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Via e-mail to: hearing.officer@adem.alabama.gov

ADEM Hearing Officer
Office of General Counsel
Alabama Department of Environmental Management
P.O. Box 301463
Montgomery, AL 36310-1463

RE: Alabama's Proposed Coal Combustion Residuals Regulations

Dear ADEM Hearing Officer:

On behalf of the Alabama Rivers Alliance, Black Warrior Riverkeeper, Coosa Riverkeeper, Mobile Baykeeper, Sierra Club and itself ("environmental organizations"), the Southern Environmental Law Center submits this letter in response to the Alabama Department of Environmental Management's (ADEM's or Department's) proposed amendments to ADEM's solid waste regulations (Ala. Admin. Code r. 335-13) related to coal combustion residuals (hereinafter "CCR" or "coal ash"). We appreciate the opportunity to comment on the proposed regulations.

Alabama Power Company, Tennessee Valley Authority, and PowerSouth Energy Cooperative (the "utilities") have stored their coal ash in unlined pits next to our rivers and streams for decades, and in some cases, for more than half a century. In doing so, utilities have been contaminating Alabama's groundwater, surface water and soil for decades, and these utilities must be held responsible for cleaning up and controlling this enormous waste stream. ADEM itself, after reviewing groundwater sampling results required under federal law, issued administrative orders fining Alabama Power and PowerSouth for contamination at each of their active coal ash facilities.¹ In addition, both of the TVA facilities in the state have also faced penalties for contamination due to coal ash pits.² In short, groundwater, surface water and soil contamination emanating from coal ash pits is significant, widespread and now well-known throughout Alabama. To weaken regulatory control and management of this large waste stream, under a state permitting program that is less protective than current federal law, would be

¹ Proposed Consent Order, *In re: Alabama Power Company James M. Barry Electric Generating Plant* (Ala. Dep't of Env'tl. Mgmt. Mar. 2, 2018); Proposed Consent Order, *In re: Alabama Power Company E. C. Gaston Electric Generating Plant* (Ala. Dep't of Env'tl. Mgmt. Mar. 7, 2018); Proposed Consent Order, *In re: Alabama Power Company William C. Gorgas Electric Generating Plant* (Ala. Dep't of Env'tl. Mgmt. Mar. 2, 2018); Proposed Consent Order, *In re: Alabama Power Company Greene County Electric Generating Plant* (Ala. Dep't of Env'tl. Mgmt. Mar. 7, 2018); Proposed Consent Order, *In re: Alabama Power Company James H. Miller Electric Generating Plant* (Ala. Dep't of Env'tl. Mgmt. Mar. 2, 2018); Proposed Consent Order, *In re: PowerSouth Energy Cooperative Charles R. Lowman Power Plant* (Ala. Dep't of Env'tl. Mgmt. Mar. 2, 2018).

² Joint Motion for Entry of Consent Decree, *Ala. Dep't of Env'tl. Mgmt. v. TVA*, 20-CV-2013-900123, (Ala. Cir. Ct. Colbert Cty. May 13, 2013); Consent Order, *In re: TVA Widows Creek Fossil Plant, NPDES Permit No. AL0003875*, No. 10-002-CWP (Ala. Dep't of Env'tl. Mgmt. Oct. 13, 2009).

irresponsible and contrary to the ADEM’s mission to protect the human health and environment of this state.

ADEM has proposed regulations that are significantly less protective of human health and the environment than the federal regulations. First, ADEM is proposing to include “flexibilities” and variances that give ADEM the ability to waive the more comprehensive requirements of 2015 federal Coal Combustion Residual Rule (“2015 CCR Rule”).³ We are particularly concerned about any “flexibility” to suspend groundwater monitoring requirements, waive remediation requirements and set alternative deadlines for compliance with the 2015 CCR Rule. Second, ADEM must ensure that coal ash is not in contact with groundwater when ash ponds or landfills are closed and adhere to performance standards required under the 2015 CCR Rule. Cap-in-place closure is not “clean-up” and will not stop ground and surface water pollution when coal ash is sitting in groundwater. Third, we urge ADEM to adopt specific recommendations to strengthen the state proposed CCR rules to better protect Alabama’s waterways and communities.

1. Background

1(a) Coal Ash Regulation

In April 2015, the U.S. Environmental Protection Agency (EPA) finalized federal coal ash regulations pursuant to its statutory authority under subtitle D of the Resource Conservation and Recovery Act (RCRA), §§ 4001–4010, 42 U.S.C. §§ 6941–6949a.⁴ In part, EPA decided to regulate coal ash because of the catastrophic failure at TVA’s Kingston Fossil Plant, in which a retaining wall broke and spilled 5.4 million cubic yards of coal ash into the Emory River.⁵ Coal ash is one of the largest industrial waste streams in the United States, generating over 110 million tons in 2012.⁶ It is disposed in either surface impoundments or landfills, and as of 2015, there were over 310 on-site landfills and 735 active on-site surface impoundments in the U.S.⁷ Coal ash is known to leach into groundwater, particularly from unlined, inadequately lined and porous landfills and surface impoundments.⁸ “[C]onstituents of most environmental concern in CCR are metals, such as antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, nickel, selenium, silver and thallium.”⁹ EPA developed national minimum criteria for coal ash as self-implementing rules, in part because of concerns from utilities over federal and state oversight.¹⁰

In December 2016, Congress passed the Water Infrastructure Improvements for the Nation (WIIN) Act, which amended section 4005 of RCRA to authorize EPA to review and approve state CCR permit programs.¹¹ For EPA to approve a state CCR permit program, the

³ Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule, 80 Fed. Reg. 21,302 (Apr. 17, 2015).

⁴ *Id.*

⁵ *See* Hazardous and Solid Waste Management System; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals from Electric Utilities; Proposed Rule, 75 Fed. Reg. 35,128, 35,132 (June 21, 2010).

⁶ 80 Fed. Reg. at 21,303.

⁷ *Id.*

⁸ *Id.* at 21,311.

⁹ *Id.*

¹⁰ *Id.*

¹¹ S. 612, 114th Cong. § 2301 (2016).

state permit program must be “at least as protective” as the federal coal ash rules promulgated under 40 C.F.R. part 257.¹² States are not required to develop and submit a CCR permit program to EPA.

In fall 2017, EPA issued an interim final guidance establishing guidelines for states implementing permit programs.¹³ On February 2, 2018, ADEM issued its proposed revisions to the Alabama Administrative Code to regulate coal ash and establish a state permit program for CCR.¹⁴ Most recently, on March 15, 2018, EPA issued a proposed rule (“2018 proposed revisions”) that seeks to revise provisions of the 2015 CCR Rule, in part to “provide States with approved CCR permit programs . . . under the [WIIN] Act the ability to set certain alternative performance standards.”¹⁵ EPA does not expect to finalize these proposed rules until 2019.¹⁶ Currently, the 2015 CCR Rule applies to coal ash facilities in Alabama.

1(b) Coal Ash in Alabama

There are nine active and inactive coal-fired power plants in Alabama: Alabama Power’s Plant Barry, Plant Gadsden, Plant Gaston, Plant Gorgas, Plant Greene County and Plant Miller; Tennessee Valley Authority’s Colbert Fossil Plant and Widows Creek Fossil Plant; and PowerSouth’s Lowman Fossil Plant. There are over 20 active and inactive surface pits and landfills that store coal ash at these plants. In total, there are well over 100 million cubic yards of coal ash currently being stored in the state, and the overwhelming majority of that coal ash is sitting in leaking, unlined pits directly adjacent to rivers that are used for drinking water, recreation, commercial activities and wildlife habitat. These rivers are the life-blood of our state.

The coal ash pits in Alabama have been contaminating state waters for years. One month after TVA’s Kingston spill in 2009, there was a spill at TVA’s Widows Creek Fossil Plant in northeast Alabama that dumped 10,000 gallons of gypsum slurry into Widows Creek and the Tennessee River.¹⁷ In 2013, ADEM fined TVA’s Colbert Fossil Plant \$150,000 for unpermitted discharges.¹⁸ Just this month, we learned that every active coal ash pit in Alabama is contaminating groundwater. In fact, these pits are not just leaching metals into groundwater, but they are doing so in high concentrations. Until the 2015 CCR Rule, utilities in this state were not required to make groundwater monitoring and testing results publicly available. The results of the recent groundwater testing and monitoring showed astonishing contamination. For example, Plant Barry’s groundwater monitoring report showed significantly high levels of several pollutants from its unlined coal ash pond—such as arsenic, boron, calcium, chloride, fluoride,

¹² RCRA § 4005(d), 42 U.S.C. § 6945(d).

¹³ U.S. EPA, Coal Combustion Residuals State Permit Program Guidance Document; Interim Final (2017), https://www.epa.gov/sites/production/files/2017-08/documents/eo12866_ccr_state_permit_prog_guide_2050-za10_significant_guidance_20170809_final_omb_clean_copy_002508.pdf

¹⁴ ADEM, Notice of Public Hearing for Proposed Revisions to the Solid Waste Program, Division 335-13, ADEM Administrative Code, <http://www.adem.state.al.us/newsEvents/notices/feb18/2div13.html>.

¹⁵ Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals from Electric Utilities; Amendments to the National Minimum Criteria (Phase One); Proposed Rule, 83 Fed. Reg. 11,584, 11,585 (Mar. 15, 2018).

¹⁶ *Id.* at 11,586.

¹⁷ Shaila Dewan, *Waste Spills at Another T.V.A. Power Plant*, *The New York Times* (Jan. 9, 2009), <http://www.nytimes.com/2009/01/10/us/10sludge.html>; Consent Order, *In re: TVA Widows Creek Fossil Plant, NPDES Permit No. AL0003875*, No. 10-002-CWP (Ala. Dep’t of Env’tl. Mgmt. Oct. 13, 2009).

¹⁸ Joint Motion for Entry of Consent Decree, *Ala. Dep’t of Env’tl. Mgmt. v. TVA*, 20-CV-2013-900123, (Ala. Cir. Ct. Colbert Cty. May 13, 2013).

total dissolved solids, pH, and sulfate—in groundwater.¹⁹ Plant Barry also had over 95 violations since 2016 with arsenic, in some samples, exceeding the maximum contaminant level by nine times.²⁰ Plant Gaston’s groundwater monitoring report showed a riverfront monitoring well (MW-20) with consistent concentrations of radium between three and four times the maximum contaminant level.²¹ Elevated levels of arsenic were also detected at the perimeter of the newer, lined gypsum pond, indicating that even lined ponds are contaminating groundwater.²²

Due to the number and size of the coal ash facilities in the state, and the extent of groundwater contamination, it is imperative that ADEM promulgate a protective CCR state permitting program. ADEM should not forsake the citizens and resources of this state by adopting less stringent regulations that allow coal ash pits to contaminate our state waters for many more decades to come.

2. ADEM must remove provisions that are contrary to RCRA and the federal CCR regulations.

2(a) ADEM must remove all flexibilities because they do not comply with federal law.

ADEM must remove the flexibilities that give it discretion to waive or alter requirements of the 2015 CCR Rule. In its interim final guidance, EPA suggested that states could include some of the flexibilities found in the municipal solid waste landfill (MSWLF) regulations at part 258 of title 40 of the federal regulations, and EPA has now proposed to amend the 2015 CCR Rule to include many of these discretionary provisions. Prior to the publication of the March 15, 2018, proposed revisions to the 2015 CCR Rule, ADEM issued its proposed CCR regulations and included the majority of the flexibilities listed in the federal interim guidance. ADEM must remove these provisions from its proposed regulations because they do not comply with current federal law, and they are less protective of human health and the environment than the federal rule.

2(a)(i) The flexibilities are contrary to RCRA and the law.

Regulation of municipal solid waste landfills falls under RCRA § 4010, which states that the Administrator must promulgate criteria for MSWLFs that are “necessary to protect human health and the environment **and may take into account the practicable capabilities of such facilities.**”²³ In addition, this section of RCRA specifically provides for some flexibility. For instance, section 4010(c) allows exemptions from the use of groundwater monitoring wells to detect releases, and section 4010(c)(4) allows suspension of groundwater requirements in certain

¹⁹ Ala. Power Co., Plant Barry, 2017 Groundwater Monitoring and Corrective Action Report (Jan. 31, 2018).

²⁰ See Proposed Consent Order, *In re: Alabama Power Company James M. Barry Electric Generating Plant* (Ala. Dep’t of Env’tl. Mgmt. Mar. 2, 2018).

²¹ Ala. Power Co., Plant Gaston, 2017 Groundwater Monitoring and Corrective Action Report (Jan. 31, 2018); See Proposed Consent Order, *In re: Alabama Power Company E. C. Gaston Electric Generating Plant* (Ala. Dep’t of Env’tl. Mgmt. Mar. 7, 2018).

²² *Id.*

²³ RCRA § 4010(c) (emphasis added).

circumstances.²⁴ EPA may consider costs under section 4010(c) in promulgating the MSWLF regulations.²⁵

Regulation of coal ash is governed by a more protective standard than the MSWLF regulations. RCRA section 4004 states that “[t]he Administrator 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.**”²⁶ Put simply, “EPA 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.”²⁷ This standard does not allow any consideration of “practicable capabilities” of facilities. The standard applied to CCR facilities must be those necessary to ensure “no reasonable probability of adverse effects on health or the environment.” In addition, the provisions governing CCR do not authorize any exemptions from groundwater monitoring requirements.

Unlike the MSWLF regulations, EPA cannot consider cost in regulating CCR: “Congress did not authorize the consideration of costs in establishing minimum national standards under RCRA section 4004(a).”²⁸ In complying with RCRA sections 4004 and 4005, EPA’s 2018 proposed revisions state numerous times that cost cannot be a factor when it determines whether to grant a waiver from rule requirements.²⁹

MSWLFs do not store waste in the same way as CCR surface impoundments; therefore, the regulatory system associated with the CCR wastes and MSWLF wastes is intentionally different. CCR impoundments present a significantly different risk profile. The vast majority of CCR in Alabama is stored in unlined surface impoundments, and the CCR regulations cover both landfills and surface impoundments. Unlined CCR surface impoundments, which are known to leach contaminants, such as arsenic, at levels of concern, pose a much more inherent risk of contamination than MSWLFs.³⁰ Many CCR surface impoundments are unlined, containing millions of tons of waste concentrated in a single location. The hydraulic head created by ash management with water “promotes the rapid leaching of contaminants into neighboring groundwater.”³¹ In addition, CCR surface impoundments are also at much greater risk for structural instability and catastrophic failure.³²

²⁴ *Id.*

²⁵ See Solid Waste Disposal Facility Criteria, 56 Fed. Reg. 56,078, 50,983 (Oct. 9, 1991) (“[I]t would appear that Congress explicitly authorized EPA to consider costs under 4010(c) . . .”).

²⁶ RCRA § 4004(a) (emphasis added).

²⁷ 80 Fed. Reg. at 21,310.

²⁸ *Id.* at 21,406.

²⁹ See, e.g., 83 Fed. Reg. at 11,601 (determination that no remediation of a release is necessary cannot be made “on the grounds that the cost of treating the water to remove the contaminants is too high”); *id.* at 11,615 (“An increase in costs . . . is not sufficient” to demonstrate no alternative capacity for non-CCR wastestreams).

³⁰ 80 Fed. Reg. at 21,311.

³¹ *Id.* at 21,328.

³² See *id.* at 21,375 (“Even for CCR units with a low hazard potential classification, EPA is still concerned with the risk to human health and the environment from any structural failure of a CCR unit . . . the environment effects of the failure of even a low hazard potential impoundment can still be significant, given the size of these units, the nature of the material in the unit, and the potential volumes that could be released.”).

Furthermore, EPA agrees that the MSWLF and CCR regulations are governed by two different standards. In the 2018 proposed revisions, EPA states “**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.**”³³

CCR and MSWLF are governed by two different standards for public health and environmental protection purposes. ADEM cannot apply standards for municipal solid waste landfills under Section 4010 and Part 258 to state permit programs because it is contrary to the more protective standards required by RCRA and the 2015 CCR Rule.

2(a)(ii) The flexibilities are less protective than the CCR regulations.

The WIIN Act provisions require that the state permit program provisions must be at least as protective as the federal CCR regulations.³⁴ For a state permit program to operate in lieu of the 2015 CCR Rule, the Administrator must determine that the state program “requires each coal combustion residuals unit located in the State to achieve compliance with—(i) the applicable criteria for coal combustion residuals units under part 257 of title 40, Code of Federal Regulations . . . ; or (ii) such other State criteria that the Administrator, after consultation with the State, determines to be at least as protective as the criteria described in clause (i).”³⁵

EPA’s currently promulgated 2015 CCR Rule does not contain many flexibilities or waivers for owners or operators of CCR units. EPA carefully chose to include some limited, specific flexibilities in the 2015 CCR Rule, such as continuing to use a CCR surface impoundment if a demonstration is made that alternative CCR disposal capacity is not currently available.³⁶ The 2018 proposed revisions to the final 2015 CCR Rule contain additional flexibilities for states with CCR programs; but, this proposed rule has not been finalized and likely will not be finalized until June 2019. The 2015 CCR Rule is still binding as ADEM drafts its state permitting program. ADEM cannot rely on proposed rules or EPA guidance to promulgate its regulations. Alabama’s proposed CCR regulations, which contain flexibilities beyond those in the 2015 CCR Rule, are not as protective as the federal CCR rule, and will not receive approval by EPA without significant revision.

Furthermore, ADEM has acknowledged the contamination emanating from these coal ash pits. To now go back and intentionally loosen coal ash regulations for a state permitting program would be irresponsible and disregard the need to protect public health and the environment.

2(a)(iii) Each flexibility must be removed from the proposed regulations because they are less protective than the federal rule and contrary to law.

2(a)(iii)(1) Proposed rule 335-13-15-.06(8)(e) (no remediation necessary)

ADEM’s proposed rule for the selection of a remedy in the event of contamination allows ADEM to determine that a CCR unit that has leached contaminants into the groundwater does not need to clean up the contamination. Proposed rule 335-13-15-.06(8)(e) states:

³³ 83 Fed. Reg. at 11,597. (emphasis added).

³⁴ RCRA § 4005(d)(1)(B).

³⁵ *Id.*

³⁶ *See* 40 C.F.R. § 257.103(a)(1).

The Department may determine that remediation of a release of an Appendix IV constituent from a CCR unit is not necessary if the owner or operator demonstrates to the Department that:

1. 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; or
2. The constituent(s) is present in groundwater that:
 - (i) Is not currently or reasonably expected to be a source of drinking water; and
 - (ii) Is not hydraulically connected with waters to which the hazardous constituents are migrating or are likely to migrate in a concentration(s) that would exceed the groundwater protection standards established under subparagraphs (6)(h) or (i) of this rule; or
3. Remediation of the release(s) is technically impracticable; or
4. Remediation results in unacceptable cross-media impacts.

In contrast, the 2015 CCR Rule requires a CCR owner or operator to select a remedy that will:

- (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).³⁷

Allowing ADEM the discretion to determine that contamination does not need to be cleaned up is less protective than the federal rule. The 2015 CCR Rule already gives flexibility to the CCR facility in case of release. For instance, it must control the release “to the maximum extent feasible” and “remove...as much of the contaminated material...as is feasible.”³⁸ Allowing a facility to leave contaminants in the groundwater indefinitely fails to meet the RCRA standard that state regulations must be “at least as protective” as the federal rule.

Furthermore, in this proposed rule, ADEM does not define certain key terms in the provisions, such as “no significant reduction of risk,” found in proposed rule 335-13-15-.06(8)(e)(1). How would ADEM determine that owners and operators have demonstrated that clean-up from the CCR unit posed “no significant reduction of risk”? Owners and operators could claim that, only if the risk were almost entirely eliminated by clean-up of the CCR contamination, would there be a “significant reduction” in the risk to trigger remediation. Similarly, in 335-13-15-.06(8)(e)(2)(i), how would ADEM define groundwater that is not “reasonably expected” to be used as a source of drinking water? Groundwater in Alabama often is a source of drinking water for residents in the state and used for commercial purposes. Approximately 44% of the population uses groundwater and several large cities and many small

³⁷ 40 C.F.R. § 257.97(b).

³⁸ *Id.*

towns use groundwater for water needs.³⁹ ADEM now proposes to make public groundwater resources a sacrificial lamb when the utilities have contaminated the groundwater with their CCR wastes.

Furthermore, if ADEM determines that remediation is unnecessary when the groundwater is not a source of drinking water or reasonably expected to be a source of drinking water, there is no requirement that the contaminated groundwater be isolated from any surface and groundwaters nearby. We know that every single coal ash pit in the state is leaking into groundwater. ADEM has acknowledged this. Every single coal ash pit in the state is directly adjacent to a major waterbody. The groundwater wells in between our rivers and the ash pits show high levels of contaminants. ADEM cannot include a provision that will allow facilities to get away with leaving contaminants in the groundwater, letting them pollute the groundwater and nearby surface waters for decades to come. CCR owners or operators must be required to remedy their pollution under the state permitting program when contamination is found.

2(a)(iii)(2) Proposed rule 335-13-15-.06(9)(c) (no practically achievable remedy)

Alabama’s proposed rule 335-13-15-.06(9)(c) allows owners or operators to show that compliance cannot be “practically achieved” with any currently available methods:

If the owner or operator demonstrates to the satisfaction of the Department that compliance with requirements under subparagraph (8)(b) [selection of remedy requirements] of this section cannot be practically achieved with any currently available methods, the owner or operator must:

1. Obtain certification of a qualified professional engineer stating that compliance with the requirements under subparagraph (8)(b) of this section cannot be practically achieved with any currently available methods;
2. Implement alternate measures to control exposure of humans or the environment to residual contamination, as necessary to protect human health and the environment; and
3. Implement alternate measures for control of the sources of contamination, or for removal or decontamination of equipment, units, devices, or structures that are:
 - (i) Technically practicable; and
 - (ii) Consistent with the overall objective of the remedy.
4. Submit the demonstration and the proposed alternative measures to the Department for review and approval within 14 days of completing the demonstration and prior to implementing the alternative measures. Concern over the costs associated with the remedial action is not sufficient to support the demonstration under this section.

The 2015 CCR Rule does not contain this provision. In addition, even EPA’s 2018 proposed revisions, which significantly waters-down the regulations and is contrary to RCRA, does not contain this provision. In fact, EPA, in the 2018 proposed revisions, identifies the differences and risks associated with MSWLFs as opposed to CCR units: “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

³⁹ *Water Information*, Geological Survey of Alabama, <https://www.gsa.state.al.us/gsa/groundwater/waterinfo> (last visited Mar. 21, 2018).

may impact the importance of source control for these types of units.”⁴⁰ EPA also recognizes that the record for the MSWLF regulations “does not contain information that would demonstrate that removing the existing regulatory requirements that all CCR units impose source control would meet the RCRA section 4004(a) protectiveness standard.”⁴¹ In addition, and in contrast to the MSWLF regulations, cost cannot be considered when making this determination. It is difficult to imagine a scenario in which there is no practically achievable remedy when cost is not considered.

Furthermore, ADEM must clarify that it will review and approve any proposed measures before the utility can go forward with them. If alternate measures must only be “submitted” to ADEM without approval, the provision fails to comply with the WIIN Act’s requirement that a state program provide for prior approval.⁴²

This provision falls far below the floor required by the 2015 CCR Rule, as well as the 2018 proposed revisions, and ADEM must remove it from its CCR regulations.

2(a)(iii)(3) Proposed rule 335-13-15-.06(1)(b) (groundwater monitoring suspension)

Proposed rule 335-13-15-.06(1)(b) gives ADEM the discretion to suspend groundwater monitoring requirements for CCR facilities:

Groundwater monitoring requirements under paragraphs (1) through (6) of this rule may be suspended by the Department for a CCR unit if the owner or operator can demonstrate that there is no potential for migration of hazardous constituents from the CCR unit to the uppermost aquifer, as defined in 335-13-15-.02, during the active life of the CCR unit and the post-closure care period. This demonstration must be certified by a qualified professional engineer, as defined by 335-13-15-.02, and approved by the Department, and must be based upon:

1. Site specific field collected measurements, sampling, and analysis of physical, chemical and biological processes affecting contaminant fate and transport, and
2. Contaminant fate and transport predictions that maximize contaminant migration and consider impacts.

Under the 2015 CCR Rule, groundwater monitoring requirements cannot be waived. Even the EPA’s 2018 proposed revisions to the federal rule—which we do not think comply with applicable the legal standard—only allow a suspension of groundwater monitoring for a period of ten years. After ten years, the owner or operator must make another demonstration to continue the suspension.

CCR units have proven time and time again they almost inevitably leak and leach contaminants into groundwater. Of particular concern are unlined or inadequately lined surface impoundments. We know that every unlined surface impoundment in Alabama is contaminating

⁴⁰ 83 Fed. Reg. at 11,601.

⁴¹ *Id.*

⁴² RCRA § 4005(d).

the groundwater.⁴³ In addition, and even more disconcerting, recent monitoring reports show that the lined surface impoundments and landfills are also contaminating the groundwater.⁴⁴

ADEM must remove this potential loophole from its proposed rules. Based on recent groundwater monitoring reports, the facilities in Alabama could not make a demonstration that contaminated groundwater is not migrating across various water bodies. Allowing a facility to circumvent the groundwater monitoring requirements will lead to unknown groundwater contamination that could endanger human health and the environment for decades.

If ADEM chooses to include this flexibility, against our urging, it should include a ten year timeframe for the groundwater monitoring to mimic the 2018 proposed revisions. In addition, it should replace “uppermost aquifer” with “first saturated zone” to make the provision identical to the solid waste regulation, Ala. Admin. Code r. 335-13-4-.2, and to encompass all groundwater that may be contaminated.

2(a)(iii)(4) Proposed rule 335-13-15-.06(6)(i) (alternative groundwater protection standards)

ADEM has proposed to establish alternative groundwater protection standards for constituents for which maximum contaminant levels (MCLs) have not been established:

The Department may establish an alternative groundwater protection standard for constituents for which MCLs have not been established. These groundwater protection standards shall be appropriate health based levels that satisfy the following criteria:

1. The level is derived in a manner consistent with EPA guidelines for assessing the health risks of environmental pollutants (51 FR 33991, 34006, 34014, 34028, September 24, 1986);
2. The level is based on scientifically valid studies conducted in accordance with the Toxic Substances Control Act Good Laboratory Practice Standards (40 CFR 792), or equivalent;
3. For carcinogens, the level represents a concentration associated with an excess lifetime cancer risk level (due to continuous exposure) with the 1×10^{-4} to 1×10^{-6} range; and
4. For systemic toxicants, the level represents a concentration to which the human population (including sensitive subgroups) could be exposed to on a daily basis that is likely to be without appreciable risk of deleterious effects during a lifetime. For purposes of this rule, systemic toxicants include toxic chemicals that cause effects other than cancer or mutation.

Under the 2015 CCR Rule, if a constituent is detected, but the concentration is below the groundwater protection standard, the owner or operator may continue assessment monitoring and is not required to implement corrective action.⁴⁵ The 2015 CCR Rule requires groundwater protection standards to be based on the MCL, if there is one for the contaminant, or on the level found in the background well. For Appendix IV constituents to which this proposed rule would

⁴³ See ADEM’s recently proposed consent orders, *supra* note 1.

⁴⁴ See, e.g., Alabama Power Company, Plant Gaston Gypsum Pond, 2017 Groundwater Monitoring and Corrective Action Report (Jan. 31, 2018).

⁴⁵ 40 C.F.R. § 257.95(f)–(g).

apply, only cobalt, lead, lithium and molybdenum (and boron if ADEM adds it as recommended below) do not have maximum contaminant levels.

Allowing a standard other than the background concentration for these constituents gives too much discretion to ADEM and the utilities and creates the potential for abuse. The groundwater protection standard determines the concentration that is allowable in the groundwater, and determines the amount that the CCR owner or operator must remove to come into compliance with the regulations. EPA determined that the “background standards are sufficiently precise that they are enforceable” and chose not to allow alternate groundwater protection standards.⁴⁶ ADEM should not be able to set discretionary groundwater standards that may allow CCR owners and operators to leave contaminants above background levels in the groundwater.

To make the state CCR rules at least as protective as the 2015 CCR Rule, ADEM must remove this provision.

2(a)(iii)(5) Proposed rule 335-13-15-.06(6)(d)2 (alternative monitoring frequency for assessment monitoring)

ADEM proposes to allow utilities to conduct assessment monitoring on a less frequent basis than provided in the federal rule, stating that “[t]he Department may specify an alternative monitoring frequency during the active life (including closure) and the post-closure period for the constituents referred to in this paragraph. The alternative frequency shall be no less than annual and shall be based on consideration of the factors specified in 335-13-15-.06(6)(c).”

Under the 2015 CCR Rule, after the owner or operator obtains results from an assessment sampling event, it must resample all wells and conduct analyses for Appendix III constituents and Appendix IV constituents that are detected in assessment monitoring on a *semiannual* basis. Neither the final 2015 CCR Rule nor the 2018 proposed revisions to that rule allow for less frequent monitoring. Therefore, this provision is less protective than the federal rule and must be removed.

2(a)(iii)(6) Proposed rule 335-13-15-.06(9)(d) (length of time to show compliance with groundwater protection standard)

Under the 2015 CCR Rule, a CCR owner or operator who has implemented corrective action to remedy groundwater contamination must show that the remedy is complete in part by “demonstrating that concentrations of constituents listed in Appendix IV have not exceeded the groundwater protection standard(s) for a period of three consecutive years”

ADEM has proposed to give itself the discretion to “specify an *alternative* length of time during which the owner or operator must demonstrate that concentrations of Appendix IV constituents have not exceeded the groundwater protection standard(s).”⁴⁷ EPA has determined that three years is the appropriate length of time to ensure that a remedy has been successful and the groundwater is not continuing to be contaminated by a facility. ADEM’s proposed rule undercuts EPA’s firm rule and is less protective; therefore, ADEM must remove this provision

⁴⁶ 80 Fed. Reg. at 21,405.

⁴⁷ Ala. Admin. Code r. 335-13-15-.06(9)(d) (emphasis added)

and require a demonstration that concentrations have not exceeded groundwater protection standards for three consecutive years prior to determining that a remedy is complete.

2(a)(iii)(7) Proposed rule 335-13-15-.07(5)(c) (decrease post-closure period)

ADEM proposes to decrease the 30-year post-closure period that is required in the federal rule: “The length of the post-closure care period may be: (i) Decreased by the Department if the owner or operator demonstrates that the reduced period is sufficient to protect human health and the environment and this demonstration is approved by the Department.” The 2015 CCR Rule requires a minimum 30-year post-closure period, in part because EPA provided flexibility for final cover systems and was concerned about proper maintenance of those cover systems. Further, EPA found that “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”⁴⁸

As noted by EPA, issues may arise at these facilities that would lead to groundwater contamination even in the post-closure period. Currently, we know that all the coal ash pits around the state have been contaminating groundwater for decades. In light of this, a 30-year post-closure period as determined by EPA is the minimum acceptable time period for post closure care. To ensure that the facility detects any leaching and contamination, and ensure that ADEM’s regulations as protective as the federal requirement, this provision allowing a reduced post-closure period should be removed and ADEM should require a minimum 30-year post-closure care period.

2(a)(iii)(8) Proposed rule 335-13-15-.07(4)(c) (disposal of non-CCR wastewater in surface impoundments)

ADEM has proposed to let facilities that are required to close their surface impoundments to continue disposing non-CCR wastewater in surface impoundments if there is no alternative disposal capacity:

No alternative non CCR wastewater management capacity. Notwithstanding the provisions of 335-13-15-.07(2)(a), 9(b)1., or (d), a CCR unit may continue to receive non CCR wastewater if the owner or operator of the CCR unit certifies that the non CCR wastewater must continue to be managed in that CCR unit due to the absence of alternative non CCR wastewater management capacity both on-site and off-site of the facility. To qualify under this paragraph, the owner or operator of the CCR unit must submit a plan to the Department for approval which demonstrates that all of the following conditions have been met:

- (i) No alternative disposal capacity is available on-site or off-site. An increase in costs or the inconvenience of existing capacity is not sufficient to support qualification under this section;
- (ii) The owner or operator has made, and continues to make, efforts to obtain additional capacity. Qualification under this subsection lasts only as long as no alternative capacity is available. Once alternative capacity is identified, the owner or operator must arrange to use such capacity as soon as feasible;

⁴⁸ 80 Fed. Reg. at 21,427.

- (iii) The owner or operator must remain in compliance with all other requirements of this chapter, including the requirement to conduct any necessary corrective action; and
 - (iv) The owner or operator must prepare and submit to the Department an annual progress report documenting the continued lack of alternative capacity and the progress towards the development of alternative non CCR wastewater management capacity.
2. Once alternative capacity is available, the CCR unit must cease receiving non CCR wastewater and initiate closure following the timeframes in 335-13-15-.07(3)(e) and (f).
 3. If no alternative capacity is identified within five years after the initial certification, the CCR unit must cease receiving non CCR wastewater and close in accordance with the timeframes in 335-13-15-.07(3)(e) and (f).

The 2015 CCR Rule does not contain a similar provision, and therefore ADEM’s provision is less protective than the federal rule. Utilities have known about the regulation of CCR for years. The proposed rule was published in December 2010, over seven years ago. The likelihood that utilities would have to close their coal ash pits is not new information. ADEM should not allow them to delay closure for five years because they did not have the foresight to find or build alternative non CCR wastewater management systems. EPA found—even in the March 2018 proposed revisions—that alternative means could be found for these waste streams:

[T]he assumption that no facility could construct alternative capacity within the time frames in the current regulation is contrary to other information presented in the USWAG letter. This letter documents several alternative disposal methods that take only two or three years to construct. It thus appears to generally be feasible for facilities with knowledge of leaking units to begin and complete the construction of these ponds, tanks, and other capacity in the time that the rule lays forth for closure to commence. If the facilities that believe that their units are leaking, or likely leaking, had already begun this construction when they first learned of the regulatory requirements, many would be nearing completion as of this rulemaking.⁴⁹

Because the federal rule is more stringent than the proposed ADEM regulation, ADEM must remove this provision from its regulations.

2(a)(iii)(9) Proposed rule 335-13-15-.06(5)(a)2 (allowing alternative parameters for detection monitoring)

Under proposed rule 335-13-15-.06(5)(a)2, ADEM proposes to allow alternative parameters for detection monitoring: “The Department may establish an alternative list of parameters, in addition to the Appendix III constituents, if the additional parameters provide a reliable indication of releases from the CCR unit to the groundwater.” The federal regulations require owners and operators to test for the constituents listed in Appendix III (boron, calcium, chloride, fluoride, pH, sulfate and total dissolved solids) when conducting detection monitoring.

Appendix III constituents were chosen because of their ability to detect groundwater contamination early: “EPA selected constituents that are present in CCRs, and would rapidly

⁴⁹ 83 Fed. Reg. at 11,596.

move through the subsurface and thus provide an early detection as to whether contaminants were migrating from the disposal unit.”⁵⁰ EPA’s 2015 CCR Rule states that “[a]t a minimum, a detection monitoring program must include monitoring for *all* constituents listed in appendix III to this part.”⁵¹

It is unclear if ADEM means that utilities may monitor for constituents in addition to those listed in appendix III, or if the owner or operator may monitor for alternative constituents and therefore not test for those listed in Appendix III. If this provision removes any requirement to test for the constituents in Appendix III, then ADEM must revise or remove the provision to ensure that it is as protective as the 2015 CCR Rule.

2(a)(iii)(10) Flexibilities not included in ADEM’s proposed rule

We commend ADEM for not including a flexibility allowing the ADEM Director to issue technical certifications in lieu of the current requirement to have professional engineers issue certifications. We urge ADEM to continue to require professional engineers to issue certifications, as is required by the 2015 CCR rule, but there should also be approval of any compliance demonstrations or proposals in addition to accepting certification from third parties. “Relying upon third party certifications is not the same as relying upon the state regulatory authority, and will likely not provide the same level of ‘independence.’ For example, although not an employee, the [certifying] engineer will still have been hired by the utility.”⁵²

2(a)(iv) Recordkeeping, notification and posting of information on the internet

If ADEM does not heed our recommendations and moves forward with the flexibilities, it must guarantee sufficient notice and opportunity for public participation. This includes adding record keeping, notification and internet posting provisions under 335-13-15-.08 for each of the flexibilities.

2(b) ADEM cannot grant variances for federal CCR requirements.

Proposed rule 335-13-15-.15 states that ADEM may grant variances from specific provisions of the chapter “whenever it is found by the Department . . . that non-compliance with this chapter will not threaten the public health or unreasonable create environmental pollution.” This is a provision that could swallow the whole of the state permitting program and make these rules ineffectual. As discussed above in several sections, the state regulations must be at least as protective as the 2015 CCR Rule. Therefore, ADEM cannot grant variances for federal CCR requirements because the state rules would not be as protective as the federal rule. ADEM must remove the variance provision from the proposed rules.

Alternatively, ADEM could revise its variance provision to ensure that variances can only be granted for provisions that are more stringent than or in addition to the federal regulations. While we do not support ADEM granting variances to CCR facilities, particularly those that are contaminating groundwater, ADEM could revise the variance provision to say: “The Department may grant individual variances only from specific provisions of this chapter that are more stringent than the federal regulations. The individual variances must be granted

⁵⁰ 75 Fed. Reg. at 35,206.

⁵¹ 40 C.F.R. § 257.94(b) (emphasis added).

⁵² 75 Fed. Reg. at 35,194.

based upon the procedures of 335-13-8-.02 through 335-13-8-.05 whenever it is found by the Department, upon presentation of adequate proof, that non-compliance with this chapter will not threaten the public health or unreasonably create environmental pollution. No variance may be issued unless it is at least as protective as requirements set forth in 40 C.F.R. Part 257.”

2(c) ADEM must require initial background monitoring for both Appendix III and Appendix IV constituents.

ADEM’s proposed provision 335-13-15-.06(5)(b) discusses the requirement for the initial background monitoring at existing and new CCR units: “[A] minimum of eight independent samples from each background and downgradient well must be collected and analyzed for the constituents listed in 335-13-15-.06(5)(a) [detection monitoring constituents] for the purpose of establishing background concentrations” The federal rule requires that CCR owners and operators the same number of independent samples be collected, but requires them to be analyzed for the constituents in both appendix III and appendix IV.⁵³ To make the state rules as protective as the federal rules, ADEM must require units to collect and analyze for both appendix III and appendix IV constituents.

3. ADEM must ensure that coal ash is not in contact with groundwater when ash ponds or landfills are closed.

Utilities in Alabama have announced their intention to close every unlined surface impoundment by capping in place, meaning that the waste will remain buried on-site in unlined pits, indefinitely. On March 2, 2018, the utilities posted their federally required 2017 groundwater monitoring and corrective action reports on their CCR compliance websites. The groundwater monitoring data shows groundwater contamination at every applicable CCR unit in the state. ADEM must consider this recently available information in the development of its CCR program and ensure that coal ash is removed from groundwater when CCR units are closed.

3(a) Capping ash ponds in place will not stop unlined, leaking coal ash impoundments from polluting Alabama’s waters.

Closing ash ponds by capping in place will not stop the ground and surface water pollution emanating from these facilities. Here in our own state, Ash Pond 1 at the Colbert Fossil Plant, which has been “closed” for decades, continues to contaminate the groundwater. There are two monitoring wells near Ash Pond 1, one up-gradient and one downgradient. In April and October 2016, the downgradient well exceeded limits for ammonia, iron and manganese, all of which are indicative of coal ash contamination.⁵⁴ In addition, the following examples show that capping in place often fails to remedy coal ash pollution:

- Belews Creek, NC: The Pine Hall Road coal ash landfill is unlined and was closed with a synthetic cap in 2008. It was listed by EPA as a potential damage case in 2010 due to

⁵³ 40 C.F.R. § 257.94(b).

⁵⁴ Tenn. Valley Auth., Colbert Fossil Plant, Groundwater Monitoring Report, at 19 (Apr. 2016); Tenn. Valley Auth., Colbert Fossil Plant, Groundwater Monitoring Report, at 25 (Oct. 2016). TVA tests for 13 pollutants when it conducts groundwater monitoring. Five of those tested are listed on Appendix III and IV of the CCR Rule. *See* 40 C.F.R. Pt. 257, App. III, IV.

continuing groundwater contamination, including exceedances for arsenic, boron, iron, manganese, nitrate, selenium, and sulfate.⁵⁵

- Chesapeake Energy Center, VA: An unlined coal ash landfill has been capped by installing a synthetically lined landfill on top of it, so the liner is intended to serve as a cap on top of the old coal ash. “Company reports to the state Department of Environmental Quality obtained by *The Virginian-Pilot* showed that arsenic in one well in 2006 was 40 times the standard.” “Results in May 2013 and April 2014 showed levels 30 times the standard. Levels of cobalt and sulfide also exceeded government standards. Other pollutants, including barium, beryllium, lead, selenium and zinc, were detected at 'significant levels above background.’”⁵⁶

There are studies showing that capping coal ash in place can even increase contamination by creating an oxygen-free environment that exacerbates arsenic leaching.⁵⁷ Utilities in other states in the southeast, including North Carolina, South Carolina and Georgia, are excavating and moving coal ash to dry, lined facilities away from waterways or using the ash for beneficial use.

3(b) The federal CCR rule and the proposed state rule require removing coal ash from groundwater and eliminating impoundments.

We support ADEM’s inclusion of the 2015 CCR Rule performance standards into its state rules, as it has done in 335-13-15-.07 of its proposed regulations. Both the federal and state regulations provide two options for closure of CCR units, either removal of the ash, also described as clean closure, or leaving the ash in place, sometimes called “cap in place.” If an owner or operator chooses to cap in place, it must meet the closure performance standards set forth in 40 C.F.R. § 257.102(d). These performance standards make clear that CCR owners or operators cannot close their ash ponds by leaving coal ash sitting in groundwater and impounded behind ash lagoon dams. ADEM should require CCR owners or operators to remove the ash from the groundwater and store it safely in lined, dry landfill storage, or recycle it for use in cement or concrete.

The CCR Rule requires that if a utility wishes to close its ash pond by capping in place, their closure plan must describe “how the final cover system will achieve the performance standards specified in paragraph (d) of this section.”⁵⁸ The performance standards require, “at a minimum,” that closure will:

- “Control, minimize or eliminate, to the maximum extent feasible, ***post-closure infiltration of liquids in the waste*** and releases of CCR, leachate, or contaminated runoff to the ground or surface waters or to the atmosphere”;⁵⁹

⁵⁵ NC Department of Environment and Natural Resources, Division of Waste Management (DWM) Comments, http://www.astswmo.org/Files/Policies_and_Publications/Cross-program/Coal_Combustion_Residuals/2011.11-NODA_Comments/North_Carolina_NODA_Comments.pdf.

⁵⁶ Protecting Chesapeake as Dominion shuts plant, *The Virginian-Pilot* (Aug. 21, 2014), <http://hamptonroads.com/2014/08/protecting-chesapeake-dominion-shuts-plant>.

⁵⁷ See, e.g., Grace E. Schwartz et al., *Leaching potential and redox transformations of arsenic and selenium in sediment microcosms with fly ash*, *Applied Geochemistry* 67 (2016): 177-185. DOI: 10.1016/j.apgeochem.2016.02.013.

⁵⁸ 40 C.F.R. § 257.102(b)(1)(iii).

⁵⁹ *Id.* § 257.102(d)(1)(i) (emphasis added).

- “*Preclude the probability of future impoundment of water, sediment, or slurry*”;⁶⁰ and the requirement that
- “*Free liquids must be eliminated* by removing liquid wastes or solidifying the remaining wastes and waste residues.”⁶¹

These standards do not deal with the cap itself, but what must be accomplished for the impoundment for the lagoon to be capped in place. EPA has confirmed the plain language of the 2015 CCR Rule and explained that “if the facility is unable to meet the performance standards for closure with waste in place . . . it must clean close the unit”⁶²

Based on the recent groundwater monitoring, corrective action reports and ADEM administrative orders, ADEM has acknowledged that every impoundment is contaminating the groundwater. In addition, it is reasonable to say that coal ash is saturated with groundwater at many of these impoundments. For example, a review of the utilities’ documents shows that many of the groundwater elevations in wells surrounding the facilities are higher than the bottom elevation of the pond. For instance, at TVA’s Colbert Fossil Plant’s Ash Pond 4, TVA admitted that the ash is submerged in an average of seven feet of groundwater.⁶³ A review of TVA’s own documents shows that even more ash—more than 20 feet—is submerged in groundwater. The bottom elevation of the pond is approximately 420 feet mean sea level,⁶⁴ and groundwater elevations in and around the pond are generally around 445 feet mean sea level.⁶⁵

Closing the ponds in place without taking any steps to ensure that the ash will no longer contaminate surface and groundwater will lead to decades of contamination. If ash is submerged in groundwater, CCR owners and operators should be required to close the units by excavating and removing the ash. Any CCR regulations that ADEM puts in place must preserve or build on these closure performance standards and the requirement to separate coal ash from the groundwater and the elimination of impoundments that hold water.

4. ADEM must strengthen its proposed CCR rules to better protect Alabama’s waterways and communities.

Given Alabama’s unique characteristics, including its climate, geology and biodiversity, the environmental organizations encourage ADEM to adopt the following specific recommendations on its proposed amendments to the Solid Waste Management regulations, Ala. Admin. Code r. 335-13.

⁶⁰ *Id.* § 257.102(d)(1)(ii) (emphasis added).

⁶¹ *Id.* § 257.102(d)(2)(i) (emphasis added).

⁶² *What are options and the performance standards for closure of units under the CCR Rule?*, U.S. Environmental Protection Agency, <https://www.epa.gov/coalash/relationship-between-resource-conservation-and-recovery-acts-coal-combustion-residuals-rule#relation> (last visited Mar. 21, 2017).

⁶³ Tenn. Valley Auth., Final Evtl. Impact Statement, *supra* note 39, at App. A, Response to Comments at 28-30, https://www.tva.gov/file_source/TVA/Site%20Content/Environment/Environmental%20Stewardship/Environmental%20Reviews/Closure%20of%20Coal%20Combustion%20Residual%20Impoundments/Final%20EIS%20Part%20I.pdf.

⁶⁴ Stantec Consulting Servs., Inc., Report of Geotechnical Exploration and Slope Stability Evaluation, Ash Pond 4, Colbert Fossil Plant, § 3.3.2 (Jan. 22, 2010).

⁶⁵ Tenn. Valley Auth., Colbert Fossil Plant, Groundwater Monitoring Report, at Fig. 5 (Oct. 2014).

4(a) General Provisions

4(a)(i) Proposed 335-13-15-.01(1)(d): Inactive Surface Impoundments

We urge ADEM to remove the exemption for CCR units from the 2015 CCR Rule obligations that have ceased producing electricity prior to October 19, 2015. Because of this exemption, TVA's Widows Creek Plant is exempt from CCR regulation. Widows Creek has over 25 million tons of ash in its ash ponds, and at the time the rule was finalized, the power plant had only been inactive for less than one month. The Widows Creek ash facilities have had significant issues over the years. The ponds are situated in karst topography, which consists of highly soluble rocks that are known for caves and sinkholes, and are vulnerable to groundwater pollution. In 2009, one of the lagoons ruptured, spilling thousands of gallons of scrubber waste into Widows Creek and the Tennessee River. The ash pits have been knowingly contaminating groundwater for decades. TVA's 2011 sampling of three wells down-gradient of the ash impoundment complex indicated that the groundwater is contaminated by coal ash. The groundwater down-gradient of the ash pond complex had much higher concentrations of coal ash indicators boron, sulfate and manganese than the up-gradient well.

The Widows Creek ash pits are no different than the other CCR facilities in the state and the site should not receive special treatment because the plant stopped producing electricity less than a month before the October 2015 deadline for exemption from the rule. Widows Creek was not dewatered and had not begun the closure process prior to promulgation of the federal rule. The waterways and communities surrounding the Widows Creek facility deserve to have the facility monitored, remediated and closed in accordance with ADEM's CCR regulations. Because Widows Creek's ash ponds are identical to those that are subject to the state regulations, ADEM should regulate Widows Creek to ensure that the ash pond is closed in compliance with the CCR rules.

4(a)(ii) Proposed 335-13-15-.01(1)(h): MSWLF Exemption

We strongly urge ADEM to apply its CCR regulations to MSWLFs and commercial and industrial landfills that receive CCR and to eliminate the exemption for MSWLFs in proposed rule 335-13-15-.01(1)(h). To make this change, ADEM should add MSWLFs and commercial and industrial landfills to the list of facilities required to comply with the regulations under proposed 335-13-15-.01(1)(a). There are requirements for CCR units that are not required for MSWLFs, such as posting information on a publicly available website and complying with fugitive dust control requirements.

If ADEM chooses not to apply its new CCR rules to landfills accepting CCR, in the alternative, the environmental groups strongly urge ADEM to: ensure public notice and participation by requiring acceptance of CCR, at least in certain quantities, to trigger a major modification; require landfills that accept CCR to comply with fugitive dust control requirements under proposed rule 335-13-15-.05(1) to minimize airborne CCR originating from landfills, roads and other activities; require landfills to comply with inspection requirements set forth in proposed rule 335-13-15-.05(4); and require landfills that accept CCR to certify that leachate will be treated for coal ash contaminants, including heavy metals; and require that landfills that accept CCR monitor groundwater for those constituents listed in Appendices III and IV.

4(a)(iii) 335-13-15-.01(1)(g): Minefill Exemption

We recommend that ADEM delete proposed provision 335-13-15-.01(1)(g), which proposes to exempt CCR placed in active or abandoned underground or surface coal mines. The preamble to the federal CCR rule states that “DOI and EPA will address the management of CCR in minefills in a separate regulatory action(s). EPA will work with the OSM to develop effective federal regulations to ensure that the placement of coal combustion residuals in minefill operations is adequately controlled.”⁶⁶ However, to date, the federal agencies have not promulgated regulations for the disposal of CCR in minefills. The environmental groups are concerned about *all* CCR disposal and storage and its impacts on Alabama’s surface and groundwater. Minefills provide multiple and direct pathways for ground and surface water contamination, and they should not be allowed.

4(b) Location Restrictions (Proposed 335-13-15-.03)

4(b)(i) Surface Water Intakes

We recommend that ADEM improve the proposed location restriction provisions by adding a location restriction prohibiting CCR units from being located within one mile of any public water supply surface water intake unless engineering modifications such as liners and leachate collection systems and groundwater monitoring systems are provided. We now have evidence that coal ash pond and landfill in the state are leaking into groundwater, and protection of our drinking water should be a top priority for the agency.

4(b)(ii) 100-year Floodplain

We recommend that ADEM prohibit new CCR units from being located in the 100-year floodplain, and require that existing CCR units in the 100-year floodplain should be closed by excavating and removing the ash. While the environmental groups would prefer a prohibition on siting in 100-year floodplain, an alternative is for ADEM to require that a facility located in a floodplain cannot restrict the flow of a 100-year flood, reduce the storage capacity of the floodplain or result in washout of CCR.⁶⁷

4(b)(iii) Endangered Species

ADEM should prohibit CCR units from being located in areas that could jeopardize the existence of endangered or threatened species. In connection with that, ADEM should prohibit CCR units from being located in a place that could result in destruction or adverse modification of critical habitat protected under endangered species.⁶⁸

4(b)(iv) Preservation Areas

We recommend that ADEM add a location restriction prohibiting any CCR units from being situated within ½ mile of an area formally dedicated and managed for public recreation or natural preservation by a federal, state, or local government agency.⁶⁹

⁶⁶ 80 Fed. Reg. at 21,341.

⁶⁷ See Ala. Admin. Code r. 335-13-4-.01.

⁶⁸ See *id.* r. 335-13-4-.01.

⁶⁹ See Oklahoma’s regulations for guidance, Okla. Admin. Code 252:517-5-7.

We also recommend that ADEM add a location restriction prohibiting any CCR units from being located within the drainage basin of any river designed as an Alabama Outstanding Water or a Wild and Scenic River.⁷⁰

4(c) Design Criteria

We support ADEM's requirement under proposed rule 335-13-15-.04(1)(b) and (c) that a composite liner with an upper component consist of a minimum 40-mil flexible membrane liner, which is more stringent than the 2015 CCR Rule requirement of a 30-mil flexible membrane liner.

4(d) Groundwater Monitoring and Corrective Action

4(d)(i) Proposed 335-13-15-Appendix IV Constituents for Assessment Monitoring

EPA's federal 2015 CCR Rule and the state's proposed rule require groundwater monitoring to be conducted in two phases. The first phase, detection monitoring, monitors for Appendix III constituents which are intended to provide early detection of contaminants migrating into groundwater. If there is a statistically significant exceedance of a constituent, the utility must conduct the second phase, assessment monitoring, and sample Appendix IV constituents. If Appendix IV constituents are detected at levels above groundwater protection standards, the utility must begin corrective action. "Thus, the primary difference between listing in Appendix III and IV is that detection of a constituent on Appendix III initiates requirements for more extensive monitoring, while detection of a constituent on Appendix IV compels a facility to initiate remedial actions to clean up the contamination and, in some cases, to close the unit."⁷¹

In the proposed CCR rule, EPA proposed including boron on both Appendix III and Appendix IV. However, in the final rule, EPA removed boron from Appendix IV, noting that an MCL had not been established under the Safe Drinking Water Act for boron. It reasoned that "[o]ut of all the coal ash constituents modeled by EPA, boron has the fastest travel time, meaning that boron is likely to reach potential receptors before other constituents . . . boron is expected to be one of the earliest constituents detected if releases to groundwater are occurring."⁷² Therefore, EPA thought boron should be listed on Appendix III. Now, EPA has proposed to add boron onto Appendix IV, in part because boron is associated with risks to human and ecological receptors, and "can pose developmental risk to humans when released to groundwater and can result in stunted growth, phytotoxicity, or death to aquatic biota and plants when released to surfacewater bodies."⁷³ Because of the risks associated with boron, ADEM should add boron to appendix IV so that it is included in assessment monitoring.

⁷⁰ See Oklahoma's regulation for guidance, Okla. Admin. Code 252:517-5-6, which prohibits new CCR units or expansions of existing CCR units in the drainage basin of any river designated under the Oklahoma Scenic Rivers Commission Act.

⁷¹ 83 Fed. Reg. at 11,589.

⁷² *Id.* at 11,588.

⁷³ *Id.* at 11,589.

4(d)(ii) Proposed rule 335-13-15-.06(2)(a)1.: Background Groundwater Quality

We urge ADEM to revise the proposed rule 335-13-15-.06(2)(a)1 to require that the owner or operator of a CCR unit accurately represent the quality of background groundwater that has not been affected by CCR. As currently written, the owner or operator must accurately represent the quality of background groundwater unaffected by leakage from a CCR *unit*. The definition of “CCR unit” is narrow in ADEM’s rules: “any CCR landfill, CCR surface impoundment, or lateral expansion of a CCR unit”⁷⁴ 335-13-15-.01(15). Therefore, the definition of CCR unit does not explicitly include inactive or closed impoundments and landfills. In addition, one CCR facility may have multiple surface impoundments and landfills. Owners or operators might interpret this narrow definition to allow them to locate background groundwater monitoring wells in areas of legacy contamination to escape corrective action requirements. ADEM should ensure that background groundwater quality is not affected by any CCR ash pit at the site, including CCR contamination from closed and inactive impoundments and landfills.

4(d)(iii) Drinking Water Well Survey and Testing

Given the evidence of groundwater contamination at every CCR facility in the state, we recommend that ADEM require the CCR owner or operator to survey the drinking water wells within one-half mile of an active or inactive unlined CCR unit, and sample the wells annually for Appendix III and Appendix IV constituents by a neutral third party. If contamination is detected, the owner or operator should be required to supply an alternative drinking water source. Well water sampling results should be posted on the CCR compliance website.

North Carolina’s Coal Ash Management Act requires utilities to sample all drinking water wells within one-half mile of unlined coal ash ponds for coal ash contaminants, and if such contaminants are detected, the owner or operator must supply the well owner with an alternate source of water.⁷⁵ In North Carolina, the vast majority of wells near Duke Energy’s unlined coal ash impoundments contained coal ash contaminants. Requiring utilities in Alabama to test for these contaminants and provide alternate drinking water if contamination is found appropriately places the burden on the polluter, not on citizens.

4(d)(iv) Posting Groundwater and Corrective Action Reports

We recommend that ADEM require groundwater monitoring plans, results, groundwater standard violations, and corrective action plans to be posted on the owner or operator’s CCR compliance website as soon as possible after the information is discovered or generated (e.g., ADEM could require owners or operators to post groundwater monitoring plans within 14 days of their finalization).

4.(d)(v) Groundwater Monitoring Parameters

We recommend that ADEM require CCR unit owners or operators to monitor for both Appendix III and Appendix IV constituents during the active life of the CCR unit and the post-closure period, on at least a semi-annual basis, but preferably on a more frequent basis. Both

⁷⁴ Ala. Admin. Code r. 335-13-15-.01(15).

⁷⁵ North Carolina Coal Ash Management Act, Drinking Water Supply Well Survey and Provision of Alternative Water Supply, at 11 (2014), <http://ncleg.net/Sessions/2013/Bills/Senate/PDF/S729v8.pdf>.

Appendix III and IV contain constituents important to detecting leaks from CCR units, and therefore regular monitoring should not be limited to Appendix III constituents.⁷⁶

4.(d)(vi) Monitoring Locations

We recommend that ADEM require monitoring of both shallow and deep aquifers, as well as contiguous surface water resources. This monitoring would provide a more comprehensive picture of the state of groundwater in and around CCR units. This will inform the CCR owner or operator of the extent of contamination, inform the public of the contaminants in the groundwater and in surface waters, and ensure that remediation is aimed at the entire plume of contamination.

4.(d)(vii) Groundwater Well Sampling

We request that ADEM add the following language to its proposed groundwater regulations: “If any surface water or well sampling required under this permit is not conducted and/or comes up ‘dry,’ then such sample shall not count as a sample but merely a sample attempt, and every 30 days thereafter for up to the next 6 months, the permittee shall attempt to obtain a sample for analysis. If a sample is not obtained within 6 months, the permittee shall sample another representative location and/or install additional wells as necessary to obtain an adequate sample.”

4.(d)(viii) Public Participation

Public participation opportunities and notice requirements should be expanded. Specifically, ADEM provisions for permitting, post-permitting and enforcement should all follow mandates set out in RCRA § 7004(b)(1) and implementing regulations codified at 40 C.F.R. Parts 25, 239 and 256. For example, ADEM should ensure that the public is notified of closure and post-closure care activities and has the opportunity to provide input on proposed actions approving closure and post-closure care activities.

4.(d)(ix) Alternatives Analysis

We recommend that in addition to the requirements of 40 C.F.R. §§ 257.96 and 257.97, ADEM require the owner or operator of a CCR unit to include an alternatives analysis for closure in its corrective action plan. Requiring the owner or operator of a CCR unit to assess alternatives for closure will help ensure that the proposed remedy is the most appropriate means of clean-up at a particular site. This analysis should include a technical and economic assessment of closure alternatives.

4.(d)(x) Enforceable Deadlines

We recommend that ADEM include enforceable deadlines for completion of corrective measures in its groundwater monitoring and corrective action rule, 335-13-15-.06. To accomplish this, ADEM could add the following language to its proposed rules at 335-13-15-.06(8): “Within 90 days of ADEM’s approval of a corrective action plan, the owner or operator shall implement corrective action under timelines approved in the corrective action plan, and

⁷⁶ See Jennifer S. Harkness, Barry Sulkin, and Avner Vengosh, “Evidence for Coal Ash Ponds Leaking in the Southeastern United States,” *Environmental Science and Technology* (June 10, 2016), <http://pubs.acs.org/doi/abs/10.1021/acs.est.6b01727>.

shall provide annual progress reports to ADEM regarding the implementation of the plan.” This addition ensures that timely action is taken to implement clean-up plans.

4(e) Closure and Post-Closure Care

4(e)(i) Public Participation for Closure and Post-Closure

Public participation opportunities and notice requirements should be expanded closure and post-closure care. ADEM should ensure that the public is notified of closure and post-closure care activities and has the opportunity to provide input on proposed actions approving closure and post-closure care activities. Decisions on closure plans should be subject to public comment.

In North Carolina, the state agency held public hearings to gather citizen input concerning coal ash pond closure plans. ADEM should require the same surrounding each utility’s coal ash pond closure plans, including their dewatering plans.

4(e)(ii) Closure Timeline

We recommend that ADEM require owners and operators of CCR units to establish a date certain for closure of all unlined CCR landfills and surface impoundments. This requirement should be built into the CCR unit permitting process.

4(e)(iii) Financial Assurances

CCR unit owners and operators should be required to show that they can pay for the required closure and post-closure period, as well as any corrective action they may be necessary. ADEM should include financial assurance provisions similar to those found in its solid waste regulations.⁷⁷ EPA stressed the importance of financial assurance in the preamble to the Part 258 MSWLF regulations:

The Agency has long maintained that financial responsibility requirements are an important component of any regulatory scheme, such as today’s Part 258 criteria. In establishing the regulatory framework for the management of municipal solid waste, the Agency believes that inclusion of financial responsibility requirements will promote the overall statutory and regulatory goals of RCRA by encouraging the development and implementation of sound waste management practices during and at the end of active facility operations. Specifically, the requirements will ensure that adequate funds are available to cover the costs of closure, post-closure care, and corrective action activities, which, if not planned for, often are left unfunded. Additional governmental expenditures would then be necessary to ensure continued protection of human health and the environment.⁷⁸

The CCR units in Alabama are hundreds of acres in size and contain over 100 million cubic yards of coal ash. Requiring a financial assurance mechanism to be in place will ensure that the CCR owners or operators are held responsible for the cost of closure, post-closure care and clean-up of these sites. We understand that the Alabama Code prohibits ADEM from requiring

⁷⁷ See Ala. Admin. Code r. 335-13-4-.28.

⁷⁸ 56 Fed. Reg. at 51,104.

financial assurance “which are more stringent than the Environmental Protection Agency requirements in effect.”⁷⁹ However, given the importance of ensuring that these facilities are able to pay for the remediation, closure and post-closure, ADEM should take appropriate steps to request an amendment by the legislature to amend the statute.

4(e)(v) Certification of Compliance

ADEM should require CCR owners or operators to obtain a certification of compliance with the state and federal CCR rules upon completion of closure. This would ensure that utilities are held accountable and give the public confidence in their closure methods.

4(f) Recordkeeping, Notification and Posting of Information on the Internet

4(f)(i) Proposed rule 335-13-15-.08(3): Permit Applications

All permit applications should be posted on the publicly accessible internet site as soon as possible after they are submitted to ADEM (i.e., could require 14 days). This could be added as rule 335-13-15-.08(3)(k) as: “Permit application. The owner or operator of a CCR unit subject to this chapter must place the following information on the owner or operator’s CCR web site: 1. The permit application and accompanying documents, as required by 335-13-15-.09.”

4(f)(ii) Posting of Waivers or Variances

Any requests for variances or waivers, as well as any approvals by ADEM, should be made publicly available on the owner or operator’s CCR website and on ADEM’s eFile system. In addition, these flexibilities should receive public notice and opportunity for comment and public hearing to ensure meaningful public engagement.

4(g) Permit Requirements

4(g)(i) Identification of Pipes

ADEM should include a requirement in the permit application to identify any pipes, utility works and other penetrations through or beneath impoundments for active or inactive surface impoundments or landfills. Failure of a buried pipe at one of Duke Energy’s inactive coal ash ponds caused the Dan River spill in 2014. Timely identification and inspection of all penetrations beneath all CCR units may help avoid future disasters.

4(g)(ii) NPDES Permit Modification

Owners/operators should apply for and receive a new or modified NPDES permit to cover dewatering activities. The permit must have enforceable effluent limits for Appendices III and IV constituents, monitoring requirements, and public notice. The public should have notice and opportunity to comment on permits for dewatering, and the owner/operator should notify the public when dewatering commences and ends.

4(g)(iii) Environmental Justice

We recommend that ADEM incorporate environmental justice considerations into its permitting activities for CCR units. These considerations must occur during permitting at all CCR units, including inactive and closed CCR units. This will ensure that owners and operators

⁷⁹ See Ala. Code § 22-27-8.

of CCR units and ADEM understand and consider the communities where coal ash waste is stored during the permitting process. ADEM could accomplish this by including the following language: “A written statement incorporating environmental justice considerations that (1) identifies and addresses disproportionately high and adverse human health or environmental effects of coal ash storage and disposal on minority and low-income populations; (2) attempts to avoid or reduce potential environmental justice effects; (3) details opportunities for community engagement; and (4) considers cumulative impacts of waste disposal on low-income and minority communities.”

4(g)(iv) Demonstration of Compliance with Closure Performance Standards

We recommend that ADEM require applicants to include a narrative description detailing the specific closure method and how it will comply with the closure performance standards if closing in place. This would include a discussion of whether the ash is in contact with groundwater. ADEM should also require CCR owners or operators to obtain a certification of compliance with the state and federal CCR rules upon completion of closure. This would ensure that utilities are held accountable and have confidence in their closure methods.

4(g)(v) Requirement of No Violations

ADEM should add to its proposed regulations the following provision: “No permit will be issued if the permit applicant is presently in violation of any applicable Alabama or federal statute or regulation governing the handling or disposal of solid or hazardous waste.”

4(g)(vi) Permit Applications

ADEM should require that permit applications, at a minimum, include: a floodplain map, groundwater resource usage map (including wells for drinking water and other resources), highest groundwater contour map, potentiometric surface map, site specific cross sections, fill cross-section map, excavation contour map, top of liner contour map, and completion map.⁸⁰ In addition, a subsurface investigation should be required prior to submitting a permit application.⁸¹ This investigation should include, but not be limited to, a determination of the location of the uppermost aquifer, soil and rock sampling, soil tests and reports for soil and rock material proposed for the liner or intermediate or final cover material, regional hydrogeological study, and a groundwater study.

4(g)(vii) Compliance Monitoring and Oversight

As ADEM develops a state permitting program for the management and control of CCR, the program must be adequately staffed and budgeted to ensure compliance by utilities. The program implemented by ADEM should be able to verify the accuracy of information submitted per the rules, verify methodology and sampling by CCR managers, produce evidence admissible in enforcement proceedings, have sufficient public information and complaint procedures posted, and maintain the staff to continue the program for decades to come.

⁸⁰ See Oklahoma state CCR regulations, Okla. Admin. Code § 252:517-3.

⁸¹ See *id.*

5. Conclusion

We appreciate the opportunity to provide feedback on the proposed amendments to Alabama's Solid Waste Management regulations. If you have any questions or would like to discuss any of our recommendations, please contact Christina Andreen or Keith Johnston at 205-745-3060.

Respectfully submitted,



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