurring, or sustained hydraulic connection between any portion of the base of the CCR unit and the uppermost aquifer due to normal fluctuations in groundwater elevations (including the seasonal high water table).”

(2) Location in wetlands, § 257.61(a)

A facility must not be located in wetlands, “unless the owner or operator demonstrates by the dates specified in paragraph (c) of this section that the CCR unit meets the requirements of paragraphs (a)(1) through (5) of this section [setting forth various demonstrations].”

(3) Location in fault areas, § 257.62(a)

A facility cannot be located within 60 meters of a damage zone from certain faults “unless the owner or operator demonstrates by the dates specified in paragraph (c) of this section that an alternative setback distance of less than 60 meters (200 feet) will prevent damage to the structural integrity of the CCR unit.”

(4) Location in seismic impact zones, § 257.63(a)

A facility cannot be located in seismic impact zones “unless the owner or operator demonstrates by the dates specified in paragraph (c) of this section that all structural components including liners, leachate collection and removal systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site.”

(5) Location in unstable areas, § 257.64(a)

A facility cannot be located “in an unstable area unless the owner or operator demonstrates by the dates specified in paragraph (d) of this section that recognized and generally accepted good engineering practices have been incorporated into the design of the CCR unit to ensure that the integrity of the structural components of the CCR unit will not be disrupted.”

These alternative performance standards in the 2015 CCR Rule were designed to meet the protectiveness standard in 42 U.S.C. § 6944(a), and thus EPA’s proposal to allow for other, weaker performance standards would violate the statute. For example, as mentioned above, the first location restriction sets an alternative performance standard for complying with the restriction on placement above the uppermost aquifer. EPA explained that the

alternative performance standard focused on the conditions identified in the damage cases and the risk assessment that this location criterion was designed to prevent: Specifically, where the groundwater elevation is high enough to intersect the base of the waste management unit. In such situations, this hydraulic connection can enhance the transport of contaminants of concern from the CCR unit into groundwater.

80 Fed. Reg. at 21,362. As EPA indicated, this alternative performance standard is grounded in empirical evidence of contamination, as documented in the damage cases, as well as in the risks analyzed in the RIA for the 2015 rule. By contrast, EPA's vague 2018 Proposal for even more flexibility, and alternative standards, has no basis in the record, and is not based on any risk analysis.

Similarly, the alternative performance standard that is part of the location restriction regarding fault zones was established to ensure no reasonable probability of adverse effects. EPA concluded that it was unaware of any options, beyond those in the 2015 CCR Rule, for mitigating the risk from fault zones so as to ensure no reasonable probability of adverse effects. *See* 81 Fed. Reg. at 21,365 (“the Agency has been unable to find any way to retrofit or engineer the unit to be protective.”). Given EPA's finding that alternative engineering measures would not mitigate the risk from fault zones, there is no record support for establishing alternative performance standards to the current restriction on locating certain units near fault zones. Specifically, there is no evidence that performance standards other than those in the current rule would ensure “no reasonable probability of adverse effects on health or the environment from disposal of” coal ash, 42 U.S.C. § 6944(a). *See also* Report on Hazardous Waste Disposal, Subcomm. on Oversight & Investigations, Comm. on Interstate & Foreign Commerce, 96th Cong., 1st Sess., H.R. Comm. Print 96 IFC-31, at 31 (Sept. 1979) (Congress intended RCRA to be a “prospective act” that would prevent harms before they occur); *S.C. Dep't of Health & Env'tl. Control v. Commerce & Indus. Ins. Co.*, 372 F.3d 245, 256 (4th Cir. 2004) (“RCRA is preventative” (quoting *B.F. Goodrich Co. v. Murtha*, 958 F.2d 1192, 1202 (2d Cir. 1992))).

2. *It would be unlawful to set location restrictions for CCR units that are weaker than the restrictions for MSWLF units.*

As mentioned in subsection (A)(3), the alternative performance standards governing the location of CCR units are virtually identical to the standards in the MSWLF rule. It would be arbitrary and capricious, and violate RCRA, to weaken the location restrictions so that they are less stringent for CCR units than for MSWLFs, for two reasons. First, the protectiveness standard is more stringent for CCR units than for MSWLFs. *See* Section II, *supra*. Having chosen to regulate coal ash under Subtitle D, EPA must issue regulations ensuring that “there is no reasonable probability of adverse effects on health or the environment from disposal of” coal ash. 42 U.S.C. § 6944(a). By contrast, the standard under which EPA issued the MSWLF regulations requires that such standards be “necessary to protect human health and the environment and may take into account the practicable capability of such facilities.” *Id.* § 6949a(c)(1). Moreover,

whereas the protectiveness standard applicable to coal ash focuses solely on preventing harm to human health and the environment, the standard governing MSWLFs allows EPA to consider costs, *id.* § 6949a(c)(1), which EPA in fact considered when it promulgated the MSWLF regulations, *see* 56 Fed. Reg. at 50,985 (“EPA considered the practicable capability of owners and operators of MSWLFs”).

Second, CCR units pose risks to human health and the environment that are different than the risks posed by MSWLFs, particularly because of the increased risk of leaks and catastrophic spills from CCR surface impoundments. *See* Section VIII, *supra*. Given that the CCR regulations must provide a greater level of protection against health and environmental harms, and that CCR units pose a greater risk of particular harms, it would be arbitrary and capricious and violate 42 U.S.C. § 6944(a) to amend the location restrictions to make them weaker than the location restrictions for MSWLFs.

D. EPA’S VAGUE PROPOSAL TO CONSIDER CHANGES TO THE LOCATION RESTRICTIONS DOES NOT PROVIDE ADEQUATE NOTICE AND AN OPPORTUNITY FOR COMMENT.

EPA’s proposal to consider changes to the location restrictions, 83 Fed. Reg. at 11,598, is so vague that any attempt by EPA to rewrite the location restrictions based on it would violate APA notice and comment requirements, 5 U.S.C. § 553. EPA has sought comment on whether to allow alternative performance standards in lieu of the existing location restrictions, 83 Fed. Reg. at 11,598, but has provided no detail on what standards would be allowed. Whereas the 2018 Proposal includes proposed new regulatory text for other proposed changes to the CCR Rule, the proposal contains no proposed regulatory language describing the changes that EPA may be considering to the location restrictions.

EPA cannot issue a final rule based on a vague call for public comments on an issue, such as EPA’s call for comments on whether to allow alternative performance standards for the location restrictions. As the D.C. Circuit explained in an analogous case:

EPA also argues that it gave general notice that it might make unspecified changes in the definition of small refinery. This purported notice, however, is too general to be adequate. Agency notice must describe the range of alternatives being considered with reasonable specificity. Otherwise, interested parties will not know what to comment on, and notice will not lead to better-informed agency decisionmaking.

Small Refiner Lead Phase-Down Task Force v. EPA, 705 F.2d 506, 549 (D.C. Cir. 1983) (internal citations omitted); *see also Shell Oil Co. v. EPA*, 950 F.2d 741, 760–61 (D.C. Cir. 1991) (“As we have already observed, the EPA ‘cannot bootstrap notice from a comment.’” (quoting *Small Refiner*, 705 F.2d at 549))); *McLouth Steel Prods. Corp. v. Thomas*, 838 F.2d 1317, 1323 (D.C. Cir. 1988) (“Because the notice was inadequate, EPA’s consideration of the comments received in response thereto, no matter how careful, cannot cure the defect.”).

E. RCRA SECTION 4004(A) REQUIRES EPA TO ESTABLISH LOCATION RESTRICTIONS AS MINIMUM FEDERAL CRITERIA, AND EPA’S SUGGESTED ALLOWANCE FOR UNSPECIFIED “ALTERNATIVE, RISK-BASED LOCATION RESTRICTIONS” IS INCONSISTENT WITH THIS MANDATE.

As discussed elsewhere in these comments, *see* Section II, *supra*, RCRA Section 4004(a) requires EPA to promulgate regulations setting forth minimum federal criteria, such as location restrictions, for facilities to be classified as sanitary landfills rather than open dumps. 42 U.S.C. § 6944(a). As noted above, EPA found in the 2015 CCR Rule that the location restrictions set forth in that rule are necessary to ensure “no reasonable probability of adverse effects on health or the environment” under the Section 4004(a) protectiveness standard. 80 Fed. Reg. at 21,304. EPA’s proposal to consider allowing unspecified “alternative, risk-based location restrictions,” without even attempting to define what those alternative standards might look like, is inconsistent with its Section 4004(a) mandate.

In addition, EPA’s proposal to allow for unspecified alternative location restrictions is also inconsistent with the WIIN Act. Although the WIIN Act does allow EPA to approve state permitting programs that are “at least as protective as” the minimum federal criteria, 42 U.S.C. § 6945(d)(1)(B), (C), the WIIN Act presumes the continued existence of clear federal minimum criteria that would act as a baseline against which state programs can be measured. The WIIN Act also presumes that the federal minimum criteria will continue to apply in states where a permitting program has not yet been approved. *Id.* § 6945(d)(3). In addition, even if EPA receives sufficient congressional appropriations to begin administering federal permitting programs in one or more states, any such federal permits must require compliance with the same federal minimum criteria as set forth in the CCR Rule itself. *Id.* § 6945(d)(2)(B). EPA’s suggestion that it can effectively do away with federal minimum location restrictions in favor of an unspecified, site-specific, “risk-based” approach would be an unjustified and illegal delegation of EPA’s responsibility to establish and maintain minimum federal criteria that meet the Section 4004(a) protectiveness standard. Any final rule that purported to allow state or federal permitting authorities to incorporate “alternative, risk-based location restrictions” into permits in lieu of the location restrictions that EPA just three years ago found to be necessary to meet the Section 4004(a) standard would be unsupported by the record, arbitrary and capricious, and contrary to law.

F. EPA SHOULD NOT EXTEND THE OCTOBER 17, 2018 COMPLIANCE DEADLINE.

There is no rational basis for EPA to extend the October 17, 2018 deadline for meeting the location restriction requirements. The CCR Rule was already long overdue when it was issued in 2015. For example, EPA concluded in 2000 that coal ash should be regulated under Subtitle D of RCRA, 65 Fed. Reg. 32,214, 32,221 (May 22, 2000), yet did not propose such a rule until 2010, 75 Fed. Reg. 35,128, and did not finalize the rule

until 2015, 80 Fed. Reg. 21,302. After decades of delay, the CCR Rule represents the first federal standards issued under RCRA governing the disposal of coal ash. In light of the long history of delays in setting federal standards, and the grave dangers to human health and the environment from improperly sited coal ash impoundments and landfills, any extension of the compliance deadlines is unwarranted.

Furthermore, EPA's proposal to extend the deadline for all CCR units, based on the mere possibility that some units might someday be subject to a permitting program, is irrational. At present, EPA has not given final approval to any state's proposed coal ash permitting program, nor has EPA established any federal coal ash permitting programs in any states. EPA has not even established a CCR permitting program on Indian Lands, where such programs have been mandatory since 2016 according to the WIIN Act. *See* 42 U.S.C. § 6945(d)(5). It makes no sense to delay a compliance deadline that is only months away based on a speculative possibility of permitting programs that do not currently exist. Further, the presence of a state or federal permit program does not provide a sound rationale for an extension of the compliance date, and EPA has provided no reason why the contrary would be true. Even if any state permitting programs are approved, there is no reason to assume that they program would establish alternatives to the current location restrictions. In any event, those "alternatives" would have to be at least "as protective as" the 2015 CCR Rule. 42 U.S.C. § 6945(d)(1)(B), (C). And any federal permitting program that EPA might establish in the future must require compliance with CCR Rule criteria; the WIIN Act does not allow EPA to deviate from those criteria in states or territories where it administers a coal ash permitting program. *Id.* § 6945(d)(2)(B), (5).

Moreover, the 2015 CCR Rule was issued in April 2015, three and a half years before the October 2018 deadline for location restrictions. The 2015 CCR Rule provides owners and operators with an additional six months to dispose of CCR in a unit that cannot meet a location restriction. Thus, facilities will have had a full four years to prepare for the location restrictions, not accounting for the notice provided by the 2010 proposed rule, which contained the same location restrictions. *See* Proposed §§ 257.60-64, 75 Fed. Reg. at 35,241-43.²⁹⁸ Given the ample time that facilities have had to plan for

²⁹⁸ *See* EPA, Comment Summary and Response Document, Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Proposed Rule, Volume 4: Location Restrictions, Docket ID No. EPA-HQ-RCRA-2009-0640-12127 (Dec. 2014). For example, see specific comments from Prairie State Generating Company, LLC, (regarding lateral expansion of existing landfills in restricted location), Comment Number: EPA-HQ-RCRA-2009-0640-09239-39 at 8-9; Electric Power Research Institute, (identifying 148 specific plants located within the seismic impact zone and submitting "Technical Memo showing areas in the United States that would be impacted by the two approaches proposed by US EPA in the Proposed Rule (EPRI, 2010). The purpose of developing this information was to determine how many power plant facilities would be impacted by the seismic impact criteria. The seismic impact zones were based on data generated by the United States Geological Survey (USGS). Locations of the power plants listed in the RIA are also shown on these maps."), Comment Number: EPA-HQ-RCRA-2009-0640-09765-54 at 10-11; Minnkota Power Cooperative, Inc. (opposing all location restrictions, Comment Number: EPA-HQ-RCRA-2009-0640-06252-13 at 13; Southern Company on behalf of itself and its four subsidiaries: Alabama Power Company, Georgia Power Company, Gulf Power Company, and Mississippi Power Company, ("EPA Should Revise Location Restrictions to Accommodate Demonstrations of Safety at New and Existing Facilities"), Comment Number: EPA-HQ-

meeting the location restrictions, an extension of the deadline is unnecessary—particularly because utilities should already have sufficient information to determine whether their units comply with the restrictions.

Indeed, several utilities have already relied on the CCR Rule to seek approval from state regulators to close CCR units that do not comply with the location restrictions. *See, e.g.*, Petition of Tampa Electric Company for Approval of the Second Phase of Its CCR Program for Cost Recovery through the Environmental Cost Recovery Clause, ¶ 10, Florida Public Service Commission, Doc. No. 06353-2017 (filed July 28, 2017) (attached) (requesting approval for recovery of costs to close impoundment at Big Bend plant because it is in violation of the uppermost aquifer five-foot separation requirement); Direct Testimony of Kelly R. Carmichael, on behalf of Northern Indiana Public Service Company, at 14:9-18, Indiana Utility Regulatory Commission, Cause No. 44872 (filed Nov. 23, 2016) (attached) (describing need for projects to allow for closure of CCR units at Michigan City and Schahfer plants due to anticipated violations of location restrictions and groundwater standards); Direct Testimony of Gary Revlett, on behalf of Louisville Gas & Electric Company, at 17:1 through 18:18, Kentucky Public Service Commission, Case No. 2016-00027 (filed Jan. 29, 2016) (attached) (describing need for closure of CCR units at Mill Creek and Trimble County plants due to anticipated violations of location restrictions and groundwater standards). EPA’s proposed changes would penalize companies that have made good-faith efforts to comply with the current rule, while rewarding companies that have not prepared to comply.

G. ANY ALTERNATIVE PERFORMANCE STANDARDS MUST BE POSTED ONLINE, IN ORDER TO FACILITATE OVERSIGHT AND ENFORCEMENT OF THE RULE.

As explained above, EPA should not change the location restrictions to allow performance standards other than the existing standards in the Rule. However, if EPA does allow alternative performance standards, EPA must ensure that all demonstrations purportedly meeting alternative standards are posted to the facility’s publicly accessible website.

Despite passage of the WIIN Act, the CCR Rule remains a self-implementing rule, because no state or federal permitting programs have yet been established. As a result, citizen enforcement is the primary means of enforcing the CCR Rule at present. Successful enforcement of the Rule requires public access to information regarding

RCRA-2009-0640-06300-7 at 13-14; Duke Energy (“There were some surface impoundments constructed at Duke Energy stations prior to these location restrictions being promulgated into state regulations.”), Comment Number: EPA-HQ-RCRA-2009-0640-06398-34, at 15; Duke Energy, (“EPA must not subject existing CCR surface impoundments to location restrictions if those units satisfied all siting requirements in effect at the time of construction.”), Comment Number: EPA-HQ-RCRA-2009-0640-06398-36 at 15-16; Arkansas Electric Cooperative Corporation (AECC), (EPA should not apply location restrictions to existing surface impoundments or landfills.), Comment Number: EPA-HQ-RCRA-2009-0640-06722-17, at 17-18. Many additional comments from owner/operators of CCR units are found in the Comment Summary and Response Documents.

compliance. Indeed, EPA designed the current recordkeeping and public notice requirements precisely to enable citizen enforcement of the Rule, given that the Rule is self-implementing. *See, e.g.*, 80 Fed. Reg. at 21,399 (“Because this is a self-implementing rule that relies on citizen enforcement, it is important for the owner or operator of the facility to periodically document that they are in compliance with the existing groundwater monitoring requirements.”).

Moreover, even once states or EPA do begin to administer WIIN Act permitting programs in some states, public posting of compliance documents is still critical to providing the public with access to information about compliance and to allow for citizen enforcement, as discussed further in Section XII of these comments. If EPA decides to allow for alternative, risk-based location restrictions at certain sites, the public must have timely access to the amended, site-specific standards in order to monitor compliance with the new standards. In addition, public posting of demonstrations related to alternative location standards must be publicly posted in order to meet the public participation mandates in RCRA section 7004(b). 42 U.S.C. § 6974(b). Section 7004(b) states:

Public participation in the development, revision, implementation, and enforcement of any regulation, guideline, information, or program under this [Act] shall be provided for, encouraged, and assisted by the Administrator and the States. The Administrator, in cooperation with the States, shall develop and publish minimum guidelines for public participation in such processes.

Id. Consequently, removal of the 2015 CCR Rule’s posting requirements would render the provision unlawful under section 7004(b).

XIV. ALTERNATIVE GROUNDWATER PROTECTION STANDARDS FAIL TO SATISFY THE SECTION 4004(A) PROTECTIVENESS STANDARD AND HAVE NO RATIONAL BASIS.

The 2015 CCR Rule requires owner/operators to establish groundwater protection standards (GWPSs). 40 C.F.R. § 257.95(d), (h). For constituents for which a Maximum Contaminant Level (MCL) has been established, the GWPS is set equal to the MCL or to the relevant background concentration, whichever is higher. 40 C.F.R. § 257.95(h). For other constituents, the GWPS is set equal to the relevant background concentration for each constituent. *Id.* EPA is now proposing to allow states to establish “alternative” GWPSs (“alternative groundwater standards” or “alternative standards”). Since states would be free to establish alternative standards that are higher (more lenient) than background, the proposal would allow for weakening of existing GWPSs. EPA determined in 2015 that the existing GWPSs were necessary to meet the RCRA section 4004(a) protectiveness standard. Response to Comments, Vol. 9, at 52 (Dec. 2014), EPA-HQ-RCRA-2009-0640-12132. Weakening these standards therefore fails to meet the protectiveness standard by increasing the probability of adverse effects on health and the environment.

EPA has failed to justify this rollback with any kind of record evidence. The proposed regulatory language is also inconsistent with, and therefore not supported by, the preamble of the 2018 Proposal. In addition, the proposal conflicts with other parts of the 2015 CCR Rule and the 2018 Proposal, as described in more detail below. Even if it were permissible to relax the groundwater protection standards in the 2015 CCR Rule, the only groundwater levels that could possibly meet the RCRA protectiveness standard are EPA's Regional Screening Levels, which are based on the same reference doses that EPA used in the risk assessment supporting the 2015 CCR Rule.

We would like to make special note of the fact that EPA's proposal would put young children at risk. EPA claims to be basing its proposal for alternative standards on a similar provision in its MSWLF regulations. Yet those regulations specifically require any alternative standards to be protective of "sensitive subgroups" such as children. 40 C.F.R. § 258.55(i). The 2018 Proposal incorporates other language from those municipal solid waste regulations wholesale but strips out the "sensitive subgroups" requirement, allowing states to ignore any heightened risks to children. EPA is effectively saying to the states, "don't worry about kids." This is a gross dereliction of duty, contrary to everything that the Agency used to stand for. It is even more startling in the context of the CCR rule, in which EPA determined that the highest noncancer risks from drinking water contaminated by coal ash "were for infants." Risk Assessment for 2015 Rule at 4-16. EPA knows that coal ash presents heightened risks to young children and is nevertheless proposing to allow states to ignore these risks. This is both illegal and immoral.

The proposed changes to section 257.95 violate the statutory standard, are unsupported by record evidence, are unsupported by EPA's statements in the preamble to the 2018 Proposal, and are in conflict with other provisions of the CCR rule. The proposed changes to section 257.95 are therefore impermissible, irrational, arbitrary, and capricious, and must not be finalized.

A. THE PROPOSAL TO ALLOW ALTERNATIVE GROUNDWATER STANDARDS WOULD VIOLATE RCRA SECTION 4004(A).

As EPA explained in the 2015 CCR Rule, "EPA must demonstrate, through factual evidence available in the rulemaking record, that the final rule will achieve the statutory standard ('no reasonable probability of adverse effects on health or the environment') at all sites subject to the standards based exclusively on the final rule provisions." 80 Fed. Reg. at 21,311. The proposed section 257.95(j) fails to incorporate this standard directly, and fails to meet the standard by otherwise limiting the discretion of State Directors. As described in more detail in the following sections, the proposed section 257.95(j) establishes vague, unenforceable guidelines; fails to address ecological risk or cancer risk in any meaningful way; arbitrarily and irrationally ignores health-based exposure concentrations that EPA has already developed; and would ultimately allow the states to increase risks to human health and the environment far above the "no reasonable probability" standard.

1. *EPA's prior determination that the appropriate groundwater protection standard for non-MCL chemicals is background must stand because EPA has not provided any record evidence or serious rationale for a change in position.*

In the preamble to the 2015 CCR Rule, EPA stated that

EPA designed the groundwater monitoring program to establish minimum requirements that are necessary to meet the standard in RCRA 4004(a) – that there be “no reasonable probability of adverse effects on health or the environment” nationwide. This means that EPA must design the program to account for the range of conditions at sites across the country – both those that are more sensitive and those that are less sensitive. While it is theoretically possible that this may result in “overprotection” at some sites (which is inherent in any national requirement), the monitoring program has been designed to in fact be “the minimum” necessary to protect human health and the environment across the country.

Response to Comments, Vol. 9 at 52. The existing groundwater monitoring program, including the groundwater standards of background for constituents without MCLs, is what EPA determined to be “the minimum” necessary to protect public health. EPA has provided no justification for changing this position. Nothing about the toxicity of these constituents has changed, and nothing about the variability in national conditions has changed. While it is true that the WIIN Act authorizes state permit programs, that fact does not change the toxicity of boron, cobalt, lead, lithium or molybdenum. If background was the appropriate health-based standard in 2015, it remains the appropriate health-based standard, and EPA has not provided any reason to change that standard.

2. *EPA's formal proposal is radically different from what the preamble to the proposal describes*

There are several important ways in which the proposed regulatory language is different than, and much weaker than, the description of the proposal in the preamble of the 2018 Proposal. Contrary to the language in the preamble, the actual proposal would allow States to consider cost and other non-risk factors in establishing alternative groundwater standards; provides no requirements or guidance as to cancer risk; fails to provide adequate instructions for establishing alternative groundwater standards for non-carcinogens; and more:

- The preamble states that the “alternative GWPS is to be a health-based standard that will be protective of potential receptors (both human and ecological) and is not based on any non-risk based factors, such as the cost to achieve the standard.” 83 Fed. Reg. 11,598-599. Yet the proposed section 257.95(j) says nothing about “non-risk based factors.” The proposed change does not expressly prohibit states from considering cost in establishing alternative standards, and therefore creates

the risk that states would consider costs in establishing those standards. This is directly inconsistent with RCRA section 4004(a)'s protectiveness standard.

- The preamble states that “EPA is proposing to replace the citations [in 40 C.F.R. Part 258] with the updated versions,” and goes on to list four documents. 83 Fed. Reg. at 11,599. However, the proposed section 257.95(j) only cites three of these documents, omitting “Guidelines for Carcinogen Risk Assessment.” Thus, the proposed regulatory language does not provide any instructions to states or require them to consider any guidance concerning cancer risk.
- The preamble states that “EPA is proposing to adopt, with modifications, the part 258 provisions specifying that the alternative standard is set at a level that is associated with an excess lifetime cancer risk within the 1×10^{-4} to 1×10^{-6} range for carcinogens.” 83 Fed. Reg. 11,599. The relevant part 258 provision states as follows: “For carcinogens, the level represents a concentration associated with an excess lifetime cancer risk level (due to continuous lifetime exposure) with the 1×10^{-4} to 1×10^{-6} range.” 40 C.F.R. § 258.55(i)(3). The proposed section 257.95(j) does not include this language, in a modified form or otherwise. Again, there is nothing in the proposed regulatory language that requires any consideration of risk from carcinogens, or provides guidance on how to do so.
- The preamble also states that “[f]or carcinogens, EPA is also proposing to require that States use a cancer slope factor to establish the alternate GWPS within the relevant risk range.” 83 Fed. Reg. at 11,599. Again, the proposed regulatory language does not include this requirement in any form.
- The preamble goes on to state that “EPA is proposing to require that States use a reference dose to establish the alternative GWPS, with a Hazard Quotient (HQ) of 1 as the upper bound on risk.” Once again, this is simply not in the proposed regulatory language. Specifically, the proposed section 257.95 does not require the use of a reference dose. Although it does require states to set alternative groundwater standards for systemic toxicants at a “level that ensures a Hazard Quotient no greater than 1,” proposed section 257.95(j)(1)(iii), the proposal does not require the HQ to be calculated relative to any particular benchmark. States would therefore be free to identify any level of exposure, even if it is higher than an EPA reference dose, from which to calculate a hazard quotient.

The preamble to the rule is so unlike the proposal itself that it fails to justify the proposal. In other words, not only is the proposal unsupported by any record evidence, it is also unsupported by its own preamble. This renders the proposal patently arbitrary and capricious.

3. *EPA’s proposal is arbitrarily weaker than its Municipal Solid Waste Landfill counterpart.*

EPA’s proposal is based on a similar provision in EPA’s MSWLF regulations, but it is significantly weaker than the MSWLF version in at least two ways. First, as described above, the 2018 Proposal would not require states to consider cancer risk. The

MSWLF regulations, by contrast, require that any alternative groundwater standards keep cancer risks below 1×10^{-4} . 40 C.F.R. § 258.55(i)(3).

Second, the MSWLF regulations require alternative groundwater standards for systemic toxicants to be protective of “sensitive subgroups,” such as children. 40 C.F.R. § 258.55(i)(4). The 2018 Proposal, by contrast, does not include any language about sensitive subgroups. EPA has already determined that, with respect to coal ash constituents in drinking water, “the highest noncancer risks [are] for infants.” Risk Assessment for 2015 Rule at 4-16. Now EPA is proposing to allow the states to ignore these heightened risks to children. This is a gross abdication of EPA’s mission and is a clear violation of RCRA Section 4004(a)’s protectiveness standard.

As we point out elsewhere in these comments, the MSWLF regulations are not a suitable model for coal ash regulation. Even if they were, however, EPA has failed to provide any record evidence or rationale for proposing something significantly weaker than the MSWLF regulations.

4. *The 2018 Proposal is not adequately protective of ecological receptors.*

The Risk Assessment for the 2015 rule identified unacceptable ecological risks from boron. Specifically, EPA found that Flue Gas Desulfurization (FGD) waste could migrate through groundwater to local surface water and exceed the ecological benchmark for boron by five-fold.²⁹⁹ Risk Assessment for 2015 Rule at 5-8. The proposed language authorizing alternative groundwater protection standards would not ensure that there is no reasonable probability of ecological harm from boron and would therefore violate the RCRA standard. The proposed language states that “[t]he alternative groundwater protection standards must be appropriate health-based levels that are protective of potential receptors (both human and ecological) and satisfy all of [the three criteria that follow].” 83 Fed. Reg. at 11,613. This presents two problems. First, it describes the standards as “health-based,” which puts the focus on human health, not ecological risk. Second, none of the criteria listed after the aspirational statement have anything to do with ecological risk. Section 257.95(j)(1)(i) lists three EPA guidance documents, all having to do with human health risk. Section 257.95(j)(1)(ii) deals with the Toxic Substances Control Act (which only pertains to human health). Section 257.95(j)(iii) discusses human, noncancer health risks. EPA has only nominally addressed ecological risk in the proposed regulatory language, and has not provided any meaningful criteria or guidance by which to ensure that alternative groundwater standards are adequately protective against ecological risks.

EPA could easily provide such guidance. For example, the Risk Assessment for the 2015 CCR Rule listed a “hierarchy” of surface water benchmarks that includes Criterion Continuous Concentrations (CCCs) developed by EPA, Final Chronic Values that have been used in EPA’s Great Lakes Water Quality Initiative, and Secondary

²⁹⁹ It also found significant ecological risks from cadmium, but cadmium has a Maximum Contaminant Level and is therefore not subject to the proposed alternative groundwater standards.

Chronic Values that have been published in the scientific literature. Risk Assessment for 2015 Rule at E-10. The Risk Assessment provides a similar hierarchy for sediment benchmarks. *Id.* at E-12. Since the Risk Assessment and the 2015 rulemaking were designed to prevent risks identified using these benchmarks, these are the benchmarks that should be used in establishing any alternative groundwater standards. Anything less protective than these benchmarks would violate the RCRA section 4004(a) protectiveness standard by allowing exposure to concentrations that EPA has identified as unacceptable.

If EPA is to allow alternative groundwater standards, it must require states to set the alternative standards at levels that are protective of both human health and ecological receptors, by requiring the standards to be set at the more stringent of the level necessary to protect human health (e.g., EPA Regional Screening Levels) and the level necessary to protect ecological receptors. The level necessary to protect ecological receptors should be defined in the regulatory language by reference to the above-cited hierarchies of ecological benchmarks.

5. *The EPA, not states or private entities, should establish groundwater protection standards for boron, cobalt, lithium, and molybdenum, and EPA has in fact already done so; allowing the states or private entities to establish alternative standards for these constituents would be arbitrary and without a rational basis, and would violate the statutory standard.*

In the 2015 CCR rule, EPA decided not to allow owners and operators of CCR units to establish alternative groundwater standards because “it was unlikely that a facility would have the scientific expertise necessary to conduct a risk assessment, and was too susceptible to potential abuse.” 74 Fed. Reg. at 21,405. The same could be said about state governments. During the rulemaking for EPA’s MSWLF regulations, “the majority of commenters, including several States,” asked EPA to establish federal standards because the states were not equipped to do it. EPA agreed:

The majority of the commenters, including several States, argued that the States should not bear the responsibility of establishing the level to which ground water should be cleaned. The commenters argued that the States do not have the financial or technical resources to undertake this task and that the lack of a federal standard would result in inconsistent standards nationally. Many commenters contended that federal standards should be established to ease the rule's burden on States and to allow States to devote State resources to making decisions on appropriate remedies.

* * *

The Agency agrees that in many cases States have limited resources available to establish clean-up standards for a large number of compounds.

U.S. EPA, Solid Waste Disposal Facility Criteria (Oct. 9, 1991), 56 Fed. Reg. 50,978, 51,086. In the case of EPA's coal ash regulations, not only is EPA in a better position to establish health-protective levels for each non-MCL constituent, but the Agency has already done so. Given that EPA has already determined which groundwater standards meet the RCRA section 4004(a) protectiveness standard, there is no justification for allowing states to use conflicting, less protective groundwater standards.

a. Allowing states to establish reference doses that are less stringent than EPA's reference doses would be arbitrary and capricious, irrational, and in violation of the RCRA standard

The preamble to the 2018 Proposal states that "EPA is proposing to require that States use a reference dose to establish the alternative GWPS, with a Hazard Quotient (HQ) of 1 as the upper bound on risk." 83 Fed. Reg. at 11,599. This is not actually in the proposed regulatory language. The proposed regulatory language cites a guidance document that discusses the derivation of reference doses, but it does not require the use of a reference dose to establish a standard that ensures a Hazard Quotient of 1 or less. The proposal does not prohibit – and would therefore allow – states to derive new, alternative reference doses, or any other kind of health benchmark, from which to calculate Hazard Quotients.

There is no rational basis for allowing states (or owner/operators) the flexibility to derive new, alternative reference doses (or other benchmarks). Reference doses are not site-specific. Rather, they represent a peer-reviewed synthesis of the scientific literature on the health effects of a chemical. The EPA's Integrated Risk Information System (IRIS) defines the reference dose as follows:

An estimate (with uncertainty spanning perhaps an order of magnitude) of a daily oral exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime. It can be derived from a NOAEL, LOAEL, or benchmark dose, with uncertainty factors generally applied to reflect limitations of the data used.³⁰⁰

Note that this definition says nothing about any site-specific factors that would justify having site- or state-specific reference doses. The derivation of a reference dose requires expertise, peer review, and a thorough evaluation of the scientific literature. Most states are not equipped to perform these derivations – a point with which EPA agreed during the MSWLF rulemaking in 1991 – and states instead look to EPA for the latest scientific consensus on a suitable reference dose for a given chemical.

³⁰⁰ U.S. EPA, Integrated Risk Information System, "About IRIS," <https://www.epa.gov/iris/basic-information-about-integrated-risk-information-system>.

The only chemicals in appendix IV of the 2015 CCR Rule that lack Maximum Contaminant Levels are boron, cobalt, lead, lithium, and molybdenum. 83 Fed. Reg. at 11,598. As discussed in more detail below, it is inappropriate for states to derive reference doses for lead. As for the remaining four chemicals, there is no need for states to derive reference doses because EPA has already done so, as shown in the table below. In other words, EPA has already determined that these levels of exposure are the levels that are “likely to be without an appreciable risk of deleterious effects during a lifetime,” the standard set forth in both the definition of a reference dose and the proposed language of section 257.95(j). EPA is therefore fully aware that allowing states to derive less stringent reference doses would create an “appreciable risk of deleterious effects,” and would therefore be in conflict with the proposed language of section 257.95(j) and the RCRA section 4004(a) protectiveness standard.

It is also important to note that EPA, using the reference doses shown in the table below, determined that coal ash units presented unreasonable risks to human and ecological receptors,³⁰¹ and determined that the protections promulgated in the 2015 CCR Rule were necessary to reduce these risks below the section 4004(a) protectiveness standard. *See, e.g.*, Response to Comments, Vol. 9, at 52. EPA has provided no new record evidence to contradict its prior determination on this point. Allowing states to arbitrarily increase the threshold for allowable levels of exposure would violate RCRA section 4004(a).

The preamble to the 2018 Proposal notes states that “any alternate GWPS will be based on established risk levels.” 83 Fed. Reg. at 11,599 (emphasis added). This is not in the proposed regulatory language, but as an expression of EPA’s justification for the proposal, we take this to mean that the Agency will not allow risks in excess of established risk levels. The “established risk levels” for the relevant constituents, for human health, are EPA reference doses. These are the established risk levels that EPA has published, but perhaps more important in this context, they are the risk levels that informed the Risk Assessment for the 2015 CCR Rule.

EPA justifies the proposed alternative groundwater standards in part by saying that

[A]ny alternate GWPS that meets the requirements specified in this proposal would still protect potential receptors from the reasonable probability of maximum exposures identified in the final risk assessment.

83 Fed. Reg. at 11,599-600. The only way to ensure that this is true, given that the final Risk Assessment was based on EPA reference doses, is to require the use of those same reference doses (or something more stringent) in the derivation of the alternative standards.

³⁰¹ *See generally* the Risk Assessment for the 2015 Rule; *see also, e.g.*, 83 Fed. Reg. at 11,589 (“[T]he risk assessment (RA) conducted to support the final CC Rule shows that boron is one of nine constituents determined to present unacceptable risks to both human and ecological receptors.”).

Accordingly, if EPA is to allow states to derive alternative groundwater standards, it must require the states to use the reference doses that EPA has established. EPA must also remove the cited guidance about deriving reference doses, since the states should not be making any such derivations for purposes of this rule.

b. It is arbitrary and insufficiently protective to let states establish groundwater protection standards where, as here, EPA has already done so.

Reference doses are exposure rates expressed in units of mg per kilogram of body weight per day (mg/kg-d). Groundwater protection standards are exposure concentrations expressed in units of mg/L. In order to convert reference doses to groundwater protection standards, one must make assumptions about the body weight and drinking water consumption rate of an exposed individual. As noted above, EPA has already determined that groundwater risks are highest for infants. Risk Assessment for 2015 Rule at 4-16. As with reference doses, there is no reason for states to derive groundwater standards because EPA has already effectively done so in the form of EPA Regional Screening Levels (RSLs or SLs) and health advisories.

EPA Regional Screening Levels are “risk-based concentrations derived from standardized equations combining exposure information assumptions with EPA toxicity data. SLs are considered by the Agency to be protective for humans (including sensitive groups) over a lifetime.” EPA, Regional Screening Levels website.³⁰² Reviewing the table of Regional Screening Levels for the constituents at issue here shows that they are all based on EPA reference doses. *Id.* In fact, they are based on the same reference doses used in the Risk Assessment for the 2015 CCR Rule. For noncancer tapwater exposures, the RSLs are derived by combining the reference doses with exposure factors appropriate for children. *Id.*

Regional Screening Levels are not overly conservative, and may in some cases be behind the science. Boron, being one of the most widespread and dangerous coal ash pollutants, is an important example. EPA’s Regional Screening Level for boron is 4 mg/L. The World Health Organization, by contrast, has a “guideline value” of 2.4 mg/L.³⁰³ The World Health Organization guideline is, like EPA’s Regional Screening Level, established to protect against developmental toxicity (e.g., low birthweight), but is much more recent than the 2004 EPA reference dose for boron, which is the basis for the current Regional Screening Level. EPA also derived a “child health advisory” for boron in 2008.³⁰⁴ The child health advisory (3 mg/L) is more recent than the 2004 reference dose supporting the RSL for boron, and is based on a different endpoint, namely

³⁰² U.S. EPA, Regional Screening Levels Frequent Questions (November 2017), <https://www.epa.gov/risk/regional-screening-levels-frequent-questions-november-2017#FQ27>.

³⁰³ World Health Organization, Guidelines for drinking-water quality, 4th edition, incorporating the 1st addendum (chapters), 323 (2017).

³⁰⁴ U.S. EPA, Drinking Water Health Advisory for Boron, 822-R-08-013 (2008).

testicular damage. The child health advisory confirms that the RSL may not be adequately protective against all adverse health effects associated with boron.

EPA actually derives two different types of noncancer tapwater RSLs, one using a target Hazard Quotient of 1, and another using a target Hazard Quotient of 0.1. Both sets of RSLs are presented in the table below. EPA explains the rationale for having two sets of RSLs as follows:

Generally, if you are screening only one contaminant, the THQ=1.0 table can be used. Generally, if you are screening multiple chemicals it is preferred to use the THQ=0.1 tables. The rationale for using THQ=0.1 for screening is that when multiple contaminants of concern are present at a site or one or more are present in multiple exposure media, the total hazard index could exceed 1.0 if each were screened at the HQ of 1.0.

Id. According to EPA, RSLs with a target Hazard Quotient of 0.1 are preferable where, as here, there are multiple constituents of concern. In the case of coal ash, the constituents of concern include at least arsenic, boron, cadmium, cobalt, fluoride, lithium, mercury, molybdenum, and thallium. *See, e.g.*, 40 Fed. Reg. at 21,451 (“Risks to residential receptors were identified primarily from exposures to arsenic, lithium, and molybdenum . . . but additional risks from boron, cadmium, cobalt, fluoride, mercury and thallium were identified for specific subsets of national waste disposal practices.”); *see also* 83 Fed. Reg. at 11,589 (referring to the “nine constituents determined to present unacceptable risks under the range of scenarios modeled.”). There are additional coal ash constituents that contribute to cumulative risk, including manganese, and as we discuss elsewhere in these comments with respect to groundwater monitoring data generated by the 2015 CCR Rule, radium and sulfate. If Regional Screening Levels are to be applied in the context of EPA’s coal ash regulations, the appropriate RSLs would be those with a target Hazard Quotient of 0.1.

The use of the RSLs with a target Hazard Quotient of 0.1 is reinforced by EPA’s proposed section 257.95(j)(1)(i), which requires that alternative groundwater standards be set consistent with, among other guidance documents, EPA’s “Supplementary Guidance for Conducting Health Risk Assessment of Chemical Mixtures.” 83 Fed. Reg. at 11,613. That document establishes “default” principles of either dose addition or response addition for chemical mixtures.³⁰⁵ In the context of coal ash, which contaminates groundwater with a chemical mixture, the guidance cited by EPA therefore establishes the principle that the risks from chemicals in a mixture should be added. The Regional Screening Levels with a target Hazard Quotient of 0.1 implement that principle (and the RSLs with a target Hazard Quotient of 1 do not).

EPA health advisories are derived by the Agency’s Office of Water, and are intended to prevent “any adverse noncarcinogenic effects for a lifetime of exposure” or,

³⁰⁵ U.S. EPA, Supplementary Guidance for Conducting Health Risk Assessment of Chemical Mixtures, EPA/630/R-00/002, at 11 (Aug. 2000) (attach).

in children, any adverse effects after one or ten days of exposure.³⁰⁶ The EPA health advisories for boron and molybdenum are more recent than the reference doses supporting the RSLs for these chemicals, and as mentioned above, differ slightly in magnitude. The child health advisory for boron is 3 mg/L, and the lifetime health advisory for molybdenum is 0.04 mg/L.³⁰⁷ EPA has not published health advisories for cobalt or lithium. EPA health advisories are derived using the same risk assessment principles that are used to derive RSLs, and are consistent with the general guidance that the 2018 Proposal purports to provide.

c. If EPA chooses to allow groundwater protection standards other than background, those standards must be no less stringent than the EPA Regional Screening Levels or health advisories.

As described above, the RCRA Section 4004(a) protectiveness standard, and the standard articulated in the 2018 Proposal, require EPA to ensure that there is “no reasonable probability of adverse effects on health” and that there is no “appreciable risk of deleterious effects.” EPA has already established the groundwater concentrations that correspond to these standards in the form of Regional Screening Levels, which are based on EPA reference doses, and in the form of drinking water health advisories. Groundwater standards higher than (less stringent than) the Regional Screening Levels or health advisories would, by definition, fail to meet these standards and would present a reasonable probability of adverse health effects. EPA must therefore ensure that groundwater protection standards for non-MCL constituents are no greater than EPA Regional Screening Levels or health advisories, either by setting these groundwater standards at the Regional Screening Levels or health advisories, or by prohibiting alternative groundwater protection standards that exceed the Regional Screening Levels or health advisories. The appropriate Regional Screening Levels to use in the context of coal ash are those with a target Hazard Quotient of 0.1, but in no case should groundwater protection standards be allowed to exceed the tapwater Regional Screening Levels with a target Hazard Quotient of 1.

³⁰⁶ U.S. EPA, 2018 Edition of the Drinking Water Standards and Health Advisories Tables, vi (2018).

³⁰⁷ *Id.* at 8.

EPA reference doses, regional screening levels, and drinking water health advisories for boron, cobalt, lithium, and molybdenum.

Constituent	Reference dose (mg/kg-d) ³⁰⁸	Regional Screening Level (tapwater), mg/L ³⁰⁹		Health Advisory (mg/L) ³¹⁰
		Target HQ of 1	Target HQ of 0.1	
Boron	0.02	4.0	0.4	3.0
Cobalt	0.0003	0.006	0.0006	n/a
Lithium	0.002	0.04	0.004	n/a
Molybdenum	0.005	0.1	0.01	0.04

6. *EPA's stated justifications for proposing alternative groundwater standards present special issues for lead and arsenic.*

- a. **The groundwater standard for lead should be background – nothing else would meet the section 4004(a) protectiveness standard – but in no case should EPA allow states to establish groundwater protection standards at levels less stringent than the Action Level for lead.**

The preamble to the 2018 Proposal suggests that the proposed alternative groundwater standards provision would apply to lead. *See, e.g.*, 83 Fed. Reg. at 11,598 (“The only constituents listed in Appendix IV of the final CCR rule that currently have no MCL (and therefore, the only ones that fall under this proposal) are cobalt, lead, molybdenum and lithium”) (emphasis added). Other language from the preamble (discussed below) appears to justify setting the groundwater protection standard either at background or at the lead Action Level of 0.015 mg/L. Nothing in the preamble or the record for the 2018 Proposal (or the record for the 2015 CCR rule) justifies allowing groundwater protection standards any less stringent than 0.015 mg/L.

Lead is unlike most other chemicals in two critical respects. First, it has no known “threshold,” or level below which adverse non-cancer effects are not expected to occur. In fact, EPA has set a Maximum Contaminant Level Goal of zero for lead, as it typically does for carcinogens.³¹¹ *See, e.g.*, 56 Fed. Reg. 26,460, 26,469 (June 7, 1991) (establishing a MCLG of zero because, “[b]ased on the available data, EPA believes there are no clearly discernible thresholds for some of the non-carcinogenic adverse health

³⁰⁸ Risk Assessment for 2015 Rule, Table E-2.

³⁰⁹ U.S. EPA, Regional Screening Levels (RSLs), <https://www.epa.gov/risk/regional-screening-levels-rsls>.

³¹⁰ U.S. EPA, 2018 Edition of the Drinking Water Standards and Health Advisories Tables (2018).

³¹¹ In addition to presenting non-cancer risks that appear to have no threshold, lead is also likely to present a cancer risk, again with no threshold. *See, e.g.*, EPA Integrated Risk Information System, Lead and compounds, https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?substance_nmbr=277 (identifying lead as a “probable carcinogen” based on evidence of cancer after oral and subcutaneous exposures in animals).

effects associated with lead”). There does not appear to be any “safe” level of lead exposure, or at least not one that has been identified.

Second, while most chemicals can be removed from drinking water at a treatment facility, lead often comes from plumbing, and therefore enters drinking water after it has been treated. EPA therefore does not regulate lead with a Maximum Contaminant Level (MCL). Instead, EPA regulates lead through the “lead and copper rule,” 40 C.F.R. § 141, Subpart I, which was promulgated pursuant to section 1412(b)(7) of the Safe Drinking Water Act. The lead and copper rule establishes an “Action Level” of 0.015 mg/L for lead. The Action Level is, like an MCL, a national primary drinking water regulation promulgated under section 1412. EPA and others often treat this Action Level as if it were an MCL. For example, Table E-2 of EPA’s Risk Assessment for the 2015 rule, which shows chronic noncancer human health benchmarks, has the following entry for lead: “MCL of 0.015 mg/L used for water.” Risk Assessment for 2015 Rule at E-5.

The preamble to the 2018 Proposal suggests that alternative groundwater standards should be set at a level that “represents a concentration to which the human population (including sensitive subgroups) could be exposed to [sic] on a daily basis that is likely to be without appreciable risks of deleterious effects during a lifetime.” 83 Fed. Reg. at 11,598. This is of course consistent with EPA’s statutory mandate to ensure that there is no reasonable probability of adverse effects. As stated above, there is no such level for lead – as far as EPA or anyone else is aware, any additional lead exposure presents risks of adverse effects. EPA has not been able to identify a “safe” level, and there is no reason to believe the states could do so. In this case, the only course of action that would be justifiable from a health protection standpoint is to minimize lead exposure by requiring that the groundwater protection standard for lead be set at background. Anything less stringent would allow a “reasonable probability of adverse effects” and would therefore violate EPA’s statutory mandate.

This explains why EPA has determined that it should not derive a reference dose for lead:

A great deal of information on the health effects of lead has been obtained through decades of medical observation and scientific research. This information has been assessed in the development of air and water quality criteria by the Agency's Office of Health and Environmental Assessment (OHEA) in support of regulatory decision-making by the Office of Air Quality Planning and Standards (OAQPS) and by the Office of Drinking Water (ODW). By comparison to most other environmental toxicants, the degree of uncertainty about the health effects of lead is quite low. It appears that some of these effects, particularly changes in the levels of certain blood enzymes and in aspects of children's neurobehavioral development, may occur at blood lead levels so low as to be essentially without a threshold. The Agency's RfD Work Group discussed inorganic lead (and lead compounds) at two meetings

(07/08/1985 and 07/22/1985) and considered it inappropriate to develop an RfD for inorganic lead.

U.S. EPA, Integrated Risk Information System, Lead and compounds (2004). When EPA's IRIS listing for lead was revised in 2004, the Agency determined that, in part "because of the continued apparent lack of threshold," "it is still inappropriate to develop reference values for lead." *Id.* The EPA has repeatedly determined that it is inappropriate to establish a reference dose for lead. It is arbitrary, capricious, and irrational, and a violation of EPA's RCRA Section 4004(a) mandate, to now give the states the authority to do so.

The preamble to the 2018 Proposal also states that "[t]he GWPS must be set at the MCL for all Appendix IV constituents for which there is a promulgated level under section 1412 of the Safe Drinking Water Act." 83 Fed. Reg. at 11,598 (emphasis added). The description in the preamble applies to lead, which has, as described above, a "level" promulgated under section 1412 of the Safe Drinking Water Act – an Action Level of 0.015 mg/L. According to this section of the preamble, then, the Action Level for lead should be the groundwater protection standard. This presents a conflict with RCRA's protectiveness mandate, however, because there is no known "safe" level of lead exposure, as described above. If there *is* a safe level of lead exposure, it is at something less than 0.015 mg/L. In other words, the 0.015 mg/L Action Level for lead is not a "safe" level of exposure. On the other hand, anything greater than 0.015 mg/L is clearly unsafe. Allowing states to establish groundwater protection standards at concentrations greater than 0.015 mg/L would undeniably create a reasonable probability of adverse effects on health, in clear violation of RCRA section 4004(a).

EPA should require the groundwater protection standards for lead to be set at background, but short of taking that step, EPA must treat the level of 0.015 mg/L as a maximum, and must not let states establish alternative groundwater protection standards at concentrations greater than 0.015 mg/L. Again, EPA has repeatedly determined that it would be inappropriate to derive a reference dose for lead, because doing so would fail to protect against low-dose health effects. It would be irrational to allow the states to do so and it would violate the RCRA Section 4004(a) mandate.

b. The Maximum Contaminant Level for arsenic, when used as a groundwater protection standard, fails to meet the RCRA mandate.

The preamble to the 2018 Proposal states that EPA would require states to establish alternative groundwater protection standards for carcinogens within a risk range of 1×10^{-4} to 1×10^{-6} (in terms of excess lifetime cancer risk). The Maximum Contaminant Level (MCL) for arsenic, which is not purely health-based and was not derived for groundwater protection purposes,³¹² fails to meet this risk standard. The

³¹² See, e.g., EPA, Technical Fact Sheet: Final Rule for Arsenic in Drinking Water (attached), <https://nepis.epa.gov/Exe/ZyPdf.cgi?Dockey=20001XXE.txt> (stating that the Maximum Contaminant Level Goal for arsenic is zero, and that the MCL was set at 0.01 mg/L in part due to cost considerations: "After careful consideration of the benefits and the costs, EPA has decided to set the drinking water standard for

MCL for arsenic exists pursuant to a different statute (the Safe Drinking Water Act), is not a groundwater standard, is not enforceable under RCRA, and is not adequately health-protective. Using the arsenic MCL as a groundwater standard is inconsistent with EPA's stated policy for protecting health through the use of alternative groundwater protection standards, and by the same logic it also fails to be adequately protective of public health when used as a mandatory (not 'alternative') groundwater protection standard. The groundwater protection standard for arsenic should be background, or at most 0.002 mg/L.

EPA currently assumes that the cancer potency of arsenic by oral administration – the “oral slope factor” – is 1.5 per mg/kg-d. EPA, Integrated Risk Information System, Arsenic.³¹³ EPA helpfully converts this slope factor in “drinking water concentrations at specified risk levels.” *Id.* The drinking water concentration corresponding to a risk of 1×10^{-4} is 2 micrograms per liter, or 0.002 mg/L. The concentration with a risk level of 1×10^{-6} is 0.02 micrograms per liter, or 0.00002 mg/L. In other words, the highest groundwater protection standard that would keep cancer risks within the range required by EPA (for alternative groundwater standards) is 0.002 mg/L. This is of course five times lower than the arsenic MCL (0.01 mg/L). The lifetime cancer risk at the MCL is 1 in 2,000, or 5×10^{-4} . The MCL clearly fails to bring cancer risk into the range that EPA is willing to accept.

It is important to note that the above discussion is based on current (outdated) EPA thinking. For several years EPA has been re-evaluating the cancer potency of arsenic. According to EPA's most recent proposed revision to the cancer assessment for arsenic, the best available science supports a cancer potency estimate for oral exposure of 25.7 cases per mg/kg-d, roughly 17 times higher than the potency estimate of 1.5 cases per mg/kg-d used in EPA analyses.³¹⁴ Using the proposed slope factor of 25.7 per mg/kg-d, the highest groundwater concentration that would meet EPA's acceptable risk range would be roughly 0.0001 mg/L and the cancer risk associated with exposure at the MCL would be 73 in 10,000 (7.3×10^{-3} , or roughly 1 in 100).

It is also important to note that EPA has established a cancer-based Regional Screening Level for arsenic in tapwater of 0.000052 mg/L.³¹⁵

In short, if there is an arsenic concentration that meets RCRA's health protection mandate, it is probably on the order of 0.00005 or 0.0001 mg/L, but is in no case higher

arsenic higher than the technically feasible level of [0.003 mg/L] because EPA believes that the costs would not justify the benefits at this level.”).

³¹³ EPA, Integrated Risk Information System, Arsenic, inorganic, https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?substance_nmbr=278 and https://cfpub.epa.gov/ncea/iris/iris_documents/documents/subst/0278_summary.pdf#nameddest=canceroral

³¹⁴ U.S. EPA (2010), Draft Toxicological Review of Inorganic Arsenic in Support of Summary Information on the Integrated Risk Information System (IRIS) (attached). Although EPA identified separate potency estimates for women (25.7 cases per mg/kg/d) and men (16.9 cases per mg/kg/d), it stated that the potency estimate for women should be used as the point of departure for the derivation of health criteria.

³¹⁵ EPA, Regional Screening Level Summary Table (Nov. 2017) (attached), available at <https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables-november-2017>.

than 0.002 mg/L. EPA should therefore use the 2018 Proposal as an opportunity to change the groundwater protection standard for arsenic to either background (since the truly health-protective exposure concentrations are likely to be below background), or to 0.002 mg/L (the maximum concentration that would be consistent with the cancer risk range presented in the 2018 Proposal). If EPA were to place arsenic within the alternative groundwater standards section of the rule, it would have to limit states' flexibility to allow alternative standards no higher than 0.002 mg/L in order to be consistent with RCRA Section 4004(a)'s protectiveness standard. The 2018 Proposal offers no rational basis for allowing any alternative groundwater standard for arsenic that is less protective.

7. *Allowing owners and operators to establish alternative groundwater protection standards would further increase risks to human health and the environment and be a clear violation of RCRA.*

Although not supported by explicit regulatory text in the 2018 Proposal, EPA seeks comment on whether to allow owners and operators to establish, with the help of independent technical experts, their own groundwater protection standards in non-participating states. 83 Fed. Reg. at 11,598-99. EPA specifically asks whether this would "satisfy the underlying statutory requirement of no reasonable probability of adverse effects." *Id.*

This is an incredibly reckless proposal, and it would not satisfy the RCRA Section 4004(a) protectiveness standard. EPA itself has already articulated a good reason for not allowing this much flexibility. As the Agency notes in the preamble to the 2018 Proposal, EPA concluded in 2015 that it was "inappropriate" to allow owners and operators to establish alternative groundwater standards in a self-implemented rule, "as it was unlikely that a facility would have the scientific expertise necessary to conduct a risk assessment, and was too susceptible to potential abuse." 83 Fed. Reg. at 11,598 (citing 80 Fed. Reg. at 21,405). Allowing owners and operators to establish these standards on their own would also create significant new challenges of oversight and enforcement for EPA, states, and citizens. There is nothing in the record that justifies EPA changing its position on this issue.

The issues that we raise above with respect to alternative groundwater standards in participating states apply equally here. The only way EPA can ensure that any non-background groundwater protection standards are adequately protective against the risks identified in its 2015 rulemaking is to require the use of the health-based levels that formed the basis for EPA's Risk Assessment for the 2015 rule – EPA's reference doses – or something more stringent. The highest noncancer drinking water risks that EPA identified in the 2015 rulemaking "were for infants." Risk Assessment for 2015 Rule at 4-16. EPA's Regional Screening Levels for the chemicals at issue here are all derived from EPA reference doses (the same reference doses that EPA used in its Risk Assessment), and all assume childhood exposure. Therefore, the only groundwater levels that can meet the RCRA section 4004(a) protectiveness standard are the Regional Screening Levels. EPA cannot allow owners and operators (or states) to set alternative

groundwater protection standards less stringent than the EPA Regional Screening Levels without violating the section 4004(a) standard.

In addition, we strongly agree with EPA's 2015 conclusion regarding site-specific flexibility. Allowing owners and operators to fiddle with risk-based groundwater standards only opens the door to abuse. Requiring an "independent" technical expert does not provide any kind of safeguard. And it would be a daunting, resource-intensive task for EPA, states, or especially private citizens to review site-specific alternative standards and challenge them under the very vague guidelines articulated in the proposed section 257.95(j) (the vague and complicated nature of the 2018 Proposal is discussed in detail below). In most cases, it will be effectively impossible for citizens to prove that an owner/operator has violated the regulation. This of course means that owners and operators would be free to ignore real threats to human health by setting arbitrarily high groundwater protection standards. EPA already found this to be inadequately protective in the 2015 rulemaking, and it has offered no rational basis in the 2018 Proposal for changing its position.

8. *The guidance that EPA provides in proposed section 257.95 is incomplete, vague, and arbitrary.*

The 2018 Proposal would require that alternative groundwater standards be "derived in a manner consistent with EPA guidelines for assessing health risks of environmental pollutants," and then cites three specific documents. In the limited time provided for review of EPA's 2018 Proposal, we were able to identify at least three important problems, discussed below. In general, the volume of information that EPA is expecting states to master and employ in the derivation of alternative groundwater standards is so vast and complicated that it is highly irrational for EPA to expect the states to follow the instructions in the 2018 Proposal. Instead, common sense indicates that states will derive alternative groundwater standards in ways that are inconsistent with EPA guidance. Given the vague directives of the 2018 Proposal and the highly technical nature of the guidance, oversight and enforcement of this section of the proposed regulations would be virtually impossible.

- a. **The cited documents do not provide clear guidance on establishing groundwater protection standards.**

The three documents cited in the 2018 Proposal are (1) "Supplemental Guidance for Conducting Health Risk Assessment of Chemical Mixtures" ("mixtures guidance"), (2) "Guidelines for Developmental Toxicity Risk Assessment" ("developmental risk guidance"), and (3) "Reference Dose (RfD): Description and Use in Health Risk Assessments" ("RfD guidance"). 83 Fed. Reg. at 11,613, proposed section 257.95(j)(1)(i). None of these documents addresses the derivation of groundwater protection standards (or other ambient exposure thresholds). All three could be used to inform the derivation of reference doses (which, as described above, has already been done by EPA), but none of them provides guidance on converting those reference doses to exposure concentrations that meet the statutory standard.

b. EPA failed to cite other relevant guidance.

The three guidance documents cited by EPA appear to be an arbitrary subset of relevant guidance. EPA did not cite its “Guidelines for Carcinogen Risk Assessment” (“cancer guidance”),³¹⁶ even though the preamble to the 2018 Proposal suggests that the Agency had intended to incorporate this document into the proposed regulatory text. 83 Fed. Reg. at 11,599. The cancer guidance, in turn, tells the reader that “[a]ll of EPA’s guidelines should be consulted when conducting a risk assessment in order to ensure that information from studies on carcinogenesis and other health effects are considered together in the overall characterization of risk.” Cancer guidance at 1-1. In addition, as an essential component of risk characterization, states would have to consult EPA’s guidelines on exposure assessment. This is duly noted in the RfD guidance: “The third step in the risk assessment process focuses on exposure issues. For a full discussion of exposure assessment, consult U.S. EPA’s guidelines on the subject (U.S. EPA 1987).”³¹⁷ This means that the 2018 Proposal should have additionally cited at least the following EPA guidance documents:

- Guidelines for Reproductive Toxicity Risk Assessment (1996). *See* Cancer guidance at 1-1.
- Guidelines for Neurotoxicity Risk Assessment (1998). *See id.*
- Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005). *See id.* at 1-2.
- The Risk Assessment Guidelines of 1986.³¹⁸

c. The guidance documents that EPA cited (or intended to cite) articulate several important principles that are not adequately reinforced in the language of the 2018 proposal itself.

The four documents that EPA lists in the preamble to the 2018 Proposal, and in particular the cancer guidance, provide important principles that the states would have to follow (be “consistent with”) as they establish alternative groundwater standards.³¹⁹

³¹⁶ U.S. EPA, Guidelines for Carcinogen Risk Assessment, EPA/630/P-03/001F (Mar. 2005) (attached).

³¹⁷ D.G. Barnes and M. Dourson, Reference Dose (RfD): Description and Use in Health Risk Assessments, 8 Regulatory Toxicology and Pharmacology 471, 481 (1988), cited by EPA as “U.S. EPA, Reference Dose (RfD): Description and Use in Health Risk Assessments, Background Document 1A (Mar. 15, 1993), <https://www.epa.gov/iris/reference-dose-rfd-description-and-use-health-risk-assessments>,” 83 Fed. Reg. at 11,599.

³¹⁸ U.S. EPA, The Risk Assessment Guidelines of 1986, EPA/600/8-87/045 (1987).

³¹⁹ The proposed language of section 257.95(j)(1)(i) requires that each “alternative groundwater protection standard is at a level derived consistent with EPA guidelines for assessing the health risks of environmental pollutants, including [three documents, to which EPA may have intended to add its cancer guidance].” 83 Fed. Reg. at 11,613.

- **Risks to children deserve special emphasis.** In its cancer guidance, EPA states that:

The overall characterization of risk is conducted within the context of broader policies and guidance such as Executive Order 13045, “Protection of Children From Environmental Health Risks and Safety Risks” (Executive Order 13045, 1997) which is the primary directive to federal agencies and departments to identify and assess environmental health risks and safety risks that may disproportionately affect children.

Cancer guidance at 1-1.³²⁰ Other statements in the cancer guidance confirm the principle. For example, EPA cites the National Research Council, which “recommended that ‘EPA should assess risks to infants and children whenever it appears that their risk might be greater than those of adults.’” Cancer guidance at 1-15. In the case of coal ash, EPA has already determined that the greatest noncancer drinking water risks are for infants, so the NRC recommendation applies, and states must assess risks to infants and children.

The EPA Regional Screening Levels do reflect this principle, which confirms that any alternative groundwater standards must be no less stringent than the Regional Screening Levels. But this principle is not consistently articulated in the 2018 Proposal. As noted above, the 2018 Proposal, unlike the MSWLF regulations, would not require the states to consider the risks to “sensitive subgroups,” even though the guidance documents that EPA purports to incorporate by reference do require the consideration of early life risks. EPA’s omission of this language from the 2018 Proposal is arbitrary and capricious and in gross violation of the Section 4004(a) protectiveness standard.

- **The states cannot cherry-pick data.** The cancer guidance states that “[t]he principle underlying these cancer guidelines is to use approaches that use as much information as possible.” Cancer guidance at 3-11. Conversely, the absence of certain types of information should not be used a reason to ignore a threat to health. For example, “[a] lack of mechanistic data . . . is not a reason to reject causality.” Cancer guidance at 2-14. Similarly, if the only health effects information available for a chemical comes from animal studies, states must make use of that information: “Is the presence or absence of effects observed in an animal population predictive of effects in exposed humans? The default option is that positive effects in animal cancer studies indicate that the agent under study can have carcinogenic potential in humans.” Cancer guidance at A-3.
- **Assume a linear dose-response relationship.** For carcinogens, when extrapolating to low doses, the default assumption should be a linear dose-response relationship. “A linear extrapolation method is used when the mode of action information is supportive of linearity or mode of action is not understood.” Cancer guidance at A-8.

³²⁰ U.S. EPA, Guidelines for Carcinogen Risk Assessment, EPA/630/P-03/001F, at page 1-1 (Mar. 2005).

- **Use the appropriate 10-fold uncertainty factors.** For noncarcinogens, states must adjust No Observed Adverse Effect Levels (NOAELs) by appropriate ten-fold uncertainty factors (also known as “safety factors”) to account for differences between animals and humans, to account for inter-individual variability, to account for an incomplete database, when a Lowest Observed Adverse Effect Level is used in lieu of a NOAEL, and when a subchronic study is used to establish a chronic exposure guideline. As the document that EPA incorporates by reference notes, “[w]hile the original selection of SFs [safety factors] appears to have been rather arbitrary, subsequent analyses of data lends theoretical (and in some instances experimental) support for their selection.”³²¹

The 2018 Proposal theoretically requires the states to follow these and other principles by incorporating them by reference, but simply stating that alternative groundwater standards must be “consistent with” a large volume of complicated technical guidance is hopelessly vague and and virtually impossible to enforce. EPA’s failure to clearly articulate minimum requirements with regard to the protectiveness of alternative groundwater standards fails to meet the RCRA section 4004(a) protectiveness standard and is arbitrary and capricious.

As the preceding discussion shows, EPA is asking the states to undertake a highly technical, complicated analysis of each pollutant, incorporating by reference hundreds of pages of guidance documents, which in turn cite hundreds of additional pages of guidance. The guidance that states would glean from these documents would be overwhelming but also incomplete (it would not include ecological risks, for example), and would be inconsistent with the language of the 2018 Proposal. And it bears repeating that there is nothing state-specific about the toxicity of the chemicals at issue here. Groundwater protection standards that comply with the guidance cited by EPA in the 2018 Proposal are already available – EPA’s Regional Screening Levels. Rather than asking each participating state to re-invent the wheel, EPA should instead require alternative groundwater standards to be no less stringent than the EPA Regional Screening Levels or ecological benchmarks, whichever is more stringent.

9. *The preamble of the 2018 Proposal includes some language that is unclear. EPA has failed to notify the public of its intention with regard to the relevant language and is prohibited from finalizing any related changes to the proposal.*

The preamble includes the following language:

In addition, EPA is considering requiring that for systemic toxicants (i.e., for chemicals that cause effects other than of deleterious effects during a lifetime. This is largely the same as the current part 258

³²¹ D.G. Barnes and M. Dourson, Reference Dose (RfD): Description and Use in Health Risk Assessments, 8 Regulatory Toxicology and Pharmacology 471, 473-474, 476 (1988), cited by EPA as “U.S. EPA, Reference Dose (RfD): Description and Use in Health Risk Assessments, Background Document 1A (Mar. 15, 1993), <https://www.epa.gov/iris/reference-dose-rfd-description-and-use-health-risk-assessments>,” 83 Fed. Reg. at 11,599.

requirement; however cancer), the alternate level represents a concentration to which potential receptors (including sensitive subgroups) could be exposed to on a daily basis that is likely to be without appreciable risk, EPA seeks comment on whether it should revise the relevant target from “human population” to “potential receptors.”

83 Fed. Reg. at 11,599. This language has so many grammatical errors and omissions that it is impossible to decipher. The public cannot know what EPA is purporting to propose, or how to comment.

To the extent that EPA is seeking comment on whether to require the consideration of ecological (non-human) receptors in the derivation of alternative groundwater standards, Commenters respond in the affirmative: EPA is required to ensure that there is “no reasonable probability of adverse effects on health or the environment.” 42 U.S.C. § 6944(a) (emphasis added). EPA can only meet its statutory obligation by including ecological receptors in the proposal.

To the extent that EPA is taking comment on whether to include “sensitive subgroups” in the definition of potential receptors, Commenters again respond in the affirmative.

XV. EPA’S PROPOSED MODIFICATION TO THE CORRECTIVE ACTION REQUIREMENTS FAILS TO SATISFY THE PROTECTIVENESS STANDARD OF RCRA SECTION 4004(A), IS CONTRARY TO LAW, AND HAS NO RATIONAL BASIS.

Under the 2015 CCR Rule, once corrective action is triggered pursuant to 40 C.F.R. § 257.96, an owner or operator of a CCR unit must select a remedy and initiate remedial action within 90 days of selection pursuant to 40 C.F.R. §§ 257.97 and 257.98. In its 2018 Proposal, EPA is proposing to insert a gaping loophole into these mandatory remediation requirements. Specifically, EPA is proposing to incorporate into the CCR Rule a provision analogous to 40 C.F.R. § 258.57(e) for MSWLFs that would allow the director of a state permitting authority, or EPA if administering a permit program in a state, to determine that remediation of a release from a CCR unit is not necessary if the owner or operator can make certain demonstrations to the satisfaction of the director. Proposed 40 C.F.R. § 257.97(f) and (g). In a departure from the MSWLF regulation, however, EPA is also considering extending the authority to waive cleanup requirements directly to owner/operators of leaking CCR units in states where there is no state or federal CCR permit program. 83 Fed. Reg. at 11,600. A final rule could thus empower owner/operators of CCR units to make their own decisions about whether any response actions are necessary to address CCR releases without any agency oversight. *Id.* In addition, in a related action, EPA is considering making all source controls for CCR units discretionary. *Id.* In other words, even if a release of an appendix IV contaminant from a CCR unit exceeds a groundwater protection standard and triggers corrective action, the

new rule would allow a State Director, or the owner/operator of the CCR unit, to avoid implementation of *any measures* to control the hazardous releases. *Id.*

EPA lacks authority under subtitle D to allow a State Director,³²² or a facility directly implementing the rule without state or federal oversight, to waive remediation requirements and all source control measures following the release of appendix IV contaminants, including when total closure is triggered by the nature of the release or other deficiencies. The protectiveness standard of RCRA section 4004(a) requires all regulations applicable to CCR units to ensure, at a minimum, “no reasonable probability of adverse effects on health or the environment from disposal” of CCR. 42 U.S.C. § 6944(a). As described below, in light of the broad discretion afforded to State Directors, and potentially to owners and operators themselves, by proposed section 257.97(f), such protection of health and the environment cannot be reasonably ensured. Waivers for cleanup provided by State Directors, or self-certified by owners and operators, will result in inadequate health and environmental protection, as well as the application of inconsistent standards from state to state, and even from facility to facility. Lastly, EPA has demonstrated no rational basis and provided no evidence in the record to support this radical weakening of the corrective action standard.

A. EPA’S PROPOSAL TO ALLOW A STATE DIRECTOR, OR OWNER/OPERATOR, TO DETERMINE THAT CLEANUP OF APPENDIX IV CONSTITUENTS IS NOT NECESSARY IF AN OWNER OR OPERATOR CAN MAKE CERTAIN DEMONSTRATIONS IS UNLAWFUL, ARBITRARY, UNSUPPORTED BY THE RECORD, AND CANNOT MEET THE PROTECTIVENESS STANDARD OF RCRA SECTION 4004(A).

EPA’s proposed revision of the corrective action requirement adds section 257.97(f). Proposed section 257.97(f) provides four separate “demonstrations” that owner/operators can make to justify waivers to escape the mandate to undertake remediation. 83 Fed. Reg. at 11,613. An owner/operator need only demonstrate one of the four conditions “to the satisfaction of” a permitting authority to escape corrective action requirements. Proposed section 257.97(f). While the proposed section would provide the authority to state or federal permitting authorities, EPA suggests that it may,

³²² EPA’s 2018 Proposal defines “State Director” as follows:

State Director means the chief administrative officer of any State agency operating an approved CCR permit program or the delegated representative of the State Director. If responsibility is divided among two or more State agencies, State Director means the chief administrative officer of the State agency authorized to perform the particular function or procedure to which reference is made. On Tribal Lands and in non-participating States where Congress has specifically provided appropriations to EPA to administer a CCR permit program, State Director means the EPA Administrator or their designee.

83 Fed. Reg. at 11,611-12. As noted above, Commenters object to the 2018 Proposal’s inclusion of EPA when acting as a permitting authority in the definition of “State Director.” *See* Section II, *supra*. The WIIN Act requires that any federal permits for CCR units must require compliance with the Part 257 federal minimum criteria, rather than any site-specific standards. 42 U.S.C. § 6945(d)(2)(B).

in the final rule, also provide this authority directly to owners and operators. 83 Fed. Reg. at 11,600.

There are two global problems with the demonstration approval process in proposed section 257.97(f). First, all four demonstrations involve complex considerations of hydrogeology; geology; soil, water and waste chemistry; toxicology; and risk modeling. All demonstrations raise issues requiring sophisticated technical analysis. In the event these demonstrations are reviewed by State Directors, EPA has provided nothing in the record to indicate that such regulators have the training, expertise, time, and resources to evaluate the technical demonstrations. Under the 2015 CCR Rule, the selection and implementation of a corrective action remedy after a release of CCR or after a deficiency is found at a CCR unit is very time-sensitive. Time limits on determining remedies and initiating corrective action are necessary to ensure releases of CCR do not cause adverse effects to health and the environment. 80 Fed. Reg. at 21,407 (“Timing is particularly important if contamination has migrated off-site.”) Pursuant to section 257.97(a) of the 2015 CCR Rule, the owner/operator must select the remedy “as soon as feasible.” 40 C.F.R. § 257.97(a). Following remedy selection, the owner or operator must initiate remedial activities within 90 days. 40 C.F.R. § 257.98(a). Consequently, not only must a State Director have the technical expertise to review adequately the owner/operator’s demonstration, it must be done quickly. In light of insufficient state funding of solid waste management programs, bias demonstrated by state regulators to powerful utilities, and the general historic lack of interest in CCR management by state agencies (*see* Section XI, *supra*), there is no justification to provide such authority to State Directors. EPA has not shown that the review of demonstrations can be done adequately, fairly, or expeditiously.

Second, EPA does not even require a professional engineer or qualified expert to complete and sign the demonstration. EPA’s failure to require a minimum of technical expertise in the creation and review of the waiver demonstrations renders the entire section unlawful under section 4004(a) and without a rational basis. In fact, EPA previously acknowledged the necessity for requiring such expertise in the context of a self-implementing CCR rule, when it proposed a similar provision in 2010. 75 Fed. Reg. at 35,251. In proposed section 257.97(e) of EPA’s 2010 proposal, EPA proposed that similar demonstrations be “certified by an independent registered professional engineer or hydrologist.” *Id.* In the final 2015 CCR Rule, EPA abandoned section 257.97(e) entirely, concluding that such demonstrations, even by a certified professional, were dangerous and inappropriate in the absence of a state permitting authority. Explaining the removal of the proposed section in the final 2015 CCR Rule, EPA explained that it “deleted a provision [section 257.97(e)] that has been adopted from the part 258 regulations, but that was determined to be *inappropriate in a self-implementing rule as it was too susceptible to potential abuse.*” 80 Fed. Reg. at 21,407 (emphasis added). In the 2018 Proposal, EPA fails to explain why it can now revise the rule to provide even less protection than its proposal in 2010, which the agency had summarily rejected. This failure renders the 2018 Proposal not only unlawful and in violation of section 4004(a), but arbitrary and capricious.

In addition to these two significant deficiencies common to the four demonstrations, each of the four waiver conditions has its own particular and fatal problems, as described below.

1. *The proposed rule would allow a State Director to waive cleanup obligations upon a demonstration that the groundwater is contaminated by multiple sources, and cleanup would provide “no significant reduction of risk” to actual or potential receptors.*

The first cleanup waiver described in proposed section 257.97(f)(1) allows an owner/operator to make a demonstration to a State Director that:

the groundwater is additionally contaminated by substances that have originated from a source other than a CCR unit and those substances are present in concentrations such that cleanup of the release from the CCR unit would provide no significant reduction in risk to actual or potential receptors.

83 Fed. Reg. at 11,613. The waiver would be granted upon “satisfaction” of the State Director. Further, EPA suggests that owner/operators in non-participating states may be allowed to complete such demonstrations and obtain waivers without the approval or oversight of a State Director. This proposal fails to meet the protectiveness standard of section 4004(a), is arbitrary and capricious, and is not supported by the record.

- a. **Because EPA failed to define “significant reduction in risk” or provide any rational basis for relying on this exercise of discretion, the proposed revision cannot ensure “no reasonable probability of adverse effects on health or environment.”**

EPA does not define “significant reduction of risk” in the 2018 Proposal, and the phrase does not appear anywhere in RCRA. To the contrary, section 4004(a) explicitly requires a CCR rule to ensure no reasonable probability of adverse effects. The statute does not place the qualifier “significant” in front of “adverse effects.” Thus, EPA’s attempt to rewrite the statute to protect only against significant adverse effects is unlawful and should be rejected.

EPA acknowledges the lack of a definition and states outright that it “is not proposing to define ‘significant reductions’ in risk in this rulemaking, but consistent with the MSWLF rules, believes the decision is best made on a case-by-case basis by the State.” 83 Fed. Reg. at 11,600. Yet the Agency also explicitly admits that such case-by-case determinations will be difficult. *Id.* In the face of the anticipated “difficulties,” EPA “expects that States will be able to draw from their experience in implementing the analogous requirement in § 258.57(e)(1).” *Id.*

There is, however, nothing in the record for this rulemaking that indicates states have exercised such discretion under the MSWLF rule wisely, with restraint, and with no

adverse effects on health or the environment. Presumably State Directors have offered cleanup waivers for MSWLFs in the decades following the promulgation of the 1991 part 258 regulations, but EPA offers no evidence. In fact, EPA asks *commenters* to suggest additional criteria that would be useful in clarifying the proposed regulatory provision under section 257.97(f)(1). 83 Fed. Reg. at 11,601. EPA asks expressly for criteria “that states have used in implementing the analogous provision in part 258.” *Id.* Evidently EPA has not analyzed how states have implemented the part 258 provision that the Agency now seeks to apply to more than a thousand CCR units. Yet the proposed modification—the premise that “significant reductions of risk” is the bar for corrective action – directly conflicts with the plain language of the more stringent statutory protective standard of section 4004(a) that must be applied to CCR units. EPA’s action is thus unlawful and arbitrary and capricious.

Furthermore, EPA makes no attempt to explain how this standard, the “significant reduction of risk,” will be applied in the context of known CCR pollution and the well-documented damage and threat to human health and the environment from CCR management. In contrast, in the 2015 CCR rulemaking, EPA recognized the necessity of basing its final rule on “an understanding of the extent and nature of the damage caused by CCR mismanagement.” 80 Fed. Reg. at 21,325. At the time the evidence of groundwater contamination from coal ash was very significant but limited, since most CCR units were not monitored. About such evidence of damage from groundwater, EPA stated in the 2015 CCR Rule:

In sum, after analyzing all of the information submitted in response to this rulemaking, EPA has confirmed a total of 157 cases, both proven and potential, in which CCR mismanagement has caused damage to human health and the environment. Although EPA expects that additional damage cases will be discovered in response to the installation of the groundwater monitoring systems required by the final rule, overall EPA has a significantly better understanding of the extent and nature of the damage caused by CCR mismanagement than when the proposed rule was issued. EPA has sufficient confidence in the veracity of the information collected to rely on it in making decisions in this rule.

Id. By contrast, in its 2018 Proposal, EPA has ignored the voluminous new evidence available to the Agency concerning the nature and extent of the damage caused by CCR mismanagement. *See* Section VII, *supra*.

In fact, EPA fails to take into account any of the documentation of widespread groundwater contamination contained in the 2017 Annual Groundwater Monitoring and Corrective Action Reports, posted recently by owners of existing CCR units on their publically accessible websites pursuant to 40 C.F.R. § 257.90(e). *See* Hutson Expert Report Part II. Based on the documented exceedances of appendix III and IV constituents in these reports, it is likely that corrective action will be triggered for the majority of CCR units nationwide, due to the high detection rate of statistically

significant increases.³²³ *Id.*; see also 40 C.F.R. § 257.96. Consequently, it is highly likely that State Directors, under a revised rule, would receive a substantial number of demonstrations from owner/operators purporting to show that a cleanup would provide no significant reduction of risk. But because the 2018 Proposal contains no definition of the term “significant reduction of risk,” it provides no clearly articulated basis on which State Directors could make such determinations. In addition, as stated above, there is nothing in the record that indicates that State Directors have the technical expertise or that states have the administrative capacity and adequate funding to complete timely and sufficient reviews of such demonstrations. See Section XXI, *supra*.

Worse still, if EPA provides owner/operators with the ability to avoid cleanup requirements simply by filing a demonstration of “no significant risk” on their websites in states where the CCR rule is self-implementing (all 50 states and territories at the present time), multiple interpretations of “significant risk” will be employed in the absence of a regulatory definition from EPA. In non-participating states, EPA suggests that individual owners and operators be given such authority to make these complicated and sophisticated assessments of risk in their self-implementing waivers. Thus owners and operators could create demonstrations of “no significant risk” without the review or oversight of a permitting agency or even the guidance and certification of a professional engineer. 83 Fed. Reg. at 11,601. This will result in the failure of the rule to ensure “no reasonable probability of adverse effects” as required by RCRA section 4004(a). EPA even suggests that such demonstrations would not have to be publicly posted. 83 Fed. Reg. at 11,598 (“Moreover, for any adopted site specific performance standards (whether approved by the State, EPA, or implemented by the facility itself), EPA is requesting comments on whether the facility or owner operator should be required to post the specific details of the modification of the performance standard to the facility’s publicly accessible website or require any other recordkeeping options.”). The absence of posting requirements for demonstrations by owner/operators to avoid corrective action would prevent or delay timely review of such actions by citizens and regulators. Thus the failure of the final rule to require posting would not meet the protective standard of section 4004(a). Further, EPA has provided no justification for removing any posting requirements currently required by the 2015 CCR Rule.

This proposal is exceedingly dangerous. During the rulemaking for the 2015 CCR Rule, EPA considered and rejected a provision identical to proposed section 257.97(f) because it found that owners and operators could not be trusted to determine whether cleanup is necessary in the absence of state or federal oversight:

EPA determined that this provision, which could be used to justify delaying remediation measures, *was potentially subject to abuse and thus,*

³²³ The precise number of CCR units that trigger corrective action could not be determined at this time due to the unavailability of SSI determinations for all sites and the Commenters’ inability to analyze all available groundwater monitoring data due to the truncated public comment period imposed on Commenters by EPA. See Commenters’ Request for a 45-day Extension of the Comment Period, Docket ID No. EPA-HQ-OLEM-2017-0286-0028 (Mar. 16, 2018) and EPA, Response to Request to Extend the Comment Period, Docket ID No. EPA-HQ-OLEM-2017-0286-0522 (Apr. 17, 2018).

inappropriate to be included in a self-implementing rule. Therefore, EPA deleted the provisions in the proposal, subsections (e) and (f) that would authorize a facility to determine that remediation of a release is not necessary.

Response to Comments, Vol. 9 at 185 (emphasis added). EPA has proffered no additional evidence and failed to provide any rational basis for changing its position on this issue.

In fact, in its discussion of the responsibility of State Directors under the proposed revision, EPA strikes a cautionary tone, stating that “participating states should take a protective approach when evaluating requests for such a waiver.” 83 Fed. Reg. at 11,600. EPA further suggests that State Directors employ a risk analysis approach that would “document that the risks to potential receptors from non-CCR constituents would still exceed acceptable levels of concern (i.e., risks greater than 1×10^{-4} to 1×10^{-6} for carcinogens, or an HQ greater than 1 for non-carcinogens) even if all CCR constituents had been removed.” *Id.* However, EPA has not demonstrated that State Directors have the expertise to complete such risk analyses. In addition, for CCR units in non-participating states, this complicated risk analysis is not subject to scrutiny by state and federal regulators with an expertise in risk assessment. Nor does EPA require that the demonstration be created and signed by a qualified professional. The proposed revision guarantees no such review and thus fails to ensure no reasonable probability of adverse effects from the release of CCR constituents, in violation of section 4004(a). In non-participating states, this revision will pose a particularly substantial threat to health and the environment.

b. EPA does not provide a definition of “actual or potential receptors” in proposed section 257.97(f)(1).

EPA fails to define what is intended by the required evaluation of risk to “actual or potential receptors.” *See* proposed section 257.97(f)(1). Without any definition, a State Director or owner/operator could determine that “actual or potential receptors” denotes only human receptors via drinking water exposure to CCR contaminants. Such an interpretation would violate section 4004(a), which requires protection against adverse effects to the environment as well as human health. Similarly, without any federal definition, a State Director or owner/operator may conclude that “sensitive” human receptors, such as children or the elderly, need receive any specific protection against actual or potential exposure threats. *See supra* Section XIV, concerning EPA’s failure to require alternative groundwater protection standards to consider “sensitive subgroups.”

- c. **Proposed section 257.97(f)(1) cannot meet the section 4004(a) protectiveness standard because it would allow the unlimited release of CCR contaminants into the environment when groundwater is already impacted.**

Proposed section 257.97(f)(1) would allow a waiver from cleanup if the groundwater is already contaminated by substances from a source other than a CCR unit and those substances are present in concentrations such that cleanup of the release from the CCR unit would provide no significant reduction in risk. Section 4004(a), however, does not permit adverse effects on health and environment from releases of CCR disposal units under any circumstances, even when groundwater is already impacted. In the event of pre-existing pollution of groundwater from a source other than the CCR unit, section 4004(a) does not permit subtitle D regulations to allow unlimited further impacts by the addition of more contamination from a CCR unit. There is nothing in section 4004(a) that permits an increase in adverse effects, merely because there are some preexisting adverse effects from other sources.

The goal of RCRA is to *prevent* adverse impacts to health and the environment from solid waste management.³²⁴ It is contrary to the statutory standard to permit continued leaking of hazardous contaminants into groundwater with resulting environmental degradation, even if that groundwater is already contaminated. The further degradation of the groundwater permitted under proposed section 257.97(f)(1) is nothing other than “adverse effects” on the environment in direct contravention of the section 4004(a) protectiveness standard.

Moreover, in situations where contamination is caused by releases from multiple sources, the solution is to require all the respective polluters to clean up all of their releases—not to let all polluters off the hook. The proposed waiver will allow CCR contamination, as well as other sources of pollution, to remain unremediated, resulting in the continuing contamination of groundwater resources. Pursuant to proposed section 257.97(f)(1), owner/operators, as part of the waiver process, will document the fact that they have caused groundwater contamination as a result of leaking CCR units within their control. The proposed section also requires the owner/operators to document any claims that another polluter has contributed pollution to the same aquifer. The end result will be the creation of highly polluted sites, where EPA must ultimately hold all polluters responsible for cleanup, most likely under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).³²⁵ By the time this occurs, however, it is likely that the contamination will be significantly worse, the cleanup much more

³²⁴ See Report on Hazardous Waste Disposal, Subcomm. on Oversight & Investigations, Comm. on Interstate & Foreign Commerce, 96th Cong., 1st Sess., H.R. Comm. Print 96 IFC-31, at 31 (Sept. 1979) (Congress intended RCRA to be a “prospective act” that would prevent harms before they occur); *S.C. Dep’t of Health & Envtl. Control v. Commerce & Indus. Ins. Co.*, 372 F.3d 245, 256 (4th Cir. 2004) (“RCRA is preventative”).

³²⁵ EPA noted in the 2015 CCR Rule that multiple CCR damage cases have been listed on CERCLA’s National Priorities List or addressed under CERCLA. 80 Fed. Reg. at 21,437. EPA stated, “Three of the damage cases were listed on the National Priority List as Superfund sites, and one is a Superfund Alternative (SA) site.” *Id.* (footnote omitted).

expensive, and the remediation more technically difficult. If remediation is delayed, receptors, both human and environmental are more likely to be harmed by the releases. Because the increase in adverse effects on health and the environment is the highly probable (and intentional) outcome of the proposed revision, EPA must not finalize this dangerous and unreasonable proposal, which is contrary to sound public policy, as well as unlawful.

d. EPA's approach to cleanup in proposed § 257.97(f)(1) fails to ensure no reasonable probability of adverse effects on health or the environment, particularly when one considers the nature of CCR-contaminated sites.

The proposed revision would allow the presence of existing CCR contamination at a facility to excuse the owner/operator from having to perform any cleanup from a CCR unit. Coal plant properties commonly contain many CCR disposal sites, including legacy dry disposal areas that are not currently in use and thus are not subject to the current CCR rule. These old landfills, ponds or fill areas, which generally have not undergone formal closure and capping, continue to contaminate underlying groundwater. *See* Hutson Expert Report Part II. The proposed revision will have the adverse impact of allowing owner/operators to claim that because an old CCR dump on the facility property (constituting a "source other than a CCR unit") has contaminated groundwater with CCR contaminants, the owner need not implement corrective action. Under proposed section 257.97(f)(1), the owner/operator may argue that cleanup from the active CCR unit is not required, because remediation of contamination from that CCR unit would not result in significant reduction of risk in light of the unremediated CCR dumps at the site.

This approach would excuse the owner/operators of the most contaminated CCR sites from needed cleanup actions. The revision is therefore unlawful, contrary to public policy, contrary to the evidence in the record, and arbitrary and capricious. EPA understands well the nature of these sites and the existence of multiple CCR waste units on facility properties.³²⁶ The intent of the statute is to prevent contamination of groundwater from the operation of solid waste disposal units. The fact that a property is contaminated with the same contaminants from earlier disposal of the same waste should not excuse the owner/operator who generated the waste from cleanup of the facility and prevention of additional groundwater contamination. The proposed provision, however, could be broadly used to waive an owner/operator's duty to clean up contaminated groundwater, even when the owner/operator created the leaking dump sites and was responsible for the pollution in the first instance. The revision thus violates section 4004(a) and the statutory goal of RCRA found in section 4001. Section 4001 states the objectives of subtitle D "are to assist in developing and encouraging methods for the disposal of solid waste which are environmentally sound." 42 U.S.C. § 6941. The

³²⁶ See for example, EPA, Information Request Response from Electric Utilities, *available at* <https://archive.epa.gov/epawaste/nonhaz/industrial/special/fossil/web/html/index-3.html> and EPA, Coal Combustion Residuals Impoundment Assessment Reports (attached), *available at* https://www.epa.gov/sites/production/files/2016-06/documents/ccr_impoundmnt_asesmnt_rprts.pdf.

proposed revision fails to develop and encourage “environmentally sound” methods of solid waste management.

2. *The proposed rule would allow a State Director to waive cleanup obligations upon a demonstration that the contaminated groundwater is not a current or potential source of drinking water and is not hydraulically connected with waters to which the part 257 appendix IV constituents are migrating or likely to migrate in a concentration that would exceed the groundwater protection standard.*

Proposed section 257.97(f)(2) would allow a waiver from remediation if an owner or operator demonstrates to the satisfaction of a State Director that the impacted groundwater “(i) [i]s not currently or reasonably expected to be a source of drinking water; and (ii) Is not hydraulically connected with waters to which the [appendix IV] constituent(s) is migrating or are likely to migrate in a concentration(s) that would exceed the groundwater protection standards established under § 257.95(h) or (i).” 83 Fed. Reg. at 11,613. As with all the waivers, EPA suggests that an owner/operator would be able to make this demonstration, without oversight, and self-certify that cleanup is not necessary. 83 Fed. Reg. at 11,600. EPA’s proposal fails to meet the section 4004(a) protectiveness standard, is arbitrary and capricious, and is not justified by evidence in the record.

a. Proposed section 257.97(f)(2)(ii) fails to protect groundwater that may, as a result of technological advances or necessity, become a valuable and essential source of drinking water.

EPA’s second proposed waiver condition would exempt groundwater cleanups if the owner or operator can demonstrate to the satisfaction of the State Director that, even though CCR constituents are present in groundwater, the groundwater is “not currently or reasonably expected to be a source of drinking water.” Proposed section 257.97(f)(2)(i). It is impossible, however, to determine if groundwater will someday be “reasonably expected to be a source of drinking water.” *Id.* Technological advances may make previously non-potable water usable for drinking water. Unanticipated scarcity of drinking water, due to population pressures, degradation of current sources, or climate change, may require aquifers to be used for drinking water that are not currently “expected” to be used as potable water. *See Sahu Expert Report.*

EPA has provided no evidence to support the protectiveness of this proposed provision over time. As its only source of support for this proposed revision, EPA cites a 34-year old “Ground-Water Protection Strategy,” dated August 1984. 83 Fed. Reg. at 11,601. Thus EPA’s sole supporting document in the record is outdated and fails to consider future impacts to groundwater or advancements in treatment technologies.

Furthermore, although an identical provision has been in effect under Part 258 for MSWLFs since 1991, EPA provides no evidence of its use or abuse or any analysis of its implementation by States in the MSWLF context. *See* 40 C.F.R. § 258.57(e). The record

contains no evidence that State Directors have properly and conservatively considered such waivers, including assessing future potential use and treatment potential.

b. Proposed section 257.97(f)(ii) fails to ensure there is no reasonable probability of adverse effects to the environment.

Although RCRA requires that the CCR Rule ensure that there is “no reasonable probability of adverse effects on health *or the environment*,” 42 U.S.C. § 6944(a) (emphasis added), the 2018 Proposal reads “or the environment” out of the statute by proposing to waive correction action requirements where there are adverse effects on groundwater not used, or potentially used, by humans. But coal ash contamination of groundwater is an adverse effect on the environment, regardless of whether the groundwater is used for drinking water. Indeed, coal ash contamination can cause adverse effects to the environment even if there are no adverse effects to human health. By allowing a waiver based solely on a demonstration that there are no purported adverse effects to human health, the provision violates the section 4004(a) statutory requirement to protect against “adverse effects on . . . the environment.” *Id.*

The proposed revision also cannot meet the protectiveness standard of section 4004(a) because it does not require the demonstration to consider environmental harm to hydraulically connected waters from appendix IV constituents. Nothing in proposed section 257.97(f)(2) specifically requires the State Director or the owner/operator to consider impacts on the environment and aquatic life. The waiver demonstration is only required to consider exceedances of “groundwater protection standards established under § 257.95(h) or (i).” Proposed section 257.97(f)(2)(ii). The proposed section states that cleanup is not necessary if CCR constituent(s) are present in groundwater that is not hydraulically connected with waters to which the [appendix IV] constituent(s) is migrating or are likely to migrate in a concentration(s) that would exceed the groundwater protection standards established under § 257.95(h) or (i).” *Id.*

This condition is not protective of surface waters and aquatic life. For example, selenium is an appendix IV constituent commonly found in leachate from CCR units. *See* 75 Fed. Reg. at 35,138-42, 35,230-39. Selenium is bioaccumulative and toxic to aquatic life at very low concentrations.³²⁷ *Id.* The groundwater protection standard for selenium is 0.50 mg/L, which is the maximum contaminant level (MCL) established

³²⁷ *See also*, Hopkins, et al., Reproduction, Embryonic Development, and Maternal Transfer of Contaminants in the Amphibian *Gastrophryne carolinensis*, *Environmental Health Perspectives*, Vol. 114 (5): 661-66 (May 2006); Rowe, et al., Ecotoxicological Implications of Aquatic Disposal of Coal Combustion Residues in the United States: A Review, *Environmental Monitoring and Assessment* 80: 207-76 (2002); Rowe, et al., Failed Recruitment of Southern Toads (*Bufo terrestris*) in a Trace Element-Contaminated Breeding Habitat: Direct and Indirect Effects That May Lead to a Local Population Sink, *Arch. Environ. Contam. Toxicol.* 40, 399-405 (2001); Lemly, Guidelines for Evaluating Selenium Data from Aquatic Monitoring and Assessment Studies, *Environmental Monitoring and Assessment* 28: 83-100 (1993); Sorensen, et al., Selenium Accumulation and Cytotoxicity in Teleosts Following Chronic, Environmental Exposure, *Bull. Environm. Contam. Toxicol.* 29, 688-96 (1982); Sorenson, Selenium accumulation, reproductive status, and histopathological changes in environmentally exposed redear sunfish, *Arch. Toxicol.* 61: 324-29 (1988). *See also*, EPA Damage Case Compendium, and Damage Case Reports.

under 40 C.F.R. §§ 141.62. *See* 40 C.F.R. § 257.95(h)(1). This drinking water standard is intended to protect human health and is not designed to protect aquatic life. Consequently, by requiring owners and operators or State Directors to consider only the groundwater protection standards, which are the MCLs or, where there is no MCL, the background concentration of the constituent, the protection of hydraulically connected surface water is not ensured.³²⁸ In the case of selenium, the leaking of contaminated groundwater to surface waters has resulted in numerous cases of severely contaminated water bodies and fish extirpation, as described in EPA's damage case reports, peer-reviewed studies of numerous scientists, as well as a report of the National Research Council.³²⁹ In fact, in many of these CCR-impacted waters, levels of selenium in fish have exceeded health-based standards, and consumption of fish has posed a threat to human health. *Id.*

Furthermore, CCR leachate that enters lakes, reservoirs and other surface waters contributes appendix IV constituents to the sediment of water bodies where such contaminants continue to accumulate as long as the polluted groundwater flows.³³⁰ The contaminants in the sediment continue indefinitely to contribute harmful levels of appendix IV constituents to the surface water and adversely impact aquatic plants and organisms as well as water quality. *Id.* Consequently, the proposed revision of section 257.97 violates RCRA section 4004(a) because there is a reasonable probability of adverse effects on the environment and health from CCR constituents.

- c. **Proposed section 257.97(2)(ii) violates RCRA section 4004(a) because hydraulic connections are frequently undetected, and it is reasonable to assume groundwater is hydraulically connected to other waters, and contaminated groundwater will therefore be reasonably likely to cause adverse effects.**

It is reasonable to assume groundwater is hydraulically connected to other waters and that CCR constituents that leak into groundwater from CCR units will migrate. EPA asserts that groundwater receiving CCR contaminants under this revision “must not migrate to Class I or II groundwaters or have a discharge to surface water that could cause degradation.” 83 Fed. Reg. at 11,601. Further, EPA states that owner/operators making demonstrations under this section must also demonstrate that the uppermost aquifer is not hydraulically connected with a lower aquifer. *Id.* The owner or operator may nevertheless seek an exemption “if it can be demonstrated that attenuation,

³²⁸ This is especially true given that the proposed section 257.95 would further allow a State Director or owner/operators to set alternative groundwater protection standards for boron, cobalt, lead, lithium and molybdenum. *See* Section XIV, *infra*. If this provision is finalized, it is likely that the groundwater protection standards will be significantly higher than background concentrations of those constituents.

³²⁹ Lemly, Guidelines for Evaluating Selenium Data from Aquatic Monitoring and Assessment Studies, Environmental Monitoring and Assessment 28: 83-100 (1993); Lemly, An urgent need for an EPA standard for disposal of coal ash, Environmental Pollution 191: 253-55 (2014); Vengosh, et al., The Impact of Coal Combustion Residue Effluent on Water Resources: A North Carolina Example, Environmental Science and Technology (2012).

³³⁰ Laura Ruhl, Avner Vengosh *et al.*, “The Impact of Coal Combustion Residue Effluent on Water Resources: A North Carolina Example, Environmental,” Science & Technology, September 30, 2012

advection/dispersion or other natural processes can remove the threat to interconnected aquifers.” *Id.* These are inherently complicated analyses that cannot be left to a self-interested party in the absence of strict regulatory review by an expert in a state or federal permitting agency. EPA made this precise judgment in the 2015 CCR Rule and it cannot without record evidence be undone here. There is nothing in the record that supports EPA’s radical proposal to allow owner/operators to grant themselves waivers from corrective action. Again, EPA offers no evidence that this waiver has been administrated without harm to health or the environment pursuant to Part 258 in the MSWLF context.

d. The proposed revision providing State Directors and facility owners/operators with the authority to waive groundwater remediation requirements according to the factors in proposed section 257.97(f)(2) is contrary to the objectives of Section 4001 of RCRA.

EPA leaves no doubt that the intent of its proposed revision is to allow some aquifers to escape cleanup or even protection from the addition of the hazardous chemicals in appendix IV, including antimony, arsenic, barium, boron, beryllium, cadmium, chromium, cobalt, fluoride, lead, lithium, mercury, molybdenum, selenium, thallium, radium 226 and 228 combined. *See* Appendix IV to Part 257—Constituents for Assessment Monitoring, 83 Fed. Reg. at 11,616.

The explicit objectives of subtitle D are blatantly violated by this proposal. According to Section 4001, the objectives of subtitle D “are to assist in developing and encouraging methods for the disposal of solid waste *which are environmentally sound* and which maximize the utilization of valuable resources including energy and materials which are recoverable from solid waste and to *encourage resource conservation.*” 42 U.S.C. § 6941 (emphasis added). Groundwater is an exceedingly important resource, which RCRA, and section 4004(a) specifically, were designed to protect. The deliberate sacrifice of a groundwater resource in order to reduce the costs of compliance to industrial polluters does not “encourage resource conservation” as required by RCRA section 4001. *Id.* The proposed revision is designed to allow, at the discretion of State Directors and the polluters themselves, the destruction of a resource that currently is not perceived as useful. Yet Congress in Section 4001 expressly established the goal of RCRA subtitle D to develop and encourage methods to conserve resources, not destroy them. Proposed section 257.97(f)(2) is inconsistent with that goal.

3. *In violation of RCRA section 4004(a) and without record support, the proposed rule would allow a State Director to waive, or an owner/operator to avoid by self-certification, cleanup obligations upon a demonstration that remediation is “technically impracticable.”*

Proposed section 257.97(f)(3) provides that owners and operators can make a demonstration that remediation of the CCR release is technically impracticable and, upon satisfaction of the State Director, cleanup of the release of appendix IV constituents is not necessary. EPA suggests that owners and operators should also be relieved of the

requirement to remediate a site in nonparticipating states by simply completing the demonstration, without the direct review or oversight of a State Director.

a. Proposed section 257.97(f)(3) contains no definition of “technically impracticable.”

Proposed section 257.97(f)(3) would allow a State Director, or potentially an owner/operator in a nonparticipating state in the final rule, to determine that remediation of a release is not required when remediation is “technically impracticable.” EPA fails, however, to define “technically impracticable” in the proposed regulation. Without a definition, State Directors or owner/operators could interpret the term in ways that are not protective under section 4004(a) and in ways that are potentially inconsistent with other states and other facilities. Further, as explained above, EPA does not require the determination of “technical impracticability” to be rendered or reviewed by a technical expert. Thus this proposed revision is arbitrary and capricious.

b. In violation of section 4004(a), EPA does not explicitly rule out the consideration of cost to determine “technical impracticability.”

In its 2018 Proposal, EPA imports the language of proposed section 257.97(f)(3) directly from the part 258 regulations at 40 C.F.R. § 258.57(e)(3). In the 2018 Proposal, EPA admits that these part 258 regulations were developed under a standard that differs significantly from the section 4004(a) protectiveness standard that governs the CCR rule. EPA explains:

One complication is the statutory standard for the part 258 regulations is different than the standard for the CCR regulations. The CCR regulations are based on RCRA section 4004(a), which requires the regulations to ensure “there is no reasonable probability of adverse effects on health or the environment from disposal of solid waste at such facility.” 42 U.S.C. 6944(a). By contrast, EPA was authorized to “take into account the [facility’s] practicable capability” in developing the part 258 regulations. 42 U.S.C. 6949a(c). As a consequence, the rulemaking record for some part 258 provisions may not fully support a determination that a particular provision meets the RCRA section 4004(a) standard or will be “at least as protective” as EPA’s CCR regulations.

83 Fed. Reg. at 11,598. As EPA notes in its 2018 Proposal, the agency has consistently interpreted the phrase “practicable capability” in section 4010(c) to have an economic or cost component.³³¹ 83 Fed. Reg. at 11,597. In addition, “practicable capability” also has

³³¹ No court has ever disagreed with, or overturned, the agency’s interpretation of this phrase. The only time a court has substantively addressed the issue, it reaffirmed EPA’s authority as stated in RCRA section 4010: “Admittedly, § 4010(c) permits the Agency generally to ‘take into account the practicable

a technical component. In EPA's preamble to its 1991 MSWLF rule, EPA explained its reliance on the RCRA section 4010(c) standard, "From the legislative history, as explained previously in this preamble, EPA determined that 'practicable capability' includes *both the economic and technical capabilities of owners and operators*, which, if exceeded, could result in significant disruptions in current solid waste disposal practices." 56 Fed. Reg. at 50,985 (emphasis added). In the MSWLF context, EPA considered the both the cost and the technical difficulty of a remedy to be limiting factors on a municipality's ability to implement a cleanup. Hence a MSWLF is able, pursuant to 40 C.F.R. § 258.57(e), to escape cleanup responsibilities when the cost and technical difficulty of a cleanup is burdensome.

Such considerations are not allowed, however, for CCR units under section 4004(a). EPA's 2018 Proposal would allow an owner or operator to escape clean up responsibilities if a remedy was technically impracticable (complicated and costly) even if the remedy was not impossible to implement. Section 4004(a) does not allow EPA to waive an obligation to clean up a release simply if the remediation is technically complex or costly. Due to the fact that common CCR constituents include metals as arsenic and selenium, which do not degrade but persist in the environment in contrast to organics, many CCR remedial options are indeed technically complex. *See Sahu Expert Report*. Under EPA's proposed standard, many CCR groundwater cleanups would be deemed "unnecessary." Yet such waivers would fail to meet the protectiveness standard of section 4004(a) because it would allow CCR releases to continue, thus causing adverse impact to health and the environment. Indeed, as discussed above in Section VIII, RCRA section 4004(a) does not allow EPA to consider cost at all.

Proposed section 257.97(f)(3) appears to be exactly the type of imported part 258 regulation that violates the section 4004(a) standard. The decades-old rulemaking record for part 258 provides support only for meeting the section 4010(c) "practical capability" standard and fails to provide support for meeting the section 4004(a) protectiveness standard. EPA has added nothing to the record for its present proposal to cure this deficiency.

- c. **The "technical impracticability" waiver, if applied directly to owner/operators, would be subject to abuse. to grant themselves an exemption from any cleanup requirements or any responsibility to stop dumping or future releases, in violation of section 4004(a).**

Proposed section 257.97(f)(3), in particular, when applied directly to owners and operators in nonparticipating states, without direct oversight of a State Director, opens up the corrective action requirements to misuse and abuse by owner/operators. Owners and operators are likely to make determinations of "technical impracticability" where, for example, the nature of the hydrogeologic setting prevents installation and operation of an effective groundwater pump and treat system (or other effective cleanup technology).

capability' of disposal facilities in determining which revised criteria are 'those necessary to protect human health and the environment.'" *Sierra Club v. EPA*, 992 F.2d 337, 344 (D.C. Cir. 1993).

The proposal would improperly allow owners and operators to use claims of technical impracticability as a surrogate for cost, consequently ignoring the benefits or effectiveness of a potential remedy. It would encourage the abandonment of difficult sites to remediate, including those that require long-term remediation, expensive site characterization, and costly and lengthy monitoring, which may include some of the most heavily-contaminated sites where adverse effects to health and environment are most significant. Consequently, this proposal cannot meet the section 4004(a) protectiveness standard.

4. *In violation of RCRA section 4004(a) and unsupported by the record, the proposed rule would allow a State Director to waive cleanup obligations upon a demonstration that remediation would result in unacceptable cross-media impacts.*

Proposed Section 257.97(f)(4) would allow an owner/operator to make a demonstration that cleanup would result in “unacceptable cross-media impacts,” and upon satisfaction of the State Director, the remediation would be deemed unnecessary. EPA suggests that owner/operators in nonparticipating states be allowed to make such demonstrations and enjoy a waiver upon self-certification. EPA’s proposed revision, however, fails to meet the protectiveness standard of section 4004(a).

First, EPA failed to define “unacceptable cross-media impacts.” Because there is no definition of “unacceptable cross-media impacts,” State Directors may issue waivers that are not protective under Section 4004(a) and are inconsistent with other states. Further, owner/operators may create demonstrations that relieve themselves of cleanup responsibilities on the basis of claims that are not justified. EPA has provided no evidence to show how this provision has been implemented properly under part 258 for MSWLFs. Nor does EPA indicate how regulators or individual owner/operators will have the requisite expertise to determine “unacceptable cross-media impacts,” particularly because technical expertise is not required to render or review the demonstration.

Further this proposed condition is particularly subject to abuse. Any groundwater remedy or source control remedy has potential cross-media impacts – albeit mostly for short times into the future. Thus, as proposed, this factor can be used broadly to justify doing nothing. The proper comparison is whether or not a proposed remedy has cross-media impacts (collectively, denoted in terms of risk) that are more than the cross-media impacts without implementing the remedy – i.e., considering the continued release and/or migration of the waste for a long time into the future. Such analysis would require a sophisticated risk assessment that must be quantitative and not speculative and must include an evaluation of long-term impacts to the potentially impacted media. As stated earlier in these comments, it is doubtful that state regulators have the expertise to conduct or even adequately assess such a demonstration. Consequently this proposal cannot meet the RCRA standard for protectiveness in section 4004(a).

B. EPA'S 2018 PROPOSAL'S BROAD AND UNLAWFUL AUTHORITY TO WAIVE CORRECTIVE ACTION. IS NOT LIMITED TO WAIVING CLEANUPS OF CONTAMINATED GROUNDWATER.

The broad waivers of cleanup responsibility provided by proposed section 257.97(f) are not limited to releases to groundwater. The proposed section broadly authorizes the State Director of a participating state to determine that remediation of a *release of a constituent listed in appendix IV* from a CCR unit is not necessary if the owner or operator is able to make one of four demonstrations, discussed in detail above. All of the demonstrations concern groundwater, including its quality, future use, hydrologic connection to surface water, potential for cross-media impacts, etc. There is nothing in proposed section 257.97(f), however, that would narrow these cleanup waivers to groundwater releases. Owners or operators who release appendix IV constituents to air, land or surface water would also be able to prepare demonstrations for cleanup waivers. However, nonsensically, the demonstrations on which these waivers would be based would focus solely on groundwater impacts. In the absence of State Director oversight, owners and operators may abuse such latitude in this vague and over-reaching proposal. According to proposed section 257.97(f), an owner/operator could complete a successful demonstration for relief from cleanup of releases to air, surface water and soil based on factors that are totally irrelevant to these releases. Consequently, the proposal is arbitrary and capricious, without a rational basis, as well as unlawful under section 4004(a).

C. EPA'S SUGGESTION TO MAKE SOURCE CONTROL MEASURES DISCRETIONARY FOR CCR UNITS IS UNLAWFUL, ARBITRARY AND CAPRICIOUS, AND WITHOUT A RATIONAL BASIS.

EPA suggests in its 2018 Proposal that it may adopt the 1991 MSWLF regulation that makes source control discretionary. In part 258, an owner or operator is not required to undertake source control measures to address groundwater contamination unless specifically ordered by a State Director to do so. 40 C.F.R. § 258.57(f). While EPA's proposed section 257.97(g) retains the requirement for owners and operators to implement source controls, EPA states that the agency "is considering making the source control measures for CCR units discretionary, similar to part 258." 83 Fed. Reg. at 11,600. Removal of mandatory source control would be unlawful as well as arbitrary and capricious, and EPA provides no justification in the record for such actions, as described more fully below.

I. Source control measures cannot be discretionary, even where the state or EPA is the permitting authority.

EPA's 2015 CCR Rule decisively rejected the suggestion in the instant proposal that source control for CCR can be discretionary. *See* 80 Fed. Reg. at 21,406; *see also* 74 Fed. Reg. at 35,251. EPA found that establishing and confirming source control are essential to the success of corrective action for CCR units. In the 2015 CCR Rule, EPA stated:

Analysis of a remedy's reliability should include an assessment of the effectiveness of the remedy in controlling the source of the release and its long-term reliability. Source control measures need to be evaluated to limit the migration of the plume, and to ensure an effective remedy. The regulation does not limit the definition of source control to exclude any specific type of measure to achieve this. Remedies must control the source of the contamination to reduce or eliminate further releases by identifying and locating the cause of the release. Source control measures may include the following: Modifying the operational procedures (e.g., banning waste disposal); undertaking more extensive and effective maintenance activities (e.g., excavate waste to repair a liner failure); or, in extreme cases, excavation of deposited wastes for treatment and/ or offsite disposal. Construction and operation requirements also should be evaluated.

80 Fed. Reg. at 21,406. If the CCR regulations do not mandate control of the source of the release, the regulations cannot meet the section 4004(a) standard to ensure no reasonable probability of adverse effects to health or the environment.

In fact, in EPA's 2010 proposed CCR Rule, EPA included a provision allowing an owner/operator to demonstrate that corrective action was not necessary, but EPA still mandated source control. 75 Fed. Reg. at 35,251. EPA's proposed section 257.97(f) stated:

A determination by the owner or operator pursuant to paragraph (e) of this section [that remedial action is not necessary] *shall not affect the obligation of the owner or operator to undertake source control measures* or other measures that may be necessary to eliminate or minimize further releases to the groundwater, to prevent exposure to the groundwater, or to remediate the groundwater to concentrations that are reasonable and significantly reduce threats to human health or the environment.

Id. (emphasis added). EPA removed section 257.97(e) in the final rule because it determined that allowing an owner/operator to determine that remediation of a release was not necessary did not meet the section 4004(a) standard. While proposed section 257.97(f) was also removed (it was no longer necessary, since source control was required by other sections of the final rule), this provision in EPA's proposed rule in 2010 indicates EPA's consistent conclusion that source control is necessary under all circumstances.

In the 2015 CCR Rule, EPA's requirement that unlined leaking impoundments close or retrofit indicates the critical importance EPA placed on ensuring that source control would be achieved. *See* 40 C.F.R. § 257.101(a). EPA recognized that unlined surface impoundments that had impacted groundwater with appendix IV constituents

above the groundwater protection standards had to cease receiving CCR or install a liner because the unit could not be effectively remediated and the source of pollutants controlled. This contrasts with EPA's treatment of lined surface impoundments, which can continue to operate after contaminating groundwater while implementing corrective action. EPA explains why such units are not required to close:

Conversely, existing lined surface impoundments that exceed their groundwater protection standard are in a better position to manage the leak because it is usually caused by some localized or specific defect in the liner system that can more readily be identified and corrected. Consequently, this rule is not requiring existing lined CCR surface impoundment to close if an exceedance of a groundwater protection standard is detected; rather the Agency is affording the owner or operator with the opportunity to rely on corrective action measures to bring the risks back to acceptable levels (*i.e., control the source of the release and remediate the contamination*), without mandating closure of the unit.

80 Fed. Reg. at 21,371 (emphasis added).

In the 2018 Proposal, EPA admits that it lacks a factual record to support its suggestion to remove the requirement for source controls for CCR units. 83 Fed. Reg. at 11,601. EPA included no evidence of any kind to support the suggested revision. The Agency neglected to perform a risk assessment, risk screening, damage case analysis, or any other analyses of risk or damage. EPA admits these critical shortcomings, stating:

As noted, EPA is generally relying on the factual record developed for the part 258 regulations to support this rule. *However, the record for that rule does not contain information that would demonstrate that removing the existing regulatory requirement that all CCR units impose source control would meet the RCRA section 4004(a) protectiveness standard.*

Id. (emphasis added).

Furthermore, in its 2018 Proposal, EPA explicitly identifies the rationale behind the mandatory source controls for CCR units by distinguishing the different risks to health and the environment posed by municipal solid waste landfills compared to CCR surface impoundments. *Id.* EPA acknowledges specifically that it has no evidence to support the application of the part 258 provision (allowing a State Director the discretion to impose source control) to CCR units. See 40 C.F.R. § 258.57(f).³³² EPA explains in the 2018 Proposal that the source control requirements in the final CCR rule:

³³² Section 258.57(f) states: "A determination by the Director of an approved State pursuant to paragraph (e) of this section shall not affect the authority of the State to require the owner or operator to undertake source control measures or other measures that may be necessary to eliminate or minimize further releases to the ground-water, to prevent exposure to the ground-water, or to remediate the ground-water to

were established to address the well-documented risks associated with CCR units, as detailed in the risk assessment and the numerous damage cases in the rulemaking record. The part 258 regulations apply only to landfills, while the CCR regulations apply to both landfills and surface impoundments, the latter being of particular concern. Surface impoundments by their very nature pose a potential for releases to groundwater that is different than landfills (e.g., presence of a hydraulic head) that may impact the importance of source control for these types of units.

Id. Even after identifying the differences between the two rules, EPA fails entirely to consider the types of threats posed by CCR units, in contrast to municipal solid waste landfills, and to examine the appropriateness of lifting a requirement for source control. As explained earlier in these comments, CCR units, including massive unlined impoundments, pose threats substantially different than household waste landfills. EPA's 2018 Proposal, however, lacks any analysis of what is required for source control for CCR units and whether a total lack of source control, in any situation, would meet the section 4004(a) protectiveness standard. EPA's admission of the unique threat posed by CCR surface impoundments and its admission that it lacks evidence to support discretionary source control render any final rule that provides discretion unlawful under section 4004(a) and arbitrary and capricious.

2. *EPA provides no evidence that state regulatory officials exercise appropriate discretion to control the sources of releases from solid waste units.*

EPA provides no evidence to support the reliability of State Directors to exercise appropriate discretion to control the sources of releases at MSWLFs or any other solid waste landfills. Similarly, EPA provides no evidence to support the reliability and effectiveness of state regulatory officials to exercise discretion to control the sources of releases at CCR units. The damage case reports are rife with evidence that state regulators do not require source control, even when releases to groundwater, surface water and air from CCR units are well documented.³³³ See also Sahu Expert Report.

3. *Allowing discretionary source control measures for CCR in non-participating states is unlawful under RCRA section 4004(a), arbitrary and capricious and without a rational basis.*

EPA suggests that it may provide authority to owner/operators of CCR units to abandon all source controls for CCR units, with no direct oversight by a state or federal

concentrations that are technically practicable and significantly reduce threats to human health or the environment.”

³³³ See, e.g., Damage Case Reports; EPA, Damage Case Compendium; EPA, Inhalation of Fugitive Dust: A Screening Assessment of the Risks Posed by Coal Combustion Waste Landfills (May 2010), Docket ID No. EPA-HQ-RCRA-2009-0640-0142.

regulatory agency. 80 Fed. Reg. at 11,600. For all the reasons stated above, this action would be unlawful, arbitrary and capricious and wholly unsupported by the record.

4. *The record for the final CCR rule, including widespread evidence of groundwater contamination, supports the requirement that all CCR units must impose source control and, consistent with the protectiveness standard of RCRA section 4004(a).*

EPA's voluminous record of groundwater contamination from CCR units demonstrates the necessity of source control. In light of this evidence any suggestion to make source control discretionary will fail to achieve the protectiveness standard of section 4004(a). For additional discussion of groundwater threats and impacts, see Section VII, supra; Sahu Expert Report; Hutson Expert Report Part II.

5. *New evidence of groundwater contamination supports the requirement that all CCR units must impose source control, and failure to do so fails to meet the protectiveness standard of RCRA section 4004(a).*

Without source control, groundwater contamination from CCR units will continue for decades or even centuries into the future, and contaminants will be transported through groundwater to drinking water supplies, lakes, rivers, and streams. The new evidence of groundwater contamination discussed in Section VII and in the Hutson Expert Report provides further evidence that source control must be mandatory in any final CCR Rule. As explained in that section, a final rule that fails to mandate source control cannot meet the protectiveness standard of section 4004(a), is arbitrary and capricious, and without justification in the record.

In addition, to the recently reported groundwater monitoring data, evidence of groundwater contamination collected pursuant to North Carolina's Coal Ash Management Act also shows the need for source control. Under that law, Duke Energy was required to model groundwater contamination at its coal ash sites across the state.³³⁴ Duke Energy's modeling shows that its coal ash ponds as currently operated—that is, absent any source control—contaminate groundwater and will continue to do so at least 250 years into the future. For example, at Duke Energy's G.G. Allen facility, where coal ash ponds are located on the banks of Lake Wylie and the Catawba River, conclusions of the modeling analysis found that “[a]t the end of the 250-year simulation period, 7 of 10 constituents were estimated by the model to be above” groundwater standards at the Catawba River.³³⁵ Figures 16 through 163 of the Allen report show that contaminant concentrations at the site adjacent to the Catawba River will remain high and actually will

³³⁴ See N.C. Dep't of Env'tl. Quality website, “Water Resources\DENR - Coal Ash,” <https://edocs.deq.nc.gov/WaterResources/Browse.aspx?startid=221202&dbid=0> (last visited Apr. 27, 2018) (modeling results included in Corrective Action Plans and Comprehensive Site Assessments).

³³⁵ HDR Eng'g, Corrective Action Plan Part 1: Allen Steam Station Ash Basin, at 73 (Nov. 20, 2015) (attached), available at https://edocs.deq.nc.gov/WaterResources/PDF/w3evxv15ypwhm1mrump15xig/29/Allen%2520CAP%2520I_Report_Final.pdf&sa=D&ust=1525131348882000&usg=AFQjCNFjbkF_Cd2C4OQJWPbM8bNuOByxRQ.

increase until 2065.³³⁶ Additional modeling shows that after 100 years, groundwater will be contaminated above groundwater standards at the Catawba River's edge for antimony, boron, chromium, hexavalent chromium, cobalt, sulphate, and vanadium.³³⁷

At another of Duke Energy's coal ash sites—the Marshall plant located on Lake Norman and the Catawba River—modeling shows groundwater contamination would increase during the 250-year model simulation period.³³⁸ At the end of 250 years, 9 of 13 constituents would be above groundwater standards at the site's compliance boundary or Lake Norman.³³⁹ Appendix C to the report includes figures illustrating the groundwater contamination plumes and showing that, after 100 years, high levels of coal ash pollutants including arsenic,³⁴⁰ boron,³⁴¹ and sulfate³⁴² would continue to contaminate the groundwater along Lake Norman and adjacent to residential neighborhoods. Additional modeling at the Marshall site showed that, after 100 years, groundwater still would be contaminated above groundwater standards for antimony, beryllium, boron, chromium, cobalt, and hexavalent chromium at the edge of Lake Norman and at a tributary of the Catawba River.³⁴³

Similarly, modeling of groundwater contamination at the other Duke Energy coal ash sites in North Carolina demonstrates that, absent source control measures, coal ash ponds will continue to contaminate groundwater and hydrologically connected surface waters for decades into the future. For example, modeling at the following sites showed contamination over groundwater standards and health screening levels over 100-year timelines: Belews Creek Steam Station (hexavalent chromium and thallium);³⁴⁴ Buck Steam Station (antimony, chromium, cobalt, hexavalent chromium, sulphate, and vanadium);³⁴⁵ Cape Fear Steam Electric Plant (boron and sulfate);³⁴⁶ Cliffside Steam Station (antimony, arsenic, beryllium, boron, chromium, hexavalent chromium, cobalt, lead, sulphate, thallium, and vanadium);³⁴⁷ Dan River Steam Station (antimony, boron,

³³⁶ *Id.*, Appendix C, Figs. 16–163, available at <https://edocs.deq.nc.gov/WaterResources/0/doc/320429/Page1.aspx>.

³³⁷ HDR Eng'g, Correction Action Plan Part 2: Allen Steam Station Ash Basin (Feb. 19, 2016), at 24, Table 4-1, available at <https://edocs.deq.nc.gov/WaterResources/0/doc/338658/Page1.aspx>.

³³⁸ HDR Eng'g, Corrective Action Plan Part 1: Marshall Steam Station Ash Basin (Dec. 7, 2015), at 68, available at <https://edocs.deq.nc.gov/WaterResources/0/doc/322583/Page1.aspx>.

³³⁹ *Id.*

³⁴⁰ *Id.*, Appendix C, Figs. 34–36, available at <https://edocs.deq.nc.gov/WaterResources/0/doc/322584/Page1.aspx>.

³⁴¹ *Id.*, Figs. 49–51.

³⁴² *Id.*, Figs. 169–171.

³⁴³ HDR Eng'g, Corrective Action Plan Part 2: Marshall Steam Station Ash Basin (Mar. 3, 2016), at 29–30, Table 4-1, available at <https://edocs.deq.nc.gov/WaterResources/0/doc/360072/Page1.aspx>.

³⁴⁴ HDR Eng'g, Corrective Action Plan Part 2: Belews Creek Steam Station Ash Basin (Mar. 4, 2016), at 32, Table 4-1, available at <https://edocs.deq.nc.gov/WaterResources/0/doc/360791/Page1.aspx>.

³⁴⁵ HDR Eng'g, Corrective Action Plan Part 2: Buck Steam Station Ash Basin (Feb. 19, 2016), at 28, Table 4-1, available at <https://edocs.deq.nc.gov/WaterResources/0/doc/351264/Page1.aspx>.

³⁴⁶ SynTerra, Corrective Action Plan Part 2: Cape Fear Steam Electric Plant (Feb. 29, 2016), Appendix D, Figs. 1-2, 4-6, available at <https://edocs.deq.nc.gov/WaterResources/0/doc/366915/Page1.aspx>.

³⁴⁷ HDR Eng'g, Corrective Action Plan Part 2: Cliffside Steam Station Ash Basin (Feb. 12, 2016), at 30, Table 4-1, available at <https://edocs.deq.nc.gov/WaterResources/0/doc/333393/Page1.aspx>.

cobalt, hexavalent chromium, sulfate, thallium, and vanadium);³⁴⁸ H.F. Lee Energy Complex (arsenic, boron, iron, and manganese);³⁴⁹ Mayo Steam Electric Plant (boron and manganese);³⁵⁰ Riverbend Steam Station (antimony, cobalt, hexavalent chromium, thallium, and vanadium);³⁵¹ and Roxboro Steam Electric Plant (boron and manganese).³⁵²

A revision of the 2015 Rule that makes source control discretionary will lead to continued contamination of groundwater and, eventually, nearby surface waters with CCR constituents, and it cannot meet the protectiveness standard of section 4004(a). Accordingly, EPA should abandon its suggestion to weaken the source control requirements.

XVI. EPA’S SUGGESTION THAT MANDATORY CLOSURE, WHEN TRIGGERED BY SECTION 257.101(A)–(C) CAN BE WAIVED BY STATE DIRECTORS OR AN OWNER/OPERATOR IS UNLAWFUL, WITHOUT A FACTUAL BASIS, AND ARBITRARY AND CAPRICIOUS.

The 2015 CCR Rule established deadlines for the closure of certain CCR surface impoundments after determining that their continued operation presented a reasonable probability of adverse impacts to health and the environment. The closure criteria are found in 40 C.F.R. § 257.101(a)-(c). EPA found it necessary to require closure of CCR surface impoundments in three separate situations:

- (1) If concentrations of one or more appendix IV constituents are detected at statistically significant levels above the groundwater protection standard at existing unlined surface impoundments. 40 C.F.R. § 257.101(a)(1);
- (2) If existing surface impoundments fail to demonstrate compliance with any location standard specified in sections 257.60-64 by October 17, 2018. *Id.* § 257.101(b)(1); and
- (3) If existing and new surface impoundments fail to complete a periodic safety factor assessment required by § 257.73(e) or fail to document that the calculated factors of safety achieve the minimum safety factors specified in § 257.73(e)(1)(i) through (iv). *Id.* § 257.101(b)(2) and (c).

³⁴⁸ HDR Eng’g, Corrective Action Plan Part 2: Dan River Steam Station Ash Basin (Feb. 10, 2016), at 26–27, Table 4-1, *available at* <https://edocs.deq.nc.gov/WaterResources/0/doc/332494/Page1.aspx>.

³⁴⁹ SynTerra, Corrective Action Plan Part 1: H.F. Lee Energy Complex (Nov. 2015), Appendix E, Figs. 55–68, *available at* <https://edocs.deq.nc.gov/WaterResources/0/doc/317342/Page1.aspx>.

³⁵⁰ SynTerra, 2017 Comprehensive Site Assessment Update (Oct. 31, 2017), at 13-11–13-12, *available at* <https://edocs.deq.nc.gov/WaterResources/0/doc/605612/Mayo%20CSA%20October%202017%20Report.pdf>.

³⁵¹ HDR Eng’g, Corrective Action Plan Part 2: Riverbend Steam Station Ash Basin (Feb. 12, 2016), at 30, Table 4-1, *available at* <https://edocs.deq.nc.gov/WaterResources/0/doc/334001/Page1.aspx>.

³⁵² SynTerra, Corrective Action Plan Part 2: Roxboro Steam Electric Plant (Feb. 29, 2016), at 3-2, *available at* <https://edocs.deq.nc.gov/WaterResources/0/doc/366803/Page1.aspx>.

The 2015 CCR Rule requires that within six months of making the determinations above, the owner or operator of the surface impoundment must cease placing CCR and non-CCR wastestreams into the surface impoundment and must close the impoundment (or retrofit an unlined leaking surface impoundment) pursuant to section 257.101(a)(1). *Id.* § 257.101(a)-(c).

In the 2018 Proposal, EPA suggests that it may waive the closure requirements in the 2015 CCR Rule for leaking unlined surface impoundments (section 257.101(a)), CCR units failing to demonstrate compliance with location restrictions (section 257.101(b)(1)), and existing and new surface impoundment that fail to conduct periodic safety factor assessments or fail to document compliance with minimum safety factors (section 257.101(b)(2)). 80 Fed. Reg. at 11,600. EPA is considering providing authority to State Directors to waive these closure requirements and is also considering providing such discretion directly to owners and operators where there is no state or EPA permitting authority “where there is no reasonable probability of adverse effect to human health or the environment.” *Id.* In the 2018 Proposal, EPA stated that it seeks comment:

on whether source control measures (e.g., covers and/or flow control measures *or closure, if triggered by § 257.101(a)–(c)*) to minimize or eliminate further releases could not be waived. In other words, EPA seeks comment on whether a State or EPA as the permitting authority in a nonparticipating state, or a facility directly implementing the requirements of this rule and subject to EPA oversight and public notice, should have discretion not to require or perform source control measures, including closure, in certain situations, e.g., where there is no reasonable probability of adverse effect to human health or the environment.

Id. (emphasis added). EPA’s suggestion is unreasonable, unlawful, without justification, and contradicted by ample evidence in the record.

A. THE RECORD DEVELOPED FOR PART 258 DOES NOT SUPPORT REMOVING SOURCE CONTROL REQUIREMENTS, INCLUDING WAIVER OF CLOSURE REQUIREMENTS FOR SURFACE IMPOUNDMENTS.

EPA’s suggestion in the 2018 Proposal that closure could be waived for surface impoundments when closure is triggered by section 257.101(a)-(c) is not supported by any record evidence for the part 258 rule. As explained in detail in Section VIII, *supra*, there is nothing in the record for part 258 that addresses the risks presented by CCR surface impoundments. The MSWLF rule exclusively addressed the regulation of landfills. *Id.* EPA’s suggestion in the 2018 Proposal to waive closure by dates certain concerns only surface impoundments in which CCR and water and other liquid wastestreams are disposed, usually in voluminous quantities. Furthermore, in the part 258 MSWLF rule, EPA applied the less stringent protectiveness standard of RCRA

section 4010(c), rather than section 4004(a), which applies to all CCR units. *Id.* In short, EPA cannot rely on the record for the part 258 rule because the units regulated by the MSWLF rule are distinguishable from CCR impoundments, the statutory standard of protectiveness governing MSWLFs is less stringent than the standard for coal ash, and there is nothing in the MSWLF rulemaking that addresses the adverse effects to health and the environment from the CCR impoundments that are the subject of section 257.101(a)-(c).

B. EPA HAS PROVIDED NO RATIONAL BASIS FOR REVERSING ITS FINDING THAT CLOSURE OR RETROFIT IS REQUIRED IN CERTAIN CIRCUMSTANCES TO ENSURE NO REASONABLE PROBABILITY OF ADVERSE EFFECTS.

- I. The record demonstrates that unlined impoundments that exceed groundwater protection standards must retrofit or close to satisfy 42 U.S.C. § 6944(a).*

Nothing in the record for the 2018 Proposal remotely supports EPA's proposal to change the closure requirement in 40 C.F.R. § 257.101(a)(1). In fact, the two sentences excerpted from the preamble of the 2018 Proposal, and quoted above, constitute the entire discussion of this proposed change. *See* 83 Fed. Reg. at 11,600. EPA proposed no specific regulatory language. As with other vague suggestions in the 2018 Proposal, EPA's inadequately explained proposed waiver of the closure requirement does not apprise interested parties of the issues presented in the proposed rulemaking with sufficient clarity and specificity to permit them to participate in the rulemaking in a meaningful and informed way. EPA's suggestions are so vague that they fail to provide adequate notice to the public and a meaningful opportunity to comment under the Administrative Procedure Act, 5 U.S.C. § 553. *See Small Refiner Lead Phase-Down Task Force v. EPA*, 705 F.2d 506, 549 (D.C. Cir. 1983) (internal citations omitted); *see also Shell Oil Co. v. EPA*, 950 F.2d 741, 760–61 (D.C. Cir. 1991) (“As we have already observed, the EPA ‘cannot bootstrap notice from a comment.’” (quoting *Small Refiner*, 705 F.2d at 549)); *McLouth Steel Prods. Corp. v. Thomas*, 838 F.2d 1317, 1323 (D.C. Cir. 1988) (“Because the notice was inadequate, EPA's consideration of the comments received in response thereto, no matter how careful, cannot cure the defect.”).

The record for the 2015 CCR Rule supports the requirement that after certain contaminants are found to have exceeded groundwater protection standards, an unlined impoundment must close or retrofit to ensure no reasonable probability of adverse effects to health or the environment. EPA has provided no rational basis for reversing the agency's prior findings that the requirements in section § 257.101(a)-(c) are necessary to meet the standard in 42 U.S.C. § 6944(a).

The CCR rulemaking record indicates that only lined impoundments can reduce the risk of adverse effects to health and the environment to levels that EPA deems acceptable. *See* Risk Assessment for 2015 Rule at ES-7 (Composite liners are the “only

liner type modeled that effectively reduced risks from all pathways and constituents far below human health and ecological criteria in every sensitivity analysis conducted.”); *see also* 80 Fed. Reg. at 21,371 (“Both the CCR damage case history and the risk assessment clearly show the need for and the effectiveness of appropriate liners in reducing the potential for groundwater contamination at CCR landfills and CCR surface impoundments.”); Response to Comments, Vol. 5 at 12, (Dec. 2014), EPA-HQ-RCRA-2009-0640-12128 (“[T]he CCR damage cases and EPA’s quantitative groundwater risk assessment clearly show the need for effective liners – namely composite liners – to very significantly reduce the probability of adverse effects.”).

Moreover, once an unlined impoundment has led to groundwater monitoring results exceeding the groundwater protection standard, contamination will continue to occur at much faster rates, and result in greater volumes of contamination, than from lined impoundments. *See* 80 Fed. Reg. at 21,370 (“in a composite liner, leakage will only occur at the location of the geomembrane penetration (e.g., hole, tear), and will be much slower than” the leakage in a unit without a composite liner). Moreover, if such a unit is not retrofit or closed, there is a significant risk of a catastrophic collapse, *see* Damage Case Compendium, Vol. I at 143, as occurred when the broken pipe under the Dan River impoundment led to the release of 39,000 tons of coal ash and 27 million gallons of wastewater, *id.* at 79-80. In addition, it is significantly more difficult, and in some cases impossible, to control leaking from an unlined impoundment. *See* 80 Fed. Reg. at 21,371 (Once a CCR unit is leaking, “without any type of liner system in place, leachate will flow through the unit and into the environment unrestrained....”); *see also id.* at 21,370 (“in a composite liner, leakage will only occur at the location of the geomembrane penetration (e.g., hole, tear), and will be much slower than” the leakage in a unit without a composite liner). *See also* Sahu Expert Report.

Indeed, precisely because of the grave risks to human health and the environment from unlined impoundments, the CCR Rule prohibits the construction of new, unlined impoundments for disposal of coal ash. 40 C.F.R. § 257.72(a). Given that EPA found it necessary to ban construction of new, unlined impoundments in order to meet the protectiveness standards in 42 U.S.C. § 6944(a), it would be arbitrary and capricious to find that unlined impoundments that are actually leaking (and exceeding groundwater protection standards) can be relieved of the requirement to retrofit or close and still meet the protectiveness standard in 42 U.S.C. § 6944(a).

In sum, EPA’s proposal to allow existing, unlined impoundments to avoid having to retrofit with a synthetic liner or close, when the unlined impoundment has already led to contaminant levels above the groundwater protection standard, is inconsistent with evidence in the 2015 rulemaking record demonstrating that composite liners are needed to ensure “no reasonable probability of adverse effects.” 42 U.S.C. § 6944(a).

2. *Units that violate the location restrictions must close in order to ensure no reasonable probability of adverse effects.*

It would be unlawful and arbitrary and capricious for EPA to remove the requirement in 40 C.F.R. § 257.101(b)(1) that a unit that violates the location restrictions must close. This is true whether EPA retains the current location restrictions, or amends the location restrictions.

As explained in detail in Section XIII, *supra*, EPA found that the current location restrictions are necessary to ensure no reasonable probability of adverse effects, 42 U.S.C. § 6944(a). *See* 80 Fed. Reg. at 21,304 (“To ensure there will be no reasonable probability of adverse effects on health or the environment from the disposal of CCR in CCR landfills, CCR surface impoundments, and all lateral expansions of CCR landfills and CCR surface impoundments (together ‘CCR units’), this final rule establishes five location restrictions.”); *id.* at 21,361 (“Absent these location restrictions, the risk of impacts to human health and the environment from releases from CCR units, including from the rapid and catastrophic destruction of CCR surface impoundments, sited in these sensitive areas would exceed acceptable levels.”).

As a result of EPA’s findings, any CCR unit that violates the location restrictions violates the statutory standard, *i.e.*, poses a reasonable probability of adverse effects. Under the statute, such a unit must be classified as an open dump and must close. *See* 42 U.S.C. §§ 6903(14), 6944(a).

Moreover, EPA concluded that it is unaware of any alternative to the current location restrictions that would sufficiently mitigate the risks the restrictions address and meet the standard in 42 U.S.C. § 6944(a). For example, EPA found that there were no options other than the fault zone restriction to mitigate the risk of adverse effects from siting a CCR unit in a fault zone. 80 Fed. Reg. at 21,365 (“[T]he Agency has been unable to find any way to retrofit or engineer the unit to be protective.”). Thus, EPA has no basis in the record for finding that, once a unit violates a location restriction, there are alternatives to closure that would ensure no reasonable probability of adverse effects.

Similarly, even if EPA amended the location restrictions themselves, which it should not do, the statute and the record still require that units violating the location restrictions close in order to satisfy 42 U.S.C. § 6944(a). EPA has suggested amending the location restrictions to include alternative risk-based location standards. *See* 83 Fed. Reg. at 11,598. Even if EPA adopted such changes, any alternative risk-based standard must ensure no reasonable probability of adverse effects. By definition, if a unit were to violate an alternative standard designed to prevent a reasonable probability of adverse effects, the unit would pose a reasonable probability of adverse effects, and is therefore an open dump that must close. *See* 42 U.S.C. §§ 6903(14), 6944(a). Lastly, EPA’s vague suggestion to waive this closure requirement, without suggesting specific regulatory text, does not provide the public with adequate notice and a meaningful opportunity to comment under the Administrative Procedure Act, 5 U.S.C. § 553. *See* Section XIII, *supra*; *see also* Sahu Expert Report.

3. *Units violating the safety factors requirements in 40 C.F.R. § 257.73(e) must close.*

a. The record does not support the suggested change.

40 C.F.R. § 257.101(b)(2) provides that a facility must close if it violates certain safety factors requirements in 40 C.F.R. § 257.73(e). It would be unlawful and arbitrary and capricious for EPA to relax or waive this closure requirement, given the record evidence that units violating these requirements pose a reasonable probability of adverse effects to human health and the environment, 42 U.S.C. § 6944(a).

The factors of safety provision requires an initial and periodic assessments to determine whether each high and significant hazard potential CCR surface impoundment³⁵³ meets four engineering criteria for structural stability. *See* 40 C.F.R. § 257.73(e)(1)(i)-(iv). In setting these engineering criteria for impoundments, “EPA relied extensively on existing MSHA requirements, FEMA’s Federal Guidelines for Dam Safety, and guidance issued by the U.S. Army Corps of Engineers.” 80 Fed. Reg. at 21,376. Indeed, some of the factors are adopted directly from the Engineering Manuals of the United States Army Corps of Engineers. *Id.* at 21,382 (“The minimum static factors of safety are adopted directly from the USACE’s Engineer Manual EM 1110–2–1902 entitled, ‘Slope Stability.’”). In other words, rather than invent these criteria, EPA based the criteria on the dam safety standards used by other federal agencies with expertise in, and oversight over, dams. *See id.*; *see also id.* at 21,381-83; 2015 CCR Rule Response to Comments, Vol. 6, pdf p. 13 (Dec. 2014), EPA-HQ-RCRA-2009-0640-12129 (EPA adopted the factors of safety assessment requirement “to mirror the recommendations made by dam safety guidance such as FEMA Federal Guidelines for Dam Safety.”). In addition, EPA set the factors of safety based on its Assessment Program, which collected detailed information on the construction, operation, and hazards posed by CCR impoundments. *See id.*; *see also* Hoffman Expert Report.

EPA adopted the factors of safety provision so that “the risk of catastrophic failure is minimized.” *Id.* at 21,376. CCR surface impoundment failures have occurred frequently, poisoning people and the environment, destroying homes, and costing billions of dollars to clean up. The failure of a dike at the TVA Kingston Fossil Plant impoundment spurred EPA to initiate the CCR rulemaking in the first place. The TVA Kingston disaster is not an isolated incident, as EPA found that between 1995 and 2009, coal ash impoundments failed at least 49 times, resulting in coal ash spills. RIA for the 2015 Rule at 5-10, EPA Docket No. EPA-HQ-RCRA-2009-0640-12034; *see also* Assessment of Damage Cases, EPA Docket ID No. EPA-HQ-RCRA-2009-0640-11975 at 15 (failure of a 20-acre CCR impoundment at Martin’s Creek Power Plant sent coal ash

³⁵³ High hazard potential CCR surface impoundment means a diked surface impoundment where failure or mis-operation will probably cause loss of human life. Significant hazard potential CCR surface impoundment means a diked surface impoundment where failure or mis-operation results in no probable loss of human life, but can cause economic loss, environmental damage, disruption of lifeline facilities, or impact other concerns. *See* 40 C.F.R. § 257.53.

into a creek and river and resulted in groundwater monitoring sites exceeding drinking water standards); *id.* at 35 (at the Clinch River Plant, a “dike failure led to severe ecological damage downstream of the spill.”). Furthermore, EPA found that “[m]ost of the impoundments have a ‘high’ or ‘significant’ hazard potential rating,” meaning that if the impoundment fails, lives may be lost and the environment damaged, among other things. Coal Combustion Residuals Impoundment Assessment Reports at 1, EPA Docket ID No. EPA-HQ-RCRA-2009-0640-3916.

Given the number of impoundment failures that have occurred, and EPA’s findings that most dams have a high or significant potential for harm if they fail, the factors of safety requirement is critical to meeting the protectiveness standard in 42 U.S.C. § 6944(a). Indeed, the factors of safety that each impoundment must meet are among the very criteria that affect the risk of structural failure. *Compare* 40 C.F.R. § 257.73(e) *with* RIA for the 2015 Rule at 5-8 to 5-9. EPA found that the CCR Rule provisions, including the factors of safety assessment, would reduce wall breach failures by 68% and other structural failures by 83%. *Id.* at 5-15.

EPA provides no record evidence to support its suggestion that closure is not necessary for these large and dangerous impoundments that fail to demonstrate compliance with federal dam safety standards. It would be unlawful and arbitrary and capricious for EPA to amend 40 C.F.R. § 257.101(b)(2) to allow a unit violating the factors of safety requirements in 40 C.F.R. § 257.73(e) to remain open. *See* Statement of Jack Spadaro, Former Director of the National Mine Health and Safety Academy Regarding EPA’s Proposed Changes to Coal Ash Dam Safety Regulations (Apr. 29, 2018) (hereinafter “Spadaro Expert Report”) (attached). In addition, as explained above, EPA does not provide a reasoned or detailed explanation of its suggestion and therefore cannot apprise interested parties of the issues presented with sufficient clarity and specificity to permit them to participate in a meaningful and informed way. EPA’s suggestion concerning waiver of closure requirements for unstable dams is so vague that it fails to provide adequate notice to the public and a meaningful opportunity to comment under the Administrative Procedure Act, 5 U.S.C. § 553. *See supra*.

In sum, the record demonstrates that the requirement to periodically assess compliance with safety factors is used by other federal agencies with expertise in dam management and oversight, such as the United States Army Corps of Engineers and the Mine Safety and Health Administration. EPA found that whether a unit meets the safety factors affects the risk of structural failure, and EPA further concluded that impoundment failures have occurred repeatedly, and future failures would cause deaths, illnesses, and environmental destruction. *See* Spadaro Expert Report. Thus, a unit that violates the factors of safety requirements poses a reasonable probability of adverse effects to human health and the environment, and must be classified as an open dump and required to close. *See* 42 U.S.C. §§ 6903(14), 6944(a).

- b. The disposal of additional CCR and non-CCR wastestreams in high and significant hazard surface impoundment that cannot demonstrate achievement of minimum safety factors will significantly increase the risk of catastrophic failure.**

The disposal of additional CCR and non-CCR wastestreams in high and significant hazard surface impoundments that have failed to achieve minimum factors of safety increases the likelihood that such impoundments will fail. *See* Hoffman Expert Report. Further, the additional volume of waste in such impoundments could increase the adverse impacts of a breach of the impoundment, because more waste and wastewater could be released. *Id.* Consequently EPA's suggestion to waive closure requirements for CCR surface impoundments that have failed to achieve safety factors increases the likelihood of harmful effects and cannot meet the protectiveness standard of section 4004(a).

- c. Owners and operators have had ample time to remediate high and significant hazard dams.**

Section 257.73(f)(1) of the 2015 CCR Rule provided owner/operators with 18 months to complete the initial structural stability assessment and initial safety factor assessment (making them due to be completed for most CCR units by October 17, 2016). 40 C.F.R. § 257.73(f)(1). Further, owner/operators had significantly more notice than that to make repairs sufficient to correct structural stability deficiencies. Between March 2009 and 2013, EPA conducted a national effort to assess the structural stability of all significant and high hazard potential CCR surface impoundments in the United States. 80 Fed. Reg. at 21,313-18; *see also*, Summary Table for Impoundment Reports (attached). These detailed assessments contained an evaluation of the same factors of safety contained in the 2015 CCR Rule at 40 C.F.R. § 257.73(e). Consequently, facility owners were apprised before 2013 of any surface impoundments that could not meet the factors of safety, since such findings were published in assessment reports for each facility. Thus owners and operators had years to complete remedial work at surface impoundments to improve their structural stability or to integrate closure activities of such impoundments into their overall waste management plans. In fact, many impoundments whose pre-2013 assessments indicated failure of factors of safety did indeed demonstrate improvements in their 2016 compliance postings.

- d. EPA removal of the closure mandate would leave the public vulnerable to a major coal ash dam disaster because there would be no date certain for repairing structurally unsound impoundments.**

If a surface impoundment fails to complete a safety factor assessment or fails to document that the factors of safety are met, the CCR Rule requires the impoundment to cease receiving coal ash and close within six months. 40 C.F.R. § 257.101(b)(2). EPA adopted the factors of safety provision so that "the risk of catastrophic failure is minimized." 80 Fed. Reg. at 21,376. The factors of safety are basic engineering

standards widely used by other agencies to ensure the structural stability of dams. *See id.* at 21,376, 21,382.

If EPA removes the mandatory closure provision in 40 C.F.R. § 257.101(b)(2), there is no date certain by which an owner or operator of a high hazard or significant hazard CCR impoundment that violates the safety factor requirements would have to cease receiving coal ash and close. In addition, there would be no date certain by which an owner/operator would have to repair the unit. Because the 2015 CCR Rule anticipated closure of any high or significant hazard surface impoundment that failed to meet factor of safety requirements would have to cease receiving waste and close, the rule does not require actual and timely remediation of such impoundments. As a result, such an impoundment could continue operating indefinitely, and an owner/operator could continue adding unlimited quantities of coal ash and wastewater to an impoundment that has not demonstrated that it meets basic engineering standards for structural stability. This would leave the public vulnerable to another major coal ash disaster like the TVA Kingston disaster that spurred development of the CCR Rule. It would be arbitrary and capricious, and violate 42 U.S.C. § 6944(a), for EPA to remove the closure requirement in 40 C.F.R. § 257.101(b)(2) that protects against the collapse of coal ash impoundments.

C. NEW EVIDENCE REVEALS INCREASED RISK FROM DISPOSAL OF CCR AND NON-CCR WASTESTREAMS IN SURFACE IMPOUNDMENTS

Since the effective date of the 2015 CCR Rule, a voluminous quantity of new information is available on hundreds of industry compliance websites, posted pursuant to section 257.107, which is highly relevant to the risk posed and the harm occurring at CCR surface impoundments nationwide. *See* posting requirements for publicly available internet sites, 40 C.F.R. § 257.107. The data posted by owners and operators of CCR surface impoundments on their “CCR Rule Compliance Data and Information” websites include but are not limited to: design criteria (documentation of liner type (*see* Sahu Expert Report), initial and periodic hazard potential classification assessments, emergency action plan, history of construction, initial and periodic structural stability assessment, documentation of corrective measures, initial and periodic safety factor assessments, design and construction plans); operating criteria (fugitive dust control reports, initial and periodic run-on and run-off control system plans, initial and periodic inflow design flood control system plans, periodic inspection reports); groundwater monitoring and corrective action (groundwater monitoring system certification, annual groundwater monitoring and corrective action report (*see* Hutson Expert Report), notification of assessment monitoring, notification of appendix IX detection and notifications to landowners, notification of initiation of corrective measures, assessment of corrective measures, semiannual corrective action reports); closure and post-closure care (notification of intent to close, annual progress reports, written closure plan,

demonstration of time extensions, notification of closure completion, post-closure plan, and retrofit criteria.³⁵⁴ *Id.*

The data in these reports provide EPA with extensive evidence concerning the age, size, volume, location, condition, hazard classification and compliance status of approximately 636 existing surface impoundments subject to the 2015 CCR rule. *See* 2018 RIA at 2-1. In addition, approximately 111 inactive surface impoundments have posted closure plans to internet websites pursuant to the 2015 CCR Rule, which contain information concerning CCR surface impoundments. *Id.* at 4-9. Four of the above data sets provided by owner/operators of CCR surface impoundments are particularly relevant to the nature of the risk posed by the impoundments and the extent of the damage currently occurring at the sites. These datasets support EPA's assessment in 2015 that the closure requirements in section 257.101(a)-(c) are necessary to ensure no reasonable probability of adverse effects to human health and the environment. The datasets include the liner certifications, groundwater monitoring data, groundwater system certifications and safety factor assessments, which are discussed more fully below.

1. *The requirement to close (or retrofit) leaking unlined surface impoundments where releases cause exceedance of groundwater protection standards is needed to meet the protective standard of section 4004(a), particularly in light of new evidence of groundwater contamination.*

As of March 2, 2018, owners and operators of existing CCR surface impoundments have posted "annual groundwater monitoring and corrective action" reports (hereinafter "Groundwater Reports") pursuant to 40 C.F.R. §§ 257.90(e), 257.105(h)(1), and 257.107(h)(1). The Environmental Integrity Project submitted all of the Groundwater Reports to the docket for the 2018 Proposal on April 26, 2018. These reports should each include at least eight rounds of sampling for appendix III and IV constituents pursuant to 40 C.F.R. § 257.94(b). Because EPA did not provide an adequate comment period and because the form of the data submitted did not allow for rapid analysis, Commenters did not have time to complete an analysis of the entire set of Groundwater Reports. Commenters were, however, able to digitize, compile and analyze the Groundwater Reports from 93 sites. A complete discussion of the results of that analysis is contained in Section VII, *supra* and in the Hutson Expert Report.

In sum, the data indicate that the groundwater at almost all surface impoundments is contaminated by coal ash constituents above levels that EPA has deemed safe for drinking water. *Id.* A majority of the sites have unsafe levels of arsenic, and often the levels are many times greater than the MCL. *Id.* Levels of cobalt, lithium, and sulfate are also found above health-based levels at most sites. In addition, one in five sites has unsafe levels of radium, and over a third of the sites have unsafe levels of molybdenum. Overall, 73 percent of sites have unsafe levels of either boron or sulfate (the two leading

³⁵⁴ EPA has provided links to all known owner/operator "CCR Rule Compliance Data and Information" websites at <https://www.epa.gov/coalash/list-publicly-accessible-internet-sites-hosting-compliance-data-and-information-required>.

coal ash indicator pollutants) and 92 percent of sites have unsafe levels of at least one of the following constituents, arsenic, boron, cobalt, lithium, molybdenum, radium or sulfate. *Id.* In other words, only 8 percent of coal plants in the database that we have analyzed to date have water that could be considered safe to drink. *Id.*

The evidence indicating high levels of dangerous coal ash contaminants leaking from CCR impoundments supports the requirement to close unlined impoundments. As discussed above, only closure of an unlined impoundment is effective to reduce risks from the continued release of hazardous constituents. EPA determined in 2015 that unlined impoundments that caused groundwater to exceed groundwater protection standards needed to close or retrofit in order to ensure the reasonable probability of no adverse effects to health and the environment. EPA now has data that indicate the significant degree to which unlined surface impoundments are polluting groundwater. It is therefore arbitrary and capricious and without rational basis for EPA not to consider these data when suggesting that closure of unlined impoundments be waived. It is also arbitrary and capricious and without rational basis for EPA to ignore these data and suggest that no source control whatsoever is required to meet the section 4004(a) protective standard.

Second, the above-mentioned datasets include additional relevant information on the location of surface impoundments in relation to groundwater. The groundwater monitoring system certifications for numerous surface impoundments indicate that the bottom of the impoundments are below the water table. *See Sahu Expert Report, CCR Surface Impoundments Located in the Water Table.* In addition, due to the reporting requirements of the North Carolina Coal Ash Management Act, Duke Energy has documented that numerous of its coal ash impoundments in North Carolina have bases that are below the water table. *Id.* EPA has repeatedly recognized that CCR surface impoundments that are built into or in close proximity to the water table will be more likely to leak coal ash constituents to groundwater, and this leaking will be difficult or impossible to control, short of closure. *See supra.* EPA has not determined how many CCR impoundments are sited with ash in contact with or in close proximity to the water table, but clearly it is not uncommon, based on the 12 examples that Commenters have been able to identify quickly from publicly available information. *See Sahu Expert Report.* Due to the inadequate comment period, a thorough search was not possible. Before radically weakening the requirement in section 257.101(a)(1) to close leaking unlined impoundments, EPA must assess the risk posed by such impoundments, because the location of impoundments in or close to groundwater is an essential risk factor. *See Sahu Expert Report.* EPA's failure to do so renders its suggestion arbitrary and capricious and without a rational basis.

2. *EPA must assess current data and consider upcoming demonstrations before lifting the mandate to close leaking unlined surface impoundments*

While the current compliance data posted on owner/operator website provides valuable information concerning the location of CCR impoundments, the demonstrations

that must be filed by all owner/operators of existing surface impoundments pursuant to section 257.60(c) will provide a more complete picture of the threat posed by the entire universe of CCR surface impoundments. 40 C.F.R. § 257.60(c). By October 17, 2018, all owner/operators must file a demonstration that their CCR surface impoundments are constructed with a base located no less than five feet above the upper limit of the uppermost aquifer (or must demonstrate that there will not be an intermittent, recurring, or sustained hydraulic connection between the base of the unit and the uppermost aquifer). *Id.* Thus shortly, EPA will have a comprehensive picture of the number, size and location of surface impoundments that are located in or in close proximity to groundwater. It would be arbitrary and capricious for EPA to remove critical health and environmental safeguards without assessing the data that will soon be available for the entire universe of existing surface impoundments.

3. *New groundwater data also support the need to close surface impoundments that fail to meet location standards.*

As described above, new information indicates that CCR surface impoundments are leaking coal ash constituents at the great majority of sites. *See* Hutson Expert Report. The adverse effects that are caused by leaking impoundments is greatly influenced by their location, because the migration rate of contaminants will be enhanced or hampered by certain locations. *See* Sahu Expert Report. Specifically, the location of leaking impoundments in areas where flow of contaminants will be significantly enhanced, such as within five feet of the uppermost aquifer, in wetlands, or in unstable areas (karst geology) increases the risk of substantial movement of toxic constituents and harm to water quality, health and other receptors. *Id.* Thus EPA must examine the groundwater data to determine its impact on the risk of impoundments sited in such locations. Given the prodigious leaking of existing impoundments, it may be necessary to strengthen the location restrictions of the 2015 CCR Rule. In light of the evidence of groundwater contamination, weakening of these regulations would be contrary to the section 4004(a) protectiveness standard. Furthermore, failing to consider such evidence renders EPA's proposal to waive closure requirements arbitrary and capricious.

4. *New evidence of the predominance of unlined surface impoundments supports strengthening of the location restrictions.*

As discussed previously in these comments, the new evidence pertaining to liners available in compliance documents posted by owner/operators of CCR surface impoundments reveals that of the existing surface impoundments with certifications, 87 percent are unlined. *See* Sahu Expert Report. The lack of liners for the great majority of CCR impoundments greatly increases the likelihood that such impoundments will leak CCR constituents to groundwater. *See supra.* The presence of unlined surface impoundments in the restricted locations, identified in 40 C.F.R. §§ 257.60-64, where migration of contaminants is enhanced by shallow groundwater or karst geology, elevates the risks posed by those impoundments. Consequently EPA must consider the higher likelihood of uncontrolled leaking into these environments and determine whether more stringent location restrictions are needed. EPA cannot radically weaken the location

restrictions and remove the mandate to close surface impoundments in these locations in view of the higher risk demonstrated. *See Sahu Expert Report.* This action would be arbitrary and capricious, without rational basis and would violate the section 4004(a) protectiveness standard.

D. EPA’S SUGGESTION THAT CLOSURE WAIVERS BE CONTINGENT ON NO “REASONABLE PROBABILITY OF ADVERSE EFFECT TO HUMAN HEALTH OR THE ENVIRONMENT” CANNOT CURE THE DEFICIENCIES AND UNLAWFULNESS OF THE SUGGESTED REVISION.

EPA suggests that State Directors and owner/operators be allowed to exercise a waiver for closure for leaking unlined surface impoundments, impoundments failing location standards, and impoundments that cannot meet structural stability standards “in certain situations, e.g., where there is no reasonable probability of adverse effect to human health or the environment.” 83 Fed. Reg. at 11,600. EPA’s suggestion is meaningless. As explained above, all of the closure triggers established in 40 C.F.R. § 257.101(a)-(c) represent situations where EPA has already determined there *is* a reasonable probability of adverse effects to human health or the environment. In addition, as discussed in detail in Section XXI, for reasons of lack of expertise, lack of resources, lack of will, or political influence, state regulators have a history of inadequate oversight and enforcement of CCR management standards. Further, reliance on owner/operators to self-certify waivers, in the absence of direct oversight by state or federal regulators, presents an even greater risk of abuse due to the inherent self-interest of the decision-makers. The suggested addition to the waiver language would not cure its deficiencies, and such waivers would fail to meet the section 4004(a) protectiveness standard and would be arbitrary, capricious, and without a rational basis.

XVII. EPA’S PROPOSAL TO ALLOW SUSPENSION OF GROUNDWATER MONITORING UPON A DEMONSTRATION OF “NO MIGRATION” IS UNSUPPORTED BY THE RECORD, ARBITRARY AND CAPRICIOUS, AND FAILS TO MEET THE PROTECTIVENESS STANDARD OF RCRA SECTION 4004(A).

EPA is proposing to allow State Directors in participating states to suspend for up to ten years the groundwater monitoring requirements under sections 257.90 through 257.95 for a CCR unit, if the owner or operator provides written documentation that there is no potential for migration of the constituents listed in Appendices III and IV of part 257 from the CCR unit to the uppermost aquifer during the active life of the CCR unit and the post-closure care period. 40 C.F.R. § 257.95(g).

EPA’s current regulation at section 257.90 requires all CCR units, without exception, to comply with the groundwater monitoring and corrective action requirements of sections 257.90 through 257.98. EPA is proposing, however, to adopt a provision analogous to 40 C.F.R. § 258.50(b), which allows the Director of an approved participating state to suspend the groundwater monitoring requirements, if the owner or

operator can demonstrate that there is no potential for migration of hazardous constituents to the uppermost aquifer during the active life of the unit and the post-closure care period. 83 Fed. Reg. at 11,601-02. Further, EPA suggests that owners or operators of CCR units in nonparticipating states, where there is no state or federal permitting authority, may obtain a waiver through a demonstration under the self-implementing program.

As described below, and in the expert report appended to these comments as an exhibit, EPA's proposal is unsupported by the record, arbitrary and capricious, and unlawful because it violates the protectiveness standard of RCRA Section 4004(a).

A. THE EPA PROPOSAL IS UNSUPPORTED BY THE RECORD, AND THEREFORE THERE IS NO RATIONAL BASIS FOR ITS PROMULGATION.

EPA provides no evidence in the record of any kind pertaining to the “no migration” waiver, which, according to the Agency, “has been a component of both the part 258 and the RCRA subtitle C groundwater monitoring programs for many years.” 83 Fed. Reg. at 11,602. In fact, “many years” is over three decades, as the waiver pertaining to hazardous waste facilities at 40 C.F.R. § 264.90(a)(4) was promulgated in 1985. Despite the decades-long presence of this waiver for both hazardous waste facilities and municipal solid waste landfills, EPA produces no evidence of the granting or denial of groundwater monitoring waivers by state officials or evidence of the conditions at sites where waivers were denied or granted. While EPA states in its proposal that “based on its experience under these programs, the Agency expects that cases where these criteria are met will be rare,” EPA shares no specific “experiences” in the proposal. 83 Fed. Reg. at 11,602. In failing to do so, EPA has not provided any rational basis to apply the “no migration” waiver to CCR units and to demonstrate that states have not abused their authority to grant such waivers.

Furthermore, contradicting EPA's assertion that its experience supports allowing states to waive groundwater monitoring requirements, in the past, state officials have exercised waivers of CCR requirements in a manner that was not protective of health and the environment. For example, Commenters pointed out in their 2010 comments on the proposed CCR Rule that state regulators employed variances in ways that significantly compromised the safety of CCR disposal units. *See* Section XI, *supra*. As described in those comments, multiple state regulators waived critical safeguards at CCR units, including exempting owners and operators from installing liners, leachate collection systems and landfill covers. *See id.*; 2010 Environmental Comments at 23. No migration waivers require highly technical evaluations by state regulators, and there is nothing in the record to support such regulators being able or willing to conduct such resource-intensive analyses on a site-by-site basis. *See* Campbell Expert Report.

The mere presence of the “no migration” waiver in other solid waste regulations is not a sufficient reason to extend its application to CCR units. Yet EPA is relying precisely on these past rulemakings without producing any evidence to justify the present proposal. In the 1991 final MSWLF rule, EPA similarly offered no specific rationale and

simply stated that “it will be difficult for many facilities to meet the ‘no potential for migration’ standard in the regulations,” that “[t]he suspension of monitoring requirements is intended only for those . . . units that are located in hydrogeologic settings in which hazardous constituents will not migrate to groundwater during the active life of the unit, closure, and post-closure periods;” and that the Agency “reminds commenters that the ‘no migration’ waiver has been a component of the subtitle C groundwater monitoring program for many years.” EPA, Solid Waste Disposal Facility Criteria, 56 Fed. Reg. 50,978, 51,061 (Oct. 9, 1991).

In the 2018 Proposal, EPA repeats verbatim this 1991 text to support its application of the “no migration” waiver to CCR units, without citing any supporting evidence of any kind. 83 Fed. Reg. at 11,602. Yet mere repetition of the same phrases, which were used decades ago in a completely different context, is grossly insufficient to support a significant regulatory change that has a high likelihood of harming health and the environment. Groundwater monitoring is one of the bedrock protections provided by RCRA subtitle D regulations in general, because it gives owners and operators, as well as regulators and the public, early warning of leaking waste disposal units. Effective groundwater monitoring is particularly important for CCR units, due to the well-documented propensity for CCR to leach hazardous substances and other contaminants, as well as the high percentage of unlined CCR units. *See* Campbell, Sahu, and Hutson Expert Reports. Waiving the requirement for groundwater monitoring is a risky and radical measure that can be rarely, if ever, be justified due to the extreme difficulties of determining that releases of CCR at any particular site will not cause adverse impacts to groundwater. *See* Campbell Expert Report.

In the absence of any rational basis, let alone evidence, to support this proposal, EPA cannot demonstrate that it would comply with the RCRA Section 4004(a) protectiveness standard. Inclusion of this provision in any final rule based on the 2018 Proposal would be arbitrary, capricious, and contrary to law.

B. EPA’S NO MIGRATION PROPOSAL IS UNLAWFUL BECAUSE IT CANNOT MEET THE PROTECTIVENESS STANDARD OF RCRA SECTION 4004(A).

1. *The “no migration” waiver fails to meet the protectiveness standard of Section 4004(a) when applied by a State Director.*

The expert opinion by Steven Campbell, Ph.D., P.G., appended to these comments, describes in detail how the proposed waiver will fail to prevent the reasonable probability of adverse effects on health and the environment. *See* Campbell Expert Report. Among the many reasons why this proposal fails to meet the protectiveness standard is its application to surface impoundments. The large waste volume and huge hydraulic head of CCR surface impoundments renders them categorically ineligible for any waivers of groundwater monitoring requirements. EPA itself provides several reasons why CCR surface impoundments should be ineligible to receive such waivers:

Surface impoundments by their very nature pose a potential for releases to groundwater that is different than landfills (*e.g.*, presence of a hydraulic head) that may impact the importance of source control for these types of units. The risk assessment for the CCR rule found that, even when key variables are controlled (*e.g.*, liner type, waste type) for the long-term risks from surface impoundments are greater than from landfills. This is because the high and sustained hydraulic head present in these surface impoundments drives leachate into the groundwater table at an accelerated rate.

83 Fed. Reg. at 11,603. Despite providing a rationale for *excluding* all surface impoundments from waivers of groundwater monitoring, EPA proposes waivers that would be directly inconsistent with RCRA Section 4004(a). *Id.*

In addition, as explained in the expert report, the no-migration waiver should not be applied in sedimentary settings and fractured rock aquifer systems. *See* Campbell Expert Report. All sedimentary settings and fractured rock aquifers should be disqualified from meeting the criteria of “no potential for migration” on the basis of fundamental hydrogeologic characteristics. *Id.*

2. *EPA’s “no migration” waiver also fails to meet the protectiveness standard of RCRA Section 4004(a) when applied in nonparticipating states.*

The expert opinion by Steven Campbell, Ph.D., P.G., describes in detail how the proposed waiver, when applied in nonparticipating states without the direct evaluation and approval of a state or federal regulator, will fail to prevent the reasonable probability of adverse effects on health and the environment. *See* Campbell Expert Report.

3. *The “no migration” waiver as applied in nonparticipating states directly by owner/operators of CCR units lacks rational basis and is arbitrary and capricious.*

The expert opinion by Dr. Campbell contains numerous reasons why EPA’s suggestion to apply the waiver in nonparticipating states lacks rational basis and is arbitrary and capricious. *See* Campbell Expert Report.

In its proposed regulation, EPA does *not* propose application of the “no migration” waiver in nonparticipating states. EPA limits the availability of the waiver to participating states, “because the Agency recognizes the need for the State to review a no-migration demonstration prior to granting a waiver from groundwater monitoring.” 83 Fed. Reg. at 11,602. EPA nevertheless seeks comment on the direct application of the waiver to owner/operators, where a facility could implement the waiver without the review, approval or scrutiny of a permitting authority. *Id.*

Application of the waiver directly to owners and operators is inconsistent with all of EPA's past rulemakings on the issue. EPA soundly rejected application of the "no migration" waiver directly to owners and operators of MSWLFs in states where there was no approved program. In its 1991 rule for MSWLFs, EPA determined that the suspension of groundwater monitoring requirements in sections 258.51 through 258.55 would be available only for owners and operators of landfills located in *approved* States. 56 Fed. Reg. at 51,061. In this 1991 final rule, EPA determined:

Owners and operators of MSWLFs not located in approved States *will not be eligible for this waiver and will be required to comply with all ground-water monitoring requirements.* The Agency has limited the availability of the waiver to approved States because the Agency *recognizes the need for the State to review a no-migration demonstration* prior to granting a waiver from ground-water monitoring.

Id. (emphasis added). Similarly, EPA did not make the "no migration" waiver available to hazardous waste "interim status" facilities, in the absence of a state or federal permitting authority. 47 Fed. Reg. 32,350 (July 26, 1982), as amended at 50 Fed. Reg. 28,746 (July 15, 1985).

EPA cannot now, without justification and record evidence, completely reverse course. EPA provides no rationale why owners and operators of immense and leaking CCR units can self-certify that groundwater monitoring is not necessary in the absence of review and approval by a state or federal official. EPA offers no explanation how, without the review by qualified State or EPA officials, there would be the "high degree of confidence that no contamination will reach the uppermost aquifer," which it has deemed necessary. 83 Fed. Reg. at 11,603. Furthermore, allowing owners and operators to self-certify that groundwater monitoring is not necessary would create the insurmountable enforcement and implementation problems discussed in Section X, *supra*. The provision would put a far too heavy burden on citizens to challenge the self-certifications in federal court in the absence of meaningful federal or state oversight.

4. *The proposed rule fails to require critical information in the waiver demonstration.*

As described in Dr. Campbell's expert opinion, EPA's proposal omits a significant amount of information critical to any waiver demonstration. *See* Campbell Expert Report. The omission of this information is likely to lead to the granting of waivers in inappropriate situations. Thus the proposal would fail to prevent the reasonable probability of adverse effects to health and the environment in violation of RCRA section 4004(a).

5. *The proposed no-migration waiver also fails to require the necessary well installation, groundwater testing and site characterization.*

As described in Dr. Campbell's expert opinion, EPA's proposal fails to require the no-migration "demonstration" to contain the requisite hydrogeologic testing and site characterization. *Id.* EPA must specifically require that any no-migration demonstration be focused on well installation and extensive vertical and horizontal testing within disposed CCRs and at the immediate boundary of a CCR unit, and it should be specified that CCR contaminants (including all constituents contained in Appendices III and IV of part 257) must be targeted during sampling and analysis of all groundwater monitoring wells used during the demonstration. *Id.*

C. EPA'S FAILURE TO SUSPEND THE APPLICATION OF THE REQUIREMENTS OF SECTIONS 257.96 THROUGH 257.98 CANNOT CURE THE DEFICIENCIES OF THE "NO MIGRATION" WAIVER PROPOSAL.

EPA notes that the requirements of sections 257.96 through 257.98 (the corrective action requirements) would not be suspended in the event a State Director approves a waiver of groundwater monitoring. 83 Fed. Reg. at 11,602. This statement is nearly meaningless, however, and it does nothing to cure the proposal's failure to meet the RCRA section 4004(a) protectiveness standard. The corrective action requirements of the CCR Rule are triggered primarily by the results of groundwater monitoring by the owner/operator. If an owner/operator receives a "no migration" waiver, there will be no groundwater monitoring, and consequently there will be no data. Without data, remediation of groundwater will never be required, in the absence of a catastrophic failure. Thus, EPA's assurance that its proposal does not waive the corrective action requirements is a hollow gesture that fails to provide the required protection under section 4004(a).

D. EPA'S PROPOSAL TO REQUIRE A RENEWAL OF THE GROUNDWATER MONITORING WAIVER EVERY TEN YEARS IS UNLAWFUL, INSUFFICIENT TO CURE THE DEFICIENCIES OF THE PROPOSAL, ARBITRARY AND CAPRICIOUS, AND HAS NO RATIONAL BASIS.

The proposed rule will require the owner or operator of the CCR unit to make periodic demonstrations every 10 years in order to retain the suspension of groundwater monitoring. 40 C.F.R. § 257.90(d)(2). As explained in detail in the expert opinion by Dr. Campbell, this provision does not reduce the likelihood that the waiver will cause adverse effects to health and the environment. *See* Campbell Expert Report. Furthermore, EPA provides no basis for choosing a 10-year renewal cycle rather than a 1-year or 5-year cycle. It is clear, nonetheless, that EPA likely based its choice of a 10-year renewal period on consideration of cost, which is not a permissible factor to consider under RCRA Section 4004(a). *See* Section VIII, *supra*. EPA states in the proposal that the "Agency received comments on suspending the groundwater monitoring requirements

for MSWLFs in part 258 that suggested EPA require periodic demonstrations every five or ten years.” 83 Fed. Reg. at 11,602. EPA explains, however, that “[t]he Agency decided against requiring periodic demonstrations for MSWLFs because the demonstration required must be extremely rigorous and *because of the additional costs associated with the continual reapplication for the suspension.*” *Id.* (emphasis added). If EPA properly considered protection of health and environment, the Agency would have chosen a 5-year renewal cycle over the less protective 10-year period. One can surmise therefore that EPA based this decision impermissibly on the cost to owner/operators associated with more frequent reapplication. In any event, EPA provided no rational basis for the establishment of the 10-year cycle of renewal.

XVIII. ALTERNATIVE POINTS OF COMPLIANCE FOR GROUNDWATER MONITORING SYSTEMS FAIL TO SATISFY THE PROTECTIVENESS STANDARD OF RCRA SECTION 4004(A).

EPA is requesting comment on whether to allow a State Director, EPA in a nonparticipating state, and owner/operators of CCR units in states with no CCR permit programs to establish alternative points of compliance for groundwater monitoring systems at CCR sites. 83 Fed. Reg. at 11,602. EPA specifically asks if an alternative point of compliance “would satisfy the standard of no reasonable probability of adverse effect on human health or the environment under section 4004(a).” *Id.* EPA requests comment without presenting a reason for the proposed change or any supporting evidence to indicate why this amendment is necessary. In addition, EPA proposes no specific language for the significant regulatory change.

If implemented, this proposal would allow owner/operators to increase substantially the lateral and vertical distance between the CCR unit and the groundwater monitoring locations. This proposed change could increase the lapsed time between the release and detection of contaminants, reduce the ability of monitoring systems to detect releases, increase the size and volume of contaminant plumes at the time of detection, and increase the likelihood of cross-media transfer of CCR contaminants and receptor exposures. As a result, such a change would not meet the protectiveness standard of RCRA section 4004(a).

A. EPA’S VAGUE SUGGESTION CONCERNING A POTENTIAL REGULATORY CHANGE DOES NOT PROVIDE INTERESTED PARTIES WITH ADEQUATE NOTICE TO PARTICIPATE IN THE RULEMAKING PROCESS IN A MEANINGFUL WAY, AS REQUIRED BY 5 U.S.C. 553(B).

EPA’s vague suggestion of establishing alternative points of compliance does not apprise interested parties of the issues presented in the proposed rulemaking with sufficient clarity and specificity to permit them to participate in the rulemaking in a meaningful and informed way. EPA’s suggestions are so vague that they fail to provide adequate notice to the public and a meaningful opportunity to comment under the Administrative Procedure Act, 5 U.S.C. § 553. In the 2018 Proposal, EPA merely

mentions in passing that it “requests comment” on whether a State Director, EPA, or an owner/operator could establish alternative points of compliance. EPA provides no details on how the regulatory change would accomplish this.

Instead, EPA simply suggests that the 2015 CCR Rule can be amended “consistent with the flexibility already allowed under the part 258 rules.” 83 Fed. Reg. at 11,602. However, the referenced part 258 regulations present a multitude of “flexibilities” that may or may not be relevant to CCR units. Further, EPA suggests that these “flexibilities” may be afforded in all possible regulatory contexts for CCR units. *Id.* EPA has provided no context, no language, and no scope to give shape to its ambiguous and open-ended suggestions. EPA cannot issue a final rule based simply on a vague call for public comments without offering a proposal with reasonable specificity. *See Small Refiner Lead Phase-Down Task Force v. EPA*, 705 F.2d 506, 549 (D.C. Cir. 1983).

B. THE RECORD FOR PART 258 DOES NOT SUPPORT AN ALTERNATIVE MEANS FOR ESTABLISHING THE RELEVANT POINT OF COMPLIANCE FOR CCR GROUNDWATER MONITORING WELLS UNDER RCRA SECTION 4004(A).

The part 258 requirements allow the director of a state program to establish the relevant point of compliance for MSWLFs. 40 C.F.R. §§ 258.40(d), 258.51(a)(2). In states that do not have approved MSWLF programs, the point of compliance is set by regulation at the waste management unit boundary. *Id.* EPA, itself, explicitly expresses doubt that the record for the part 258 requirements would support an alternative means for establishing the relevant point of compliance for CCR groundwater monitoring wells under RCRA section 4004(a). *See* 83 Fed. Reg. at 11,602 (“EPA does not believe the record for the part 258 requirements would support an alternative means for establishing the relevant point of compliance for CCR groundwater monitoring wells under RCRA section 4004(a).”). We agree that there is no basis in the record for such support.

In fact, EPA’s discussion of the alternative point of compliance in the preamble to the proposed part 258 rule clearly indicates that the Agency based its MSWLF rule on the “practicable capability” of MSWLF owners and operators. 53 Fed. Reg. 33,314, 33,351-55 (Aug. 30, 1988). As discussed further in Section II of these comments, reliance on cost considerations is not permissible under section 4004(a). In the lengthy excerpt below, EPA explains how it applied the RCRA section 4010(c) protective standard to arrive at the proposed MSWLF regulations allowing alternative points of compliance:

This alternative [establishing the point of compliance at the unit boundary] could be enforced easily through citizen suits; however, this option does not allow consideration of the practicable capabilities of the regulated community and could limit State flexibility by not allowing States to consider site-specific conditions when determining the point of compliance. Further, by not allowing consideration of site-specific conditions, this alternative could result

in overregulation and could exceed the practicable capability of the regulated community to comply.

The second alternative, requiring MSWLFs to meet the design goal at the unit boundary or a State-selected alternative, would provide more flexibility to account for the practical capability of the regulated community. It would be less burdensome to the regulated community because site-specific factors could be considered, thereby avoiding over-regulation and increased costs; however, it would be less protective of ground water because it would allow for a greater area extent of ground water to be contaminated than the first alternative. This alternative also could be difficult to enforce through citizen suits because no one alternative boundary would be specified in the rule for all MSWLFs.

Id. at 33,355.

In EPA's final rule establishing the MSWLF standards, the Agency was crystal clear regarding its preference for placement of wells at the downgradient waste boundary for protection of health and environment, but also adamant about the need to consider the cost to owners and operators of MSWLFs, whose resources may be severely constrained. EPA stated:

The Agency acknowledges that allowing the relevant point of compliance to be set at a point beyond the waste unit boundary would allow dilution or contamination in some cases and delay detection of contamination. Although EPA generally prefers the installation of ground-water monitoring wells at the waste management unit boundary to provide the earliest opportunity to detect contamination, EPA believes the unique characteristics of MSWLFs warrant the flexibility afforded by today's final rule. First, the technical and economic resources of MSWLF owners and operators is limited in many cases. Corrective action is a significant cost component of today's rule and providing flexibility on the boundary designation for ground-water monitoring can in some cases serve to reduce costs by allowing the owner or operator to take advantage of a limited dilution and treatment zone in the ground water. In addition, the owner or operator will be able to avoid overdesign and thus reduce costs.

56 Fed. Reg. 50,978, 51,068 (Oct. 9, 1991). Secondly, EPA found, "after consideration of a wide range of site-specific factors," a low risk to human receptors due to its finding that drinking water wells are not located in close proximity to the landfills. *Id.* EPA found "in most instances, there will be very little potential for human exposure to contaminated ground water that remains within the property line (and no more than 150 meters from the unit boundary) of a MSWLF. Most MSWLFs are owned by local

governments, who should be able to control ground-water use within the facility boundary.” *Id.* In the 2018 Proposal, EPA has not similarly considered “a wide range of site-specific factors” and cannot draw such conclusions from the siting of CCR disposal units.

We reiterate that EPA cannot in this rulemaking consider costs and “practicable capability” in this manner. While the part 258 provision may have met the relevant standard under section 4010(c) of RCRA, EPA’s CCR regulations must meet the more stringent protectiveness standard of RCRA Section 4004(a). Thus the record for part 258’s alternative compliance boundary plainly does not support an analogous provision for CCR units.

C. FLEXIBILITY TO ESTABLISH AN ALTERNATE POINT OF COMPLIANCE WILL VIOLATE THE PROTECTIVENESS STANDARD OF RCRA SECTION 4004(A).

Pursuant to the 2015 CCR Rule, the relevant point of compliance for groundwater monitoring systems at CCR units is the waste unit boundary. 40 C.F.R. § 257.91(a)(2) (“The downgradient monitoring system must be installed at the waste boundary that ensures detection of groundwater contamination in the uppermost aquifer.”) The “waste boundary” is defined in the CCR Rule as “a vertical surface located at the hydraulically downgradient limit of the CCR unit. The vertical surface extends down into the uppermost aquifer.” 40 C.F.R. § 257.53.

As stated above, and described in more detail in the expert report by Mark Hutson, P.E., the suggested “flexibilities” would allow regulators of CCR units, and potentially the owners and operators of those units, to increase the distance between the CCR unit and the groundwater monitoring locations. Such placement would increase the time between release and detection of contaminants, reduce the ability of monitoring systems to detect releases, increase the size and volume of contaminant plumes at the time of detection, and increase the likelihood of cross-media transfer of CCR contaminants and receptor exposures. *See* Hutson Expert Report.

If a state, EPA, or an owner/operator took advantage of the “flexibilities” suggested, it would be more likely that the groundwater monitoring wells would fail to detect a leaking unit during both its active operation and the post-closure monitoring period. As explained by Hutson, relaxing the requirement that the point of compliance be located along the downgradient limit of the CCR unit would, assuming that detection remains possible, substantially increase the time between release of contaminants and their detection. *Id.* Groundwater flow velocities are typically slow, on the order of a few feet to a few tens of feet annually. Assuming that monitoring points are located 150 meters from the waste boundary and a groundwater flow velocity of 10 feet per year, it would take a minimum of more than 49 years for a contaminant plume to reach a downgradient monitoring well. *Id.* Interaction between the soil/rock through which contaminants migrate will further slow the migration rate of common CCR parameters. By the time a contaminant plume arrives at a detection well, many CCR units will likely

have been closed. Since contaminants would not have yet reached a monitoring well, groundwater monitoring might no longer be required precluding the possibility of discovery of the release.

This scenario, which would totally nullify the purpose of the groundwater monitoring system, is possible because EPA has proposed to allow State Directors, or owner/operators themselves, to reduce the length of the post-closure care period, and has suggested that the reduction may be to as little as five years.³⁵⁵ 83 Fed. Reg. at 11,609. In that event, a release from this hypothetical CCR unit would likely never be recognized because the monitoring wells are located too far from the source.

Furthermore, and explained in greater detail in the expert report, allowing contaminant plumes to grow larger prior to detection is particularly problematic due to the common location of regulated CCR units on the floodplain of streams and rivers. In contrast, locating monitoring points very near the regulated CCR unit minimizes the probability that an undetected contaminant plume will be captured in a channel to be rapidly transported off-site or into the river to become a cross-media transfer of contaminants. The siting of hundreds of existing CCR disposal units clearly pose substantial risks to health and the environment not considered by EPA in this vague proposal.

D. EPA’S SUGGESTION TO ESTABLISH ALTERNATIVE POINTS OF COMPLIANCE IS ARBITRARY AND CAPRICIOUS AND WITHOUT A RATIONAL BASIS.

As explained in more detail in the Hutson expert report, EPA cannot provide State Directors, EPA, and particularly not owner/operators in non-participating states the authority to choose alternative points of compliance for groundwater monitoring. First the allowance of any alternative points of compliance, with or without a permit program, violates the protective standard. Allowing owners and operators to self-certify such alternative points of compliance, without the review and approval of a state or federal official responsible for permitting the facility, falls far short of level of protection to health and the environment required by the statute. Furthermore, the complete lack of data, rationale, and evidence to support EPA’s suggestion for alternative points of compliance, renders the Agency’s suggestion arbitrary and capricious and without rational basis.

³⁵⁵ In Section E of the regulatory proposal, EPA solicited comments on numerous aspects of the Regulatory Impact Analysis (RIA). The Agency was interested in “soliciting comment primarily on the assumptions and the data sources used in the analysis.” 83 Fed. Reg. at 11,609. Among the questions posed by EPA was the following, “Do you have information that would refine the RIA assumption that states adopting Alternative Performance Standard 5 (the amendment discussed in Unit IV.E of this preamble) would on average reduce the period from 30 years to five years?” *Id.*

XIX. EPA’S PROPOSAL TO ALLOW AN ALTERNATIVE LENGTH OF TIME IN WHICH TO DEMONSTRATE COMPLIANCE WITH GROUNDWATER PROTECTION STANDARDS FAILS TO MEET THE PROTECTIVENESS STANDARD OF RCRA SECTION 4004(A), IS ARBITRARY AND CAPRICIOUS, AND IS NOT SUPPORTED BY THE RECORD.

The 2015 CCR Rule requires owners and operators of CCR units that implement corrective actions for groundwater contamination to demonstrate that remedies are “complete” and thus protective of health and the environment. As part of this demonstration, section 257.98 of the 2015 CCR Rule requires the owner/operator to demonstrate that concentrations of constituents listed in appendix IV of part 257 have not exceeded the groundwater protection standard(s) for a period of three consecutive years. 40 C.F.R. § 257.98(c)(2). EPA’s 2018 Proposal would amend this requirement to allow the Director of a participating state to specify an alternative length of time (as little as one year) during which the owner or operator can demonstrate that the groundwater does not exceed the applicable groundwater protection standards.³⁵⁶ 83 Fed. Reg. at 11,614.

EPA’s proposal to establish an alternative length of time to demonstrate successful remediation of groundwater pollution is not supported by evidence in the record and cannot meet the standard of protectiveness in section 4004(a). In addition, when viewed in conjunction with EPA’s other proposed revisions to weaken groundwater monitoring requirements in the 2018 Proposal, it is clear that this provision will greatly increase the likelihood of adverse impacts on health and the environment.

A. EPA’S EXCLUSIVE RELIANCE ON THE MSWLF RULE IS IMPROPER.

EPA is relying solely on the record for the MSWLF rule to support its proposed amendment of Section 257.98(c) to allow a shorter period of time to demonstrate successful remediation. EPA seeks to import an identical provision from part 258 and states that “[i]n large part, EPA is relying on the longstanding experience with these criteria under part 258 for municipal solid waste landfills.” 83 Fed. Reg. at 11,603 (citing 40 C.F.R. § 258.58(e)(2)). EPA has failed, however, to consider material differences between MSWLFs and CCR disposal units, particularly surface impoundments. As explained in these comments, the two types of disposal units are not comparable and one set of standards cannot be imposed mindlessly on the other. *See* Section VIII, *supra*; *see also*, Sahu Expert Report.

In addition, EPA promulgated the MSWLF regulations under the less protective statutory standard of section 4010(c), so it is wrong to assume that EPA ever considered whether the criteria now proposed would meet the protectiveness standard of section 4004(a). *See* Section VIII, *supra*. It is arbitrary and capricious for EPA to rely on the MSWLF rulemaking record to support establishing a shorter length of time in which to

³⁵⁶ In the draft 2018 RIA, EPA assumes that states adopting this provision would on average reduce the post-remedy monitoring from three years to one year. 83 Fed. Reg. at 11,609.

demonstrate successful remediation of groundwater, given the material differences in risk posed by MSWLFs and CCR units. In particular, EPA provided no evidence that the alternative time period for groundwater monitoring to demonstrate that the groundwater meets the applicable groundwater protection standards, which it instituted for MSWLFs, will ensure that there is no reasonable probability of adverse effects from CCR units as required by section 4004(a).

B. THE PROPOSED AMENDMENT OF SECTION 257.98(C) POSES UNACCEPTABLE RISKS TO GROUNDWATER.

1. *EPA has not identified any new evidence that undermines the Agency's prior conclusion that a three-year minimum monitoring period is necessary to ensure no reasonable probability of adverse effects.*

The current three-year monitoring period is already the minimum time period during which monitoring should be conducted to demonstrate that remediation was successful and that human health and the environment are no longer at risk from CCR leachate impacts to groundwater quality. *See* Campbell Expert Report. There is no hydrogeologic justification for the EPA to allow any reduction of this already minimal three-year monitoring period to demonstrate compliance with the groundwater protection standards, and EPA presents none. *Id.* There are numerous hydrogeologic factors that support *a much longer* time period than three years. *Id.* Consequently, EPA's proposal to shorten the groundwater monitoring period is without a rational basis.

2. *EPA fails to consider the impacts of other parts of its proposal on the alternative monitoring period.*

EPA's 2015 CCR rule requires downgradient groundwater monitoring wells to be installed at the CCR unit's waste boundary to ensure timely detection of groundwater contamination in the uppermost aquifer. 40 C.F.R. § 257.91(a)(2). EPA's 2018 Proposal requests comment on allowing downgradient groundwater monitoring wells to be installed up to 150 meters from the waste boundary, consistent with part 258 regulations. *See* Section XVIII, *supra*. 83 Fed. Reg. at 11,602. In the event that EPA finalizes its proposal that a State Director, EPA, or the owner/operator where there is no permitting authority, could establish points of compliance at locations distant from the CCR unit's waste boundary, the risk to groundwater posed by shortening the minimum post-remediation monitoring period increases substantially.

The reason for this is that groundwater tends to migrate at rates ranging from a few feet to tens of feet per year. *Id.* One consequence of EPA's proposal to increase the distance from the CCR unit to downgradient monitoring wells is that slowly migrating groundwater contamination (i.e., exceedances of the groundwater protection standard) may not be detected for a significant period of time. For example, even if one considers a rapid groundwater flow rate of 100 feet per year, it would take five years for contaminants to be detected at a monitoring well located 150 meters directly downgradient of the source. In this situation, three years would not be sufficient to

confirm that the CCR unit is not still releasing contaminants above the groundwater protection standards. *See* Campbell Expert Report. Thus, a period less than three years in duration is simply much too short to determine the effectiveness of the remedial action.

3. *The proposed amendment cannot meet the protectiveness standard of RCRA section 4004(a) because of multiple deficiencies.*

The Expert Report by Stephen Campbell describes in substantial detail why the proposed amendment to section 257.98(c)(2) cannot meet the protectiveness standard of RCRA section 4004(a). Groundwater quality is influenced by myriad factors, including rates and volumes of groundwater recharge and the actual remediation of the CCR unit itself. Many of these factors are difficult to predict. *Id.* In addition, EPA failed to consider the following factors: the slow movement of groundwater, the temporary changes that the regime may be experiencing post-remediation, the usually sparse monitoring well network installed in response to the 2015 CCR Rule, and the infrequency of groundwater monitoring when proposing an early termination of groundwater monitoring. A period less than three years after remediation will simply not be enough time to ensure that groundwater protection standards will not again be exceeded. The many factors determining groundwater quality and the uncertainties of monitoring simply demand a longer time period in order to ensure no reasonable probability of adverse impacts to health and the environment. *See* Campbell Expert Report.

In addition, EPA's inclusion of four general factors that a State Director must consider prior to specifying an alternative length of the monitoring period fail to cure the problems described above and in the Expert Report. The four factors included in proposed section 257.98(c)(2) are vague and cannot guarantee that proper consideration will be given to the complicated, multitudinous and varied factors that impact groundwater monitoring, as described in the Expert Report. The vagueness of the terms is likely to lead to insufficient investigation and an absence of data-driven evaluation by the State Director, which in turn will lead to the premature termination of the groundwater monitoring.

The impact of too short a monitoring period is potentially very harmful to health and the environment. If monitoring is terminated after one year, for example, the owner/operator will be allowed to return to detection monitoring of part 257 appendix III standards pursuant to 40 C.F.R. § 257.94. In the event that the remediation was actually unsuccessful, the next semi-annual monitoring period may indicate an exceedance of an appendix III constituent. At that point, the owner/operator would have 90 days to sample for appendix IV constituents. 40 C.F.R. § 257.95(b). If exceedance of the same groundwater protection standards were again found in the groundwater, the owner operator would again go through all the steps required pursuant to sections 257.96-98. Because those sections allow owners and operators considerable time to complete a new assessment of remedial measures, solicit public comment, and select a remedial measure, it is likely that at least one and a half years will pass before the second remedial action is initiated. During that time period additional hazardous constituents will have migrated

from the CCR unit, and such migration and dispersion may harm off-site human and ecological receptors and make the cleanup more difficult.

Furthermore, if EPA has finalized other regulatory revisions of its 2018 Proposal, an owner/operator may be successful in demonstrating “alternative” groundwater protective standards for boron, lead, molybdenum, lithium and cobalt that allow much higher concentrations of these substances in groundwater, resulting in no assessment monitoring being triggered, even when the same level of these constituents in groundwater previously triggered remedial action (albeit unsuccessful). *See* proposed section 257.95. Alternatively, the owner or operator may be successful in demonstrating that no corrective action is necessary pursuant to EPA’s proposed revision of section 257.97(f) in the 2018 Proposal. In that case, again, no remediation would be required, even though remediation was required under the exact same circumstances in the recent past.

Under all of these scenarios, it is clear that EPA’s proposed changes in section 257.98(c)(2) introduce great uncertainty and nearly insurmountable obstacles to the successful completion and confirmation of groundwater remedial actions. Consequently, this proposal cannot come close to meeting the protectiveness standard of RCRA section 4004(a).

4. *EPA’s current three-year standard is insufficiently protective.*

There is also evidence that the current requirement in the 2015 CCR Rule for owner/operators to demonstrate that concentrations of constituents listed in appendix IV have not exceeded the groundwater protection standards for a period of three consecutive years is inadequate to protect health and the environment. In a comment to EPA during the comment period for the proposed CCR Rule in 2010, Shari T. Wilson, Secretary, Maryland Department of the Environment (MDE), commented on the inadequateness of the proposed standard, which is identical to the final regulation (section 257.98(c)(2)). *See* EPA, Comment Summary and Response Document, Hazardous and Solid Waste Management System; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals from Electric Utilities; Proposed Rule, Volume 9: Groundwater and Correction Action (Dec. 2014), Docket ID No. EPA-HQ-RCRA-2009-0640-12132. Secretary Wilson stated that MDE observed waste sites that had remedial measures installed, such as caps and groundwater pump-and-treat systems, which were observed to reduce the concentrations of contaminants to below MCLs, only to result in MCLs being exceeded after the system was deactivated. *Id.* at 36-37. Ms. Wilson cited the Scarboro Landfill in Harford County, Maryland, at which an active groundwater extraction and treatment system was installed under a Consent Order with the MDE. The landfill subsequently met groundwater protection standards, and MDE allowed the landfill to turn the system off. Years later, however, the MCLs were again exceeded, and the extraction system was reactivated. In light of these experiences, the MDE recommended that the proposed three-year period be changed to a more effective standard, including the demonstration that the remedy is effective over a longer period. *Id.* In light of all the factors that impact groundwater quality and the efficacy of groundwater monitoring at

CCR units in the period after remediation, it is clear that for some sites, three years is insufficient time in which to determine whether the corrective action taken protects human health and the environment. Consequently, it is unlawful, arbitrary and capricious, and without rational basis to permit an even shorter alternative period.

XX. EPA’S PROPOSAL TO DECREASE THE LENGTH OF THE POST-CLOSURE CARE PERIOD IS UNSUPPORTED BY THE RECORD, ARBITRARY AND CAPRICIOUS, AND CANNOT SATISFY THE PROTECTIVENESS STANDARD OF RCRA SECTION 4004(A).

EPA proposes to allow State directors in participating states to decrease the 30-year post-closure care period upon a determination that an alternate period is sufficient to protect human health and the environment. Proposed section 257.104(c)(3), 83 Fed. Reg. at 11,616. The current regulations at section 257.104(c)(1) state that the owner or operator of a closed CCR unit must conduct post-closure care for 30 years, unless at the end of the 30 years corrective action is on-going or the CCR unit is operating under assessment monitoring, in which case the owner or operator must continue to conduct post-closure care until the unit has returned to detection monitoring. 40 C.F.R. § 257.104(c)(3). The provision EPA is proposing is similar to, albeit weaker than, 40 C.F.R. § 258.61(b), which allows the Director of a participating state to decrease the length of the post-closure care period of a MSWLF unit, if the owner or operator demonstrates that the reduced period is sufficient to protect human health and the environment. 83 Fed. Reg. at 11,603-06. The proposed change is unlawful because it does not meet the section 4004(a) protectiveness standard, and it is arbitrary and capricious because EPA has provided no rational basis for the change.

A. EPA’S PROPOSED CHANGES TO THE 30-YEAR POST-CLOSURE CARE PERIOD REQUIREMENT ARE INSUFFICIENTLY PROTECTIVE AND UNSUPPORTED BY THE RECORD.

- 1. EPA has not identified any new evidence that undermines the agency’s prior conclusion that a 30-year post-closure care period is necessary to ensure long-term safety.*

In the 2015 CCR Rule, EPA established post-closure care requirements, including a minimum 30-year post-closure care period, that are “essential to ensuring the long-term safety of closed CCR units.” 80 Fed. Reg. at 21,305. Because the 30-year requirement establishes a minimum, it cannot be reduced under any circumstance. *See* 40 C.F.R. § 257.104(c). Indeed, in the final rule EPA rejected a proposal that would have authorized reduction of the post-closure care period in certain cases—and provided clear justification for its decision. 80 Fed. Reg. at 21,426. EPA stated that in addition to the lack of regulatory oversight, the Agency based its decision to require a 30-year post-closure period on the following factors:

The Agency has concluded that providing the owner or operator the flexibility to shorten the post-closure care period is no longer

appropriate, particularly given the flexibility being provided for the selection of a final cover system or alternative final cover system. As discussed in Unit M.3 above, the information available to the Agency supports the need to proceed cautiously. By not allowing the post-closure care period to be shortened, EPA better ensures that the final cover system will be properly maintained. In addition, a mandatory 30 year period ensures that if problems do arise with respect to a final cover system, the groundwater monitoring and corrective action provisions of the rule will detect and address any releases from the CCR unit, at least during the post-closure care period.

Id. The only modification of the 30-year period permitted under the 2015 CCR rule is a lengthening of the post-closure care period, which is required if at the end of the 30-year period either corrective action is ongoing or the CCR unit is operating under assessment monitoring. *See* 40 C.F.R. § 257.104(c). Because EPA has failed to identify any new evidence that contradicts the agency’s previous findings in support of a 30-year minimum, any change in the post-closure care period would be unsupported by the record.

The 2018 Proposal is similar to the proposal that EPA rejected in the 2015 CCR Rule, but with an important difference. The earlier proposal would have allowed reduction of the 30-year minimum post-closure period for CCR units whose owners or operators are able to demonstrate that a “reduced period is sufficient to protect human health and the environment.” 80 Fed. Reg. at 21,426; *see also* 75 Fed. Reg. 35,209, 35,253 (proposed 40 C.F.R. § 257.101). The current proposal adopts precisely the same standard for determining whether a post-closure period can be shortened. *Compare id.*, with 83 Fed. Reg. at 11,603 (authorizing a reduced length of post-closure care upon a demonstration that the “reduced period is sufficient to protect human health and the environment”). EPA has failed to identify new evidence – or even articulate a rational basis – to support its attempt to revive the rejected proposal.

One important difference in EPA’s current proposal makes it less protective than the earlier proposal that EPA rejected. EPA’s earlier proposal required the owner or operator to prepare a demonstration that the reduced period was sufficient to protect human health and the environment, and this demonstration had to be certified by a professional engineer. 80 Fed. Reg. at 21,426. EPA’s 2018 Proposal instead requires only approval by a State Director, 83 Fed. Reg. at 11,603. As discussed below, relying on the judgment of State Directors in the absence of and in lieu of certification by qualified professional engineers is unsupported by the record and fails to satisfy the section 4004(a) protectiveness standard. *See* Section XXI, *infra*.

EPA’s decision to establish a 30-year minimum is supported by clear justification. EPA explained that a 30-year minimum was required to address concerns regarding the integrity of final cover systems. 80 Fed. Reg. at 21,414. As the agency stated,

A final cover system that does not perform as designed may result in unacceptable infiltration of water into the closed CCR unit that may lead to leachate and releases from the unit. To address this concern, as well as the concerns raised by commenters regarding the long-term performance of certain cover systems by providing further assurance that the final cover system will perform over the longer term, EPA has deleted the proposed provision that would have allowed owners or operators to shorten the length of the post-closure care period.

Id. Based on the “information available,” EPA concluded that the twin risks of design failure and lack of longevity “support[] the need to proceed cautiously.” *Id.* at 21,426. Hence, its decision to prohibit reductions of the 30-year post-closure care period. *Id.* Moreover, EPA noted that these risks are heightened by the “flexibility” allowed to owners or operators to select a final cover system. *Id.* at 21,414; *see also id.* at 21,426.

Under the 2018 Proposal, EPA significantly increases this flexibility by increasing the scope of options available to include the use of CCR in final cover systems. *See* 83 Fed. Reg. at 11,585, 11,605-08, 11,614-15 (proposed 40 C.F.R. § 257.102). As discussed below, allowing the use of CCR in construction of final cover systems also fails the section 4004(a) protectiveness standard. *See* Section XXII, *infra*. EPA has not identified any new evidence for reassessing the risks of design failure and lack of longevity in cover systems and, moreover, the agency has exacerbated these risks by proposing to allow the use of CCR in cover systems. *Id.*

In addition, the 2018 Proposal would eliminate specific benefits that EPA identified as flowing from the establishment of a 30-year minimum requirement. In the 2015 CCR Rule, EPA explained that by rejecting any exceptions that would allow the post-closure care period to be shortened, EPA “better ensures that the final cover system will be properly maintained.” 80 Fed. Reg. at 21,426. Moreover, the mandatory 30-year minimum “ensures that if problems do arise with respect to a final cover system, the groundwater monitoring and corrective action provisions of the rule will detect and address any releases from the CCR unit, at least during the post-closure care period.” *Id.* Those benefits would be lost under the 2018 Proposal as a result of the elimination of the 30-year minimum. EPA has introduced no new evidence that would support eliminating the benefits of a 30-year minimum that EPA identified in the 2015 CCR Rule.

2. *EPA fails to establish a rational basis for the alternative performance standard because the evidence cited in the 2018 Proposal is incomplete, vague and bears no rational connection to the alternative standard that EPA proposes.*

EPA fails to consider numerous factors that impact the long-term effectiveness of a CCR unit cover. In lieu of new evidence to support its alternative performance standard for post-closure, EPA’s 2018 Proposal includes only a brief and largely irrelevant discussion of the lifespan of landfill covers. After correctly acknowledging that “no final

cover, however well-constructed, will last forever,” EPA purports in its proposal to consider the legitimate question of whether the cover of the CCR unit “will continue to function effectively.” 83 Fed. Reg. at 11,604. EPA fails, however, to actually consider the factors that impact the long-term effectiveness of a CCR unit cover.

First, EPA mentions only the impacts of natural deterioration of the cover. However, CCR units commonly experience damage to their covers by a wide variety of anthropogenic activities. *See* Hutson Expert Report. Maintenance activities such as mowing, repairs, and re-grading can adversely impact and increase the permeability of the cover. In addition, unauthorized recreational activity is frequent at many closed waste units since the open slopes present an “attractive nuisance.” *Id.* Dirt bikes, ATVs and other recreational vehicles have been known to cause damage to covers, which allows infiltration of rainwater and runoff.³⁵⁷ *Id.*

Second, EPA’s 2018 Proposal cites numerous studies that discuss the service life of landfill liners (polyethylene geomembrane barriers), which have no relevance to the post-closure care period of unlined landfills and surface impoundments.³⁵⁸ 83 Fed. Reg. at 11,604, fn.36, 37, and 38. EPA has estimated that approximately 43 percent of the existing CCR landfills are unlined. 75 Fed. Reg. at 35,144. Furthermore, according to the liner certifications posted by owner and operators of existing CCR surface impoundments pursuant to 40 C.F.R. § 257.71(a)(1), at least 87 percent of the surface impoundments with certifications are unlined.³⁵⁹ *See* Sahu Expert Report. Thus for the great majority of CCR units, the service life of an underlying liner is totally irrelevant to a consideration of the necessary duration of post-closure care. EPA fails entirely to address the obvious point that the absence of a liner will substantially increase the harm caused by any infiltration of water into the closed disposal unit.

Next, the scant evidence actually cited in the 2018 Proposal is vague and bears no rational connection to the alternative standard that EPA proposes. First, EPA states that

³⁵⁷ *See, e.g.*, “ATV racers are banned from cap of old landfill”, Worcester Telegram, Jan. 29, 2007, available at <http://www.telegram.com/article/20070129/NEWS/701290465> and New York Parks, Freshkills Park: Landfill Infrastructure, (“Keeping in line with regulations, structural requirements, and landfill engineering there are some of the ideas we won’t be able to implement because they may cause erosion, damage to the landfill, and brush fires. Some examples are: Mountain Biking, ATVs/Dirt Bikes, Waterslides/Pools, Fire Pits, and Barbeques.”), available at <http://freshkillspark.org/wp-content/uploads/2014/03/3.-Landfill-Engineering-Landfill-Engineering.pdf>.

³⁵⁸ By failing to make these studies publicly available, EPA has failed to provide adequate opportunity for public notice and comment under the APA and has failed to satisfy the public participation standard of 7004(b). EPA did not submit these studies to the administrative record. Moreover, two of the studies cited are blocked from online public access by paywalls. *See* Needham, A.D., Smith, J.W.N., Gallagher, E.M.G., The service life of polyethylene geomembrane barriers, 85 Engineering Geology 82–90 (2006), available at <https://www.sciencedirect.com/science/article/pii/S0013795206000706?via%3Dihub>; Bonaparte, R., J.P. Giroud, and B.A. Gross, Rates of leakage through landfill liners, Geosynthetics 1989 Conference. San Diego, CA (1989), available at <https://www.sciencedirect.com/science/article/pii/0266114492900108>.

³⁵⁹ In fact, this number is likely greater than 90 percent, however verification is difficult because owners and operators of more than 100 inactive surface impoundments have not yet posted liner certifications. These inactive impoundments were required to post their liner certifications by April 17, 2018, *see* 40 C.F.R. § 257.100(e)(3)(i), but are not required to post them until May 17, 2018, *see id.* § 257.107(d), (f)(3).

the deterioration of final cover systems, or “wear-out,” can take “thousands of years.” 83 Fed. Reg. at 11,603. If anything, this assertion would suggest the need to lengthen the 30-year minimum, as is recommended by at least one of the studies cited by EPA. *See* 83 Fed. Reg. at 11,604, fn.37 (citing Rowe, R.K., Islam, M.Z., Impact of landfill liner time-temperature history on the service life of HDPE geomembranes, 29 Waste Management 2689 (2009) (attached)); 29 Waste Management at 2697. Yet, the alternative standard proposed by EPA would change the standard in the opposite direction. Further, this same study indicates that wear-out can occur in well under 30 years. *See* Rowe, et al., 29 Waste Management at 2694 tbl. 4, 2696 tbl. 7. These data demonstrate that reduction of the post-closure care period may result in undetected wear-out events and, therefore, is evidence that weighs against the changes proposed in the 2018 Proposal. EPA has failed to estimate how many, and when, such wear-out events may occur within the 30-year period. *See* 83 Fed. Reg. at 11,603-04. As a result, it is impossible to estimate how many wear-out events that would be detectable under the 2015 CCR Rule would fail to be detected under the reduced post-closure periods that might receive authorization under the 2018 Proposal.³⁶⁰

Similarly, EPA stated that the “wear-in” phase is “much shorter” by comparison, but failed to give an approximate timeline. *See* 83 Fed. Reg. at 11,604. In the 2018 Proposal, EPA predicts State Directors will reduce post-closure care periods from 30 years to 5 years, *id.* at 11,609, but there is no evaluation of whether the “wear-in” phase will be within that 5-year period. As a result, once again, it is impossible to estimate how many wear-in events that would be detectable under the 2015 CCR Rule would fail to be detected under the reduced post-closure periods that might receive authorization under the 2018 Proposal.

Finally, EPA’s theory of contamination “transit time” fails to take into consideration slow-moving contaminant plumes. EPA states that “one would generally expect transit time of any contamination to be short, and thus a shorter post-closure monitoring period might be sufficient” where the CCR unit is close to the groundwater table and the groundwater monitoring wells are located at the unit boundary. *Id.* But EPA failed to cite evidence in support of this rationale and, moreover, failed to account for slow-moving contaminant plumes or even to identify the factors that might affect the rate of migration of contaminant plumes. *See* Hutson Expert Report. EPA’s vague assertions are inadequate to support the alternative standard that the Agency proposes.

In sum, EPA stated clear justifications to support its adoption of the 30-year minimum post-closure care period and its rejection of the alternative proposal, which it attempts to revive in the 2018 Proposal. EPA has failed to identify any new evidence that would contradict its previous findings and the reasons it cites bear no rational connection

³⁶⁰ Indeed, yet another study cited by EPA states that “[n]o data are available” to estimate over what period of time a geomembrane would be expected to “become brittle” and undergo “rapid[]” stress cracking damage that might allow leakage to occur. *See* 83 Fed. Reg. at 11,604 n.36 (citing Needham, A.D., Smith, J.W.N., Gallagher, E.M.G., The service life of polyethylene geomembrane barriers, 85 Engineering Geology 82–90 (2006), available at <https://www.sciencedirect.com/science/article/pii/S0013795206000706?via%3Dihub> (attached). Estimates have been reported as low as 13 years. 85 Engineering Geology at 88.

to the alternative performance standard that EPA proposes. Therefore, any change in the post-closure care period would be unsupported by the record and, moreover, would violate the section 4004(a) protectiveness standard.

3. *EPA's 2018 Proposal is significantly weaker than the MSWLF provision on which EPA relies.*

According to EPA's 2018 Proposal, EPA claims to be proposing to adopt a provision analogous to 40 C.F.R. § 258.61(b). 83 Fed. Reg. at 11,603. However, EPA's proposal is in two ways significantly weaker and less protective than the MSWLF provision it purports to incorporate. First, section 258.61(b) allows the Director of a participating state to decrease the length of the postclosure care period *if the owner or operator of the MSWLF demonstrates* that the reduced period is sufficient to protect human health and the environment and this demonstration is approved by the Director of an approved participating state. The 2018 Proposal contains no such requirement for an owner or operator to prepare any demonstration of protectiveness. The 2018 Proposal provides a State Director with the sole responsibility for making such a determination. This reinforces the concern described above that no professional engineer need be involved in this critical determination and that the quality and depth of the evaluation depends on the uncertain expertise, unpredictable motivation, and likely very limited resources of state regulators. *See* Section XXI, *infra*. There is nothing in the record to support this particular weakening of the part 258 standard, and the weakened provision clearly fails to meet the section 4004(a) protectiveness standard.

Assigning such authority to state regulators is particularly problematic because states have a consistent record of failing to require adequate post-closure care and monitoring periods for CCR landfills and surface impoundments. EPA recognized this in the preamble to its 2015 CCR Rule, noting that some states require a post-closure care period of less than 30 years. 80 Fed. Reg. at 21,426. Specifically, Commenters to the 2010 proposal noted that only five states required 30 years of post-closure monitoring at all CCR landfills, and only one state required such monitoring at all CCR surface impoundments.³⁶¹ There is nothing in the record to suggest that states, the vast majority of which have for decades never required a significant period of post-closure care at CCR units, will suddenly demonstrate an interest and expertise in requiring a sufficiently protective period of care.

Second, section 258.61(b) of the MSWLF rule allows the Director of the participating state to *increase* the length of the post-closure period if the Director determines a lengthened period is necessary to protect human health and the environment. The 2018 Proposal is significantly weaker than section 258.61(b) because there is no authority for a State Director of a CCR permit program to increase the post-closure period. The preamble to the proposal claims that this provision is in the proposed rule, but it is not. The 2018 Proposal fails to include any evidence justifying this omission, and consequently the proposal is arbitrary and capricious and lacks a rational

³⁶¹ 2010 Environmental Comments at 40-41.

basis. The weakened provision also fails to meet the section 4004(a) protectiveness standard.

4. *To the extent the agency is relying on the record for the MSWLF rule, EPA has failed to consider material differences between MSWLFs and CCR disposal units, particularly surface impoundments.*

The revised language proposed by EPA is analogous to 40 C.F.R. § 258.61(b), which allows the Director of a participating state to decrease the length of the post-closure care period of a MSWLF if the owner or operator demonstrates that the reduced period is sufficient to protect human health and the environment. *See* 83 Fed. Reg. at 11,603. This same provision of the MSWLF was similarly the source of the proposal that EPA rejected in the 2015 CCR Rule, as is discussed above. *See* 75 Fed. Reg. at 35,209 (citing to the MSWLF Rule). The risks associated with MSWLFs are materially different than those posed by CCR units. To the extent that EPA's current proposal relies on the record for the MSWLF rule, the proposed changes are arbitrary and capricious.

One significant difference between MSWLFs and CCR units is that MSWLFs are not permitted to contain the large amount of liquid wastes found in CCR surface impoundments, as discussed above. *See* Section VIII, *supra*. The MSWLF regulations restrict the amount and type of liquid wastes that may be disposed of in municipal solid waste landfills, *see* 40 C.F.R. § 258.28, whereas a significant portion of CCR is disposed of in wet form in surface impoundments. In fact, 72 percent of CCR units are wet impoundments. 2018 RIA at 2-1. More to the point, due to factors such as hydraulic head, wet disposal of coal ash presents significantly higher risks of contamination than dry disposal. *E.g.*, 80 Fed. Reg. at 21,361.

Second, unlike municipal solid waste, inorganic CCR does not biodegrade. *See* Hutson Expert Report. CCR waste that is capped in place remains in the unit for many years and is capable of leaching contaminants into groundwater at any time. *Id.* Over the long term, even caps that perform relatively well are likely to see a significant decrease in performance. *Id.* Failure of a cap may occur through a variety of natural or anthropogenic processes. *Id.* Once failure occurs, infiltration of water through the cap will result in leachate and environmental impacts. *Id.*

Third, unlike CCR landfills and surface impoundments, active cells at municipal solid waste landfills are likely to have composite liners. EPA's MSWLF rule became effective in 1991, so all landfill expansions built after that date were required to install liners before accepting waste. *See* 40 C.F.R. § 258.40. A 2017 state survey of solid waste landfills in Massachusetts identifies 12 active municipal solid waste landfills and confirms that all landfills have liners. *See* Commonwealth of Massachusetts, Department of Environmental Protection, Active Landfills (attached).

The 2018 Proposal contains no discussion of the substantial differences in risk posed by CCR surface impoundments compared to MSWLFs. Given that EPA has not accounted for these material differences, any proposed changes of post-closure care

period for CCR units based on the record for the MSWLF rule are arbitrary and capricious and, moreover, fail to satisfy the protectiveness standard of section 4004(a).

5. *EPA has failed to ensure that the post-closure care period is long enough to establish settlement behavior and to detect wear-in defects.*

The factors that EPA requires State Directors to consider when approving reductions in the length of the post-closure care period are inadequate. EPA has identified an open-ended list of site-specific factors that bear upon the length of the post-closure care period required to protect human health and the environment. 83 Fed. Reg. at 11,603. Namely, these are “geology, climate, topography, resources, demographics, etc.” *Id.* Yet, the proposed alternative standard does not require that the State Director take these factors into consideration when approving reductions in the post-closure care period. *Id.* Instead, EPA designates only two factors that State Directors must consider when approving reductions. 83 Fed. Reg. at 11,616 (proposed 40 C.F.R. § 257.104(c)(3)(ii)). The State Director’s determination must be based upon “the type of cover placed on the unit” and “the placement of the groundwater monitoring wells with respect to the waste management units and the groundwater table.” *Id.* While State Directors have discretion to take additional factors into account, *id.* (consideration of these two factors is a “minimum” requirement), no such additional consideration is mandated. For example, there is no provision in the alternative standard that would require State Directors to take into account demographics. Thus, State Directors have discretion to disregard the factors that EPA identified as relevant to determining the length of the post-closure care period.

EPA’s failure to require consideration of additional factors undermines the analysis of settlement behavior and wear-in defects that EPA requires of State Directors. Under the alternative standard, the State Director “must ensure that the post-closure care period is long enough to establish settlement behavior and to detect wear-in defects in the cover system.” 83 Fed. Reg. at 11,616 (proposed 40 C.F.R. § 257.104(c)(3)(ii)). Both settlement behavior and wear-in may be affected by the factors identified above, including climate, topography, and geology. *See id.* at 11,603. Yet, as stated above, EPA failed to require that these factors be taken into consideration when approving reductions in the length of the post-closure care period. *See id.* at 11,616. As a result, State Directors would have discretion to approve reductions without being specifically required to address all relevant factors, which could allow for reductions in the post-closure care period based on inadequate analyses of settlement behavior and wear-in defects.

Because the factors taken into account by the alternative standard are insufficient to determine whether a reduction of the 30-year post-closure care period is appropriate, the proposed revision would be arbitrary and capricious and, moreover, would violate the section 4004(a) protectiveness standard.

6. *EPA must prohibit alternative post-closure care periods where coal ash is close to or placed in the groundwater table.*

Although EPA is well aware of numerous CCR units where waste is disposed of very near to and actually in the groundwater table, the 2018 Proposal does not prohibit a State Director from shortening the post-closure care period under those conditions.³⁶² In fact, there is no discussion whatsoever of the behavior of CCR leachate in disposal units where direct contact with groundwater continues after closure. While EPA's proposed section 257.104(c)(3) requires the State Director to consider certain factors, the location of the bottom of the CCR unit in relation to the groundwater table is not one of those factors. In fact, EPA's proposal is nearly silent on groundwater impacts and includes only the specific directive that "the Director must ensure that the post-closure period is long enough to establish settlement behavior and to detect wear-in defects in the cover system." 83 Fed. Reg. at 11,616. Because EPA does not consider the impact to groundwater of early termination of groundwater monitoring under these conditions, the proposal is arbitrary and capricious and without a rational basis. Because EPA does not require State Directors to consider the placement of the CCR relative to the water table, the proposal also fails to meet the section 4004(a) protectiveness standard, because it cannot ensure no reasonable probability of adverse effects on health and the environment in these situations.

7. *The 2018 Proposal would allow reduction of a post-closure care period on the basis of incomplete information about the risk of contamination from the CCR unit.*

EPA's proposed section 257.104(c)(4) fails to require that State Directors take into account when determining the length of a post-closure care period critical information regarding the risk of contamination from the CCR unit. In fact, EPA suggests that a State Director may authorize the reduction of a post-closure care period without access to sufficient monitoring data that would indicate the presence of contamination and potential impacts to health and the environment. See 83 Fed Reg. at 11,604 ("This would hold, *even if the state had previously authorized a shorter postclosure care period.*") (emphasis added)). State Directors should not be able to shorten the post-closure care period under any circumstances, but certainly not when critical factors are unknown, including the leaching characteristics of the CCR, the effectiveness of the liner, the level of the water table (which is subject to fluctuation over the lifespan on the unit), the presence of sensitive receptors at the time of closure, the direction and rate of flow of groundwater, etc. Such information will not be available before the passage of years, and more likely decades, of operation of the CCR unit. A decision to shorten a post-closure period should never be allowed, and such a decision would be particularly dangerous if made before the unit completed closure activities. The proposal's allowance of a premature determination of a shortened post-closure period of

³⁶² Sahu Expert Report contains examples of surface impoundments whose bottom is below the water table. The information is based on, and includes excerpts of, compliance reports posted by owner/operators pursuant to the 2015 CCR Rule.

care is arbitrary and capricious, has no rational basis, and cannot meet the section 4004(a) protectiveness standard.

8. *EPA's 2018 Proposal is inconsistent with recent EPA guidance concerning post-closure care of solid waste disposal units.*

In 2016, EPA issued guidance on evaluating post-closure care for hazardous waste disposal facilities.³⁶³ EPA recognized that many facilities around the country were approaching the end of the initial 30-year post-closure care period established in their RCRA permits or post-closure plans. *See* EPA, Guidelines for Evaluating the Post-Closure Care Period for Hazardous Waste Disposal Facilities under Subtitle C of RCRA, (Dec. 15, 2016) (hereinafter “2016 Post-Closure Guidance”) (attached).

Accordingly, the 2016 Post-Closure Guidance provides instruction regarding how to evaluate conditions at these facilities to determine whether the post-closure care period must be extended, or whether a 30-year post-closure care period is protective for a specific unit. The guidance recommends numerous criteria to consider when determining whether 30 years is a sufficient length of time to ensure protection of human health and the environment. EPA explained:

An overarching consideration in determining whether to extend the post-closure care period, or allow it to end, is the inherent uncertainty associated with the long-term presence of hazardous waste in the unit. Because many hazardous wastes degrade slowly or do not degrade under containment in these units, the continued presence of hazardous waste in the unit (*i.e.*, any case other than clean closure) indicates the potential for unacceptable impacts on human health and the environment in the future if post-closure care is not maintained. For instance, there are often uncertainties in whether controls will continue to function as planned and whether future activities will lead to unplanned exposures to human and environmental receptors. Even if there is no current evidence of actual releases from the facility, significant factors can change over time. For example, groundwater flow can change direction due to the sequencing of dry and wet years, pumping at municipal water supply or other well fields, or shifting gradients resulting from seasonal variations or tidal influences. Landfill components, such as caps and liners (which have a finite design life), can degrade over time, especially if maintenance is discontinued. Exposure pathways that have been eliminated by means of an engineered control may be reopened (*e.g.*, if animals burrow through the cap). Thus, continued monitoring and maintenance activities may be appropriate unless or until it can be demonstrated that site-specific

³⁶³ In light of the presence of persistent heavy metals (that do not degrade) as well as sludges and other liquid wastes in both CCR units and hazardous waste disposal facilities, the EPA guidance is relevant to CCR units, even though it addresses hazardous waste disposal units.

conditions adequately minimize the risk that contaminants will migrate from the unit (*e.g.*, site geology/hydrogeology) or that, in the event the engineering controls fail, a release would not pose an unacceptable risk to human health and the environment.

2016 Post-Closure Guidance at 4. The EPA guidance thus provides criteria to be used to evaluate site-specific conditions and associated risks or remaining uncertainties to be used to determine whether to extend the post-closure care period. *Id.* Seven of the eight criteria are directly relevant to the length of the post-closure period for CCR landfills and impoundments, namely, waste treatment; nature of wastes remaining in the unit; unit type/design; leachate; groundwater; siting and site geology/hydrogeology; facility history; and long-term care. *Id.* Yet EPA included none of those criteria in the 2018 Proposal. Because the 2018 Proposal requires no consideration of these factors – which are necessary to consider to ensure protection of health and the environment – as part of the State Director’s determination to shorten the post-closure care period, the proposal is arbitrary and capricious, lacks a rational basis, and fails to satisfy the section 4004(a) protectiveness standard.

9. *EPA does not guarantee public participation in the State Director’s determination to shorten the post-closure care period and thus does not meet the public participation standards of section 7004(b) of RCRA.*

Any shortening of a post-closure care period for a CCR unit must be subject to requirements for public involvement in the decisionmaking pursuant to the public participation mandates in RCRA section 7004(b). 42 U.S.C. § 6974(b). Section 7004(b) states:

Public participation in the development, revision, implementation, and enforcement of any regulation, guideline, information, or program under this Act shall be provided for, encouraged, and assisted by the Administrator and the States. The Administrator, in cooperation with the States, shall develop and publish minimum guidelines for public participation in such processes.

Id. Thus any provision authorizing alternative post-closure care periods must require the State to provide public notice, hold a public meeting, and allow an opportunity for written comments to be submitted. In the 2016 Post-Closure Guidance, EPA recommends, in addition, that the local community be notified when a post-closure care period ends and when the state releases the owner or operator from their post-closure care obligation. 2016 Post-Closure Guidance at 16. The 2018 Proposal contains no requirements for public participation. Consequently the alternative post-closure provision is unable to meet the section 7004(b) standard.

B. EPA CANNOT CONSIDER COST IN ITS PROPOSAL OF AN ALTERNATIVE POST-CLOSURE CARE PERIOD

As explained above, EPA is proposing to adopt a provision analogous to the MSWLF post-closure provision at 40 C.F.R. § 258.61(b). 83 Fed. Reg. at 11,603. The MSWLF regulations are promulgated under the less stringent protectiveness standard of RCRA section 4010(c), which allows the consideration of cost. As has been stated many times in these comments, EPA cannot consider cost in the establishment of criteria for CCR units under RCRA section 4004(a). There is clear evidence that the post-closure standard in part 258 was indeed influenced by the need to control the cost to owners of MSWLFs. In fact, cost consideration in post-closure care is a real issue among municipalities since revenue to the owner/operator terminates completely when the landfill closes. This is in sharp contrast to utilities that frequently close CCR units but continue to operate the coal plant, thus creating ample funding for the financing of post-closure care. Extending the post-closure period beyond 30 years after closure would increase the financial obligation of the municipal landfill owner during the time when the landfill is not generating income. In addition to the continued monitoring and maintenance beyond the initial 30-year post-closure period specified in the post-closure requirements, extending the financial obligation beyond 30 years could lead to the need to fund groundwater cleanups associated with the ultimate failure of the landfill liner system.

In fact, there is evidence that EPA considered cost in the establishment of the 30-year post-closure care period for MSWLFs. In the 1988 proposed rule for MSWLFs, EPA proposes more protective requirements, namely two post-closure care periods, the first comprising 30-years of care and the second of a length to be determined by the state director. 53 Fed. Reg. at 33,344. The final MSWLF rule in 1991 reduced the two periods of post-closure care to a single 30-year period and substantially weakened the original proposal. EPA explained that the final rule's provision allowing states with approved programs to "shorten the MSWLF post-closure care period" helps address the resource concerns of small MSWLFs.³⁶⁴ 56 Fed. Reg. at 50,990.

C. DEMONSTRATIONS IN SUPPORT OF ANY ALTERNATIVE POST-CLOSURE CARE PERIODS MUST BE POSTED ONLINE, IN ORDER TO FACILITATE OVERSIGHT AND ENFORCEMENT OF THE RULE.

As explained above, EPA should not change the post-closure care period to allow performance standards other than the existing standards in the 2015 CCR rule. However,

³⁶⁴ Additional discussion by EPA concerning cost considerations may have been included in the document entitled, "Public Comment and Responses on Subtitle D, Solid Waste Disposal Facility Criteria: Final Rule, General Comments (Part 258)," however, this document was not available in the docket for the final rule, although it was listed as being in the record. Nor were Commenters able to locate this document elsewhere on EPA's website. Due to the very short comment period afforded by EPA, Commenters had insufficient time to obtain a copy of the missing document. As discussed above, EPA's failure to make critical documents available to the public in the docket of this rulemaking is in and of itself a violation of the APA. See Section XXIV, *supra*.

if EPA does allow alternative performance standards, EPA must ensure that the alternative standards are posted to the facility's publicly accessible website.

Public posting is needed because, despite passage of the WIIN Act, the CCR Rule remains a self-implementing rule. The WIIN Act does not require the creation of state CCR permit programs, and application of alternative performance standards to facilities in non-participating states fails the protectiveness standard of section 4004(A). *See* Sections II & XI, *supra*. As a result, citizen enforcement is a primary means of enforcing the CCR Rule at present. Successful enforcement of the 2015 CCR Rule requires public access to information on compliance. Indeed, EPA designed the current recordkeeping and public notice requirements precisely to enable citizen enforcement of the 2015 CCR Rule, given that the rule is self-implementing. *See, e.g.*, 80 Fed. Reg. at 21,399.

Here, if approval is sought for any reduction of the 30-year post-closure care period, the public must have timely access to the supporting information in order to monitor the sufficiency of the proposed care period to protect human health and the environment. In short, EPA must require that any proposed alternative performance standards be posted to a publicly accessible website as soon as possible after approval is sought. *See* Section XII, *supra*.

XXI. THE PROPOSAL TO ALLOW STATE DIRECTORS TO ISSUE CERTIFICATIONS IN LIEU OF REQUIRING THE CERTIFICATION OF A QUALIFIED PROFESSIONAL ENGINEER IS NOT SUPPORTED BY THE RECORD AND FAILS TO SATISFY THE PROTECTIVENESS STANDARD.

EPA proposes to allow the certification of a state agency director to substitute for the certification of a qualified professional engineer. This proposal fails to satisfy the standard of no reasonable probability of adverse effect on human health or the environment under Section 4004(A) and has no rational basis. This substitution has no basis in the record, is not as protective of the environment as the CCR Rule itself, and would allow political and agency interests to take precedence over engineering and scientific requirements.³⁶⁵

A qualified professional engineer has the education, training, certification, an obligation for continuing education, and regulatory oversight which is totally lacking in a state agency director. "To become licensed, engineers must complete a four-year college degree, work under a Professional Engineer for at least four years, pass two intensive competency exams and earn a license from their state's licensure board. Then, to retain

³⁶⁵ In order to be approved under the WIIN Act, however, state CCR programs must mandate that the state review and approve any plans and proposals certified by independent professional engineers before the utility may begin carrying out those plans or proposals. *See* 42 U.S.C. § 6945(d)(1)(B) (directing EPA to approve "a permit program or *other system of prior approval* and conditions . . .").

their licenses, PEs must continually maintain and improve their skills throughout their careers.”³⁶⁶

Professional engineers are also subject to a professional code of ethics. Their ethical code requires them to “hold paramount the safety, health, and welfare of the public.”³⁶⁷ If a professional engineer’s “judgment is overruled under circumstances that endanger life or property, [the engineer] shall notify [his or her] employer or client and such other authority as may be appropriate.”³⁶⁸ Their code of ethics provides: “Engineers are encouraged to adhere to the principles of sustainable development in order to protect the environment for future generations.”³⁶⁹

The code of ethics also ensures that the professional engineer provides seals and certifications that are in his or her area of competency and that the engineer’s work is reliable. By ethical code, professional engineers “shall perform services only in areas of their competence.”³⁷⁰ They “shall approve only those engineering documents that are in conformity with applicable standards.”³⁷¹ They “shall undertake assignments only when qualified by education or experience in the specific technical fields involved” and “shall not affix their signatures to any plans or documents dealing with subject matter in which they lack competence, nor to any plan or document not prepared under their direction and control.”³⁷² To emphasize this point, the code provides: “Engineers shall not complete, sign, or seal plans and/or specifications that are not in conformity with applicable engineering standards. If the client or employer insists on such unprofessional conduct, they shall notify the proper authorities and withdraw from further service on the project.”³⁷³

Professional engineers are also subject to oversight and regulation by state law and state agencies. For example, in North Carolina – a state with a large quantity of coal ash – professional engineers are regulated by statute and regulation and overseen by the North Carolina Board of Examiners for Engineers and Surveyors made up of licensed professional engineers and surveyors.³⁷⁴ N.C. Gen. Stat. §§ 89C-1 *et seq.* North Carolina law requires anyone who practices engineering to be licensed by the state, N.C. Gen. Stat. Section 89C-2, and defines an engineer as a specialized professional: “A person who, by reason of special knowledge and use of the mathematical, physical and engineering sciences and the principles and methods of engineering analysis and design, acquired by

³⁶⁶ National Society of Professional Engineers, *What is PE?*, <https://www.nspe.org/resources/licensure/what-pe> (last visited Apr. 24, 2018).

³⁶⁷ National Society of Professional Engineers, *Code of Ethics*, I. Fundamental Canons (1), <https://www.nspe.org/resources/ethics/code-ethics> (last visited Apr. 24, 2018).

³⁶⁸ *Id.*, II. Rules of Practice (1)(a).

³⁶⁹ *Id.*, III. Professional Obligations (2)(d) (citation omitted).

³⁷⁰ *Id.*, I. Fundamental Canons (2).

³⁷¹ *Id.*, II. Rules of Practice (1)(b).

³⁷² *Id.*, II. Rules of Practice (2)(a) & (b).

³⁷³ *Id.*, III. Professional Obligations (2)(b).

³⁷⁴ North Carolina Board of Examiners for Engineers & Surveyors, <http://www.ncbels.org/> (last visited Apr. 24, 2018).

engineering education and engineering experience, is qualified to practice engineering.” *Id.* § 89C-3(2).

By statute, a professional engineer must have a bachelor’s, master’s, or doctoral degree in engineering, pass a licensing exam, and have a required level of experience. *Id.* § 89C-13. The Board has adopted extensive rules that govern the licensure and practice of professional engineers. 21 NCAC §§ 56.0101 *et seq.* Those regulations, like the code of ethics, require that professional engineers “protect the public health, safety, and welfare” and contain extensive requirements that professional engineers work only on matters for which they have professional competence. 21 NCAC § 56.0701.

In contrast, generally state directors are political appointees and are not required to have any engineering training or expertise or to have worked extensively in engineering. For example, the Southeast is a center of improper coal ash disposal. However, past and current directors of state environmental agencies in the Southeast have included a college instructor, the administrator of an accounting firm, a career government manager, a nonprofit executive, and a manager of a recycling business.

And the state agencies have been ineffective in protecting communities from coal ash pollution and catastrophes. The very reason for the CCR Rule in the first place was the failure of state agencies to handle coal ash issues. TVA’s Kingston collapse and Duke Energy’s Dan River spill are the two most notorious examples, and the Kingston disaster led to the call for EPA to adopt the CCR Rule. The problems and risks connected with Duke Energy’s Dan River site had been documented for years, yet the North Carolina state agency never took action to require Duke Energy to address the dangerous and corroding pipe that eventually failed and caused the massive spill.³⁷⁵ In Alabama, the recent utility reports on groundwater contamination have underscored the serious groundwater pollution at Alabama Power’s Barry plant and the threats to the ecologically valuable Mobile-Tenshaw Delta, but the state agency has done nothing to require Alabama Power to remedy the situation and rather has only imposed a fine – and did so only after the publication of the data.³⁷⁶

As political appointees of agencies that are dependent upon state legislatures to fund their budgets and staff, state agency directors are subject to political influence. The utilities are among the most influential political actors in the state capitols.³⁷⁷

³⁷⁵ Joint Factual Statement & Memorandums of Plea Agreement for Duke Energy Bus. Servs., LLC and Duke Energy Progress, Inc., *United States v. Duke Energy Bus. Servs., LLC*, No. 5:15-CR-62-H (E.D.N.C. May 14, 2015), Docket Nos. 56, 54, 55.

³⁷⁶ Dennis Pillion, *Mobile Baykeeper: Coal ash endangers 'America's Amazon,' Mobile-Tensaw Delta*, AL.com (Mar. 28, 2018), http://www.al.com/news/index.ssf/2018/03/mobile_baykeeper_coal_ash_enda.html.

³⁷⁷ See Richmond Times-Dispatch, *DOMINION RULES: How the Richmond-Based Utility Company Became One of the Most Influential Political Forces in Virginia* (Oct. 13, 2017), <http://www.richmond.com/news/special-report/dominion/>; Gabe Elsner, *Utilities Exert Influence through Universities to Sway Regulatory and Political Debate*, Huffington Post (Jan. 21, 2017), https://www.huffingtonpost.com/gabe-elsner/utilities-exert-influence_b_9043838.html; Teri Sforza, *Watchdog: California Utilities Spend Lots of Public's Money to Influence State Politics*, Orange County Register (Oct. 26, 2015), <https://www.ocregister.com/2015/10/26/watchdog-california-utilities-spend-lots-of-publics->

In some instances, the utilities' activities with respect to state directors have become the subject of public notoriety. For example, at an estimated cost of \$2,370, the Virginia state agency director was flown to the Masters Golf Tournament in Augusta, Georgia, by Dominion Electric, and, while at the Masters, he was Dominion's guest at a dinner that cost \$1,236.³⁷⁸ The director of the Alabama state agency attended a baseball game in the box of Alabama Power and was otherwise investigated by the state ethics agency.³⁷⁹ In North Carolina prior to the Dan River spill, the state agency worked with Duke Energy to block citizen enforcement against coal ash pollution across the state.³⁸⁰ And soon after Duke Energy companies pleaded guilty to coal ash crimes across North Carolina and at a time when the state agency had many enforcement decisions against Duke Energy pending before it, the state agency director and the Governor hosted Duke Energy executives at a private and secret dinner at the Governor's mansion where they discussed environmental issues.³⁸¹

While the proposal discusses generally the substitution of a state director's certification for that of a qualified professional engineer, the actual proposed regulatory provisions include this option only in the provisions relating to the use of CCR in the design and construction of the final cover system, 40 C.F.R. § 257.102. This proposal illustrates the problems set out above. A state director is in no position to determine the adequacy, safety, and effectiveness of using CCR – which can vary significantly in content and characteristics – in a final cover system for a CCR unit, which itself will have specific characteristics and needs based on location, hydrology, climate, and slope, among other things. These decisions should not be left to a political appointee subject to political pressures who can have close relations with the utilities. And the same is true for the other instances in the Rule, which remain unchanged in the proposed regulation, where certification by a qualified professional engineer is required.

Decisions affecting the environment, clean water, public health and safety, and risky coal ash storage should not be left to the political decision making of state agency directors. Certification by a qualified professional engineer offers the public and our natural resources a level of protection beyond that of a state director's choice.

money-to-influence-state-politics/; Mary Ellen Klas, *Group Says Power Companies Wield Too Much Influence in Legislature*, Miami Herald (Mar. 30, 2014), <http://www.miamiherald.com/news/state/article2087902.html>.

³⁷⁸ Capital News Service, *Head DEQ Official Accepted Dominion Gifts Including Paid Trip to the Masters Tourney* (Mar. 15, 2016), <http://wtvr.com/2016/03/15/head-deq-official-accepted-dominion-gifts-including-paid-trip-to-masters-tourney/>.

³⁷⁹ The Decatur Daily, *Official Facing Ethics Probe Watches Baseball in Alabama Power's Box* (July 18, 2007), <http://archive.decaturdaily.com/decaturdaily/news/070718/ethics.shtml>.

³⁸⁰ Michael Biesecker, Associated Press, *NC Regulators Shielded Duke's Coal Ash Pollution*, NewsOK (Feb. 9, 2014), <http://newsok.com/article/feed/648928>.

³⁸¹ Mark Binker, *Governor, Top Duke Energy Officials Met Privately, Won't Say Why*, WRAL (Jan. 6, 2016), <http://www.wral.com/governor-top-duke-energy-officials-met-amid-lawsuits-controversies/15185689/>.

This change is even less defensible because it will increase the financial burden on the state agencies without any benefit to the environment or the public. If this proposal is adopted, the costs of certification will shift from the utilities to the state agencies, and the RIA estimates the additional burden may be as much as \$1.6 million. *See* 2018 RIA at 4-13. This Administration has made claims of reducing burdens on the states, and yet in this instance would shift costs from some of the richest institutions in the country to state agencies that are starved for resources. The RIA claims a net savings, but that is because the utilities will save even more from this shift than the states will shoulder.

XXII. THE REVISION TO ALLOW THE USE OF CCR IN CONSTRUCTION OF FINAL COVER SYSTEMS FOR CCR UNITS DOES NOT SATISFY THE RCRA SECTION 4004(A) PROTECTIVENESS STANDARD.

EPA is proposing to allow the placement of coal ash in units that have initiated closure, ostensibly to provide support for a final cover system. 83 Fed. Reg. at 11,605, 11614, proposed section 257.102(d)(4). EPA claims that the proposal would only allow a “minor addition” of ash for purposes of “grading and contouring,” and would prohibit the use of ash for “waste stabilization,” “to otherwise fill the unit to capacity,” or for “consolidation of CCR into a single unit of a multi-unit system.” *Id.* at 11605-07. However, the proposed regulatory language is not so limited. As written, there is no limit on the amount of ash that can be used, and nothing to prohibit the use of ash for waste stabilization, consolidation of ash from multiple units, or to fill a unit to capacity.

Although the proposed regulatory language states that “CCR may be placed in such units but only for the purposes of grading and contouring,” 83 Fed. Reg. at 11,614, proposed section 257.102(d)(4), there is nothing in the proposed language that corresponds to the positions taken by EPA in the preamble. Specifically, the proposed regulatory language does not explicitly prohibit the addition of ash for purposes of “waste stabilization,” “to otherwise fill the unit to capacity,” or for “consolidation of CCR into a single unit of a multi-unit system.” 83 Fed. Reg. at 11,605-07. There will be situations where owners and operators will have an incentive to add ash to a unit that has initiated closure for one of these ostensibly prohibited purposes, and will be able to claim that they are adding the ash for purposes of grading and contouring. EPA creates several conditions in the proposal, for example restricting the elevation below which additional ash can be placed, but these restrictions alone will not prevent what could be called ‘sham’ grading and contouring. A far simpler regulatory approach, if EPA is serious about the intentions articulated in the preamble, would be to simply prohibit the use of ash for “waste stabilization,” “to otherwise fill the unit to capacity,” or for “consolidation of CCR into a single unit of a multi-unit system.” *Id.* at 11,605-07.

EPA has cautioned against this practice in the past. In the preamble to the 2015 CCR rule, EPA noted that the re-grading a landscape with CCR can lead to environmental damage and should be considered disposal:

EPA recognizes that several proven damage cases involving the large-scale placement, akin to disposal, of CCR have occurred under the guise of “beneficial use”—the “beneficial” use being the filling up of old quarries or gravel pits, or the re-grading of landscape with large quantities of CCR. EPA did not consider this type of use as a “beneficial” use in its May 2000 Regulatory Determination, and still does not consider this type of use to be covered by the exclusion. Therefore, the final rule explicitly removes these types of uses from the category of beneficial use, and from this Regulatory Determination. As discussed in the next section of this preamble, EPA has adopted criteria in the final rule to ensure that inappropriate uses that effectively are disposal will be regulated as disposal. The final rule expressly defines the placement of CCR in sand and gravel pits or quarries as disposal in a landfill. In addition, the final rule provides that the use of large volumes of CCR in restructuring landscape that does not meet specific criteria will constitute disposal.

80 Fed. Reg. at 21,330 (emphasis added). EPA also made note of the structural risks that can accompany the placement of new ash over pre-existing coal ash landfills:

A foundation composed of unconsolidated materials, such as CCR that is susceptible to slip-plane failure, is an unstable area (man-made), and, under provision of this rule, is therefore a prohibited location for new CCR units. The TVA Kingston ash fill failure was at least partly attributable to slip-plane failure of saturated CCR that made up the subgrade and foundation beneath the unit.

Id. at 21373. To address these risks, EPA created special requirements for “overfills”:

In essence, EPA is retaining the approach from the proposal that overfills will need to comply with both the requirements applicable to the closure of surface impoundments or landfills, and with all of the technical requirements applicable to new landfills. Thus, overfills cannot be constructed unless the underlying foundation—i.e., the existing CCR surface impoundment has first been dewatered, capped, and completely closed. And because overfills are considered to be “new CCR landfills,” the design and construction of such units must comply with the technical requirements that address foundation settlement, overall and side slope stability, side slope and subgrade reinforcement, and leachate collection and groundwater monitoring system requirements, which will all need to be evaluated independent of the underlying CCR unit to ensure that the overfill design is environmentally protective.

Id. Depending on the quantity of ash used – and keeping in mind that the quantity of ash is not limited by proposed section 257.102(d)(4) – many purported ‘grading and contouring’ additions of coal ash will be, for all practical purposes, overfills. Yet EPA is not requiring the same level of care in the use of ‘grading and contouring’ ash that it requires for overfills. For example, EPA is not requiring that all ‘grading and contouring’

placements of ash be at least five feet above the “upper limit of the uppermost aquifer.” 40 C.F.R. § 257.60. This means that any ash purportedly placed for grading and contouring can be placed within five feet of the high water table, leaving it susceptible to wetting and leaching regardless of the presence of a cap. More broadly, the 2018 Proposal would not require ash purportedly used for grading and contouring to meet any of the location restrictions applicable to other placements of coal ash.

The preamble to the current proposal contains additional notes of caution. Specifically, EPA notes the fact that the placement of “large volumes” of ash in units that have initiated closure is an inherently risky practice that the Agency did not model in the Risk Assessment for the 2015 rule:

[T]here are also potentially significant risks associated with the continued placement of large volumes of CCR in a deficient unit. As discussed in the next section, although EPA has preliminarily concluded that the use of CCR in the construction of the cover system will meet the RCRA section 4004(a) standard, there were limitations in the assessment that raise questions about further extrapolation of that assessment to support the placement of large volumes of CCR in these units (e.g., EPA’s risk assessment did not model the addition of CCR to partially-filled leaking units). Thus an interpretation that allowed consolidation of CCR into a single unit of a multi-unit system could be seen as inconsistent with the approach outlined in this proposal.

83 Fed. Reg. at 11,607. *See also id.* at 11,608 (describing the additional risks to groundwater that accompany the “addition of larger volumes of ash for purposes other than expediting closure.”). All units to which the ‘grading and contouring’ proposal would apply are by definition “deficient units,” as they would be closing pursuant to 40 C.F.R. § 257.101. 83 Fed. Reg. at 11,614, proposed section 257.102(d)(4). As stated above, there is nothing in the proposed regulatory language that prohibits the use of large volumes of coal ash pursuant to proposed section 257.102(d)(4) (i.e., there are no limits on the amount of ash that can be used). The proposed regulatory language would therefore allow a practice that EPA has – in the preamble to the proposal itself – described as having “potentially significant risks.” This simply cannot be squared with the RCRA section 4004(a) protectiveness standard.

The record does not support EPA’s proposal. EPA focuses on the sensitivity assessments that it conducted in 2009 and 2014, which found that groundwater contamination was not particularly sensitive to the thickness of the coal ash in a particular coal ash unit. These findings are far too narrow to support the proposal. To begin with, EPA never modeled the all-too-common scenario of coal ash units that are in contact with groundwater. *See, e.g.*, 83 Fed. Reg. at 11,589 (referring to “scenarios that were not modeled in the [risk assessment], such as units that intersect with the groundwater table”). There is nothing in the language of the proposal that would prohibit an owner/operator from adding coal ash to a unit, ostensibly for purposes of supporting a

cover system, in such a way that the additional ash is periodically in contact with groundwater, and thus susceptible to leaching despite the cap.

In addition, these sensitivity analyses did not address non-groundwater risks, including structural risks. EPA cannot claim that the risk of structural failure is not sensitive to the thickness of the ash. Increasing the amount of ash in a coal ash unit will increase the risk of structural failure, and increase the potential damage in the event of a failure by increasing the amount of coal ash that may end up in a local waterbody.

Even for the groundwater-to-drinking water pathway, the sensitivity analyses are not nearly as compelling as EPA claims. The 2009 sensitivity analysis appears to show that “depth” of ash in a coal ash unit is a significant input variable in something less than 30% of the scenarios that EPA analyzed. U.S. EPA, Sensitivity Analysis for the Coal Combustion Waste Risk Assessment. Draft Technical Report, EPA-HQ-OLEM-2017-0286-0012, at 12, A-1 (2009). In other words, the thickness of ash in a unit may be a significant variable in up to 30% of scenarios. This is not the same as saying that the thickness of ash is irrelevant. It merely suggests that other variables are more determinative of risk. But where all other variables are equal, for example, when considering a particular coal ash unit that may or may not receive additional ash for grading and contouring, the additional ash will still increase health risks. The sensitivity analysis is silent about the degree of additional risk.

EPA cites the Risk Assessment for the 2015 rule for the proposition that, “[a]s waste depth changed, EPA did not see significant changes in risk for any liner type.” 83 Fed. Reg. at 11,608. Here the word “significant” is being used in a subjective way. The results presented in the preamble actually show, for unlined units, that cancer risks were roughly 20% higher for units with more coal ash (“4th Quartile”) than they were for units with less coal ash (“1st Quartile”). *Id.* Again, many of the units closing pursuant to 40 C.F.R. § 257.101 will be unlined impoundments. EPA therefore acknowledges that the ‘grading and contouring’ proposal will increase cancer risk (and presumably other health risks).

Again, the 2018 Proposal is notable for what it would allow under the guise of ‘grading and contouring.’ There is no limitation on the amount of ash used for such purposes. EPA assumes that it will be up to 1.3 million tons of ash per impoundment. 2018 RIA at 4-15. EPA cannot credibly claim that this is a “minor addition” of ash. 83 Fed. Reg. at 11,608. And regardless of any statements in the preamble to the rule, the proposed regulatory language simply fails to provide meaningful restrictions on how, or how much, ash can be used. Consider a recent impoundment closure plan, for the Tennessee Valley Authority’s (TVA) Bull Run Fossil Plant in Tennessee.³⁸² TVA claimed that it was using ash for the “beneficial use” of “structural fill in the Fly Ash Pond area, to achieve proposed final grades with minimum slopes, for positive drainage of stormwater.”³⁸³ TVA planned to add bottom ash from one disposal area to a fly ash pond. In other words, it consolidated ash from one or more units. *Id.* at 1-2. The amount

³⁸² AECOM, Report: CCR Beneficial Use Demonstration, Prepared for TVA (June 6, 2016) (attached).

³⁸³ *Id.* at 5.

of ash to be used for this purpose was never stated. In other words, TVA planned to consolidate an unlimited amount of bottom ash into an unlined, leaking fly ash pond that was in continuous contact with groundwater, in a flood plain, for the ostensible purposes of ‘grading and contouring.’ This was a sham, and one that EPA’s 2018 Proposal would allow.

In short, EPA’s proposal to allow the use of coal ash for the ostensible purpose of grading and contouring is far too open-ended, would allow uses that the preamble suggests would be prohibited, and would increase risks to human health and the environment in violation of the RCRA section 4004(a) protectiveness standard. EPA has failed to provide a rational justification for this part of the proposal, or to support the proposal with anything close to an adequate record, rendering it not only contrary to law, but also arbitrary and capricious.

XXIII. EPA HAS FAILED TO PROVIDE FOR, ENCOURAGE, AND ASSIST WITH PUBLIC PARTICIPATION REGARDING THE 2018 PROPOSAL, IN VIOLATION OF RCRA SECTION 7004(B).

The unreasonableness and unlawfulness of EPA’s 2018 Proposal is further highlighted by the agency’s refusal to provide the public with sufficient opportunity to review and provide comment regarding EPA’s wide-ranging proposal to eviscerate the 2015 Rule. In particular, EPA provided only a 45-day window for public comment and held only one public hearing on the 2018 Proposal, even though the agency had previously told the U.S. Court of Appeals for the D.C. Circuit that it anticipated that it would provide at least a 90-day comment period and multiple hearings, *see* U.S. EPA, Status Report, Case No. 15-1219, Doc. 1704590 (D.C. Cir. Nov. 15, 2017) (attached), and even though 104 public interest organizations specifically requested such 90-day comment period and multiple hearings. *See* Letter from Lisa Evans, Senior Counsel, Earthjustice, to Mary Jackson, Office of Resource Conservation and Recovery, EPA (attached). The limited public participation process here plainly failed to satisfy Section 7004 of RCRA, which requires that “[p]ublic participation in the development, revision, implementation, and enforcement of any regulation, guidelines, information, or program under this chapter shall be provided for, encouraged, and assisted by the Administrator.” 42 U.S.C. § 6974(b)(1). Instead, EPA’s approach demonstrates that the agency is more interested in restricting the public’s ability to evaluate and comment on its proposed roll back of the 2015 Rule than in encouraging and assisting public participation in the process.

A. EPA’S 45-DAY PUBLIC COMMENT PERIOD IS CLEARLY INSUFFICIENT GIVEN THE SCOPE OF THE 2018 PROPOSAL AND THE SUBSTANTIAL AMOUNTS OF NEW DATA REGARDING COAL ASH DISPOSAL THAT RECENTLY BECAME AVAILABLE.

That the 45-day comment period is inadequate and fails to “provide[] for, encourage[], and assist[]” public participation is shown by the immense scope of the 2018 Proposal and the numerous, varied, and technically and legally complex issues raised by

EPA's proposed changes. In particular, the expansive proposal addresses four technically complex issues that were the subject of a 2016 judicial remand, seven major changes to the rule requested by the utility industry, and numerous far-reaching suggestions that fundamentally alter the 2015 rule. In addition, the proposal solicits comment on at least a dozen direct questions, and at least nine additional topics or potential courses of action. In all, the proposed rule encompasses myriad complex and radical changes to the 2015 CCR rule that should be subject to a full public airing.

Furthermore, EPA is proposing a significant weakening of the 2015 Rule at the very time that an unprecedented amount of new groundwater data has become available to the public. On March 2, 2018, pursuant to the 2015 Rule, groundwater monitoring data for every existing coal ash landfill and surface impoundment have been posted on publicly accessible compliance websites. These data contain information for many ash dumps that have never been monitored and contain information on the presence of certain hazardous chemicals, such as radium, cobalt and lithium, which have never before been collected. Such data identify significant new threats to public health from coal ash disposal, and these threats have great bearing on the technical adequacy and legal sufficiency of the 2018 Proposal. However, the ability of the public to assess the new groundwater data requires time. For a single utility, Duke Energy, the new data encompass more than 25,000 pages. Assessing the contents and significance of the data for even a significant portion of the more than 1,000 landfills and impoundments cannot be accomplished within 45 days.

Given these sweeping changes, the 45-day comment window is plainly insufficient, and does not meet the statutory requirement that EPA provide for, encourage, and assist in public participation on this Proposed Rule.

B. THE INSUFFICIENCY OF THE 45-DAY COMMENT PERIOD IS FURTHER SHOWN IN COMPARISON TO THE FAR LENGTHIER COMMENT PERIODS THAT EPA HAS PROVIDED ON REGULATORY PROPOSALS OF COMPARABLE SCOPE AND COMPLEXITY.

The inadequacy of EPA's 45-day comment period for the 2018 Proposal is further demonstrated by comparison to the agency's approach to public participation on regulatory proposals of comparable scope and complexity. For example, the public comment window on the 2010 proposed rule that led to the 2015 Rule lasted for 150 days, with EPA providing for 90 days in its original proposal and then, upon receiving requests for more time from stakeholders, extending the comment period another 60 days. *See* 75 Fed. Reg. 51,434, 51,434 (Aug. 20, 2010) (extending the public comment period by 60 days to November 19, 2010, and noting that "EPA received numerous requests for an extension of the comment period and this notice is the Agency's response to those persons who requested an extension of the comment period").

In response, *nearly half a million* Americans submitted comments. *See* www.regulations.gov (Docket ID: EPA-HQ-RCRA-2009-0640) (stating "425,170

Comments Received”) (last accessed Apr. 28, 2018). Similarly, in 2013, for the Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category, EPA afforded the public about 150 days to submit comments following the prepublication announcement. *See* www.regulations.gov (Docket ID No. EPA-HQ-OW-2009-0819). It is plainly unreasonable for EPA to not allow the public a similar time period to provide comments on the 2018 Proposal as it did with the proposals that led to the 2015 Rule and the Effluent Limitation Guidelines. .

C. EPA HAS NOT PROVIDED ANY REASONED BASIS FOR FAILING TO PROVIDE AT LEAST A 90-DAY COMMENT PERIOD ON THE 2018 PROPOSAL.

EPA has failed to offer any reasoned basis for refusing to provide at least the 90-day comment period it informed the D.C. Circuit that it anticipated and that 104 public interest organizations requested. In its D.C. Circuit filing, EPA explained that:

The estimated dates also assume a 90-day comment period on any contemplated proposed rule. EPA anticipates that 90 days is the *minimum amount of time needed to provide the public with an adequate opportunity to comment*, given the complexity of the technical matters at issue. In addition, this 90-day period will allow sufficient time for EPA to hold the public hearings that are statutorily mandated as part of the process to revise the 40 C.F.R. part 257 regulations. *See*, 42 U.S.C. §§ 6907(a), 6944(a).

Status Report at 5 (emphasis added). In the 2018 Proposal, however, EPA abandons this logic and claims that 90 days “would be unnecessary.” 83 Fed. Reg. at 11,587. According to EPA, the 90-day period is not needed because four of the changes in the 2018 Proposal are included in the 2016 judicial remand, while the remaining proposals are largely based on the regulations that apply to MSWLFs. *Id.*

EPA offered similar excuses for rejecting the request by 104 public interest environmental and public health organizations for additional time. In their March 16, 2018 request, those groups stated in no uncertain terms that 45 days would not provide for adequate public participation in this rulemaking process, and that at least a 90-day comment period was necessary “to provide the public with an honest and meaningful opportunity to participate in commenting on EPA’s proposal. In rejecting that request, and refusing to provide even one more day of additional time to comment, EPA stated simply that it “believes” the 45-day window is “adequate, for interested parties to provide comment on the widely known issues in the proposed action,” because the “proposal reflects elements of the 2015 final coal ash rule that were remanded back to the Agency in 2016 as well as provisions similar to those in long-standing municipal solid waste regulations implemented by the states.” *See* Letter from Barnes Johnson, Dir., Office of Resource Conservation and Recovery, EPA, to Lisa Evans, Senior Counsel, Earthjustice (Apr. 17, 2018) (attached).

Contrary to these excuses offered by EPA, the issues raised in this proposal are not “widely known” by the more than 400,000 individuals who provided comments on the 2015 Rule. Many of these commenters are regular citizens living near coal ash disposal sites, concerned about the health and well-being of their families, individuals who are coal ash experts only by necessity after having to live next to coal ash sites and bear the environmental and health burdens therefrom, but who are not environmental engineers or attorneys by training and who need time to be alerted to the proposed changes and then need time to review, understand, and craft meaningful comments. Forty-five days is not “adequate” for them, and it is likewise not “adequate” even for the experts to review and properly analyze the mountains of new pollution data that has recently become available or the many technical aspects of the proposed rule’s changes.

In addition, the remanded elements of this rule by their nature were issues that had to be litigated due to discrepancies between what EPA decided in 2015 and what stakeholders believed should have been decided based on the record. These are complex issues that have been litigated for years. The claim that 45 days is sufficient time to address them is meritless.

Furthermore, EPA’s statement that its proposed rule reflects provisions similar to municipal solid waste regulations should have resulted in more, not less, time for public comment. This is so because the MSWLF regulations not only have not previously been applied to coal ash disposal, but such an application of these regulation to coal ash disposal was expressly rejected by EPA in the 2015 CCR Rule. As explained in Section VIII, that application should be rejected again given the substantial differences between landfills for household trash and the disposal of toxic coal ash in unlined, water-filled pits. At a minimum, however, any proposal to suddenly apply 27-year-old regulations, based on a 30-year-old record, to coal ash disposal today is new and should have warranted a comment period at least as long as the underlying rule’s comment period—150 official days.

Finally, the implication that borrowing from the MSWLF regulations for this proposed rule warrants less close public scrutiny than the 2015 Rule is also meritless because EPA did not propose to adopt these regulations wholesale. Instead, EPA cherry-picked some of the MSWLF regulations for application at coal ash disposal sites, and this cherry-picking was conducted in ways that heighten the threat to public health and the environment. One glaring example of this problem is that EPA is proposing new “alternative” groundwater standards using language from its MSWLF regulations in proposed section 257.97(j), but while EPA nearly copy-and-pasted language from the MSWLF regulations, it curiously omitted the phrase that would have required alternative standards to protect children and other sensitive subgroups. Specifically, MSWLFs require any alternative standards to protect against risks to humans, “including sensitive subgroups,” which typically refers to children. In fact, in its Risk Assessment for the 2015 Rule, EPA found that noncancer risks were highest for infants. However, the 2018 Proposal omitted this phrase “including sensitive subgroups” when it inserted language from the MSWLFs into the 2018 Proposed Rule. The hastiness of the 45 day comment window raises the concern that other omissions of this great magnitude in terms of health

implications may not have been identified or addressed in public comments. Examples such as these demonstrate that EPA's claims that a 45-day comment period was adequate are meritless.

D. EPA'S SINGLE PUBLIC HEARING DID NOT ADEQUATELY PROVIDE AN OPPORTUNITY FOR, ENCOURAGE, OR ASSIST PUBLIC PARTICIPATION REGARDING THE 2018 PROPOSAL.

The inadequacy of the public participation process for the 2018 Proposal is further demonstrated by EPA's holding of only a single public hearing in the Washington, D.C. metro area and its rejection of stakeholders' requests for four additional public hearings in communities with many coal ash disposal facilities. As the EPA recognized in its D.C. Circuit filing, federal law refers to the holding of "public hearings" – plural – as opposed to a "public hearing." *See* 42 U.S.C. §§ 6907(a), 6944(a); Status Report at 5. Such multiple hearings are also necessary to provide for, encourage, and assist many interested individuals with the opportunity to share their comments or provide their input on the many broad changes proposed by this Proposed Rule. For all of the reasons already set forth in this section, meaningful public participation for a rule of this magnitude warranted additional hearings. EPA acknowledged this when it held seven public hearings nationwide in 2010 on this proposed rule for coal ash disposal following publication of the 2010 proposed CCR rule.

The March 16, 2018 letter from 104 organizations requested additional public hearings, stating, "the undersigned groups, on behalf of their millions of members, request the addition of four public hearings on the proposed rule in the following locations: Chicago, IL; Pittsburgh, PA; Durham, NC; and Guayama, Puerto Rico." However, EPA denied this request and scheduled no additional public hearings. As stated in the March 16, 2018 letter, "[c]oal ash contamination is a nationwide problem, so it is essential to hold multiple hearings to allow impacted communities to voice their concerns. Because coal ash disproportionately impacts low income and minority communities, many impacted people are unable to travel long distances to attend a hearing. A single hearing in Washington, D.C. will silence those voices." EPA's failure to provide for public hearings in additional locations, in conjunction with its failure to provide any additional time beyond the original 45 days allotted for public comment, have, indeed, silenced many additional voices in this rulemaking process.

XXIV. EPA MAY NOT FINALIZE THE 2018 PROPOSAL UNLESS AND UNTIL IT MAKES AVAILABLE FOR REVIEW AND COMMENT ALL DOCUMENTS IT HAS RELIED ON IN DEVELOPING THE 2018 PROPOSAL.

EPA may not finalize the 2018 Proposal unless and until it has made available for public review and comment all technical studies, data, and other documents it is relying on in developing the 2018 Proposal. A fundamental tenet of the Administrative Procedure Act ("APA"), 5 U.S.C. § 553, is that agencies must make available to the public the underlying data and documents on which it is relying in issuing a rule. *See*,

e.g., *Conn. Light & Power Co. v. Nuclear Regulatory Comm'n*, 673 F.2d 525, 530-31 (D.C. Cir. 1982) (explaining that an agency must “identify and make available technical studies and data that it has employed in reaching the decisions to propose particular rules An agency commits serious procedural error when it fails to reveal portions of the technical basis for a proposed rule in time to allow for meaningful commentary.”); *see also Am. Radio Relay League, Inc. v. F.C.C.*, 524 F.3d 227, 236-40 (D.C. Cir. 2008). EPA is also required to “provide[] for, encourage[], and assist[]” with “public participation in the development, revision, implementation, and enforcement of any regulation, guideline, information, or program under this Act” 42 U.S.C. § 6974(b). Here, contrary to the APA and RCRA section 7004(b), EPA has failed to provide numerous documents that it relied on in developing the 2018 Proposal, depriving Commenters of the ability to review and meaningfully comment on those documents.

First, EPA has failed to make available the vast majority of documents in the rulemaking record for the 40 C.F.R. part 258 regulations of Municipal Solid Waste Landfills (“MSWLFs”). EPA states repeatedly throughout the preamble to the 2018 Proposal that it is relying in large part on the rulemaking record for the part 258 MSWLF regulations in making many of the changes it proposes in the 2018 Proposal.³⁸⁴ Notwithstanding EPA’s broad reliance on the rulemaking record for part 258, the *only* document from that rulemaking that EPA has made available in the docket for the 2018 Proposal is the Federal Register notice of the proposed MSWLF rule.³⁸⁵ Moreover, the vast majority of the documents in the MSWLF rulemaking are not available in the electronic docket for that rulemaking.³⁸⁶

Second, despite an explicit statement that EPA was making them available on the docket,³⁸⁷ EPA failed to include in the docket two petitions for reconsideration of the

³⁸⁴ See 83 Fed. Reg. at 11,587 (stating that the changes associated with the WIIN Act “are based in large measure on the established record supporting the longstanding regulations for Municipal Solid Waste Landfills codified at 40 CFR part 258”); *Id.* at 11,597 (“EPA evaluated whether there was sufficient evidence in the record for those [40 C.F.R. part 258] regulations to support incorporating either the part 258 MSWLF provision or an analogue into the part 257 CCR regulations.”).

³⁸⁵ See Docket for 40 C.F.R. part 258 MSWLF rule, EPA-HQ-RCRA-1991-0020, <https://www.regulations.gov/docket?D=EPA-HQ-RCRA-1991-0020>. EPA also posted in the docket for the 2018 Proposal an EPA document titled, “Solid Waste Disposal Facility Criteria Technical Manual for MSWLFs,” EPA-530-R-93-017 (1993), Docket ID No. EPA-HQ-OLEM-2017-0286-0007, but that manual dates from 1993, two years *after* the part 258 rulemaking was completed, and is not part of that rulemaking record.

³⁸⁶ See Docket for 40 C.F.R. part 257 MSWLF rule (at which website only the “Decision Maker’s Guide to Solid Waste Management” is available (Docket ID No. EPA-HQ-RCRA-1991-0020-0119)).

³⁸⁷ 83 Fed. Reg. at 11,586 (“In addition, on September 13, 2017, EPA granted petitions from the Utility Solid Waste Activities Group (USWAG) and from AES Puerto Rico LLP requesting the Agency initiate rulemaking to reconsider provisions of the 2015 final rule.² EPA determined that it was appropriate and in the public interest to reconsider provisions of the final rule addressed in the petitions, in light of the issues raised in the petitions as well as the new authorities in the WIIN Act.”); *id.* at n.2 (“A copy of both rulemaking petitions are included in the docket to this proposed rule.”).

2015 CCR Rule on which EPA relied in developing the 2018 Proposal.^{388, 389} EPA likewise failed to make available, via the docket or otherwise, three technical documents concerning liners that EPA cites in discussing its proposal to allow states with approved CCR programs to reduce the length of the post-closure care period for CCR units;³⁹⁰ a document it references in discussing its proposal concerning slope stability;³⁹¹ and a document that EPA does not specifically mention in the preamble, but which it appears to rely on in support of its proposal to allow states with approved CCR programs to set alternative groundwater protection standards.³⁹²

These omissions prejudice Commenters. To begin with, in part because EPA failed to include almost any of the documents from the 40 C.F.R. part 258 MSWLF rulemaking in the docket, it is not clear precisely which of the documents in that large rulemaking record EPA is relying on for the 2018 Proposal. Leaving unclear which documents are relied on violates the APA. *See, e.g., Conn. Light & Power Co.*, 673 F.2d at 530 (“To allow an agency to play hunt the peanut with technical information, hiding or disguising the information that it employs, is to condone a practice in which the agency treats what should be a genuine interchange as mere bureaucratic sport.”). Commenters are left guessing which documents contained in the MSWLF rulemaking EPA believes support the 2018 Proposal. With only 45 days to comment on the entire 2018 Proposal,

³⁸⁸ *See id.* at 11,586 (“EPA determined that it was appropriate...to reconsider provisions of the final rule addressed in the petitions, *in light of the issues raised in the petitions* . . .”) (emphasis added).

³⁸⁹ Although the docket for the 2018 Proposal lists “Petitions Concerning Coal Combustion Residuals Rule” as one of its “Supporting Documents,” the document actually available under that heading is not the petitions themselves, but rather EPA Administrator Pruitt’s letter to the petitioners granting their petitions. *See* <https://www.regulations.gov/document?D=EPA-HQ-OLEM-2017-0286-0002>.

³⁹⁰ 83 Fed. Reg. at 11,604, n.36 (citing “Needham, A.D., Smith, J.W.N., Gallagher, E.M.G. 2006. *The service life of polyethylene geomembrane barriers*. *Engineering Geology* 85. 82–90” in support of its statement that “Although any impermeable barriers used in a final cover system will eventually fail, studies have shown that such natural deterioration can take thousands of years....”); *id.* at n.37 (citing “Rowe, R.K., Islam, M.Z. 2009. *Impact of landfill liner time-temperature history on the service life of HDPE geomembranes*. *Waste Management* 29.2689–2699” in support of same statement); *id.* at n. 39 (citing “Bonaparte, R., J.P. Giroud, and B.A. Gross. 1989. Rates of leakage through landfill liners. *Geosynthetics 1989 Conference*. San Diego, CA.” in support of its statement that, “[i]n the context of CCR units, the wear-in phase of a closed unit would be due to imperfections in covers, either from a manufacturing defect or faulty installation. Manufacturing defects may include items such as pin holes, whereas faulty installation may be the result of a tear or failure to properly seal joints”). Although Commenters were able to find two of these studies online, both were blocked from public access by paywalls, rendering them effectively unavailable. *See* Needham, A.D., Smith, J.W.N., Gallagher, E.M.G., *The service life of polyethylene geomembrane barriers*, 85 *Engineering Geology* 82–90 (2006), available at <https://www.sciencedirect.com/science/article/pii/S0013795206000706?via%3Dihub>; Bonaparte, R., J.P. Giroud, and B.A. Gross, *Rates of leakage through landfill liners*, *Geosynthetics 1989 Conference*. San Diego, CA (1989), available at <https://www.sciencedirect.com/science/article/pii/0266114492900108>.

³⁹¹ *See* 83 Fed. Reg. at 11,592, n.10 (citing “USDI-USBR, Water Operation and Maintenance, Bulletin No. 150, Guidelines for Removal of Trees and Vegetative Growth from Earth Dams, December 1989.”). This document is listed as a “supporting document” on the docket, but is not available there. *See* <https://www.regulations.gov/document?D=EPA-HQ-OLEM-2017-0286-0005>.

³⁹² *See* 83 Fed. Reg. at 11,599 (referencing guidance on “deriving a reference dose” for the purpose of establishing alternative groundwater protection standards). The document, “Reference Dose (RfD)-Description and Use in Health Risk Assessments, Reg. Toxicology and Pharmacology 8, 471-486 (1988),” is listed as a “Supporting Document” in the docket for the 2018 Proposal, but is not available there. *See* <https://www.regulations.gov/document?D=EPA-HQ-OLEM-2017-0286-0019>.

Commenters cannot attempt to independently track down, review, and comment on all 123 documents in that docket³⁹³ - via a Federal Information Act Request or otherwise – just in case EPA is relying on them, and the APA does not require them to engage in such an undertaking. *See id.* Accordingly, EPA must specify which documents contained in the part 258 MSWLF rulemaking it is relying on for the 2018 Proposal, and makes those documents available for public review and comment. Failure to do otherwise violates the APA, *id.*, and contravenes RCRA section 7004(b).

Commenters have been further prejudiced by EPA’s failure to include the above-mentioned documents in the record because we have needed to spend precious hours of the short 45-day comment period searching for those documents and, in some cases, we have been unable to locate them at all. For example, the MSWLF docket appears to contain a document entitled “Public Comment and Responses on Subtitle D, Solid Waste Disposal Facility Criteria: Final Rule, General Comments (Part 258),” but that document is not available on the docket and Commenters were not able to locate this document on EPA’s website or elsewhere. This document appears highly likely to contain important information about the MSWLF rulemaking, which Commenters would review and rely on in evaluating the impropriety of importing provisions developed in 1991 for MSWLF into regulations for CCR units in 2018. Because it was not made available, Commenters were improperly deprived of that opportunity.

In addition, following a review of the present docket, a Google search, and a search of the docket for the 2015 CCR Rule, we remain unable to locate the document titled “Reference Dose (RfD)- Description and Use in Health Risk Assessments, Reg. Toxicology and Pharmacology 8, 471-486 (1988)” that is listed, but not provided, in the docket for this 2018 Proposal. Reference dose is an important concept in determining how alternative groundwater protection standards – which must, pursuant to RCRA section 4004, ensure “no reasonable probability of adverse effects on health or the environment” – may be set. *See* Section IX, *supra*. Because EPA appears to be relying on this document to provide parameters or methods of determining such standards, Commenters (and other interested members of the public) must be afforded an opportunity to review and comment on its applicability to the 2018 Proposal.

EPA further violates the APA’s notice and comment requirements, as well as the mandates of RCRA section 7004(b), by providing links to websites where the referenced documents are housed, instead of by posting those documents directly in the docket. Specifically, in two instances, EPA provided weblinks that do not directly lead to the referenced documents, but rather to websites where those documents, among many others, are housed.³⁹⁴ Particularly with regard to Regional Screening Level, Commenters

³⁹³ *See*

<https://www.regulations.gov/docketBrowser?rpp=25&so=DESC&sb=commentDueDate&po=0&D=EPA-HQ-RCRA-1991-0020>.

³⁹⁴ *See* 83 Fed Reg. at 11,599 n.31 (stating that “this document” [presumably Regional Screening Levels for Chemical Contaminants at Superfund Sites,” *id.* at 11,599] “can be accessed at <https://www.epa.gov/risk/regional-screening-levels-rsls>.”); *id.* at 11,601 n.33 (providing a weblink not directly to the document referenced, but rather stating that “Additional documents related to technical impracticability may be found at <https://www.epa.gov/superfund/superfund->

were left to guess at which document listed, or linked to, on the website provided is the one EPA is referring to. And if doing so is challenging for Commenters, who include a number of trained scientists, it is undoubtedly even more so for the general public. EPA may not “play hide the peanut” with the information it is relying on in support of the 2018 Proposal. *Conn. Light & Power Co.*, 673 F.2d at 530. As such, EPA is failing to comply with the APA, *id.*, and RCRA section 7004(b).

In sum, because EPA failed to make available many documents it is relying on in the docket for this rulemaking, leaving Commenters guessing at which documents EPA considered and unable to comment on some of them, EPA has run afoul of APA requirements and RCRA section 7004(b). The Agency must make all the above-mentioned documents available in the docket for this rulemaking and provide adequate opportunity for public review and comment on them.

XXV. BY FAILING TO CONSULT WITH TRIBAL GOVERNMENTS, EPA HAS VIOLATED EXECUTIVE ORDER 13175 AND EPA’S POLICY FOR IMPLEMENTING THE ORDER.

Pursuant to Executive Order 13175, it is federal policy “to establish regular and meaningful consultation and collaboration with tribal officials in the development of Federal policies that have tribal implications.” E.O. 13175, Consultation and Coordination With Indian Tribal Governments, 65 Fed. Reg. 67,249, 67,249 (Nov. 6, 2000). A 2009 presidential memorandum reaffirmed the principles in Executive Order 13175, namely, that “consultation is a critical ingredient of a sound and productive Federal-tribal relationship.” Presidential Memorandum on Tribal Consultation, 74 Fed. Reg. 57,881, 57,881 (Nov. 5, 2009). To implement Executive Order 13175, EPA’s policy is to “ensure[] the close involvement of tribal governments and gives special consideration to their interests whenever EPA’s actions may affect . . . tribal interests.” U.S. Env’tl. Prot. Agency, EPA Policy on Consultation and Cooperation with Indian Tribes at 4 (2011).

EPA’s failure to consult with tribal governments regarding the 2018 Proposal is contrary to both the plain language of Executive Order 13175 and EPA’s own policy for implementing the Order. The Order directs federal agencies such as EPA to consult with tribal officials regarding “the development of Federal policies that have tribal implications.” During the rulemaking for the 2015 CCR Rule, EPA concluded that “this action may have tribal implications.” 80 Fed. Reg. at 21,465. That was the right conclusion, given that three large coal plants subject to the CCR Rule are located on tribal lands. *See id.*; *see also* 83 Fed. Reg. at 11,610. Given that the CCR Rule had tribal implications, “EPA consulted with tribal officials early in the process of developing this regulation to permit them to have meaningful and timely input into its development.” 80 Fed. Reg. at 21,465.

[groundwatergroundwaterresponse-selection#TI_anchor](#).”); *see also* EPA, Inhalation of Fugitive Dust: A Screening Assessment of the Risks Posed by Coal Combustion Waste Landfills (May 2010), Docket ID No. EPA-HQ-RCRA-2009-0640-0142.

In an abrupt about face, the agency now claims that the proposal “does not have tribal implications” because none of the coal plants located on tribal lands³⁹⁵ are owned directly by tribes, and because the proposal will allegedly save facilities money rather than establishing new compliance costs. 83 Fed. Reg. at 11,610. EPA’s change in position is inconsistent with the plain language of the Executive Order and EPA’s policy for implementing the Order, is arbitrary and capricious, and reflects a blatant disregard of the interests of tribal interests that are implicated by this proposal.

Executive Order 13175 defines “[p]olicies that have tribal implications” to include “regulations . . . that have substantial direct effects on one or more Indian tribes.” E.O. 13175, § 1(a). This definition focuses on “substantial direct effects” on tribes, yet EPA focuses exclusively on whether tribes will incur direct compliance costs as a result of the proposal. EPA provides no rationale for interpreting “substantial direct effects” to encompass only compliance costs and exclude the health and environmental effects of coal ash disposal. Indeed, a specific subsection of the Executive Order governs any regulation “that imposes substantial direct compliance costs on Indian tribal governments,” E.O. 13175 § 5(b)(2), demonstrating that the Order uses a more specific term when referring only to compliance costs and a more general term when referring to broader effects.

EPA’s own policy supports the conclusion that consultation is required here. According to EPA policy, the agency should involve tribal governments in the development of a rule that “may affect . . . tribal interests.” EPA Policy on Consultation and Cooperation with Indian Tribes at 4 (2011). Just as E.O. 13175 does not limit “effects” to direct compliance costs, EPA’s policy statement does not limit “tribal interests” to direct compliance costs. “EPA takes an expansive view of the need for consultation in line with the 1984 Policy’s directive to consider tribal interests whenever EPA takes an action that “may affect” tribal interests.” *Id.* at 2. Here, EPA’s proposal would change the requirements regarding disposal of coal ash on tribal lands in ways that are likely to adversely impact tribal interests in the health of tribal members and the quality of their environment, including surface water, groundwater, soil and air. Some of these proposed changes would impact monitoring of groundwater at coal ash disposal sites, the level of coal ash contaminants permissible in groundwater, the extent of cleanup required if contamination occurs, and the requirements applicable to the closure and post-closure care of such disposal sites. Thus, EPA’s own policy statement requires the

³⁹⁵ “The Navajo Generating Station and the Four Corners Power Plant are on lands belonging to the Navajo Nation, while the Bonanza Power Plant is located on the Uintah and Ouray Reservation of the Ute Indian Tribe.” 80 Fed. Reg. at 21,465. The Navajo Generating Station disposes of coal ash in an on-site CCR landfill. See <https://environmental.srpnet.com/CCR/Account/Login?ReturnUrl=%2fCCR>. See also, <https://environmental.srpnet.com/CCR/Account/Login?ReturnUrl=%2fCCR> The Four Corners plant disposes of coal ash in a landfill and unlined impoundments. See https://www.aps.com/en/ourcompany/ratesregulationsresources/environmentalcompliance/CCRDocuments/FC_LinerDoc_012_20160919.pdf. See also, <https://www.aps.com/en/ourcompany/ratesregulationsresources/environmentalcompliance/Pages/fourcornerlibrary.aspx>. The Bonanza power plant has two coal ash landfills. See 2017 Annual Groundwater Report, available at <https://apps.deseretpower.com/apex/f?p=107:1:15562972899926:::> see also <https://apps.deseretpower.com/apex/f?p=107:1:13801775145271:::>

agency to consult with tribal governments “early enough to allow tribes the opportunity to provide meaningful input that can be considered prior to EPA deciding whether, how, or when to act on the matter under consideration.” *Id.* at 7.

There is no question that policies regulating the disposal of CCR have real-life implications for the tribes that reside in the vicinity of CCR units. For example, it is well-documented that families of the Navajo Nation are impacted by fugitive dust from the CCR units at the Four Corners Power Plant.³⁹⁶ Tribal members have frequented reported clouds of toxic dust rising from the plant’s half-dozen coal ash ponds and a landfill that rises 110-feet above the desert floor.³⁹⁷ Exposure to the dust has been associated with health problems, including asthma and other respiratory ailments, as well as higher-than-normal rates of cancer among Navajo residents.³⁹⁸ Moreover, the coal ash, which is deposited by the wind over hundreds of acres, jeopardizes the Navajo people’s ability to practice traditional healings that are embedded in their culture.^{399,400}

Navajo families are affected also by the leakage of pollutants from the coal ash landfill at the Navajo Generating Station.⁴⁰¹ Leachate from the landfill has formed a man-made aquifer that contains concentrations of heavy metals, sulfate and total dissolved solids, some in excess of federal water-quality standards.⁴⁰² For example, sampling in October 2015 demonstrated selenium levels four times greater than federal water quality standard.⁴⁰³ Fractures present in the Carmel Formation, where this new aquifer is located, act as preferred pathways for downward migration of contaminated groundwater to enter and contaminate the larger groundwater system of the region.⁴⁰⁴ However, the contamination may be difficult to detect due to the slow rate of migration.⁴⁰⁵ The contamination may also be difficult to clean up because fractured-rock aquifers are notoriously difficult to characterize, monitor, and remediate once they become contaminated.⁴⁰⁶

In addition to the Navajo Nation and Ute Indian Tribe, it is also necessary for EPA to consult with the Moapa Band of Paiutes, whose tribal lands are approximately 300 yards from the coal ash impoundments and landfills for the Reid Gardner power plant.⁴⁰⁷ Members of the Moapa describe a coal ash “sandstorm” that blows from the

³⁹⁶ Alan H. Lockwood, Lisa Evans, *Ash in Lungs: How Breathing Coal Ash Is Hazardous To Your Health*, 13-15 (2014), <https://earthjustice.org/blog/2014-july/ash-in-lungs-how-breathing-coal-ash-is-hazardous-to-your-health> (attached).

³⁹⁷ *Id.*

³⁹⁸ *Id.*; Damage Cases: Fugitive Dust Impact at 45-46.

³⁹⁹ *Id.*

⁴⁰⁰ See Statement of Dailan Long, U.S. EPA Public Hearing (Apr. 24, 2018) (attached).

⁴⁰¹ See Groundwater Management Associates, *Evaluation and Professional Opinions Regarding Geologic and Hydrogeologic Aspects of the 2016 Draft Environmental Statement As It Pertains to Scheduled Facility Closure in 2019 or Extending Operation Until 2044* (June 5, 2017) (attached).

⁴⁰² *Id.* at 1

⁴⁰³ *Id.*

⁴⁰⁴ *Id.* at 1-2.

⁴⁰⁵ *Id.* at 2.

⁴⁰⁶ *Id.*

⁴⁰⁷ See <https://earthjustice.org/video/an-ill-wind-the-secret-threat-of-coal-ash>.

plant's coal ash landfill and evaporation ponds, as well as from uncovered trucks carrying coal ash.⁴⁰⁸ They report health problems resulting from the exposure to the blowing ash, including burning skin, sore throats, hyperthyroidism, heart problems, and asthma.⁴⁰⁹ On bad days, residents stay inside.⁴¹⁰ The toxic dust prevents use of tribal lands for traditional activities, and members are concerned that their soil and water are poisoned by pollutants from the ash.⁴¹¹ In 2015, NV Energy, the owner and operator of the coal ash disposal site at Reid Gardner, settled a lawsuit filed by the Moapa alleging that improper and illegal disposal of coal ash had harmed the health of Moapa members and damaged tribal lands.⁴¹² The CCR disposal sites remain in place and, therefore, the 2018 Proposal would have a substantial direct effect on the Moapa and their tribal lands that should have triggered consultation under E.O. 13175.⁴¹³

In sum, as described elsewhere in these comments, the proposal would weaken critical safeguards in the CCR Rule for the disposal of coal ash. As a result, the proposal would increase the health risks for tribal members living near CCR disposal units, as well as increase the risk of environmental damage on tribal lands near CCR units. The proposed rule therefore has “tribal implications” within the meaning of Executive Order 13175, and “may affect . . . tribal interests” within the meaning of EPA’s policy statement. EPA’s failure to consult with affected tribes therefore violates Executive Order 13175 and EPA policy. To remedy its noncompliance with the Executive Order, EPA must initiate consultation with tribes whose lands are the site of or near coal ash disposal units – i.e., the Navajo Nation, Ute Indian Tribe, and Moapa Band of Paiutes at a minimum - and then re-propose for public review and comment a rule based on the input of the tribes.

XXVI. THE ENDANGERED SPECIES ACT REQUIRES EPA TO CONSULT WITH THE FISH AND WILDLIFE SERVICE AND THE NATIONAL MARINE FISHERIES SERVICE BEFORE FINALIZING ANY RULE.

Prior to issuing any final rule based on the 2018 Proposal, EPA must first consult with the Fish and Wildlife Service (“FWS”) and the National Marine Fisheries Service (“NMFS”) under Section 7 of the Endangered Species Act (“ESA”) regarding the new rule’s effects on threatened and endangered species.

Under the ESA, federal agencies must, in consultation with FWS and/or NMFS, insure that any action authorized, funded, or carried out by the agency is not likely to jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of designated critical habitat. 16 U.S.C. §

⁴⁰⁸ Lockwood and Evans at 12-13; Damage Cases: Fugitive Dust Impact at 47-51.

⁴⁰⁹ Lockwood and Evans at 12-13; *see also* Damage Cases: Fugitive Dust Impact at 50.

⁴¹⁰ Lockwood and Evans at 12-13; Damage Cases: Fugitive Dust Impact at 50.

⁴¹¹ Lockwood and Evans at 12-13; Damage Cases: Fugitive Dust Impact at 50.

⁴¹² *See* Order Granting Joint Motion to Approve Settlement, Case No. 2:13-cv-01417 (D. Nev. Oct. 14, 2015); *see also* <https://www.reviewjournal.com/news/nv-energy-tribe-settle-suit-over-coal-fired-power-plant/>.

⁴¹³ *See* Statement of Vickie Simmons, Environmental Director, Council Member, Moapa Band of Paiutes, U.S. EPA Public Hearing, April 24, 2018 (attached).

1536(a)(2). An agency proposing an action must first determine whether the action “may affect” species listed as threatened or endangered under the ESA. 50 C.F.R. § 402.14. “The ‘may affect’ threshold for triggering the consultation duty under section 7(a)(2) is low.” *Nat’l Parks Conservation Ass’n v. Jewell*, 62 F. Supp. 3d 7, 12-13 (D.D.C. 2014); *see also Karuk Tribe of Cal. v. U.S. Forest Serv.*, 681 F.3d 1006, 1027 (9th Cir. 2012) (en banc) (“[A]ctions that have any chance of affecting listed species or critical habitat—even if it is later determined that the actions are ‘not likely’ to do so—require at least some consultation under the ESA.”).

If the action “may affect” listed species or designated critical habitat, the action agency must pursue either formal or informal consultation. Informal consultation is “an optional process that includes all discussions, correspondence, etc., between the Service and the Federal agency . . . designed to assist the [action agency] in determining whether formal consultation . . . is required.” 50 C.F.R. § 402.13(a). “If during informal consultation it is determined by the [action agency], with the written concurrence of the Service, that the action is not likely to adversely affect listed species or critical habitat, the consultation process is terminated, and no further action is necessary.” *Id.*; *Am. Bird Conservancy, Inc. v. FCC*, 516 F.3d 1027, 1034 (D.C. Cir. 2008) (“If an agency determines that an action “may affect” endangered or threatened species or critical habitats, the agency must initiate formal consultation with the [FWS], at least unless preparation of a biological assessment or participation in informal consultation indicates that a proposed action is ‘not likely’ to have an adverse affect.”).

If an action agency chooses to forego informal consultation, or the informal consultation concludes that the proposed action is likely to adversely affect listed species or critical habitat, the agency must participate in “formal consultation.” 50 C.F.R. § 402.14. Formal consultation entails the formulation of a Biological Opinion (“BiOp”) by either FWS or NMFS. In a BiOp, the FWS or NMFS determines whether the proposed action, taken together with all other relevant impacts on the species – including both those included in the environmental baseline as well as cumulative impacts – is likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat. *Id.* § 402.14(h)(3).⁴¹⁴

If the BiOp determines that the proposed actions are likely to jeopardize the continued existence of listed species or critical habitats, the FWS or NMFS may not approve them. 16 U.S.C. § 1536(a)(2), (b)(4); *see also Sierra Club v. U.S. Army Corps of Eng’rs*, 803 F.3d 31, 41 (D.C. Cir. 2015). Alternatively, if the BiOp concludes that an action will likely result in at most a limited take that is incidental to the project, FWS or

⁴¹⁴ If it is determined that a “take,” 16 U.S.C. §§ 1538(a)(1)(B), 1532(19), 50 C.F.R. § 17.3, may occur incidental to the proposed action, but that the action and associated incidental take will not violate the Section 7 jeopardy standard, then FWS or NMFS includes an incidental take statement with the BiOp. 16 U.S.C. § 1536(b)(4); 50 C.F.R. § 402.14(i)(1)(i-v). The incidental take statement specifies the predicted impact to the species, the reasonable and prudent measures that FWS or NMFS determines necessary to minimize take, and the terms and conditions required to implement the reasonable and prudent measures. *Id.* If the action complies with the terms and conditions of the incidental take statement, ESA Section 7(o)(2) exempts the incidental taking from the prohibitions contained in ESA Section 9. 16 U.S.C. § 1536(o)(2).

NMFS prepares an Incidental Take Statement (ITS) identifying reasonable and prudent measures that are necessary or appropriate to minimize the impact on species likely to be incidentally affected. 16 U.S.C. § 1536(b)(4); 50 C.F.R. § 402.14(i), (iv).⁴¹⁵ Notably, if the action agency were then to authorize take of protected species by way of incorporating the ITS's terms and conditions into that authorization, such authorization constitutes "federal action" triggering National Environmental Policy Act ("NEPA") review. *Sierra Club*, 803 F.3d at 45; *see* 40 C.F.R. § 1508.18(b)(4).

Here, issuing a final rule based on the 2018 Proposal is likely to adversely affect, and at a bare minimum may affect, threatened and endangered species, and therefore EPA must initiate informal or formal consultation under ESA Section 7. The baseline for evaluating the effects of this proposal includes the improvements to human health and environmental protection that would be expected under the 2015 CCR Rule.⁴¹⁶ EPA's 2018 Proposal would weaken the CCR Rule in several critical respects that would, among other things, increase the likelihood of groundwater contamination, delayed and/or less effective corrective action and responses to non-groundwater releases, and risk of catastrophic coal ash impoundment failures, leaks, and spills. *See* Sections XV-XXI. The increase in coal ash contamination that would likely result from finalizing the 2018 Proposal may affect, and is likely to adversely affect, listed species.⁴¹⁷

Under the ESA's implementing regulations, the action area is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." 50 C.F.R. § 402.02. EPA has acknowledged that the agency did not consider impacts to managed lands and critical habitats nor did it explicitly evaluate direct risks to threatened and endangered species in its ecological risk assessment. *See* EPA, *Human and Ecological Risk Assessment of Coal Combustion Residuals* at 5-44 (Dec. 2014), Docket ID No. EPA-HQ-RCRA-2009-0640-11993 (attached).

⁴¹⁵ If FWS or NMFS issues an ITS, the choice falls to the action agency that consulted with FWS/NMFS under Section 7 to determine whether and how to proceed with the proposed action (including permitting private activity) in light of the ITS issued by the Service – but the action agency and private party (if any) must comply with the terms of the ITS if they wish to be insulated from ESA liability for any (otherwise unlawful) take of protected species incidental to the carrying out of the proposed action. *See* 16 U.S.C. § 1536(b)(4); 50 C.F.R. § 402.15(a).

⁴¹⁶ Under the ESA's implementing regulations, the "environmental baseline" is defined to include "the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process." 50 C.F.R. § 402.02.

⁴¹⁷ As discussed elsewhere in these comments, and in the report by Synapse Energy Economics submitted herewith, the RIA prepared by EPA in connection with the 2018 Proposal incorrectly asserts that the 2018 Proposal would not diminish the benefits to human health and the environment that would otherwise be provided by the 2015 CCR Rule. *See infra* Section XXX; *see also* Frank Ackerman, PhD, Devi Glick, Thomas Vitolo, PhD, Synapse Energy Economics, Synapse report on 2018 CCR proposed rule RIA (Apr. 30, 2018) (hereinafter "Synapse Expert Report") (attached). Because the RIA's analysis of the impacts of the 2018 Proposal is fatally flawed, it cannot be relied on by EPA to justify its failure to engage in consultation required under ESA Section 7.

EPA has previously noted that managed lands, critical habitats, or threatened and endangered species were located within a five kilometer radius of CCR sites at between 12 and 32 percent of facilities. See EPA, *Report to Congress - Wastes from the Combustion of Coal by Electric Utility Power Plants* at Exhibit 5-27, p. 5-92 (1988), <https://www.epa.gov/sites/production/files/2015-08/documents/coal-rtc.pdf> (attached). Coal ash contamination and damage has been documented at sites in close vicinity to threatened or endangered species. See *Out of Control; In Harm's Way*. Additionally, approximately 45 percent of the Nation's threatened and endangered species directly depend on aquatic and wetland habitats.⁴¹⁸ Furthermore, EPA has acknowledged that many pollutants present in coal ash wastewaters can harm, and even kill, fish and other wildlife. See, e.g., EPA, *Benefit and Cost Analysis for the Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category* at 5-1 (Sept. 2015), Doc. No. EPA-821-R-15-005, Docket ID No. EPA-HQ-OW-2009-0819-5856 ("Final Benefit & Cost Analysis").

EPA cannot avoid its ESA Section 7 obligations on the grounds that its decisions concerning the disposal of CCR are somehow "non-discretionary," and thus exempt from these requirements. See 50 C.F.R. § 402.03 ("Section 7 and the requirements of this part apply to all actions in which there is discretionary Federal involvement or control."). "When an agency, acting in furtherance of a broad Congressional mandate, chooses a course of action which is not specifically mandated by Congress and which is not specifically necessitated by the broad mandate, that action is, by definition, discretionary and is thus subject to Section 7 consultation." *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 524 F.3d 917, 929 (9th Cir. 2008). Furthermore, "an agency cannot escape its obligation to comply with the ESA merely because it is bound to comply with another statute that has consistent, complementary objectives." *Karuk Tribe of California v. U.S. Forest Serv.*, 681 F.3d 1006, 1024 (9th Cir. 2012) (quoting *Wash. Toxics Coal. v. EPA*, 413 F.3d 1024, 1032 (9th Cir. 2005)). EPA's obligations under RCRA regarding solid waste management, and specifically, EPA's duty to issue minimum criteria for the safe disposal of CCR, are discretionary. As a result, EPA possesses discretion to account for the 2018 Proposal's effects on threatened or endangered species.

In sum, EPA's proposal would remove or weaken several safeguards in the CCR Rule that protect listed species, and thus the proposed action may affect listed species within the meaning of 50 C.F.R. § 402.14. As a result, EPA must initiate consultation with FWS and NMFS under ESA Section 7 prior to finalizing any rule. See generally *Nat'l Parks Conservation Ass'n*, 62 F. Supp. 3d at 17 (finding that a 2008 rule revising standards for coal mining near streams may affect listed species where there was "clear evidence that habitats within stream buffer zones are home to threatened and endangered species and that mining operations affect the environment, water quality, and all living biota").

⁴¹⁸ Risk Assessment for 2015 Rule at 5-44.

XXVII. EPA MUST COMPLETE AN ENVIRONMENTAL IMPACT STATEMENT OR ENVIRONMENTAL ASSESSMENT, AS REQUIRED BY THE NATIONAL ENVIRONMENTAL POLICY ACT, CONCERNING THE ADVERSE ENVIRONMENTAL IMPACTS FROM THE PROPOSED MODIFICATIONS TO THE CCR RULE.

NEPA, the “basic national charter for protection of the environment,” 40 C.F.R. § 1500.1, requires federal agencies to prepare an Environmental Impact Statement (“EIS”), for any “major Federal actions significantly affecting the quality of the human environment.” 42 U.S.C. § 4332; 40 C.F.R. § 1502.9. To determine whether an action “significantly affects” the environment, the agency must consider several factors, such as the degree to which the proposed action affects public health or safety, the degree to which the effects on the quality of the human environment are likely to be highly controversial or highly uncertain, the degree to which the action may establish a precedent for future actions, and the degree to which the action may adversely affect an endangered or threatened species. 40 C.F.R. § 1508.27(b).

“There is a major Federal action subject to NEPA review ‘whenever an agency makes a decision which permits action by other parties which will affect the quality of the environment.’” *Humane Soc. of U.S. v. Johanns*, 520 F. Supp. 2d 8, 22 (D.D.C. 2007) (quoting *Scientists’ Inst. for Pub. Info. v. Atomic Energy Comm’n*, 481 F.2d 1079, 1088–89 (D.C. Cir. 1973); see also *NAACP v. Med. Ctr., Inc.*, 584 F.2d 619, 629 n. 15 (3d Cir. 1978) (“In each instance cited by Judge Wright in *Scientists’ Institute*, the agency action was one which was an absolute legal condition precedent to the action which would affect the environment.”). Furthermore, “[t]he duty to prepare an EIS normally is triggered when there is a proposal to change the status quo.” *Humane Soc. of U.S.*, 520 F. Supp. 2d at 29 (quoting *Comm. for Auto Responsibility v. Solomon*, 603 F.2d 992, 1002–03 (D.C. Cir. 1979)).

An EIS must discuss:

“(i) the environmental impact of the proposed action, (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented, (iii) alternatives to the proposed action, (iv) the relationship between local short-term uses of man’s environment and the maintenance and enhancement of long-term productivity, and (v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.”

42 U.S.C. § 4332(c). An EIS serves the statute’s two key goals: (a) to ensure the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts, and (b) to guarantee that the relevant information will be made available to the public. See, e.g., *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989). In considering the effects of an action, an agency must consider all impacts on the environment, including, *inter alia*, “effects on air and water and other natural systems.” 40 C.F.R. § 1508.8(b). An EIS must also consider “cumulative” effects – *i.e.*, “the incremental impact of the action when

added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or Non-Federal) or person undertakes such other actions.” *Id.* § 1508.7.

If it is not clear whether an EIS is required, the agency must prepare an Environmental Assessment (“EA”), which is defined as a “concise public document” that sets forth the evidence and analysis for proceeding with an EIS. *Id.* §§ 1501.4(b), 1508.9. If, based on the EA, the agency determines that an EIS is warranted, it must proceed with the EIS. *Id.* § 1501.4(d). However, if the agency determines that an EIS is not warranted, the agency must issue a finding of no significant impact (“FONSI”) explaining why the proposed action would not significantly affect the environment. *Id.* §§ 1501.4(e), 1508.13.

EPA’s proposed rule to modify the CCR Rule is clearly a major Federal action significantly affecting the quality of the human environment.⁴¹⁹ The proposed revisions permit “action by other parties which will affect the quality of the environment.” *Scientists’ Inst. for Pub. Info.*, 481 F.2d at 1088. Furthermore, by removing or weakening several protections in the CCR Rule, the agency is proposing to change the status quo.⁴²⁰ Accordingly, before the Agency may seek to finalize the rule, the agency must also prepare an EA or EIS detailing the adverse environmental impacts associated with the rule, and considering reasonable alternatives.

XXVIII. THE PROPOSED RULE VIOLATES EXECUTIVE ORDER 12898 ON ENVIRONMENTAL JUSTICE.

Executive Order 12898 provides that each federal agency:

[t]o the greatest extent practicable and permitted by law . . . 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.

E.O. 12898, 59 Fed. Reg. 7629 (Feb. 11, 1994). The proposed rule violates EO 12898 by failing to take all lawful and practicable steps to address the disproportionate and adverse impacts of coal ash disposal on communities of color and low-income communities.

⁴¹⁹ A “categorical exclusion” may exempt certain agency actions from NEPA review. However, there is no basis to deem any final rule based on the 2018 proposal as a “category of action[] which do[es] not individually or cumulatively have a significant effect on the human environment.” 40 C.F.R. § 1508.4. Furthermore, EPA’s proposed rule to modify the CCR Rule does not qualify as a categorically excluded action under EPA’s own NEPA implementing procedures. *See* 40 C.F.R. § 6.204.

⁴²⁰ As discussed elsewhere in these comments, and in the report by Synapse Energy Economics submitted herewith, the RIA prepared by EPA in connection with the 2018 Proposal incorrectly asserts that the 2018 Proposal would not diminish the benefits to human health and the environment that would otherwise be provided by the 2015 CCR Rule. *See infra* Section XXX; *see also* Synapse Expert Report. Because the RIA’s analysis of the impacts of the 2018 Proposal is fatally flawed, it cannot be relied on by EPA to justify its failure to comply with NEPA.

A. IMPROPER DISPOSAL OF COAL ASH HAS DISPROPORTIONATELY HIGH AND ADVERSE IMPACTS ON COMMUNITIES OF COLOR AND LOW-INCOME COMMUNITIES.

EPA estimates that at least 1.5 million people of color live in the “catchment areas” of coal ash surface impoundments at 277 power plants throughout the United States.⁴²¹ In catchment areas⁴²² downstream of coal ash impoundments, residents are threatened by leaks, discharges and spills of toxic chemicals, as well as potentially deadly catastrophic failures. EPA found that the minority population in catchment areas is higher than both national and state averages.⁴²³ EPA also estimates nearly 900,000 low-income residents live in catchment areas, which is also higher than state and national averages. In fact, more than 60 percent of the power plants operating coal ash impoundments are located in catchment areas where the percentage of residents who live below the Federal Poverty Level exceeds statewide percentages.⁴²⁴ In other words, the population living below the poverty level near these coal ash impoundments is about 40 percent larger than would be expected based on statewide averages, and the minority population is approximately 20 percent greater.

Almost 70 percent of ash ponds in the United States are in areas where household income is lower than the national median.⁴²⁵ Of the 181 ZIP codes nationally that contain coal ash ponds, 118 (65.19 percent) have above-average percentages of low-income families.⁴²⁶ Given the serious health threats posed by coal ash, it is particularly troublesome that coal ash impoundments are disproportionately located in low-income communities, where residents are more likely to rely on groundwater supplies and less likely to have access to medical insurance and healthcare.

As the United States Civil Rights Commission noted, “[r]acial minorities and low income communities are disproportionately affected by the siting of waste disposal facilities and often lack political and financial clout to properly bargain with polluters

⁴²¹ RIA for 2015 Rule, at 8-10.

⁴²² EPA defines “catchment area” as the downstream area that receives surface water runoff and releases from CCR impoundments, and incurs risks from CCR impoundment discharges (*e.g.*, unintentional overflows, structural failures, and intentional periodic discharges). Catchment areas are measured in terms of runoff travel time. This analysis considers populations in all catchments within 24 hours of downstream travel time from the plant under mean surface water flow conditions, to estimate populations potentially affected by impoundment failures. *Id.* at 8-9.

⁴²³ *Id.* at 8-12.

⁴²⁴ *Id.*

⁴²⁵ U.S. Census Bureau, Census 2000 Summary File 3 (SF 3) - Sample Data, All 5-Digit ZIP Code Tabulation Areas (860), Table P53 "Median Household Income in 1999 (Dollars)", http://factfinder.census.gov/servlet/DCSubjectKeywordServlet?_ts=307978361769.

⁴²⁶ U.S. Census Bureau, Census 2000 Summary File 3 (SF 3) - Sample Data, All 5-Digit ZIP Code Tabulation Areas (860), Table P76 "Family Income in 1999" (downloaded June 23, 2009), http://factfinder.census.gov/servlet/DownloadDatasetServlet?_lang=en&_ts=263843114140. “Low-income” defined as earning less than \$20,000 annually. ZIP codes containing coal ash ponds compared to a national mean percent “low-income” of 12.61%, calculated based on the “Family Income in 1999” dataset; United States Environmental Protection Agency (U.S. EPA). Database of coal combustion waste surface impoundments (2009). Information collected by EPA from industry responses to Information Collection Request letters issued to the companies on March 9, 2009.

when fighting a decision or seeking redress.” United States Commission on Civil Right, Environmental Justice at pdf p. 5 (Sept. 2016) (attached) (hereinafter “United States Commission on Civil Rights Report”). The Commission further found that “EPA’s Final Coal Ash Rule negatively impacts low-income and communities of color disproportionately.” *Id.* at pdf p. 6. *See also*, Title VI Civil Rights Complaint and Petition for Relief or Sanction – Alabama Department of Environmental Management Permitting of Arrowhead Landfill in Perry County, Alabama (EPA OCR File No. 01R-12-R4) (attached).

The disparate health impacts from coal ash disposal are not evenly distributed across the United States. Certain states face worse disproportionate impacts than others. For example, more than half of residents living near coal plants in New Mexico—and more than 40% in Alabama, Arizona, Georgia, and Illinois—are non-white. Further, coal ash impoundments are more numerous in the southeastern United States, and the populations near the dumps tend to be poorer and less white. In addition, in the absence of federal regulation of coal ash, state regulations created a patchwork of inadequate controls, with many states having no regulation of the disposal of coal ash, particularly of wet impoundments. *See supra* Section XI; *see also* 2010 Environmental Comments at 21-55. This uneven distribution of risks and state regulations has huge and dangerous implications for any revisions to the coal ash rule, as explained below.

Comparing states predicted to adopt federal guidelines and states predicted not to adopt such guidelines, it is possible to measure the impact on minority and low-income communities under the 2015 CCR Rule.⁴²⁷ The CCR Rule is having, and will have, a significant disproportionate impact on minority and low-income communities because communities near coal plants in the states that are likely not to adopt the new coal ash rule are more likely to be non-white, impoverished, and to contain a larger-than-average child population. In other words, the 2015 CCR Rule failed to add protections in states where environmental justice communities are most heavily harmed by coal ash disposal. The table below summarizes the impacts.

⁴²⁷ EPA provided a new prediction of the states that would adopt the alternative performance standards in the 2018 Proposal. *See* 2018 RIA at 4-3 to 4-4. Due to the short public comment period provided by EPA, Commenters were not able to take the new estimate into account, but the list of states that EPA predicted would adopt the 2018 revisions is fairly consistent with the agency’s earlier prediction.

Environmental Justice Impacts of EPA’s Coal Ash Rule

Demographic Groups Surrounding Coal-Fired Plants	Demographic Statistics Comparison Method	Subset A States Expected to Implement New Coal Ash Rule Requirements (17 states)	Subset B States <i>Not</i> Expected to Implement New Coal Ash Rule Requirements (30 states)
Minority	To national average	-35%	+5%
	To expected state avg.	-16.4%	+23.0%
Below Poverty Line	To national average	+2%	+13%
	To expected state avg.	+8.5%	+28.0%

The table above compares demographic characteristics near coal plants with national and statewide average demographics to determine whether environmental justice communities are disproportionately affected by coal ash disposal under the new EPA rule. The analysis, prepared by the Center for Progressive Reform at the University of Maryland School of Law, uses the same method that EPA used in 2009 when performing its own environmental justice analysis for the proposed CCR Rule.⁴²⁸ The analysis distinguishes between states that are expected to implement new protections according to EPA’s predictions and states that EPA has predicted will not adopt the protections. It shows far worse disparate impacts in the latter.

For example, the minority populations near coal plants are 5 percent higher than the national average and 23.5 percent higher than their respective statewide averages *in states that are not expected to adopt new controls*. This pattern is reversed in states that are expected to adopt the new rule. In those states, the minority populations are 35 percent *lower* than the national average, and 16.4 percent *lower* than their respective state averages.

The percentage of the population living near coal plants having an income below the poverty level (“poverty population”) exceeds the national average by 2 percent in states that are expected to adopt new controls, but by 13 percent in states that are not. By this measure, the harm to poverty populations is 6.5 times more disproportional in states that will not adopt new controls. The poverty populations near plants exceed their respective statewide averages by 8.5 percent in states that are expected to adopt new controls and by 28 percent in states that are not. By this measure, the harm is 3.3 times worse in states that are not expected to adopt new controls.

⁴²⁸ Center for Progressive Reform, Comments on Hazardous and Solid Waste Management System; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals From Electric Utilities; Proposed Rule, Nov. 19, 2010, http://www.progressivereform.org/articles/Coal_Ash_Comments_Steinzor_111910.pdf.

While the disproportionate impacts of coal ash pollution are worse in states that are not expected to adopt new controls under EPA's new rule, other geographic trends also show that the environmental injustices of coal ash are not shared equally throughout the United States. The environmental justice impact is especially magnified in EPA Region 4. Throughout Region 4 (which includes Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee), coal-fired utility plants are sited in areas with disproportionately high minority and low-income populations—particularly when compared to national averages, but also when compared to state averages. For example, Mississippi and Alabama are the two states in the nation with the worst disproportionate impact for populations living below the poverty line and Tennessee is among the top five with the worst disproportionate impact to minorities.⁴²⁹ In addition, Region 4 has the highest concentration of unlined coal ash impoundments in the nation. According to a 1999 report, 31.7 percent of the unlined surface impoundments were concentrated in Region 4, almost double the number in any of the other nine EPA Regions.⁴³⁰

According to an analysis completed by Earthjustice in 2010, the greatest disparity in Region 4, as compared to the nation as a whole, applies to minority populations.⁴³¹ In Region 4, the minority population near coal plants—30.0 percent—is 21 percent *higher* than the national average. The minority populations near coal plants in Region 4 also cumulatively exceed their respective state averages by 19 percent. In a few particular states, this metric soars far higher than 19 percent. For example, in Alabama, the minority population near coal plants is 46 percent higher than in the state as a whole; in Mississippi, it is 34 percent higher; and in Tennessee there is nearly twice as high a share of non-white individuals living near coal plants as would be expected given the state average (an 89 percent exceedance).

The burden of coal ash disposal and ultimately the threat of contamination—borne unequally by low-income communities nationwide—also have a more dramatic disproportionate impact in Region 4. The following figures reflect the national poverty levels in 2010.⁴³² In 2010, the national average percent poverty population was 11.9 percent.⁴³³ Near coal plants nationwide, the poverty rate was 12.9 percent, or 8 percent higher than the national average. In Region 4, the poverty rate near coal plants was 14.9 percent, a figure that exceeds the national average by 25 percent. As with the minority population, the poverty population is particularly concentrated near coal plants in Alabama, Mississippi, and Tennessee. In Alabama and Mississippi, the poverty rate near coal plants was more than twice the national average. At 24.5 percent near coal plants in Alabama, the poverty rate was 106 percent higher than the national average; and at 26.5

⁴²⁹ See RIA for 2010 Proposed Rule at 224-225.

⁴³⁰ 80 Fed. Reg. at 21,458.

⁴³¹ 2010 Environmental Comments at 196-200.

⁴³² *Id.*

⁴³³ See RIA for 2010 Proposed Rule at 148-65.

percent in Mississippi, it was 115 percent higher than the national average. Finally, the poverty rate near coal plants in Tennessee exceeded the national average by 41 percent.⁴³⁴

Outside of Region 4, disparate impacts are also particularly dramatic in Louisiana, Arizona, and New Mexico. Louisiana's three coal ash impoundments are all in environmental justice communities. The percent non-white population is 87 percent higher than the national average, and the poverty rate near coal ash impoundments in Louisiana is about twice the national average. In New Mexico, the ash impoundments are in areas with a combined percent non-white population of 93 percent, or about four times the national average and three times the statewide average.⁴³⁵ In Arizona and New Mexico, the poverty rates near ash impoundments exceed the national average by 52 percent and 225 percent, respectively.

B. THE PROPOSED RULE FAILS TO TAKE ALL LAWFUL AND PRACTICABLE STEPS TO ADDRESS THE DISPROPORTIONATE IMPACTS OF COAL ASH DISPOSAL.

EPA predicted disparate impacts of coal ash disposal for minority, low-income, and child populations under the RCRA subtitle D regulatory option, yet the agency finalized a subtitle D rule. Furthermore, the type of disposal most harmful to these populations, wet disposal, was allowed to continue under the new rule. But instead of attempting to remedy these problems, the proposed rule would only exacerbate the disproportionate health impacts from coal ash disposal.

In prior comments and reports, Commenters have demonstrated that even the 2015 CCR Rule failed to comply with EO 12898. *See* 2010 Environmental Comments at 4, 196-205; Statement of Lisa Evans to the United States Commission on Civil Rights (Jan. 22, 2016). Specifically, the CCR Rule creates a RCRA subtitle D program under which states are not required to adopt into state law, or enforce, the federal standards. The states that EPA predicts will not adopt the subtitle D guidelines have disproportionately high percentages of poor communities and communities of color located near coal ash disposal sites. *See table supra*. “[A] greater percentage of minorities live in states that the EPA predicts will not adopt the Final Rule. Therefore, a disproportionate number of minority communities will not enjoy the minimum federal protections that the Final Rule provides, unless all states implement the Final Rule.” United States Commission on Civil Rights Report at 79. Moreover, the 2015 CCR Rule allowed unlined impoundments to continue to operate (contingent on meeting groundwater protection standards, location restrictions and stability standards), and the risk of harm from unlined impoundments is greater among low-income communities and

⁴³⁴ Poverty rates in these maps were calculated by dividing the population living below the poverty line in each geography by the “population for whom poverty status has been determined” therein. This method yielded a calculated national poverty rate of 12.38%. In EPA’s RIA for the 2015 rule and in the other analyses discussed in these comments, the national poverty rate was given as 11.9% because these analyses calculated the poverty rate by dividing the population living below the poverty line by the *total* population in each geography.

⁴³⁵ U.S. Census Bureau, Census 2000 Summary File 3 (SF 3) - Sample Data, All Census Tracts, “Individual Poverty in 1999,” received via email from Professor Paul Mohai, University of Michigan, on Jun. 4, 2010.

communities of color, who are more likely to live in the catchment areas downstream of impoundments, 80 Fed. Reg. at 21,467.

The 2018 Proposal is in many ways much weaker than the 2015 CCR Rule. Specifically, the rule would allow unlined CCR surface impoundments to continue to operate indefinitely, without the 2015 CCR Rule's requirements to close based on violation of groundwater protection standards, location restrictions or stability standards. Furthermore, the 2018 Proposal provides much more discretion to state agencies and, most likely, to owners and operators of CCR units themselves, to comply with alternative (less protective) standards. Therefore, the 2018 Proposal violates EO 12898 for the same reasons that the CCR Rule violated the EO. In addition, the 2018 Proposal violates EO 12898 by weakening other key protections of the CCR Rule, as explained elsewhere in these comments. The 2018 Proposal would therefore expose low-income communities and communities of color, who are disproportionately likely to live downstream of a CCR impoundment, to increased risks of coal ash contamination, in violation of EO 12898.

XXIX. THE PROPOSED RULE VIOLATES EXECUTIVE ORDER 13045 ON PROTECTING CHILDREN FROM ENVIRONMENTAL HEALTH AND SAFETY RISKS.

Executive Order 13045 provides that:

to the extent permitted by law and appropriate, and consistent with the agency's mission, each Federal agency . . . (a) shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children; and (b) shall ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.

E.O. 13045, § 1-101, 62 Fed. Reg. 19,885 (Apr. 21, 1997). The proposed rule does not ensure that the standards for coal ash address the disproportionate risks to children resulting from the improper disposal of coal ash.

The table below indicates that under the Subtitle D regulations EPA adopted, the states EPA predicts will not implement the coal ash rule have disproportionately high populations of children.⁴³⁶ The child population exceeds statewide averages by 9.2 percent in states that are not expected to adopt the new requirements, but by 1.2 percent in states that are. The harm to children is 7.7 times more disproportional in states that will be left out of regulatory improvements under the CCR Rule.

⁴³⁶ This analysis is based on a slightly different set of states that EPA predicted in 2010 would adopt the 2015 subtitle D coal ash rule requirements. *See infra*.

Environmental Health Risks to Children from the Coal Ash Rule⁴³⁷

Demographic Groups Surrounding Coal-Fired Plants	Demographic Statistics Comparison Method	Subset A States Expected to Implement New Coal Ash Rule Requirements (17 states)	Subset B States <i>Not</i> Expected to Implement New Coal Ash Rule Requirements (30 states)
Child	To national average	-2%	+9%
	To expected state avg.	+1.2%	+9.2%

EPA’s current proposal does nothing to address these risks to children’s health. To the contrary, as described in these comments, the proposed rule would exacerbate the environmental health risks to children by weakening many of the core elements of the CCR Rule.

For example, EPA’s proposal to permit states to establish “alternative” groundwater protection standards (“GWPS”) would enable states to set standards higher than currently authorized standards, and higher than background levels. The proposal would be even more lenient than the groundwater protection standards for MSWLFs, for which any alternative standards must protect “sensitive subgroups” such as children, 40 C.F.R. § 258.55(i). By dramatically weakening the groundwater protection standards in the CCR Rule, EPA’s proposal would increase health risks from coal ash contamination—risks that disproportionately affect children. The 2018 Proposal pays no regard to EPA’s prior finding that the highest noncancer risks from drinking water contaminated by coal ash “were for infants.” Risk Assessment for 2015 Rule at 4-16. For these reasons, the proposal violates EO 13045 by failing to ensure that the standards for coal ash disposal “address disproportionate risks to children that result from environmental health risks.” EO 13045, § 1-101.

XXX. COMMENTS ON THE REGULATORY IMPACT ASSESSMENT

As discussed below and in further detailed in the attached expert report by Synapse Energy Economics, EPA’s Regulatory Impact Analysis (RIA) for the 2018 Proposal is predicated on the patently false premise that the proposed changes to the 2015 CCR Rule will not result in *any* lost benefits to health or the environment – despite the fact that, as described in detail in the comments above and in the attached Synapse report, the 2018 Proposal would result in major changes to the CCR that would substantially increase the risk to health and the environment with potentially dangerous and catastrophic consequences. Moreover, as detailed in the Synapse report, the RIA’s

⁴³⁷ Center for Progressive Reform, Comments on Hazardous and Solid Waste Management System; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals From Electric Utilities; Proposed Rule, Nov. 19, 2010, http://www.progressivereform.org/articles/Coal_Ash_Comments_Steinzor_111910.pdf.

documented cost savings to the electric generating industry are trivially small in the context of a multi-billion dollar industry. Because the RIA fails to rationally consider the numerous lost benefits to health and the environment that would result from the 2018 Proposal, EPA's analysis is fatally flawed and yet another reason why finalizing the proposed rule would be arbitrary, capricious, and contrary to law.

A. THE RIA FAILS TO CONSIDER ANY OF THE NUMEROUS LOSSES IN BENEFITS THAT WOULD RESULT IF THE 2018 PROPOSAL IS FINALIZED.

Despite the numerous ways (described in detail in these comments) that the 2018 Proposal would result in increased probability of harm to health and the environment, the analysis in EPA's RIA for the 2018 Proposal is based entirely on the patently false premise that the proposed changes would not result in any "change of behavior" by owner/operators that would increase risk to health or the environment or otherwise result in any loss of the 2015 CCR Rule's benefits.⁴³⁸ There at least two critical weaknesses in EPA's argument:

- EPA assumes that there will be no additional risks because state permit programs are required to be at least as protective as "the existing CCR rule."⁴³⁹ But the WIIN Act only requires state permit programs to be at least as protective as the current Part 257 regulations. If the Part 257 regulations become less stringent (e.g., through EPA finalizing the 2018 Proposal), then state programs will only have to be as protective as the new, less stringent regulations. As discussed throughout these comments, it is clear from the rest of the RIA that EPA's proposed changes to the CCR Rule would on the whole make it significantly less stringent. And the RIA assumes that many states – between 19 and 39 of the 41 eligible states – will only be as stringent as they have to be.⁴⁴⁰ So most state programs will be less stringent than the 2015 CCR rule, and there will be a reduction in benefits from the baseline established by the 2015 rule. *See* Synapse Expert Report.
- EPA also states that the 2018 Proposal "does not alter the requirements from the existing CCR rule that plumes from leaking impoundments be identified and remediated."⁴⁴¹ This is absurd on its face – other sections of the RIA assume that contamination at up to 105 coal ash units will not be remediated as a result of the remand rule.⁴⁴² And as discussed in detail these comments, the 2018 Proposal would create numerous potential off-ramps for owner/operators seeking to delay or avoid corrective action requirements.

⁴³⁸ 2018 RIA at 2-4 to 2-5.

⁴³⁹ *Id.* at 2-5.

⁴⁴⁰ *See id.* at 4-2 to 4-4.

⁴⁴¹ *Id.* at 2-5.

⁴⁴² *Id.* at 4-7.

Even just looking at the RIA itself, there are many ways in which the RIA assumes a change in behavior that will increase risks and reduce benefits:

- The RIA assumes that 1% of impoundments will have non-groundwater releases each year. Under the 2018 Proposal, owner/operators would no longer have to:
 - prepare, and have certified, the demonstration required under 40 C.F.R. § 257.96(a) (a demonstration of the need for additional time to assess corrective measures);
 - meet with the public and affected parties to discuss corrective measures, per section 257.96(e);
 - prepare the semi-annual report required by section 257.9; or
 - prepare, and have certified, a notification that the remedy is complete, per section 257.98(e).

These changes reduce transparency and thereby increase the likelihood that non-groundwater releases are not remediated as quickly or as well.

- The RIA assumes that the remand rule will add five years of operating life to roughly 55 disposal impoundments and roughly 358 storage impoundments (the majority of impoundments). The annual risks of, among other things, structural failure and groundwater contamination will recur for five additional years, and the cumulative risks will increase proportionally.
- The RIA assumes that up to 792 coal ash units will have less corrective action as a result of the remand rule. Specifically, corrective action costs will be 25% lower at between 181 and 792 coal ash units. According to the RIA, there are 922 units in the country.⁴⁴³ National corrective action costs will therefore be between 5% and 21% lower under the remand rule. The benefits of corrective action will be reduced proportionally.
- Contamination at up to 105 coal ash units will not be remediated. Specifically, between zero and 105 units “may be able to avoid all of the costs of remediation.”⁴⁴⁴
- Between 19 and 39 states will shorten the period during which an owner/operator must show that their corrective action has worked, from three years to one year.⁴⁴⁵ This will increase the risk of new or recurring contamination that evades detection.

⁴⁴³ *Id.* at 2-1.

⁴⁴⁴ *Id.* at 4-7.

⁴⁴⁵ *Id.* at 4-10.

- Between 14 and 27 states will shorten the period of post-closure care from 30 years to 5 years.⁴⁴⁶ Again, this will dramatically increase the risk of new or recurring contamination that evades detection.
- Between 19 and 39 states will pass the certification requirements from the owners and operators to the states. The utilities will save between \$0.9 million and \$1.84 million per year. The states (taxpayers), on the other hand, will pick up a new cost of between \$0.8 million and \$1.6 million per year. It stands to reason that many state agencies will be unwilling or unable to carry out their certification duties adequately, leading to less effective implementation of the rule, and more contamination.
- The 2018 Proposal would allow the additional placement of up to 1.3 million tons of coal ash, per impoundment, in disposal impoundments undergoing closure-in-place.⁴⁴⁷ This clearly increases the source term (the coal ash available for leaching or collapse), the potential for contamination, and the risk to human health and the environment.
- EPA assumes that 100% of facilities will comply with the coal ash regulations,⁴⁴⁸ despite abundant evidence to the contrary. Since compliance will be significantly less than 100%, baseline costs, incremental cost savings, and baseline benefits will all be lower than EPA assumes. EPA acknowledges that it is overstating the cost savings of the rule in this regard, but fails to acknowledge the corollary: By assuming 100% compliance, EPA is underestimating the health and environmental risks that will be created by non-compliance.⁴⁴⁹ The 2018 Proposal will further erode the already limited protections created by the 2015 CCR rule, from less-than-100% compliance with the 2015 requirements to less-than-100% compliance with new, less stringent requirements.
- As discussed above, *see supra* Section V, the 2018 Proposal relaxes certain requirements for non-groundwater releases of CCR. The RIA describes these as “non-groundwater releases of a ‘minimal volume,’” and as “non-catastrophic.”⁴⁵⁰ However, the language of the proposed rule is not limited to releases of a minimal volume, and in fact the rule explicitly defines eligible non-groundwater releases to include catastrophic releases.⁴⁵¹ As written, this provision of the 2018 Proposal applies to all non-groundwater releases, including catastrophic releases, as long as they can be remediated within 180 days.⁴⁵² Although the RIA describes the relaxed requirements as “information collection requirements,” they include much

⁴⁴⁶ *Id.* at 4-12.

⁴⁴⁷ *Id.* at 4-14 to 4-15.

⁴⁴⁸ *Id.* at 2-7.

⁴⁴⁹ *See id.* at 2-7 (“...this RIA may overstate the cost savings...”).

⁴⁵⁰ *Id.* at 3-1.

⁴⁵¹ *See* 83 Fed. Reg. at 11,611. The definition of “Non-groundwater releases” states that “examples of non-groundwater releases include...releases of a ‘catastrophic’ nature such as the release of CCR materials from the CCR surface impoundments from the [Kingston and Dan River plants].”

⁴⁵² *See id.* at 11,614 (proposed section 257.99).

more than information collection, including (1) a demonstration that more time is needed to assess corrective measures, (2) public meetings, (3) a semi-annual report, (4) a notification that the selected remedy is complete, and (5) two certifications. These would be better described as transparency requirements. This provision will reduce transparency related to the remediation of non-groundwater releases (which, as stated above, may be large), will lead to remedies that are not certified as complete, and will likely have the effect of causing less timely and less effective remediation.

- The 2015 CCR Rule allowed for a five-year extension of otherwise applicable closure deadlines for CCR units where there is no alternative capacity for CCR disposal. *See* 40 C.F.R. § 257.103. The 2018 Proposal would broaden this loophole by giving CCR units an extra five years to close if they are needed for any waste stream, CCR or otherwise, for which there is no alternative disposal capacity. *See* Section VI, *supra*. This expanded loophole would only apply in certain North American Electric Reliability Corporation (NERC) regions where the cessation of plant operation due to a lack of alternative disposal capacity would disrupt electricity generation.⁴⁵³ For plants in the affected regions, the RIA assumes that some impoundments will already be using the five-year delay provided by the 2015 rule (because they needed the CCR disposal or storage capacity). These account for roughly 42% of disposal impoundments and 13% of storage impoundments.⁴⁵⁴ The RIA then assumes that all other impoundments will take advantage of the deadline extension in order to accommodate non-CCR waste.⁴⁵⁵ In other words, roughly 58% of the disposal impoundments and 87% of the storage impoundments in the affected regions will close five years later as a result of the 2018 Proposal. These end up being roughly 47% of the disposal impoundments in the United States, and 69% of storage impoundments. Multiplying these fractions by the numbers of impoundments shown on page 2-1 of the RIA, this means that the 2018 Proposal would give an extra five years of operating life to roughly 55 disposal impoundments and 358 storage impoundments.
- The 2018 Proposal would create a series of “alternative performance standards.” *See supra*. Although EPA tries to pretend that these will be as stringent as the 2015 CCR Rule, the RIA shows that they will in fact be weaker than the 2015 CCR Rule. This can be seen in EPA’s approach to guessing which states will

⁴⁵³ *Id.* at 11,615 (proposed section 257.103(b)(iii)); 2018 RIA at 3-10.

⁴⁵⁴ 2018 RIA 3-14, Exhibit 3-8.

⁴⁵⁵ *See id.* at 3-12 (“Therefore, this RIA makes the simplifying assumption that all baseline costs directly associated with closure can be delayed through the alternative closure provision for facilities in the three NERC regions...”); *id.* at 3-13 (“Finally, these cost reduction factors are adjusted downwards to account for impoundments that may have or are likely to delay closure under the alternative closure provision for CCR capacity in the 2015 CCR rule”); *id.* at 3-16 (“However, this is predicated on the assumption that all CCR disposal and storage impoundments in the [affected NERC regions] are eligible for the alternative closure provision”).

adopt the alternative performance standards.⁴⁵⁶ EPA cites two studies of state-level implementation of other environmental statutes and creates three categories:

- **Stringent states:** Some states “have a history of promulgating regulations that are more stringent than the federal regulation.” These might be called the “stringent” states. EPA assumes that they will not adopt the alternative performance standards.
- **Weak states:** Other states have a history of maintaining equivalency with federal regulations. These might be called the “weak” states. EPA assumes that these states will adopt the alternative performance standards.
- **In the middle:** These states are sometimes weak and sometimes stringent, so EPA assumes that they will (in one version of the analysis) or will not (in another version) adopt the alternative performance standards.

In short, then, EPA is assuming that the “stringent” states will implement the default federal regulations, while the “weak” states will adopt alternative performance standards. In other words, EPA is assuming that the alternative performance standards are weaker than the default regulations.

- With respect to EPA’s proposed alternative groundwater protection standards (*see supra* Section XIV), EPA effectively admits that this is weaker than the default rule on page 4-4 of the RIA: “This analysis anticipates that this proposed change will prompt some states to relax the [Groundwater Protection Standards] requirements at sites with lower health-based risks.”

Moreover, there are a number of irrational assumptions built into EPA’s analysis:

- EPA assumes that corrective action costs will be reduced by 25% because 25% of the Appendix IV assessment monitoring constituents are eligible for alternative groundwater standards.⁴⁵⁷ This assumes that all Appendix IV constituents are equally likely to trigger corrective action. Given what we know about existing contamination, these four constituents are more likely than the other constituents to trigger corrective action. A more accurate cost adjustment factor would therefore be higher than 25%.
- EPA also seems to be assuming that the alternative groundwater standards will only be used in areas where there are fewer people and a correspondingly lower risk.⁴⁵⁸ However, the proposed rule does not restrict the applicability of the alternative groundwater standards in this way. In other words, all facilities are equally likely to take advantage of this provision – the proximity to receptors is irrelevant.

⁴⁵⁶ *Id.* at 4-2.

⁴⁵⁷ *Id.* at 4-5.

⁴⁵⁸ *Id.* at 4-5.

- There is also an internal inconsistency in EPA’s approach to guessing which facilities will use the alternative groundwater standards. EPA assumes that facilities in sparsely populated areas (lower exposure potential) will use the alternative standards, but also assume that facilities within one mile of a sole-source aquifer (higher exposure potential) will use them.⁴⁵⁹ This may be a drafting error. EPA appears to be looking for facilities in sparsely populated areas and outside, not inside, the one-mile radius of the nearest sole-source aquifer. That is the approach taken by the Agency on page 4-7.
- Finally, EPA’s approach ignores ecological receptors. There is no reason to expect that facilities in area with low potential for human exposure will have correspondingly low potential for ecological exposure.

Ultimately, EPA assumes that between 181 and 792 CCR management units will experience a 25% reduction in corrective action costs. Based on the discussion above, 25% is probably too low. In any case, the proposed rule will lead to less corrective action at up to 792 CCR units.

- With respect to EPA’s proposed changes to the corrective action requirements (*see supra* Section XXV), the 2018 Proposal would allow facilities to decide that remediation of a release is not necessary for any of several reasons, including that remediation “is not technically feasible.”⁴⁶⁰ Again, EPA makes some plainly illogical assumptions about which facilities will take advantage of this loophole. For example, EPA assumes that facilities taking advantage of the loophole will be far away from sole source aquifers or “potential future water sources.” Yet eligibility for this loophole is not limited based on potential exposure. Any facility that finds corrective action to be “technically [in]feasible” can avoid the corrective action requirement, regardless of potential exposure to nearby receptors. Taking EPA’s assumptions as a starting point, between 0 and 105 coal ash units may be able to “avoid the costs of remediation.” In reality, the number of units is likely to be much, much higher.
- With respect to EPA’s proposed allowance for owner/operators to apply for a “no migration” waiver (*see supra* Section XVII), the RIA treats it as a very limited loophole. In fact, EPA assumes that zero units will ultimately apply for and be eligible for the waiver.⁴⁶¹ This is an astonishing number – if EPA believes that no one will be able to use this waiver, then why is it in the proposal? EPA based the proposed groundwater monitoring waiver on a similar waiver in EPA’s MSWLF regulations.⁴⁶² In order to estimate how many facilities might take advantage of

⁴⁵⁹ *Id.* at 4-5.

⁴⁶⁰ *Id.* at 4-6.

⁴⁶¹ *Id.* at 4-9 (“[T]his RIA estimates that no owner or operator of a CCR management unit will successfully apply for, and receive, a ‘no migration’ waiver.”).

⁴⁶² *See* 83 Fed. Reg. at 11,601 (citing 40 C.F.R. § 258.50(b)).

the proposed waiver, EPA could have looked at the number of MSWLFs that take advantage of the section 258 waiver. EPA did not do that.

- The 2018 Proposal would allow state-employed engineers to certify various documents requiring certification under the CCR rule (*see supra* Section XXI). The RIA is very clear here – there will be a net cost savings, but most of the costs will be transferred from owners and operators to the states.⁴⁶³ Specifically, states will incur an added annual cost of between \$0.8 million and 1.6 million annually.
- With respect to EPA’s proposed changes to the 30-year post-closure care period (*see supra* Section XX), EPA assumes that between 14 and 27 states will allow post-closure care periods of five years, rather than the currently required 30 years, “based on existing state post closure care requirements.”⁴⁶⁴ Again, the 2018 Proposal would substantially increase the risk of undetected post-closure contamination, which in turn increases the risk of contamination that is more widespread, and more expensive to address, than it would otherwise be.
- As described in detail in the Synapse report, EPA’s projection of total savings to the industry from the rule change, on an annualized basis, is \$25 - \$76 million at a 3 percent discount rate, or \$32 - \$100 million at a 7 percent discount rate⁴⁶⁵ – which are trivially small numbers in the context of the multi-billion dollar electric generating industry. Of 10 individual categories of cost savings expected from the proposed rule, the national totals for 7 are less than \$1 million in every variant of the calculation. These are absurdly small savings relative to the massive revenues generated and operating expenses of this industry (*see* Synapse Expert Report) to serve as justification for the scope and complexity of changes to CCR regulation in the 2018 Proposal.

B. EPA’S FAILURE TO CONSIDER LOST BENEFITS, PARTICULARLY IN LIGHT OF THE MEAGER COST SAVINGS TO INDUSTRY THAT IT IDENTIFIED, IS ARBITRARY AND CAPRICIOUS.

EPA is required to evaluate the numerous losses in benefits that would result if the 2018 Proposal is finalized. Not only is this OMB policy,⁴⁶⁶ but it is also a basic tenet of reasoned decisionmaking that an agency must provide a reasoned explanation of its action that considers both the advantages and disadvantages of issuing a rule. *See Michigan v. EPA*, 135 S. Ct. 2699, 2707 (2015). If EPA were to finalize the proposed rule without fully considering both the benefits and the costs of its action, the action would be arbitrary and capricious, because the agency would have “entirely failed to

⁴⁶³ 2018 RIA at 4-13.

⁴⁶⁴ 2018 RIA at 4-12.

⁴⁶⁵ 2018 RIA at Exhibit 5-2, page 5-5.

⁴⁶⁶ 2018 RIA at 2-3 (“OMB Circular A-4 requires regulatory impact analyses to measure the benefits and costs...”).

consider an important aspect of the problem.” *Motor Vehicle Mfrs.’ Ass’n of United States, Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

Federal administrative agencies are required to engage in “reasoned decisionmaking.” *Allentown Mack Sales & Service, Inc. v. NLRB*, 522 U.S. 359, 374 (1998) (internal quotation marks omitted). “Not only must an agency’s decreed result be within the scope of its lawful authority, but the process by which it reaches that result must be logical and rational.” *Id.* It follows that agency action is lawful only if it rests “on a consideration of the relevant factors.” *Motor Vehicle Mfrs. Assn.*, 463 U.S. at 43 (internal quotation marks omitted).

One of the most fundamental “relevant factors” in any rulemaking is the potential disadvantages, or costs, of the proposed action. Where an agency’s proposal would modify an existing rule, these costs include the foregone benefits of the requirements that will no longer be in effect. *See, e.g., State of N.Y. v. Reilly*, 969 F.2d 1147, 1153 (D.C. Cir. 1992).

In the proposed revisions to the CCR rule, EPA places great emphasis on the potential benefits, in the form of cost savings to the regulated sector. The agency states in the preamble to the proposed rule:

The RIA estimates costs and cost savings attributable to the provisions of this action against the baseline costs and cost savings of the 2015 CCR rule. The RIA estimates that the net annualized impact of these eleven provisions over a 100 year period of analysis will be cost savings of between \$32 million and \$100 million when discounting at 7 percent and cost savings between \$25 million and \$76 million when discounting at 3 percent.

83 Fed. Reg. at 11,608. However, the agency does not consider *any* potential costs imposed by the rule revisions, including costs in the form of foregone public health and environmental benefits due to changes to the 2015 rule. The Regulatory Impact Analysis acknowledges that it considers only “changes in compliance costs (i.e., cost savings) due to the proposed CCR remand rule.” RIA at 2-2. Neither the rule preamble nor the RIA discuss whether, or how much, of the \$232 to \$289 million in annual benefits projected to accrue from the 2015 rule would be foregone due to these revisions, not to mention any effects to the 11 categories of non-monetized benefits.

EPA defends this decision by stating that the proposed revisions will not affect human health or the environment compared to the 2015 rule. *See* 83 Fed. Reg. at 11,610; *see also* RIA at 2-2 (“[T]his analysis assumes that none of the proposed changes will result in behavioral changes that will increase risk. . . . Accordingly, this RIA does not anticipate changes to the quantitative and qualitative analysis of human health and environmental benefits analyzed for the 2015 CCR rule.”). These statements are conclusory, not backed up by any evidence, and unreasonable. In the 2018 Proposal, EPA runs afoul of the principle that “reasonable regulation ordinarily requires paying attention to the advantages *and* the disadvantages of agency decisions,” *Michigan*, 135 S.

Ct. at 2707 (emphasis in original), and EPA failed to consider an important aspect of whether to revise the rule, *Motor Vehicle Mfrs. Ass'n*, 463 U.S. at 43. Given the extensive evidence that EPA itself produced on the benefits of the 2015 CCR Rule, it is arbitrary and capricious for EPA to give no rational consideration to the costs or foregone benefits of modifying the rule.

CONCLUSION

A. COAL ASH IS HAZARDOUS; THE LAW MUST NOT BE WEAKENED.

The TVA Kingston disaster alerted the nation to the deadly power of coal ash. On December 22, 2008, more than a billion gallons of toxic sludge broke from a poorly maintained earthen dam to destroy forever the riverfront community below it. While EPA quickly responded with the promise of a federal rule to protect American communities, powerful lobbyists stood in the way. Only after litigation from public interest groups and the Moapa Band of Paiutes did the 2015 coal ash rule emerge. While the federal rule is far from what is needed to fully address the threats posed by coal ash, it established, for the first time, a national baseline of protective standards intended to prevent dam failures and stop toxic coal ash chemicals from polluting our drinking water, rivers, and air.

Recently it has come to light that numerous workers engaged in the cleanup of the Kingston spill were grievously injured by inhalation of the ash.⁴⁶⁷ According to the pleadings and press reports in a lawsuit brought on behalf of the workers, those removing the ash from the Harriman, Tennessee community worked with no protective gear.⁴⁶⁸ Testing by the Tennessee Department of Environmental Conservation revealed levels of arsenic in the coal ash 36 times higher than the level in surrounding soil.⁴⁶⁹ According to the lawsuit, the workers were told coal ash was safe. USA Today obtained records showing that TVA, which faced lawsuits from residents over the spill, persuaded EPA to remove warnings from signage that coal ash was “hazardous.”⁴⁷⁰

These developments underscore the hazardous nature of coal ash and the dangers it poses to those who come into contact with it. These developments, along with the recently published groundwater data discussed extensively in these comments, make it even more clear that we need a strong national coal ash rule that protects communities and water supplies and that prevents, to the maximum extent possible, any future spills that would expose nearby communities and the people who respond to the disasters to toxic ash and the health and environmental threats that it presents.

⁴⁶⁷ See <https://www.knoxnews.com/story/news/crime/2017/08/23/epa-bowed-tva-contractor-worker-safety-standards-nations-largest-coal-ash-disaster-records-say/574855001/>; <https://www.knoxnews.com/story/news/crime/2017/08/11/kingston-coal-ash-spill-cleanup-probe-spurs-more-complaints-disease-death/551596001/>; Sworn Declaration of R. Doug Hudgens, *Vanguilder v. Jacobs Engineering Group, Inc.*, No. 3:15-cv-00462-TAV-HBG, Doc. 129-7 (E.D. Tenn. Oct. 28, 2017); Affidavit of Dan. R. Gouge, *Vanguilder v. Jacobs Engineering Group, Inc.*, No. 3:15-cv-00462-TAV-HBG, Doc. 129-5 (E.D. Tenn. Oct. 28, 2017); Kingston Ash Release Response Project, Jan. 2013 Rev. 06, at Table 4-2: Fly Ash Constituent Information, *Vanguilder v. Jacobs Engineering Group, Inc.*, No. 3:15-cv-00462-TAV-HBG, Doc. 129-1 (E.D. Tenn. Oct. 28, 2017).

⁴⁶⁸ See *id.*

⁴⁶⁹ See <https://www.knoxnews.com/story/news/crime/2018/03/28/tva-coal-ash-spill-cleanup-roane-county-lawsuits-dead-dying-workers/458342002/>.


⁴⁷⁰ <https://www.knoxnews.com/story/news/crime/2017/08/23/epa-bowed-tva-contractor-worker-safety-standards-nations-largest-coal-ash-disaster-records-say/574855001/>

The changes to the federal coal ash rule now proposed by the Trump Administration are an outrage to those communities impacted by coal ash and a travesty to the workers who lost their health and possibly their lives because of the government and industry's decades-long refusal to ensure proper management of coal ash waste. The 2015 coal ash rule was an important, though inadequate, step towards finally addressing this toxic legacy of the coal industry. Now, only three years later, the Trump EPA seeks to turn the clock back at the behest of an industry that has long refused to clean up its own mess.

EPA must not proceed down this immoral, unjustified, and unlawful path. The scientific evidence is overwhelming that stronger protections are needed. If, instead, EPA proceeds with finalizing the 2018 Proposal, it will be a complete and outrageous abdication of the EPA's duty to protect public health and safety, and a victory for a powerful polluting industry.

The good news is that science and law stand in the way of EPA's proposal. As a result of the monitoring and reporting requirements in the 2015 coal ash rule, there is abundant evidence of the nature and extent of coal ash water pollution. There are strong laws in this country that do not permit hazardous chemicals to threaten our health, livelihoods, and environment. Whoever is in the White House or at EPA must abide by those laws. Should this proposal be finalized, the public can and will exercise their right to enforce the statutory protections that forbid such actions.

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