

# Blue Ridge Environmental Defense League

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October 15, 2019

Andrew R. Wheeler, Administrator  
US Environmental Protection Agency  
1200 Pennsylvania Ave. NW  
Washington, DC 20460

## **RE: Docket ID No. EPA-HQ-OLEM-2018-0524**

Hazardous and Solid Waste Management System, Disposal of Coal Combustion Residuals from Electric Utilities, Enhancing Public Access to Information, Reconsideration of Beneficial use Criteria and Piles, 84 FRN 40353, 8/14/19

Dear Administrator Wheeler:

On behalf of the Blue Ridge Environmental Defense League and its members in Virginia, North Carolina, South Carolina, Tennessee, Georgia and Alabama, I write to provide further comments on coal ash management. This will supplement my remarks made at the virtual public hearing on October 10 of this year.

## **Background**

On December 19, 2014, the EPA issued its final rule governing the disposal of coal combustion residuals in landfills and surface impoundments.<sup>1</sup> The rule is part of solid waste requirements under the Resource Conservation and Recovery Act, enacted in 1976. 42 U.S.C. §6901 *et seq.* RCRA is the principal federal law governing the disposal of solid waste and hazardous waste in the United States. It has several parts, or subtitles, covering various waste forms.

RCRA Subtitle D governs management of nonhazardous industrial solid waste and municipal solid waste (household trash). It sets criteria for states to build and operate municipal solid waste landfills and other solid waste disposal facilities and prohibits the open dumping of solid waste.

RCRA Subtitle C governs hazardous waste generation and disposal. Its “cradle-to-grave” approach is designed to protect the environment and public health from a class of waste which hazardous based on its ignitability, corrosivity, reactivity or toxicity. It includes batteries, lightbulbs, pesticides, mercury-containing equipment, many forms of industrial waste by-products of manufacturing, and wastes which may “leach poisons into underground water and other systems in the environment when disposed of on land.”<sup>2</sup>

RCRA Subtitle I, regulates underground storage tanks containing hazardous substances and petroleum products.

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<sup>1</sup> We use the term “coal ash” to refer to fly ash waste, bottom ash waste, slag waste, and flue gas emission control waste generated primarily from the combustion of coal.

<sup>2</sup> “RCRA Subtitle C,” Ben Anderson, University of Georgia, Ashwini Kulkarni, University of Georgia, 12/07/2009, <https://www.georgiaencyclopedia.org/articles/geography-environment/resource-conservation-and-recovery-act-rcra-subtitle-c>

## Specific Comments on Proposed Changes

Regarding the five issues in this docket:

1. We oppose “replacing the 12,400-ton threshold that triggers an environmental demonstration with specific location-based criteria” because the specific, numerical benchmark provides an equitable and certain level of protection. And it does not prohibit the additional site-specific considerations such as wetlands, floodplains, seismic zones and other factors based on experience elsewhere.
2. Regarding so-called temporary placement of unencapsulated CCR on the land, we believe that this process would be unnecessary under the proposal we call Subtitle Z, which would have all coal ash encapsulated, managed and isolated from the groundwater on-site and above-grade at existing coal-fired power plants.
3. We support making groundwater monitoring and corrective action report data easier to understand so long as such summaries do not omit, misrepresent or gloss over the conclusions based on that data. Moreover, the original data must be made available contemporaneously with all such executive summaries.
4. Based on the adverse health effects of boron ingestion on prenatal development including atrophy of the testes and arrested spermatogenesis, we support establishing a groundwater protection standard for boron at the lowest level protective of human health; that is, a Maximum Contaminant Level at or below the EPA’s Health Reference Level of 1.4 milligrams per liter. Boron should be added to the list of constituents for assessment and monitoring of coal ash.
5. We support revising the EPA’s CCR website requirements to ensure that relevant facility information required by the regulations is immediately available to the public.

## Re-use of Coal Ash is Not Beneficial

Coal ash is toxic. Fly ash is the dry residue from burning of coal captured by the pollution control devices. Bottom ash is the residue which collects in the bottom of the boiler during the coal burning process. Both types of ash are laced with toxic elements, including arsenic, chromium, lead, selenium and mercury. Also, radioactive strontium and uranium remain after the electric power combustion process and are concentrated in the ash.

The alternative uses of coal ash are many: gypsum wallboard, Portland cement, concrete blocks, precast concrete, roadbeds, structural fill for construction projects, roofing tile and shingles, sandblasting, paint and adhesives. Also, coal ash is used to alter the chemical or physical properties of soil and spread to improve traction on ice-covered roads. However, all methods of re-using ash are unsatisfactory. That the ash becomes immobilized is a common but false claim. Research indicates that contaminants in the ash, heavy metals in particular, are leached from roadways and cement blocks made with ash, endangering the environment and public health. A few examples will illustrate the problems.

In Newcastle, UK, hazardous levels of heavy metals were found where ash from a local incinerator had been applied on local pathways.<sup>3</sup>

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<sup>3</sup> Ryder, R.E., “Incinerator Ash is Inert.” ToxCat, 2000. 3(1). Citation 49 accessed 3/23/14 at <http://www.zerowaste.co.nz/assets/Reports/Wastedopportunities.pdf>

According to the EPA, alternative use of coal ash has contaminated water at more than 16 sites in nine states. Independent studies have documented 10 sites in four other states.<sup>4</sup> In Indiana, coal ash used on highways polluted drinking water with arsenic, chromium and molybdenum. In Chesapeake, Virginia, coal ash used to build a golf course released arsenic, lead, chromium and other toxics into nearby streams. According to an independent testing firm, the 1.5 million tons of coal ash deposited between 2002 and 2007 by Dominion-Virginia Power will contaminate local drinking water “for 200 years or more.”<sup>5</sup>

Wisconsin leads the nation in coal ash reuse to build roads and other construction projects. An investigation of water contamination by Clean Wisconsin found that of 1,000 wells tested, nearly half had high levels of the metal molybdenum linked to the use of coal ash. Hundreds of families have had to find new drinking water. Coal ash used in the construction of an elementary school rendered its water supply unusable.<sup>6</sup> Although molybdenum is an essential trace element, ingestion at high levels can have negative impacts on humans including gout-like diseases, joint pain, liver enlargement and other health problems.

### **North Carolina’s Failed Attempts to Manage Coal Ash**

On February 2, 2014, in the third largest coal ash disaster in history, Duke Energy’s Dan River Steam Station released a torrent of toxic sludge into the Dan River near Eden, North Carolina. The story made national and world news, but the disaster was an accident waiting to happen. Ample warnings were there. Regulatory officials in North Carolina were aware of excessive groundwater contamination. Risks to residents from coal ash impoundments were known to the company and state and federal officials. In response to the Dan River spill, the NC General Assembly passed a Coal Ash Management Act, setting a timetable to close all electric utility coal ash ponds. This led to the siting of two coal ash dumps at former clay mines, creating new ash dumps without having to comply with stricter state and federal solid waste standards.

In 2018 BREDL commissioned a technical review of the state’s groundwater analysis at the Brickhaven coal ash landfill in Chatham County, sited at one former clay mine. Our independent engineering study found that the state’s analysis, paid for by Duke Energy, mischaracterized groundwater flow patterns. Our report by Groundwater Management Associates revealed “incorrect, meaningless” data which, “demonstrates a lack of understanding of the fundamentals of groundwater flow.” Questions and concerns were raised regarding the inadequacy of the monitoring plan, and the complexity of the geology in Chatham and Lee counties during the permitting process. But Duke Energy wanted a place to dump their coal ash, and they got one.

Elsewhere, we work with residents who now face coal ash incineration, the STAR (Staged Turbulent Air Reactor) process, which is being promoted by the SEFA Group in Lexington, South Carolina. With STAR, there is much potential harm to public health, including metals and particulates in the air emissions and the formation of dioxins and furans during the incineration process. Mercury is a toxic hazard in the ash. What isn’t emitted as elemental mercury vapor can

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<sup>4</sup> Lisa Evans at Earthjustice, <http://earthjustice.org/blog/2014-november>

<sup>5</sup> “Lawsuits: Virginia utility built golf club with toxic ash,” United Press International, Dec. 12, 2014 [https://www.upi.com/Top\\_News/US/2014/12/12/Lawsuits-Virginia-utility-built-golf-club-with-toxic-ash/3751418393088/](https://www.upi.com/Top_News/US/2014/12/12/Lawsuits-Virginia-utility-built-golf-club-with-toxic-ash/3751418393088/)

<sup>6</sup> “Environmental group links ‘beneficial use’ of coal ash to southeastern Wisconsin well contamination,” Cole Monka, Wisconsin Center for Investigative Journalism, November 2014

settle on the fine particulates, which cannot all be captured by the baghouse filter. Another hazard is the impact of co-contaminants such as poly-chlorinated biphenyls (PCBs) on what is emitted.

Re-burning coal ash in what is essentially an incinerator is not protective of public health or the environment—exchanging water contamination for air emissions is a false choice. Additionally, imposing such a facility on a community which has been negatively impacted by years of environmental degradation from coal-burning, fugitive coal ash dust and contaminated wells adds insult to the injuries the people living there have already endured.<sup>7</sup>

### **A New Proposal for the Management of Coal Ash**

For the reasons detailed in these comments and more, we recommend that a new approach to coal ash management is needed. Coal ash should be isolated from the environment and stored above-ground on utility property. For convenience, we will call it Subtitle Z, because it would be a new category of waste regulated under the Resource Conservation and Recovery Act.

First, a new category is justified on the basis of annual waste production: According to EPA, in 2012, 470 coal-fired electric utilities generated about 110 million tons of coal ash. Compared with this total, the US generated about 254 million tons of trash in 2013 and recycled and composted about 87 million tons, leaving 162 million tons to be disposed.

Second, assurances by solid waste landfill regulators and commercial companies that waste is safely contained and managed by a Subtitle D double-lined landfill are false. Impartial experts agree that liner failure is inevitable, regardless of the liner type. That all such liners will eventually fail is not in dispute. The only question is: How long will it take?

During the early 1990's, implementation of the new Subtitle D regulations prompted widespread closure of traditional unlined landfills and a flurry of new double-lined landfills relying on a layer of clay and a layer of plastic. The double liners were thought to provide protection from contamination of groundwater. However, the fatal flaw of solid waste landfills is that they are subject to natural forces which make leakage and contamination inevitable.

Third, the RCRA Subtitle C definition of hazardous waste encompasses coal ash; it is undeniably a toxic waste. The combustion of coal tends to concentrate many toxic elements in the bottom and fly ash. High levels of toxic and radioactive elements in coal ash make it hazardous. Yet, the EPA Administrator in 2014 ruled out managing coal ash under Subtitle C.

Fourth, there is an inherent injustice in transporting toxic coal ash waste from a power plant site to a waste dump or incinerator. The solution to the coal ash problem cannot be the transfer of liability from the generator of the waste to the public. Nor can the solution be the infringement of community well-being. Getting coal ash out of the impoundments near rivers and lakes must be done as rapidly as possible but to a more secure site within the power plant operators' responsibility.

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<sup>7</sup> NC DEQ Comments on Duke Energy H.F. Lee Coal Ash Beneficiation Application, Therese Vick, July 13, 2018

As an alternative, we propose that the ash be stored by the power plant operators onsite but in a manner which would isolate it from surface water, groundwater and the air. One method would involve the use of above-grade, cylindrical concrete tanks. Such concrete vaults are used commercially for toxic waste sludge and liquids. The mixture includes cement, fly ash, and slag which is put into the concrete vaults where it hardens. Such vaults may be as large as 120,000 square feet, approximately two football fields in size. They are modular, allowing for expansion as the need arises. Constructing such vaults on power plant property eliminates the need for both transport of the ash and a dumpsite.

### **Conclusion**

Some hold that because we all use electricity we bear a common responsibility for the coal ash and should therefore accept our share of the pollution. This is a strange idea which, if carried to its conclusion, would have us all eating the poisonous byproducts of modern technology like a minimum daily requirement of vitamins and minerals. Plainly, this is unacceptable.

The Blue Ridge Environmental Defense League opposes the transfer the coal ash pollution problem from the private power company to the public. The reintroduction of any poison into the environment under the guise of so-called beneficial use merely transfers the problem from one medium to another and from one community to another. A new way must be found.

Respectfully submitted,

A handwritten signature in black ink that reads "Louis A. Zeller". The signature is written in a cursive style and is followed by a horizontal line.

Louis A. Zeller

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