TESTIMONY OF
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BEFORE THE
SUBCOMMITTEE ON ENERGY AND ENVIRONMENT,
COMMITTEE ON ENERGY AND COMMERCE,
U.S. HOUSE OF REPRESENTATIVES
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Chairman Griffith, Ranking Member Tonko, and Members of the Subcommittee, I appreciate the opportunity today to address the threats posed to our nation's health, environment and economy by coal ash -- the hazardous byproduct of burning coal. When mismanaged, this toxic waste damages the health, environment and economic well-being of Americans nationwide by polluting their water, air and soil and leaving behind toxic sites unfit for productive use.

I am Lisa Evans, Senior Counsel for Earthjustice, a national non-profit, public interest law firm. Earthjustice represents, without charge, hundreds of public interest clients to reduce pollution and prevent toxic contamination. I have worked previously as an Assistant Regional Counsel for U.S. EPA enforcing federal hazardous waste law.

I submit the following testimony to the Subcommittee to increase the Members' understanding of the threats posed by coal ash pollution, as well as the threats posed by attacks on the protections established by the Resource Conservation and Recovery Act (RCRA), the Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities; Final Rule, 80 Fed. Reg. 21,302, (Apr. 17, 2015) (hereinafter "2015 Coal Ash Rule"), and the Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities: Legacy CCR Surface Impoundments, 89 Fed. Reg. 38,950 (May 8, 2024) (hereinafter "2024 Legacy Coal Ash Rule").

Summary of Major Points

- Coal ash is a hazardous substance that has harmed human health and the environment at hundreds of coal plants sites throughout the United States.
- The nation's groundwater is particularly at risk as 91 percent of U.S. coal plants are contaminating groundwater above federal safe standards according to industry's own data.
- EPA's regulation of coal ash is essential to protect human health and the environment from coal ash pollution.
- Efforts to weaken the 2015 Coal Ash Rule and 2024 Coal Ash Rule will harm the health, water resources, and economies of communities across the United States.
- The Trump Administration's illegal efforts to approve state coal ash permit programs that are not as protective as the federal coal ash rule will leave residents of those states vulnerable for the foreseeable future to the harmful impacts of coal ash pollution, including contamination of drinking water sources, surface water, and air.
- Use of coal ash as a substitute for soil (use as fill) must be prohibited due to high levels of arsenic and radioactivity in the ash.
- Recycling of coal ash into encapsulated products has merit, but recycling will never be a solution to the large-scale damage caused by current and past dumping of billions of tons of toxic ash.
- Under no circumstances should new coal be burned to create coal ash for use in concrete or for extraction of rare earth elements (REEs).
- It is imperative that Congress address the ongoing serious and widespread harm to human health and the environment from coal ash pollution.

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I. INTRODUCTION

It is a critical moment for coal ash. The coal power industry is demanding swift and broad repeal of Environmental Protection Agency (EPA) rules that establish essential protections from coal ash pollution.[1] The Trump administration is listening and is considering rule revisions designed to weaken both the 2015 and 2024 coal ash regulations.[2] In addition, the administration has embarked on a mission to cede authority over coal ash permitting and enforcement to coal-friendly states, declaring that rapid approval of state programs is central to EPA's mission. This trifecta threatens all gains made since 2015 to establish effective health and environmental safeguards to prevent and clean up coal ash pollution.

The Subcommittee has chosen to focus its hearing on coal ash recycling, and this testimony addresses recycling issues in later sections. While coal ash recycling in encapsulated products, like concrete and gypsum, can have substantial benefits, the amount of coal ash recycled beneficially is small compared to the volume of ash that has been disposed over the last century in leaking dumps and the ash that requires disposal in landfills every year. According to the American Coal Ash Association (ACAA), the amount of coal ash recycled into encapsulated products, like concrete and gypsum, is short of 40 percent of the annual coal ash generation.[3] Up until 2015, according to the same ACAA data, reuse in encapsulated products had never surpassed more than 20 percent of total coal ash generation.[4] This leaves the majority of coal ash to be disposed in landfills or "sham recycled" to mining projects, ash pond closures, structural

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[1] Daniel Chartier, Utility Solid Waste Activities Group, "Coal Combustion Residual Rules Impede U.S. Energy Production," (white paper), January 16, 2025, https://assets.canarymedia.com/content/uploads/Jan-15-letter-from-power-plant-operators-to-EPA-on-coal-ash.pdf

[2] US EPA, "EPA Announces Swift Actions on Coal Ash Program (Coal Combustion Residuals), Press Release, (March 12, 2025), *available at* https://www.epa.gov/newsreleases/epa-announces-swift-actions-coal-ash-program-coal-combustion-residuals

[3] American Coal Ash Association, 2023 Coal Combustion Product (CCP) Production and Use Report, https://acaa-usa.org/wp-content/uploads/2025/05/2023-Production-and-Use-Survey-Results-FINAL.pdf

[4] *Id*., from data contained in CCP Production and Use Reports, 2000-2023.

fills, agricultural applications, snow and ice control, and other miscellaneous uses. We believe the Subcommittee's highest priority must be to ensure that the many hundreds of unlined and leaking dumps containing billions of tons of coal ash are securely closed and remediated as soon as possible. Promotion of encapsulated recycling is valuable, but its value pales in comparison to ensuring the protection of human health and the environment from the much larger volume of this toxic waste that has been, and is still being, dumped in unprecedented volumes throughout the United States.

II. BACKGROUND: THE REGULATORY LANDSCAPE

Coal ash – the toxic waste left after burning coal for electricity – is one of the largest industrial waste streams in the United States. Coal ash is a mix of hazardous pollutants, metals, carcinogens, and neurotoxins, including arsenic, boron, cobalt, chromium, lead, mercury, radium, selenium, and thallium, which cause a wide range of harm to human health and the environment.[5] Although coal consumption has declined, the coal power industry continues to generate nearly 70 million tons of coal ash annually.[6] It is estimated that after 100 years of burning coal, U.S. power plants have generated approximately 5 billion tons of coal ash – enough toxic waste to fill train cars stretching from here to the moon.[7] Most of this ash has been

[5] For more information on coal ash generally, see Earthjustice's Coal Ash Primer, *available at* https://earthjustice.org/wp-content/uploads/coal-ash-primer_earthjustice_2023.pdf

[6] *See* fn 4, *supra.*

[7] American Road & Transportation Builders Association, ACAA, Production and Use of Coal Combustion Products in the U.S.: Market Forecast Through 2023, at 11 & 14, Figs. 1-1 & 2-1 (June 2015); ACAA, Ash at Work: Applications, Science and Sustainability of Coal Ash, Issue 1, at 14, Chart 1 (2008); ACAA, Coal Combustion Product (CCP) Production & Use Survey Reports, 2014 – 2017, available https://acaa-usa.org/publications/production-usereports/. Estimate based on U.S. coal ash generation of approximately 5 billion cubic yards to present day. The train car analogy assumes that each ton of coal ash occupies one cubic yard of space, that each train car holds 197 cubic yards, and that each train car is 60 feet long (coupled).

dumped in more than 1,000 unlined settling ponds and landfills, with minimal protections to prevent spills or leaking of hazardous chemicals.[8]

During a century of coal-burning in the U.S., there were no federal disposal requirements to safely manage the waste, and most states lacked the political will or resources to regulate it effectively. Consequently, the utility industry dumped its waste for decades using the cheapest means possible, which meant dumping the toxic ash into unlined pits, unlined surface impoundments (ponds), and unlined landfills, with no requirements to monitor or maintain the dumps or prevent the release of hazardous materials. Power plants continued these dangerous practices long after they knew that coal ash contained hazardous contaminants and that these contaminants readily leaked from their primitive dump sites.

The widespread harm from reckless dumping of coal ash is well recognized. In 2015, in response to nearly 160 cases of water contamination[9] and catastrophic coal ash spills at the Tennessee Valley Authority's Kingston Fossil Plant in 2008[10] and Duke Energy's Dan River Generating Station in 2014,[11] EPA established the first-ever federal regulations governing coal ash disposal. The primary goals of EPA's 2015 Coal Ash Rule[12] are to stop the disposal of coal ash in leaking or unlined ash ponds,[13] to close ash ponds and landfills in a safe manner, to

[8] *See* map of all U.S. coal ash disposal sites at https://earthjustice.org/feature/coal-ash-map-sites-legacy-inactive-regulated

[9] 80 Fed. Reg. at 21,450. Note that EPA counts 157 damage cases, but the accurate number is 158, as EPA's damage case spreadsheet erroneously numbered two potential damage cases as number 16. See Alexander Livnat, U.S. Environmental Protection Agency, CCR Damage Case Database, Technical Support Document on Damage Cases, Docket No. EPA-HQ-RCRA-2009-0640 (Dec. 18, 2014) (Document No. EPA- HQRCRA-2009-0640-12123), https://www.regulations.gov/#!documentDetail;D=EPA-HQ-RCRA-2009-0640- 12123.

[10] 80 Fed. Reg. at 21,213.

[11] *Id.* at 21,457, fn. 219.

[12] U.S. EPA, Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities; Final Rule, 80 Fed. Reg. 21302, 21404 (Apr. 17, 2015) (hereinafter "2015 Coal Ash Rule").

[13] The term, "ponds," is widely used to refer to CCR (coal ash) surface impoundments, which are often many acres in size and can span more than 100 acres, containing millions of tons of toxic waste.

monitor groundwater for contamination, and to clean up contaminated sites and restore groundwater quality.

Despite the new safeguards in the 2015 rule, large gaps in coal ash protections remained. In 2015, Earthjustice sued EPA over numerous deficiencies in the rule, including its failure to address coal ash ponds located at plants that retired before October 19, 2015, the effective date of the rule. In 2018, the U.S. Court of Appeals for the District of Columbia (D.C. Circuit Court) agreed with Earthjustice and found that these "legacy ponds" were as dangerous to human health and the environment as the active ponds regulated by the 2015 rule.[14] In fact, the legacy ponds at retired coal plants were in many respects more dangerous than coal ash ponds at active plants because they were more likely to be unlined, unmonitored, and unmaintained. Spills and leakage from these ponds could remain forever undetected and unremediated, creating a high probability of harm to human health and the environment. The court required EPA to establish regulations to better protect public health and safety from approximately 190 legacy coal ash ponds.

The 2015 Coal Ash Rule also failed to regulate inactive landfills that did not receive coal ash after October 19, 2015, and areas of coal ash used as fill or simply placed on the ground at power plant sites.[15] By 2022, it became obvious that these gaps jeopardized health and the environment and allowed many coal plant owners to avoid effective monitoring and clean up.[16] As long as the gap remained, utilities would continue to use the loophole to permanently avoid remediation of contaminated groundwater at their sites. many coal plant owners blamed the

[14] *Util. Solid Waste Activities Grp. v. EPA* (*USWAG*), 901 F.3d 414 (D.C. Cir. 2018). The Court found that EPA's exemption of legacy ponds from the same preventative safeguards that applied to all other inactive impoundments was arbitrary and capricious.

[15] Despite its hazardous constituents, utilities and the general public used coal ash as a substitute for soil or clean fill in construction, landscaping, road building, playgrounds, residential projects, etc. Fill and "structural fill" are used interchangeably. This issue is discussed further in Section XX, *infra.*

[16] Environmental Integrity Project & Earthjustice, Coal's Poisonous Legacy: Groundwater Contaminated by Coal Ash Across the U.S. ((Mar. 2, 2019, rev. July 11, 2019) (hereinafter "Coal's Poisonous Legacy"), *available at* https://www.environmentalintegrity.org/reports/coals-poisonous-legacy/

older, unregulated dumps for their plant's groundwater contamination. Since the older dumps were not regulated, these owners could escape clean up. Full and effective cleanup of power plant sites is possible only if *all* disposal areas of the plant are subject to monitoring, closure and clean up. Because most active power plants have been operating for decades, they have numerous coal ash dumpsites not captured by the 2015 rule.[17] Consequently, in 2023, Earthjustice sued EPA to address these leaking ash dumps. In response to this suit, EPA promulgated the 2024 Legacy Coal Ash Rule.[18] The rule addresses both legacy ponds and the onsite dry disposal of coal ash in landfills and other Coal Combustion Residuals Management Units (CCRMU).[19] Pursuant to the 2024 Legacy Coal Ash Rule, legacy ponds and CCRMU are subject to protections similar to those established by the 2015 rule, including monitoring, closure, cleanup, and post-closure care.

Addressing another perceived gap in the 2015 Coal Ash Rule in 2016, Congress passed the Water Infrastructure Improvements for the Nation (WIIN) Act, which authorized EPA to approve State CCR Permit Programs.[20] EPA can approve such state CCR Permit Programs only if the Administrator determines that the state permit programs' standards "are at least as protective" as the Federal CCR Rule requirements. 42 U.S.C. § 6945(d)(1)(B). EPA has, to date,

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[17] *Id.*
[18] Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities: Legacy CCR Surface Impoundments, 89 Fed. Reg. 38,950 (May 8, 2024) (hereinafter 2024 Coal Ash Legacy Rule)
[19] CCR Management Units (CCRMU) are defined as any area of land on which any noncontainerized accumulation of CCR is received, is placed, or is otherwise managed, that is not a regulated CCR unit. This includes inactive CCR landfills and CCR units that closed prior to October 19, 2015, but does not include roadbed and associated embankments in which CCR is used unless the facility or a permitting authority determines that the roadbed is causing or contributing to a statistically significant level above the groundwater protection standard established under § 257.95(h). 40 C.F.R. § 257.53.
[20] Codified as part of RCRA, 42 U.S.C. § 6945(d).

approved state permit programs in Oklahoma, Texas, and Georgia, issued a denial of program approval to Alabama, and published a draft approval to North Dakota on May 12, 2025.[21]

Lastly, on June 28, 2024, the D.C. Circuit Court issued another impactful decision in *Electric Energy, Inc. v. Environmental Protection Agency*. The Court affirmed that the 2015 Coal Ash Rule prohibits closure of coal ash dumps where ash is left in place and in contact with groundwater, calling this prohibition a "straightforward application" of the rule and rejecting industry's strained efforts to misconstrue the rule's plain language.[22] A large number of coal ash dump sites across the country are sitting in groundwater, leaching toxic pollution that can migrate to drinking water and nearby rivers, lakes, and streams. The ruling affirms the requirement that all sites must eliminate any contact between ash and groundwater. Site owners must also ensure that there won't be future contact, ideally by removing the waste and placing it in safely constructed landfills or by recycling the ash. Because water levels fluctuate over time, and there is a risk of flooding at many sites, leaving ash in unlined dumps creates significant risk of future water infiltration even if the dump is currently dry. The decision provides a clear directive to states that have their own coal ash permitting programs (Georgia, Texas, and Oklahoma) and to those states seeking primacy, requiring them to uphold the ban on closing coal ash ponds in groundwater.

III. COAL PLANTS ARE POLLUTING THE NATION'S WATER

One very significant benefit of the 2015 Coal Ash Rule is its requirement that all active coal plants monitor their coal ash ponds and active landfills to determine if the dumps are

[21] US EPA, U.S. State of North Dakota Coal Combustion Residuals Permit Program, https://www.epa.gov/coalash/us-state-north-dakota-coal-combustion-residuals-permit-program

[22] Industry filed two lawsuits challenging this prohibition. *Electric Energy, Inc. et. al. v. EPA* (I) and *Electric Energy, Inc. et. al. v. EPA* (II) were argued together and were addressed by the Court's opinion. One lawsuit challenged concerns raised by EPA about plants in Ohio, Indiana, Puerto Rico, Kentucky, Kansas, Iowa, and Georgia. The other lawsuit was focused on Gavin Power in Ohio, where EPA found that a massive 300-acre coal ash pond is sitting in up to 64 feet of groundwater.

leaking. Pursuant to the EPA rule, coal plants must install groundwater monitoring systems and test the groundwater for hazardous coal ash contaminants twice a year. The rule also requires that monitoring data be reported on publicly accessible websites. Because of these requirements, the public can learn if power plants in their communities are polluting their water. In addition, the availability of the industry data allows the Environmental Integrity Project and Earthjustice to determine the levels of harm to groundwater occurring at the 292 coal plants regulated by the 2015 Coal Ash Rule.

The data show that 91 percent of U.S. coal plants are causing unsafe levels of groundwater contamination. Most coal plants are contaminating groundwater with unsafe levels of arsenic, which can cause multiple types of cancer, impair the brains of developing children, and cause heart disease.[23] But arsenic is just one cause for concern. Boron, lithium, molybdenum, and sulfate are each present at unsafe levels at most coal plants, with levels of lead, chromium, and radium that exceed federal standards also present at a significant number of plants. Most coal plants have created unsafe levels of at least four toxic coal ash constituents in groundwater. Once these pollutants seep into groundwater, they are persistent and hard to remove. This is why it is so important to deal with the source – leaking coal ash dumps – as soon as possible, before more leaching occurs and leads to contamination.

Most coal plants have not determined how much contamination is flowing to nearby drinking water wells, streams, lakes, or rivers, despite federal requirements to monitor the site boundary and define the extent of the contaminant plume once pollution exceeds certain thresholds. This is dangerous because it leaves neighboring residents in the dark

[23] Integrated Risk Information System (IRIS) Toxicological Review of Inorganic Arsenic, (January 13, 2025) https://iris.epa.gov/document/&deid=363892#:~:text=EPA%20has%20finalized%20the%20IRIS,decisions%20to%20protect%20human%20health.

about potential contamination and because most coal plants are located next to water bodies that can be harmed by toxic coal ash contaminants. In fact, 74 percent of plants have an ash landfill or pond within a quarter mile of surface water, and 57 percent have a landfill or pond within 500 feet of surface water.[24] Unsafe levels of toxic metals in groundwater at coal plants threaten the safety of the nation's drinking water as well as the health and safety of lakes and rivers near the plants.

Although no comprehensive study has been performed, contaminated drinking water wells have been identified in at least 15 communities across the U.S. because of coal ash and this is likely only the tip of the iceberg.[25] Sites where drinking water contamination has been documented include Town of Pines, Indiana (which was named a Superfund site because of the widespread pollution); Gambrills, Maryland; and Belmont, North Carolina, among others.[26]

The following graphic shows the hazardous chemicals found in coal ash and the harm they can cause to different organs in the human body.

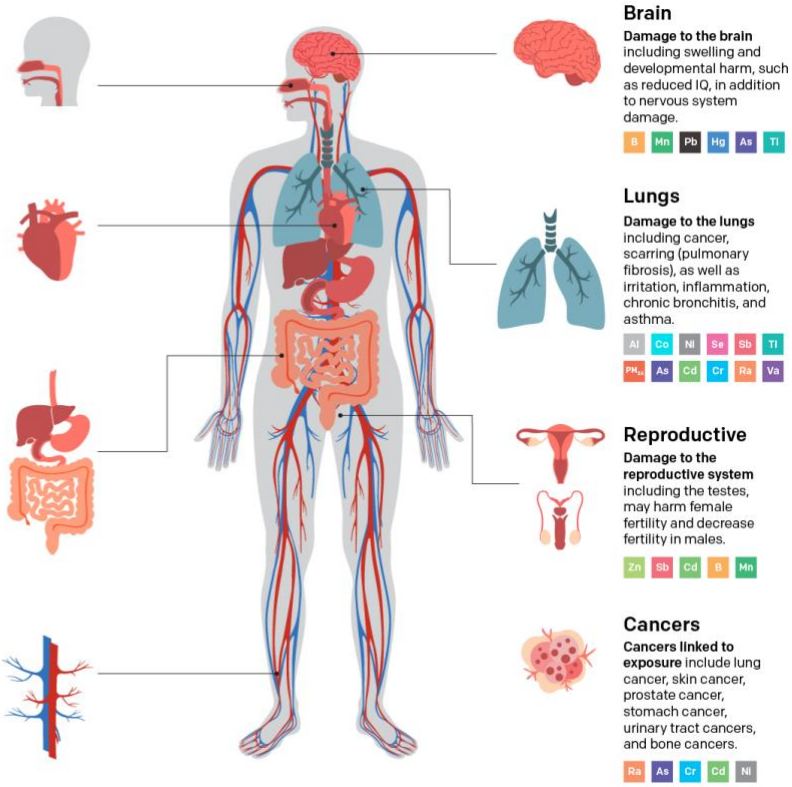
[24] Information was gathered in the US EPA Office of Water 2010 Steam Electric Power Generating Effluent Guidelines Questionnaire (https://www.epa.gov/eg/steam-electric-power-generating-effluent-guidelinesquestionnaire). 287 of the 302 plants with regulated coal ash ponds or landfills responded with this information.

[25] *See* www.earthjustice.org/coalash/map

[26] Environmental Integrity Project & Earthjustice, Coal's Poisonous Legacy: Groundwater Contaminated by Coal Ash Across the U.S. ((Mar. 2, 2019, rev. July 11, 2019) (hereinafter "Coal's Poisonous Legacy"), *available at* https://www.environmentalintegrity.org/reports/coals-poisonous-legacy/ at 44-46. *See also,* www.earthjustice.org/coalash/map

Threats to Human Health from Coal Ash

Breathing or ingesting the toxic chemicals in **coal ash can harm every major organ** in the human body over time. Short-term exposure to the chemicals in coal ash can lead to dizziness, nausea, vomiting, irritation of the nose and throat, and shortness of breath. Long-term exposure can lead to organ damage and a variety of cancers.



What Makes Coal Ash So Harmful

Al **ALUMINUM** Long-term exposure to dust can cause scarring of lungs (pulmonary fibrosis) with symptoms of cough and shortness of breath. May be linked to dementia.

Sb **ANTIMONY** Long-term inhalation can cause a hole in the septum dividing the inner nose and lead to permanent lung damage. May harm female fertility and damage liver, kidneys and heart.

As **ARSENIC** Ingestion can lead to nervous system damage, cardiovascular harm, and urinary tract cancers. Inhalation and absorption through skin can cause lung cancer and skin cancer, respectively.

B **BORON** Inhalation can lead over the short term to eye, nose, and throat irritation. Ingestion of large amounts can result in damage to the testes, intestines, liver, kidneys, and brain, and eventually lead to death.

Cd **CADMIUM** May cause lung and prostate cancer and damage the reproductive system. Inhalation can irritate lungs. Ingestion can cause nausea, vomiting, diarrhea and abdominal pain.

Cr **CHROMIUM** Ingestion can cause stomach and intestinal ulcers, anemia, and stomach cancer. Frequent inhalation can cause asthma, wheezing, and lung cancer. Inhalation can also irritate the nose and throat, resulting in asthma-like symptoms and damage the nose's septum.

Pb **LEAD** Exposure can result in brain swelling, kidney disease, cardiovascular problems, nervous system damage, and death. It is accepted that there is no safe level of lead exposure, particularly for children.

Mn **MANGANESE** Long-term exposure can cause permanent brain damage. Inhalation irritates nose, throat and lungs, causing coughing, wheezing and shortness of breath. May cause harm to the liver and testes and decrease fertility in males.

Hg **MERCURY** Impacts include nervous system damage and developmental harm, such as reduced IQ. Poses particular risk to children, infants and fetuses.

Mo **MOLYBDENUM** Ingestion causes gout (joint pain) and increased blood uric acid levels and is linked to high blood pressure and liver disease. Slowed growth, low birth weight and infertility found in animals.

Ni **NICKEL** Inhalation can irritate and damage the nose, throat and lungs. Acute exposure can cause headache, dizziness, nausea and vomiting. A probable carcinogen for lung cancer. Can cause chronic bronchitis and scarring of the lungs. Long-term exposure may harm liver and kidneys.

$PM_{2.5}$ **PM2.5** Particles less than 2.5mm can lodge deep in the lungs and cause premature death, as well as lung and heart disease, decreased lung function, asthma attacks, heart attacks and cardiac arrhythmia.

Se **SELENIUM** Inhalation can irritate the nose, throat, and lungs, causing coughing, wheezing, and shortness of breath. Can also cause nausea, diarrhea, abdominal pain, and headache. Repeated exposure can cause irritability, fatigue, dental cavities, loss of nails and hair, and depression.

Tl **THALLIUM** Ingestion causes nervous system damage and lung, heart, liver and kidney problems. Main ingredient in rat poison.

Va **VANADIUM** Lung irritant. Long-term exposure can cause asthma attacks with shortness of breath, wheezing, cough, and chest tightness. May damage the kidneys. Repeated high exposure may cause anemia.

Zn **ZINC** Inhalation can irritate the nose and throat, and cause wheezing and coughing. Appears to affect the male reproductive system, including sperm count.

Co **COBALT** Frequent inhalation irritates the lungs, causing asthma and wheezing. Exposure to high levels of cobalt can also result in heart, liver, and kidney damage.

Ra **RADIUM** Regular exposure to the gamma radiation released by radium can increase the risk of many types of cancer, particularly lung and bone cancer.

Source: Agency for Toxic Substances and Disease Registry (ATSDR), U.S. Department of Health & Human Services. Toxicological Profiles. www.atsdr.cdc.gov/toxprofiles

IV. ONGOING COAL ASH POLLUTION MUST BE ADDRESSED

A. Coal Ash Contamination Is Widespread and Significant

Coal ash damage to groundwater is found in every state where coal was burned for electricity. In fact, **groundwater is contaminated above federal health standards at every one of the 23 coal plants in the Subcommittee Members' districts where plant owners have conducted monitoring**, The following table presents the levels of groundwater contamination found at these sites. More in-depth monitoring and compliance data can also be found on Earthjustice's map of coal ash facilities and in our database at www.earthjustice.org/coalash/map and the Environmental Integrity Project's Ashtracker site at www.ashtracker.org.

Table 1: Coal Ash Contamination at Coal Power Plants in Members' Districts

Subcommittee Member	District	Name of Coal Plant	Evidence of Groundwater Contamination**
Morgan Griffith	VA 09	AEP Clinch River	Barium (x2), Cobalt (x2), Lithium (x4), Molybdenum (x4)
Morgan Griffith	VA 09	AEP Glen Lyn	Unsafe levels of arsenic, boron, cobalt, lead, manganese, molybdenum, strontium, sulfate[27]
Morgan Griffith	VA 08	Virginia City	Unsafe levels of boron, cadmium, lithium, thallium, total dissolved solids[28]
Gary Palmer	AL 05	Plant Barry	Arsenic (x7), Boron (x1), Cobalt (x5)
Mariannette Miller-Meeks	IA 01	Interstate Power and Light Burlington Coal Plant	Arsenic (x8), Boron (x14), Lithium (x1), Molybdenum (x7), Sulfate (x1)
Mariannette Miller-Meeks	IA 01	Muscatine Power Plant	Barium (x22), Boron (x10), Sulfate (x2), Thallium (x1)
Mariannette Miller-Meeks	IA 01	Sutherland Coal Plant	Arsenic (x1), Boron (x1), Sulfate (x1)
Mariannette Miller-Meeks	IA 01	Fair Station	Unsafe levels of boron, cobalt, manganese, molybdenum, sulfate
Nick Langworthy	NY 23	Dunkirk Power Plant	Antimony (x3), Thallium (x2)
Gabe Evans	CO 08	Xcel Cherokee	Boron (x2), Lithium (x3), Molybdenum (x1), Sulfate (x3)
Julie Fedorak	ND	Antelope Valley	Molybdenum (1)
Julie Fedorak	ND	Coal Creek Station	Arsenic (x2), Boron (x15), Cobalt (x5), Lead (x2), Lithium (x17), Sulfate (x11)
Julie Fedorak	ND	Coyote Power Plant	Arsenic (x1), Boron (x2), Cobalt (x5), Selenium (x2), Sulfate (x10)
Julie Fedorak	ND	Leland Olds Power Plant	Boron (x2), Lithium (x3), Molybdenum (x1), Sulfate (x3)

[27] Information on groundwater contamination found on Ashtracker.org at https://ashtracker.org/site/303
[28] Information on groundwater contamination found on Ashtracker.org at https://ashtracker.org/site/53

Julie Fedorak	ND	Milton Young	Unsafe levels of arsenic, boron, lithium, molybdenum, radium, total dissolved solids[29]
Julie Fedorak	ND	RM Hesket	Lithium (x54), Sulfate (x22)
Julie Fedoral	ND	RM Stanton	Arsenic (x17), Boron (x2), Lead (x1), Molybdenum (x2)
Brett Guthrie	KY 02	D.B. Wilson	Cobalt (x17), Lithium (x1), Sulfate (x4)
Brett Guthrie	KY 02	Elmer Smith	Boron (x7), Lithium (x1), Molybdenum (x57), Selenium (x1), Sulfate (x1)
Brett Guthrie	KY 02	JK Smith	Lithium (x12), Radium 226+228 (x1), Sulfate (x2)
Brett Guthrie	KY 02	Sebree	Arsenic (x2), Lithium (x35), Mercury (x135), Sulfate (x5)
Jake Auchincloss	MA 04	Brayton Point	Arsenic (x1), Lithium (x2), Molybdenum (x1)
Rob Menendez	NY 08	Hudson	Barium (x1), Cobalt (x1), Lithium (x2), Radium 226+228 (x4), Sulfate (x1), Thallium (x6)

**Parentheticals indicate magnitude of exceedance above federal health-based guidelines for drinking water based on industry data and analysis described in the report, *Poisonous Coverup*.

B. Ongoing Coal Ash Disasters: Three Examples

Unremediated coal ash dumps present ongoing and serious threats to human health and the environment. For illustration purposes, three sites are described below.

i. *Town of Pines Superfund Site*

Northern Indiana Public Service Company (NIPSCO) dumped toxic coal ash in a leaking, unlined landfill and allowed the coal ash to be used as fill at hundreds of properties in the Town of Pines, a small town in Northwest Indiana. The dumping and fill projects contaminated the Town's drinking water wells and soil with arsenic, boron, molybdenum and other hazardous constituents. Arsenic levels in soil in the Town of Pines were found up to 888 parts per million (ppm), more than 1,300 times EPA's safe level for residential soil.[30]

[29] Sarah Bowman, "Who was responsible for harmful pollution left in small Indiana town after 'cleanup' done?" Indy Star, (May 30, 3034), https://www.indystar.com/story/news/environment/2024/05/23/residents-of-small-indiana-town-face-risks-even-after-coal-ash-cleanup/73502047007/

[30] Table 1 Validated Inorganics Results Supplemental Soil Characterization Pines Area of Investigation, https://response.epa.gov/sites/11098/files/Supplemental%20Soil%20Characterization%20Validated%20Inorganics%20Results.pdf

Coal ash was also used as fill to construct the town's playground where the arsenic level in surface soil reached 450 ppm, 662 times the safe level.[31] Thallium (rat poison), a common constituent of coal ash, and radium were also found in Town of Pines' soil at unsafe levels.[32]

As a result of the widespread contamination of drinking water and soil and the threat to human health, EPA designated the Town of Pines a Superfund Site in 2001.[33] NIPSCO, the polluter responsible for the cleanup, has done little to efficiently, honestly and effectively clean up the small community.[34] Despite the passage of decades, cleanup has been exceedingly slow, and many residents have backyards still contaminated with arsenic, radium, and other hazardous constituents of coal ash. Cleanup activities are currently further slowed by the Trump administration's budget cuts and reduction of staff at EPA.[35]

ii. *Michigan City Generating Station: A Drinking Water Source Imperiled*

NIPSCO's Michigan City Generating Station, the primary source of the coal ash contaminating the land and water of the neighboring Town of Pines, is a coal-fired power station in Michigan City, Indiana on the shore of Lake Michigan with its own leaking coal ash dumps. NIPSCO has been operating the coal plant for nearly a century and has been dumping toxic ash on the property for just as long.[36] NIPSCO used 2 million tons of sand, soil and coal ash as structural fill, placing the ash fill into the lake to build acres of man-made land extending into

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[31] *See* Table 1, Analytical Results for Inorganics, Property 34, Town Hall Property, Supplemental Soil Characterization, Pines Area of Investigation at 5-6.
[32] *Id.*
[33] US EPA, Town of Pines Groundwater Plum, Town of Pines, IN, https://cumulis.epa.gov/supercpad/SiteProfiles/index.cfm?fuseaction=second.cleanup&id=0508071
[34] Bowman, Sarah. "Who was responsible for harmful pollution left in small Indiana town after "cleanup" done, Indy Star, May 23, 2024, https://www.indystar.com/story/news/environment/2024/05/23/residents-of-small-indiana-town-face-risks-even-after-coal-ash-cleanup/73502047007/
[35] Email from EPA employee June 4, 2025 to resident of Town of Pines concerning delayed Technical Assistance Plan (TAP) grant, stating that "I want to assure you that we are working diligently to make this happen under difficult conditions as staff working on this Site will be leaving the Agency."
[36] Wood Environment & Infrastructure Solutions, Inc., 2018. NIPSCO Michigan City Generating Station Surface Impoundment Closures (CCR Final Rule and RCRA Regulated) Closure Application. Prepared for Northern Indiana Public Service Company, December 2018.

Lake Michigan, providing acreage for more coal ash ponds. To hold back the coal ash fill from Lake Michigan and the adjacent Trail Creek, NIPSCO installed a wall of steel pilings. The company then created in the fill area a large coal ash surface impoundment adjacent to the lake.[37] This impoundment was eventually filled to capacity with coal ash, and in the 1970s, NIPSCO reworked the large impoundment to construct five unlined ash ponds that were used until the 2010s.[38] NIPSCO closed these ponds, as required by law, starting in 2023, by removing the coal ash.

The 2 million tons of fill remain, however. The estimated lifespan of the steel pilings wall is limited, and corrosion is already evident in the wall along Trail Creek. NIPSCO has not released data concerning the level of corrosion along the lakeside wall, although experts expect to see similar levels of corrosion. In fact, NIPSCO is currently in the process of installing a second steel piling wall at the Trail Creek wall due to stability concerns. Short-term fixes to the sheet piling, however, provide little relief and no long-term assurance of safety. Coal ash contaminants are leaking from the fill area and a catastrophic spill into Lake Michigan, the source of drinking water for 32,000 people in Michigan City (and 40 million more outside Michigan City) remains a threat as long as the coal ash sits behind the aging wall and in the lake.

Despite repeated requests by the community to remove the coal ash fill from Lake Michigan, NIPSCO is steadfast in its claims that the 2-million-ton fill area in the lake is causing no harm.[39] The data indicate otherwise. Although NIPSCO does not monitor the coal ash fill, the company does monitor other areas of the site. According to NIPSCO's own data, coal ash has

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[37] Northey, H. & Wittenberg, A. (2018, Sept. 26). Greens see "tale of two utilities in Florence response. E&E News. Retrieved from: https://www.eenews.net/stories/1060099817

[38] Hoosier Environmental Council (2020). Michigan City coal ash closure. Webpage: https://www.hecweb.org/issues/environmental-health-justice/coal-ash/michigan-city-coal-ash/

[39] Thiele, Rebecca, Activists: NIPSCO's seawall repair isn't enough to prevent coal ash 'crisis,' could stir up pollution, Indiana Public Radio (June 10, 2025), https://indianapublicradio.org/news/2025/06/activists-nipscos-seawall-repair-isnt-enough-to-prevent-coal-ash-crisis-could-stir-up-pollution/

contaminated the groundwater with arsenic, boron, selenium and thallium above federal standards. Arsenic is the most acute groundwater pollutant, with levels up to 50 times the federal maximum contaminant level (MCL) for drinking water.[40] Because groundwater flows towards Trail Creek and Lake Michigan, contamination may be impacting lake and creek sediment, aquatic life, and surface water. However, like most coal ash sites in the U.S., monitoring data for off-site contamination are incomplete or non-existent.

An environmental justice analysis of the population residing within three miles of the Michigan City Generating Station finds that low-income populations and people of color are disproportionately impacted by the site's toxic threats. Thirty-nine percent of the people living near the Michigan City Generating Station are people of color, nearly twice Indiana's average of 21 percent. Forty-six percent of the nearby population is low income, significantly exceeding the state average of 33 percent.[41] In fact, the NAACP, in their 2016 Coal-Blooded Report, gave the Michigan City plant a failing grade due to its impact on low-income communities and communities of color.[42]

The large coal ash fill area at the plant is categorized as a CCRMU under the 2024 Legacy Coal Ash Rule, subjecting it to long overdue monitoring, closure, and cleanup requirements. The Trump EPA's plans to weaken the rule could undermine this. EPA's plans to extend the already long compliance deadlines for CCRMU, discussed in further detail below, could keep the aging and already compromised steel pilings wall in place for years to come and

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[40] Earthjustice, Cleaning Up Coal Ash for Good: How clean closure of coal ash impoundments provides jobs, economic benefits and redevelopment opportunities for host communities (July 2021), *available at* https://earthjustice.org/wp-content/uploads/coal_ash_addendum_new_final_email.pdf (hereinafter "Cleaning Up Coal Ash for Good") at 21.

[41] *Id.*

[42] National Association for the Advancement of Colored People, Indigenous Environmental Network, & Little Village Environmental Justice Organization (2016). Coal blooded: Putting profits before people. Retrieved from: https://naacp.org/resources/coal-blooded-putting-profits-people

delay relief for nearby communities. As climate change raises the level of Lake Michigan and more frequent storms and intense wave action batter the old wall, the risk of catastrophic failure rises. In addition, the utility industry is calling for the exemption of all onsite so-called "beneficial use" from the definition of CCRMU. Such changes to the 2024 Legacy Pond rule would jeopardize the health and safety of Michigan City residents and the environment of a potentially large area of Indiana and Illinois.

iii. *Mooresville, North Carolina: A Town Built on Toxic and Radioactive Ash*

For years, advocates, scientists and residents have asked EPA to investigate and clean up toxic and radioactive coal ash in Mooresville, North Carolina, where more than 1 million tons of coal ash from Duke Energy's Marshall Steam Plant was used as a substitute for clean soil from 1996 to 2010.[43] Mooresville has been designated as a cancer cluster due to the high rate of papillary thyroid cancer. In 2018, as part of an analysis of the state's cancer registry data, the Iredell County Health Department confirmed that two ZIP codes in the Mooresville area, had 110 observed cases of papillary thyroid cancer from 2012 to 2016 — more than double the number expected.[44] Dozens of teenagers have been diagnosed with cancer, and many have died.

Toxic coal ash was used widely as a substitute for soil in construction projects, landscaping, and roadways and can be found in residential neighborhoods, parks, the public high school, and at a daycare center. Earthjustice recently obtained samples of coal ash on surface soil in Mooresville near the day care center and a stream in a public park. Duke University analyzed these samples and found that the coal ash contained arsenic and radium above safe levels. In fact,

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[43] Maher, Kris, Wealthy Carolina Town Worries There's Danger Lurking Under Its Lawns, The Wall Street Journal, (Sept. 29, 2024), https://www.msn.com/en-us/health/other/wealthy-carolina-town-worries-there-s-danger-lurking-under-its-lawns/ar-AA1rqQYW *See also,* Ortiz, Eric. Teen's cancer uncovers a mystery in one North Carolina town: Why here? NBC News. (June 4, 2020) https://www.nbcnews.com/health/cancer/teen-s-cancer-uncovers-mystery-one-north-carolina-town-why-n1062011.

[44] *Id.*

the radium level found in the ash in the public park and near the day care exceeds the cleanup standard set by Superfund and is considered unsafe according to EPA guidance as well as EPA's 2024 Risk Assessment for coal ash.[45] EPA and state regulators have, to date, refused to conduct an investigation of the town to determine the extent of the contamination and its risk to public health from exposure to radioactivity and arsenic.

Mooresville is tragic example of the reckless use of a toxic waste as a substitute for soil. But this is far from an isolated example. Use of coal ash as a soil substitute near homes and drinking water sources is a national problem that stretches from sites in Fairbanks Alaska to southeastern Puerto Rico.[46] The American Coal Ash Association (ACCA) estimates that 180 million tons of coal ash has been used in fill projects throughout the U.S. since 1980. Regulators are aware of only a portion of these dumpsites.

V. CURRENT THREATS TO COAL ASH POLLUTION PREVENTION AND CLEANUP

A. Coal Power Industry Demands: January to April 2025

This section describes two industry letters sent to EPA between January and April 2025. The utility industry has also met with EPA at least once, and there may have been additional correspondence not captured by our Freedom of Information Act (FOIA) Request. The two letters we have obtained, nevertheless, are significant in their scope and in the magnitude of their urgent demands to significantly weaken the 2015 and 2024 coal ash rules.

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[45] US EPA, *Risk Assessment of Coal Combustion Residuals: Legacy Impoundments and CCR Management Units* (April 2024), https://www.regulations.gov/document/EPA-HQ-OLEM-2020-0107-1075.

[46] Earthjustice *et al,* Comments 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 Fed. Reg. 40,353 (Aug. 14, 2019)

i. *USWAG "White Paper" (submitted January 16, 2025)*

The coal power industry wasted no time asking Assistant Administrator, Lee Zeldin, to weaken and remove coal ash protections. Even before his confirmation, the Utility Solid Waste Activities Group (USWAG)[47] sent then-Representative Zeldin a letter on January 16, 2025[48] that called for the following "immediate actions," among others:

- Hold the release of any new regulations or guidance until "reconsideration" is completed by the Trump EPA.
- •. Decline to defend the 2024 Legacy Coal Ash Rule "because it exceeds statutory authority."
- File a motion for voluntary vacatur of CCRMU provisions and the definitions of "liquids," "infiltration," and "contains both CCR and liquids" in the 2024 Legacy Coal Ash Rule.
- Promptly rescind current requirements applying to legacy ponds and CCRMU. This was described as "essential."
- Weaken cleanup requirements to allow for "risk-based" closure of coal ash dumps.
- Rescind requirements for on-site beneficial use of coal ash at power plant sites.
- Review and assess EPA's National Enforcement and Compliance Initiative on coal ash as well as recent EPA regional enforcement actions in light of "new priorities."

[47] The Utilities Solid Waste Utility Group is an industry trade lobbying organization formed in 1978. USWAG members include more 130 utility operating companies, energy companies, and industry associations, including the National Rural Electric Cooperative Association (NRECA), the American Public Power Association (APPA), and the American Gas Association (AGA). *See* www.uswag.org

[48] Daniel Chartier, Utility Solid Waste Activities Group, "Coal Combustion Residual Rules Impede U.S. Energy Production," (white paper), January 16, 2025, https://assets.canarymedia.com/content/uploads/Jan-15-letter-from-power-plant-operators-to-EPA-on-coal-ash.pdf. *See also,* Kari Lydersen, Power companies pressure Trump EPA to roll back rules on toxic coal ash, Canary Media, (Jan. 29, 2025) https://www.canarymedia.com/articles/policy-regulation/power-companies-pressure-trump-epa-to-roll-back-rules-on-toxic-coal-ash

- Revoke EPA's Guidance on Free Liquids, entitled "Considerations for the Identification and Elimination of Free Liquids in CCR Surface Impoundments and Landfills" and any similar guidance or interpretation intended to address "contact with groundwater."
- •. Decline to defend EPA's Final Denial for Gavin Power's Request for a Part A Extension of Closure Date while seeking an abeyance of litigation related to that denial and remand of the Final Denial to allow for reconsideration.
- Initiate a critical review of EPAs April 2024 "Risk Assessment of Coal Combustion Residuals: Legacy Impoundments and CCR Management Units."
- •. Prioritize the expeditious approval of State CCR permit programs and include a streamlined process for approving State CCR programs that adopt the federal rules by reference.[49]

USWAG indicated the above "necessary immediate steps" were "just first steps" to a needed fundamental overhaul of "wasteful" coal ash regulation.

ii. *USWAG Letter re CCR Management Units (April 4, 2025)*

Via a FOIA request, Earthjustice obtained a letter sent by USWAG to Steven Cook, Deputy Assistant Administrator of the Office of Land and Emergency Management (OLEM) dated April 4, 2025.[50] The April letter posits that utilities are unable to comply with the current deadlines in the 2024 Legacy Coal Ash Rule pertaining to CCRMU. USWAG requested, therefore, that EPA provide an indefinite postponement of these safeguards. USWAG stated, "A commonsense approach to address this challenge would be to delay initiation of FER [facility

[49] *Id.*
[50] Daniel Chartier, Utility Solid Waste Activities Group, "Information Regarding Deadline Extensions for CCR Management Unit Requirements under the Federal CCR Rule (40 C.F.R. Part 257, Subpart D), April 4, 2025.

evaluation report] activities until a permit program is in place to review, approve, and verify the existence of CCRMU's at sites prior to further work being conducted."[51]

USWAG's request is for an indefinite postponement of *any* obligations relating to the identification, reporting, and monitoring of CCR management units. USWAG asks for a delay "until a permit program is in place." USWAG knows that there is no federal permit program, and a final rule to create such a program has been delayed since 2020. Further, EPA has projected no date for promulgation of the final rule. USWAG also knows that no state program has permitting authority over CCRMUs, nor has any state expressed interest in seeking approval for that part of the program. If EPA were to accept USWAG's suggestion to delay CCRMU safeguards until permitting, it could be decades before compliance with the protections is required. EPA already provided utilities with extremely generous compliance timeframes in the 2024 rule. In fact, the deadline for a company's *first* groundwater monitoring reports for CCRMUs is January 31, 2029.[52] This extended compliance deadline was requested by USWAG in their comments on the draft rule in 2023. Apparently, USWAG now sees an open door, not only for more time, but to avoid the requirements of the rule indefinitely.

It should also raise concerns that the USWAG noted in its letter that 15 out of 23 utilities surveyed stated that the size of the CCRMU universe on their sites was a reason for delay. The fact that 65 percent of the surveyed utilities found a concerning number of unmonitored CCR dumpsites at their power plants is reason to *hasten* the protective safeguards of the rule, not to delay them.

B. The Trump Administration's Attack on Coal Ash Protections

[51] *Id.*
[52] 40 C.F.R. § 257.90(e),

Assistant Administrator Zeldin announced in a press release on March 16, 2025, that EPA is prioritizing timely actions on coal ash including state program reviews and regulatory "updates."[53] According to the press release, "EPA will advance cooperative federalism to allow states to lead the charge."[54] Assistant Administrator Zeldin stated that EPA will work with states to place implementation of the coal ash regulations "more fully into state hands."[55] In addition, the press release states that EPA is reviewing the 2024 Legacy Coal Ash Rule to determine "whether to grant short- and long-term relief such as extending compliance deadlines."[56] EPA's stated intention to speed state permit program approvals and extend compliance deadlines matches perfectly with the utilities' January and April demands. The bold scheme USWAG proposed to EPA in April to indefinitely delay the CCRMU requirements may provide the shape of the regulatory relief previewed in this press release.

C. The Trump Administration's Rapid Retreat from Coal Ash Enforcement

i. *The Biden administration's National Enforcement and Compliance Initiative on coal ash*

On August 17, 2023, EPA announced its National Enforcement and Compliance Initiatives (NECI) for fiscal years 2024 to 2027.[57] As one of its six initiatives, EPA chose to protect communities from coal ash.[58] EPA's decision was in response, in part, to comments submitted by Earthjustice and public interest groups highlighting the widespread noncompliance

[53] US EPA, "EPA Announces Swift Actions on Coal Ash Program (Coal Combustion Residuals), Press Release, (March 12, 2025), *available at* https://www.epa.gov/newsreleases/epa-announces-swift-actions-coal-ash-program-coal-combustion-residuals
[54] *Id.*
[55] *Id.*
[56] *Id.*
[57] US EPA, Memorandum, FY 2024 – 2027 National Enforcement and Compliance Initiatives (Aug. 17, 2023), https://www.epa.gov/system/files/documents/2023-08/fy2024-27necis.pdf
[58] US EPA, National Enforcement and Compliance Initiative: Protecting Communities from Coal Ash Contamination, https://www.epa.gov/enforcement/national-enforcement-and-compliance-initiative-protecting-communities-coal-ash

of the utility industry with the 2015 Coal Ash Rule, the urgent need for federal enforcement, and the disparate impact of coal ash pollution on low-income communities and communities of color.[59] Earthjustice and Environmental Integrity Project's ("EIP's") 2022 report, *Poisonous Coverup: The Widespread Failure of the Power Industry to Clean Up Coal Ash Dumps*, highlighted EPA's nearly complete failure until 2022 to exercise its enforcement authority.[60]

The coal ash National Enforcement and Compliance Initiative includes an enhanced effort by EPA to assess coal plants' compliance with the federal CCR requirements and address areas of noncompliance. EPA describes the problem as follows:

> - In 2021 alone, coal-fired electric utilities generated almost 80 million tons of coal ash. There are approximately 300 regulated coal facilities nationwide that currently house approximately 775 coal ash surface impoundments and landfills. Coal ash disposal impoundments and landfills are found throughout the country in both urban and rural areas. Of these facilities, 119 are located near areas already overburdened by pollution.
>
> -The harm to human health and the environment from noncompliance with EPA's Resource Conservation and Recovery Act (RCRA) Coal Ash Program can be significant and can occur through catastrophic releases of contaminants into the air or contamination of groundwater, drinking water, or surface water. These

[59] Comments of Earthjustice, Environmental Integrity Project, Clean Water Action, Hoosier Environmental Council, Sierra Club, Southern Environmental Law Center, And Waterkeeper Alliance, Public Comment on EPA's National Enforcement and Compliance Initiatives for Fiscal Years 2024-2027, Docket ID No. EPA-HQ-OECA-2022-0981.

[60] Environmental Integrity Project and Earthjustice, Poisonous Coverup: The Widespread Failure of the Power Industry to Clean Up Coal Ash Dumps (Nov. 3, 2022), https://environmentalintegrity.org/reports/poisonous-coverup-the-widespread-failure-of-the-power-industry-to-clean-up-coal-ash-dumps/.

impacts have and will continue to be felt by surrounding urban and rural communities until the coal ash is properly contained, controlled and cleaned up.[61]

In Fall 2024, EPA posted FY 2024 results of the initiative, which included "substantially increased enforcement resources" that enabled EPA to assess over 100 units for compliance with coal ash rules. In addition, EPA finalized final orders and settlement agreements with five companies. The orders and agreements address noncompliance at power plants in New York, Alabama, Pennsylvania, Colorado and Puerto Rico, and require companies to take certain actions including addressing groundwater monitoring deficiencies, conducting effective and protective groundwater cleanup, addressing emergency planning, and paying a fine.[62] In addition, in FY 2024, EPA completed compliance assessments of 107 coal ash dumps in 18 states, including onsite inspections, to determine compliance with coal ash regulations.[63] Lastly, the agency engaged in an enforcement capacity building effort consisting of training and education of staff responsible for enforcing the coal ash regulations. To this end, EPA hosted five Coal Ash Program training sessions with a combined total of over 400 participants. Topics covered included a basic overview of the Coal Ash program and regulations, litigation related to the CCR Rule, and criminal enforcement authorities. The above represents a substantial effort to initiate enforcement of the rule.

ii. *The Trump administration kills the coal ash National Enforcement and Compliance Initiative*

On March 12, 2025, the Trump administration essentially buried the Coal Ash National Enforcement and Compliance Initiative. The Office of Enforcement and Compliance Assurance

[61] *Id.*
[62] *Id.*
[63] *Id.*

(OECA) issued a memorandum entitled, "Implementing National Enforcement and Compliance Initiatives Consistently with Executive Orders and Agency Priorities."[64] OECA made it clear that EPA must not proceed with enforcement actions at the 107 plants they have already investigated or initiate new investigations unless "imminent threats to human health" are present. OECA stated:

> Protecting Communities from Coal Ash Contamination: This NECI focuses in large part on perceived noncompliance with current performance standards and monitoring and testing requirements and is motivated largely by environmental justice considerations, which are inconsistent with the President's Executive Orders and the Administrator's Initiative. To align this NECI with those, henceforth enforcement and compliance assurance for coal ash at active power plant facilities shall focus on imminent threats to human health. Except where expressly required by statute or regulation, under no circumstances may enforcement or compliance assurance incorporate environmental justice considerations. Any order or other enforcement action that would unduly burden or significantly disrupt power generation shall require the advance approval [of the Assistant Administrator for OECA].[65]

OECA's action aligns with industry's demand in their January letter to Administrator Zeldin to immediately review and assess the National Enforcement and Compliance Initiative as well as EPA regional enforcement actions "in light of new priorities."[66] USWAG's January letter

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[64] US EPA, Office of Enforcement and Compliance Assurance, Memorandum, Implementing National Enforcement and Compliance Initiatives Consistently with Executive Orders and Agency Priorities, Mar. 12, 2025, https://www.epa.gov/system/files/documents/2025-03/necimemo-20250312.pdf.

[65] *Id.*

[66] Daniel Chartier, Utility Solid Waste Activities Group, "Coal Combustion Residual Rules Impede U.S. Energy Production," (white paper), January 16, 2025, https://assets.canarymedia.com/content/uploads/Jan-15-letter-from-power-plant-operators-to-EPA-on-coal-ash.pdf.

also called for the "review of federal contracts with private consultants used by EPA to implement the agency's compliance and enforcement responsibilities."[67] These contracts are undoubtedly adversely impacted by the OECA directive.

The bar set by OECA for EPA's coal ash enforcement is high, reckless, and inappropriate. The OECA bar would allow EPA only to address coal ash rule violations that pose "imminent threats to human health."[68] However, the goal of RCRA and its implementing regulations is foremost to *prevent* harm to health and the environment, not simply to address damage this is "imminent."[69] EPA's extensive solid and hazardous waste regulations promulgated since 1980 under subtitles C and D of RCRA are intended to establish secure repositories for dangerous waste, monitor groundwater to detect leaks, and capture releases as soon as they occur. These regulations intended to *prevent imminent threats* to human health. Waiting for such threats to occur violates the core principles of the statute and constitutes a sharp and dangerous departure by the Trump administration.

D. EPA's Dangerous and Illegal Approach to State Program Approvals

In EPA's March 12, 2025 press release, Assistant Administrator Zeldin announced that under his direction, the agency is "committed to fulfilling President Trump's promise to unleash American energy, lower costs for Americans, revitalize the American auto industry, restore the rule of law, and *give power back to states to make their own decisions*." EPA reiterated this in its April 8 press release, announcing it would "take swift action to advance cooperative federalism and encourage states to pursue oversight and permitting of coal ash within their borders" and

[67] *Id.*
[68] US EPA, Office of Enforcement and Compliance Assurance, Memorandum, Implementing National Enforcement and Compliance Initiatives Consistently with Executive Orders and Agency Priorities, Mar. 12, 2025, https://www.epa.gov/system/files/documents/2025-03/necimemo-20250312.pdf.
[69] *Id.*

promised quick decisions on both North Dakota's and Wyoming's state permit programs. On May 16, 2025, EPA published its proposed decision to partially approve North Dakota's program. In light of these announcements, we anticipate North Dakota will be the first of many proposed approvals from this administration.

If finalized, EPA's approval of North Dakota's coal ash permit program would violate the WIIN Act and set a dangerous precedent for other state applications to come. Approval of state permit programs that are not as protective as the federal rule will threaten the health and well-being of communities and the natural resources on which they depend.

EPA's approval would violate the WIIN Act because North Dakota's program *on its face* is neither a "system of prior approvals" nor "at least as protective" as federal CCR requirements. The WIIN Act enables EPA to approve "a permit program or *other system of prior approval* and conditions . . . if . . . the program or other system requires each [CCR] unit located in the State to achieve compliance with" the federal CCR rule or State provisions that are "at least as protective as" the federal CCR rule. 42 U.S.C. § 6945(d)(1)(B) (emphasis added). Yet, ample evidence indicates that North Dakota has issued permits to coal ash units in the state without doing adequate due diligence of site-specific facts or making clear what a site needs to do to achieve compliance with the state's coal ash regulations. In short, North Dakota's program is not a system of prior approvals. Nor are multiple provisions of North Dakota's coal ash regulations—spanning public participation requirements to closure requirements, among others — "at least as protective" as federal requirements. Earthjustice intends to identify and describe these issues in greater detail in its upcoming comments on the North Dakota proposal.

Additionally, EPA's approval would violate the WIIN Act because North Dakota's program *as applied* is not "at least as protective" as federal requirements. Again, the WIIN Act's

plain language precludes EPA from approving a state CCR permit program unless it first determines that the program "requires *each*" coal ash unit in the state "*to achieve compliance* with" at-least-as-protective coal ash requirements. 42 U.S.C. § 6945(d)(1) (emphasis added). This language compels EPA to consider coal ash permits that a state has already issued. Those permits reveal whether a state's program in fact requires each coal ash unit in the state to achieve compliance with at-least-as-protective requirements.

EPA itself reached this exact conclusion when it decided to deny Alabama's coal ash permit program. There, EPA explained that it could not determine whether a permit program requires "each" CCR unit to "achieve compliance" with requirements "at least as protective as" the federal CCR rule without considering "*both* a State's statute and regulations *and what the State actually requires individual CCR units to do, such as in permits or orders* . . . ." 88 Fed. Reg. at 55,226 (emphasis added); *see also* 89 Fed. Reg. at 48,778. Thus, EPA concluded, "it would be both *unreasonable and arbitrary and capricious* to ignore issued permits" when evaluating state permit programs "since [issued permits] are the best evidence of whether a State program does in fact require each CCR unit in the State to achieve compliance with the Federal CCR regulations or State standards that are at least as protective as the Federal regulations." 89 Fed. Reg. at 48,781 (emphasis added).

The requirement to consider a state's coal ash permits when deciding whether to approve the state program makes particular sense in light of the WIIN Act's permit shield provision. As EPA explains in its proposed North Dakota approval,

> Once a final CCR permit is issued by an approved State or pursuant to a Federal CCR permit program, [] the terms of the permit apply in lieu of the terms of the Federal CCR regulations and/or requirements in an approved State program, and RCRA section

> 4005(d)(3) provides a permit shield against direct enforcement of the applicable Federal or State CCR regulations (meaning the permit's terms become the enforceable requirements for the permittee).

90 Fed. Reg. 20,989. Thus, a state's coal ash permit is the evidence of whether a state's program requires "each" coal ash unit "to achieve compliance" with at-least-as-protective coal ash regulations, as the WIIN Act mandates.

Yet, in its proposed approval of Norh Dakota's program, EPA deems "not relevant" the eight coal ash permits North Dakota has already issued. EPA's about-face is unsupported by the rulemaking record and illegal under the WIIN Act's plain language. It is also especially egregious in light of the ample evidence showing that North Dakota's coal ash permits have enabled rampant noncompliance with federal coal ash requirements, which Earthjustice will discuss in detail in its upcoming comments on the proposed approval.

EPA's decision to ignore North Dakota's permits is especially egregious because the agency in fact reviewed those permits and knows they allow units to violate federal requirements. EPA states in its Technical Support Document that it "conducted a screening review of the state CCR permits," which "raise[d] concerns that additional groundwater monitoring wells, revised statistical analyses, and additional groundwater sampling are needed at CCR units to ensure the groundwater monitoring and corrective action requirements are met." EPA-HQ-OLEM-2021-0051-0150 at 48. Just last year, EPA informed North Dakota of extensive noncompliance it discovered at permitted units at Stanton, Heskett, and Coyote stations, noting "improper use of intrawell statistics, other statistical issues, many items missing in annual groundwater monitoring and corrective action (AGWMCA) reports, speculative alternative source demonstration (ASD) delaying assessment monitoring, and incomplete assessment of

corrective measures (ACM))." Attachment to email from EPA to NDDEQ (Jan. 3, 2024), EPA-HQ-OLEM-2021-0051-0127. The rulemaking record alone is full of evidence that North Dakota's permits fail to require each CCR unit to achieve compliance with federal requirements or equally protective state requirements.

In addition, EPA previously found significant noncompliance at Coal Creek Station when evaluating that site's Part B application. In January 2023, EPA identified multiple violations of the federal CCR rule at Coal Creek's "Upstream Raise 91" surface impoundment ("Upstream pond"), including "1) an inadequate groundwater monitoring network; 2) evidence of a potential release from the impoundment and insufficient information to support the alternative source demonstration; [and] 3) inadequate demonstration of meeting location restrictions."

The rampant noncompliance in North Dakota is nothing new. Indeed, noncompliance is well documented in other states that have already received EPA approval, including Georgia, as described in a recent petition to EPA. In 2020, EPA approved Georgia's Partial CCR Permit Program to be operated by the Georgia Environmental Protection Division (Georgia EPD). Georgia EPD is operating its Partial CCR Permit Program in way that does not ensure compliance with the requirements of the CCR Rule or state criteria at least as protective as those in the CCR Rule. In fact, Georgia EPD has issued a state CCR Permit that blatantly violates the protective criteria of the 2015 Coal Ash Rule by authorizing the closure of Georgia Power Company's unlined 1.1-million-ton Plant Hammond Ash Pond-3 (AP-3) in Northwest Georgia, which has coal ash submerged up to ten feet in groundwater. On July 18, 2024, Southern Environmental Law Center and seven public interest groups petitioned the EPA to issue a notice

of deficiencies with respect to the Georgia program and to withdraw approval of the program.[70] To date, EPA has not issued a notice of deficiencies nor withdrawn the program. GA EPD continues to operate is permit program in a way that is fundamentally not-as-protective as the federal rule, which was demonstrated most recently by its issuance of a draft permit to Plant McDonough despite closure of its coal ash pond in groundwater and a noncompliant groundwater monitoring system, among other deficiencies.

With more coal states such as Wyoming, Louisiana, Virginia, West Virginia, Indiana, and Illinois expressing interest in obtaining their own coal ash permit programs, the stakes are very high.

VI. COAL ASH RECYCLING: HARMS AND BENEFITS

Some types of coal ash recycling, such as use of coal ash in concrete, can be beneficial to health and the environment because they avoid disposal of coal ash in leaking landfills and ponds. Numerous uses of coal ash that purport to be beneficial, however, are dangerous. It is critical to distinguish between the two and prohibit harmful uses of coal ash.

A. Harm from "Sham Recycling"

i. Use of coal ash as a substitute for soil (fill or structural fill)

When coal ash is placed on the ground, dangerous pollutants such as arsenic, boron, cobalt, lithium, mercury, and radium will leak into the groundwater. As of 2019, the EPA documented 22 sites where ash used as fill caused significant water contamination.[71] Children can also ingest heavy metals by playing in the soil. Examples of devastating damage include:

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[70] Southern Environmental Law Center *et al,* Petition for EPA withdrawal of approval of Georgia's Partial Coal Combustion Residual (CCR)Permit Program under the Resource Conservation and Recovery Act, 42 U.S.C. § 6945(d)(1)(D) and (E), (July 18, 2024).

[71] *See* Earthjustice *et al,* Addendum to Comments filed in response to 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 Fed. Reg. 40,353 (Aug. 14, 2019).

- *Gambrills, MD*, where coal ash fill contaminated residential drinking water wells in 2006 after Constellation Energy used more than 4 million pounds of ash to fill a nearby quarry. Drinking water wells were contaminated with high levels of heavy metals, including arsenic, cadmium and lead.[72] A class action lawsuit involving 84 households in Gambrills resulted in a settlement of $54 million paid by Constellation Energy in 2008.[73]
- *Battlefield Golf Course, Chesapeake, VA*, where 1.5 million tons of coal ash from Dominion Energy was used to create a golf course. The coal ash quickly contaminated the water of nearby residents with arsenic, boron, and other harmful chemicals.
- *Town of Pines, IN,* where widespread coal ash fill contaminated the town's drinking water wells. The EPA declared Town of Pines a Superfund site in 2001. Cleanup is still ongoing, 24 years later.[74]

Use of coal ash as fill also contaminates soil with dangerous levels of hazardous chemicals. When the coal ash is left uncovered, small particles from coal ash can be inhaled and lodge in lung tissue, causing lung damage and potentially cancer. Examples of dangerous uncovered fill sites include:

- *Town of Pines, IN*, where arsenic levels in surface soil at a public playground reached 450 parts per million (ppm) and residential soil contained 888 ppm of arsenic, which is more than 1300 times the EPA's safe level for residential soil.

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[72] 80 Fed. Reg. 21,328, 21,348, 21,452

[73] Peter Angelos Law, Fly Ash Class Action Settlement: In December 2008, Judge Alfred Nance Signed Off On The Settlement, Which Will Cost Constellation Energy In Excess Of $54 Million (Dec. 2008), https://www.angeloslaw.com/verdicts-settlements/fly-ash-class-action-settlement-in-december-2008-judge-alfred-nance-signed-off-on-the-settlement-which-will-cost-constellation-energy-in-excess-of-54-million/, *See also,* SNL Securities, Maryland judge approves final coal-ash settlement with Constellation, The Electricity Forum, https://electricityforum.com/news/judgeapprovescoalashsettlement https://content.next.westlaw.com/Document/Iaab38beebb1a11dd93e8a76b30106ace/View/FullText.html?transitionType=Default&contextData=(sc.Default)&bhcp=1

[74] *See* Section IV.B.i, *supra.*

- *Mooresville, NC,* where more than 1 million tons of coal ash from Duke Energy's Marshall Steam Plant was used as a substitute for clean soil between 1996-2010 on residential properties, a high school, roads, and commercial properties. Coal ash exposed near a daycare center was contaminated with radium above health standards and arsenic 18 times above background levels.[75]
- *Southeastern Puerto Rico,* where from 2004 to 2012, more than 2 million tons of coal ash from the AES Guayama Plant were used at dozens of sites, including housing, hospital, and road projects in an environmental justice community.[76] Most sites are located directly above the South Coast Aquifer near public supply water wells, and in some cases ash was placed directly in the aquifer. At dozens of sites, coal ash remains uncovered and close to homes, parks, and schools.

These examples offer just a snapshot of the potential impacts from this harmful "reuse" of coal ash. Data from a handful of states reveal that there are likely hundreds of sites where coal ash has been used as fill and that many of these are likely in residential communities. North Carolina's Department of Environmental Quality tracked information about coal ash used as fill at least up through 2013,[77] and Maryland's Department of Natural Resources compiled information about areas where coal ash has been used as fill in the general Chesapeake Bay region.[78] These two datasets tabulate a combined 137 fill locations (116 in North Carolina's database and 21 in the Chesapeake Bay report). Because these areas are not monitored, it is

[75] *See* Section IV.B.iii, *supra*.
[76] Earthjustice, Toxic Coal Ash in Puerto Rico: The Hazardous Legacy of the AES-PR Coal Plant, https://earthjustice.org/feature/coal-ash-states/puerto-rico
[77] NC DEQ, Coal Ash Structural Fills in NC, https://www.arcgis.com/apps/webappviewer/index.html?id=1be927d3f5f749d59ff887cd793ebf4a.
[78] MD DNR, Inventory of Chesapeake Bay Watershed Coal Ash Deposits (December 2021), https://www.bayjournal.com/chesapeake-bay-watershed-coal-ash-inventory/pdf_d9acb2c6-d50c-11ef-9e1a-37d34d7a42bc.html.

unclear how groundwater near these sites may be impacted, but these state datasets show clearly that the practice was widespread and potentially harmful.

ii. *EPA's new findings of elevated health risks from coal ash fill*

As detailed above, when coal ash is used as fill, it can contaminate groundwater with heavy metals in the same manner as coal ash landfills and ponds. New EPA findings contained in two important technical documents published in 2024 and 2025 indicate that the risk to human health from fill is much higher than previously acknowledged.

Arsenic is the most prevalent coal ash pollutant found in contaminated water. In a new risk assessment from May 2024, the EPA quantified for the first time much higher risks from exposure to arsenic at coal ash fill sites.[79] First, the EPA found that even smaller fills (1 – 74,800 tons) can contaminate millions of gallons of groundwater with arsenic.[80] This is especially concerning given that the EPA's Integrated Risk Information System (IRIS) Toxicological Review of Inorganic Arsenic, finalized on January 13, 2025, determined that the cancer potency of arsenic is 21 times higher than previously thought.[81] In addition, the toxicological review found increased risk of heart disease and diabetes from arsenic ingestion and recommended that the safe daily lifetime dose be 5 times lower than the current value.[82] These findings indicate serious harm from exposure to low levels of arsenic, which increases the risk from exposure to coal ash used as fill.

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[79] US EPA, *Risk Assessment of Coal Combustion Residuals: Legacy Impoundments and CCR Management Units* (April 2024), https://www.regulations.gov/document/EPA-HQ-OLEM-2020-0107-1075. (hereinafter "2024 risk assessment")

[80] *Id.* at 4-17.

[81] Integrated Risk Information System (IRIS) Toxicological Review of Inorganic Arsenic, (January 13, 2025) https://iris.epa.gov/document/&deid=363892#:~:text=EPA%20has%20finalized%20the%20IRIS,decisions%20to%20protect%20human%20health.

[82] *Id.* where the updated value is 0.00006 mg/kg/day, compared to the threshold in place before this update of 0.000031 mg/kg/day.

The EPA's 2024 risk assessment also examined risks posed by radioactivity in coal ash fill for the first time. Coal ash contains radioactive elements, or radionuclides, that release radiation into the environment as they decay. The EPA found that fills located in residential areas can pose a cancer risk by incidental ingestion of heavy metals in the ash or by direct exposure to radiation released from the ash. These risks are reduced when a thick layer of clean soil is used to separate ash from residents or recreators. But this is not often the practice where coal ash is used as fill. The EPA assessed the risk when coal ash is mixed with clean surface soil in residential areas, and found that even a small amount of coal ash can result in elevated cancer risk. If the coal ash has higher than average levels of radionuclides or arsenic, EPA estimates that a 1 in 10,000 cancer risk would occur with 11 percent and 33 percent mixing for radionuclides and arsenic, respectively.[83] If the coal ash has average concentrations of radionuclides, a 1 in 10,000 cancer risk is estimated to occur at 21 percent mixing.[84] Often, however, coal ash is not mixed with clean soil before placement, which raises the risk of harm. **The EPA concluded that most coal ash should not be used as a substitute for soil due to the dangers of exposure to radioactivity**.

iii. Use of coal ash as minefill in active and abandoned coal mines

For decades, millions of tons of coal ash have been used to fill active and abandoned coal mines in a practice known as minefilling. Although placement of coal ash in abandoned and active coal mines is common practice, coal mines are not designed to be disposal facilities. Consequently, the risk of contamination of underlying groundwater and adjacent surface water is high. In the process of coal mining, deep layers of rock are broken, creating a highly fractured, geologically disturbed and hydrologically transmissive environment. When coal ash is placed in

[83] 2024 Risk Assessment at 6-18.
[84] *Id.*

these mines, the waste's hazardous constituents can dissolve easily and infiltrate the fractured sites.

The potential for adverse impacts to water is compounded by the location of mining with respect to groundwater. Coal mines are unlined and often at least partly below the water table. Thus, coal ash dumped into mine pits can leach toxic metals and other contaminants directly into the groundwater that flows through and eventually leaves the site. This can provide a direct path for coal ash contaminants to reach groundwater; nearby rivers, lakes, and streams; and potentially drinking water sources. Further, when contamination does occur at minefill sites, the fractured and spoil-filled nature of the sites makes remediation difficult or even impossible. Minefill can have disastrous impacts on groundwater, which can be seen at the McDermott Mine and others in Pennsylvania, where this practice has been pervasive.[85]

Since 2000, according to data from the ACAA, over 220 million tons of coal ash have been dumped in mines, with annual levels hovering around 10 million tons in recent years.[86] Based on mine disposal rates in Illinois, Indiana, Ohio, New Mexico, North Dakota, Pennsylvania, South Dakota, Texas and West Virginia, plus conservative estimates of mine disposal in eight other coal basin states, up to 20 percent of annual CCR generation is likely disposed in coal mines each year.[87]

This dangerous practice is not yet federally regulated by EPA or the Office of Surface Mining, Reclamation and Enforcement and is poorly regulated by states.

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[85] Earthjustice, Waste Deep Filling Mines with Coal Ash Is Profit for Industry, But Poison for People at 8, https://earthjustice.org/wp-content/uploads/earthjustice_waste_deep.pdf.

[86] ACAA, Coal Combustion Product (CCP) Production & Use Survey Reports, 2000 – 2023, available https://acaa-usa.org/publications/production-usereports/.

[87] Earthjustice, Earthjustice, Waste Deep: Filling Mines with Ash is Profit for Industry, But Poison for People, February 2009, *available at* https://earthjustice.org/sites/default/files/library/reports/earthjustice_waste_deep.pdf.

B. Legitimate Recycling: Encapsulated Products

While the use of ash as fill poses significant threat to communities, there are reuses of coal ash that may have human health and climate benefits if conducted with proper guardrails in place.

i. Concrete

The use of coal ash in concrete is generally beneficial to health and the environment. There are, nevertheless, concerns about its use when the coal ash must be excavated from old landfills or ponds and when the coal ash must be processed before use. During both excavation and processing, health concerns are raised due to exposure to fugitive dust. In addition, processing of coal ash to create a suitable substitute for Portland cement can substantially reduce the greenhouse gas benefits of using coal ash, as explained below. Generally, using "fresh" ash (ash harvested immediately after it is created, rather than ash excavated from existing ponds and landfills) offers the largest potential for benefits. **However, these benefits do not outweigh the myriad harms caused by burning coal for power, and by no means should the life of coal fired power plants be extended as a means to reuse ash in this way.**

There are several key stages in the processing of coal ash for its use as a replacement for Portland cement in concrete: Excavation and Drying, Screening and Grinding, and Carbon Treatment. Each of these stages have associated health and climate impacts. For fresh ash, no excavation step is necessary, and, in fact, some fresh fly ash can be used directly as cement

replacement.[88] **According to data from the American Coal Ash Association, only about 12 percent of all coal ash produced in the U.S. from 2002-2022 was used directly in cement products**.[89]

Excavation and transport of coal ash requires air monitoring and protective measures to prevent the inhalation of toxic ash by cleanup workers and nearby residents. Excavation also involves the use of heavy equipment that is often diesel-based,[90] creating new air pollution that may expose workers and nearby residents. Depending on the technology used in the Carbon Treatment stage, a separate drying step may be necessary, which is often powered by burning natural gas,[91] which may emit potentially hazardous air pollution to the nearby community.

The Screening and Grinding stage of the process is powered largely by electricity[92] and involves sorting the ash by size and then grinding as necessary. Similar to transport, air monitoring and protective measures may be necessary to prevent any inhalation of fine ash particles during this stage.

Coal ash contains varying levels of residual carbon that was not fully burned in a facility's coal combustion process. This carbon content is often represented in a score called loss on ignition ("LOI"). In the U.S., to meet material standards for replacement of Portland cement, the LOI of coal ash must be lowered below 6%.[93] There are three main techniques to lower the

[88] US EPA, Background Document for Life-Cycle Greenhouse Gas Emission Factors for Fly Ash Used as a Cement Replacement in Concrete at 6 (November, 2003), https://19january2017snapshot.epa.gov/www3/epawaste/conserve/tools/warm/pdfs/FlyAsh_11_07.pdf.
[89] ACAA, Coal Combustion Product (CCP) Production & Use Survey Reports, 2000 – 2023, available https://acaa-usa.org/publications/production-usereports/.
[90] EPRI, Harvested Coal Ash Used as a Cement Replacement in Concrete: Life-Cycle Impacts at 14 (August, 2023), https://www.epri.com/research/products/000000003002024165.
[91] *Id.* at 6.
[92] In theory, the carbon emissions from this stage could be zero if new renewable electricity were used.
[93] This is the threshold necessary to meet the ASTM standard, *see* https://store.astm.org/c0618-23e01.html.

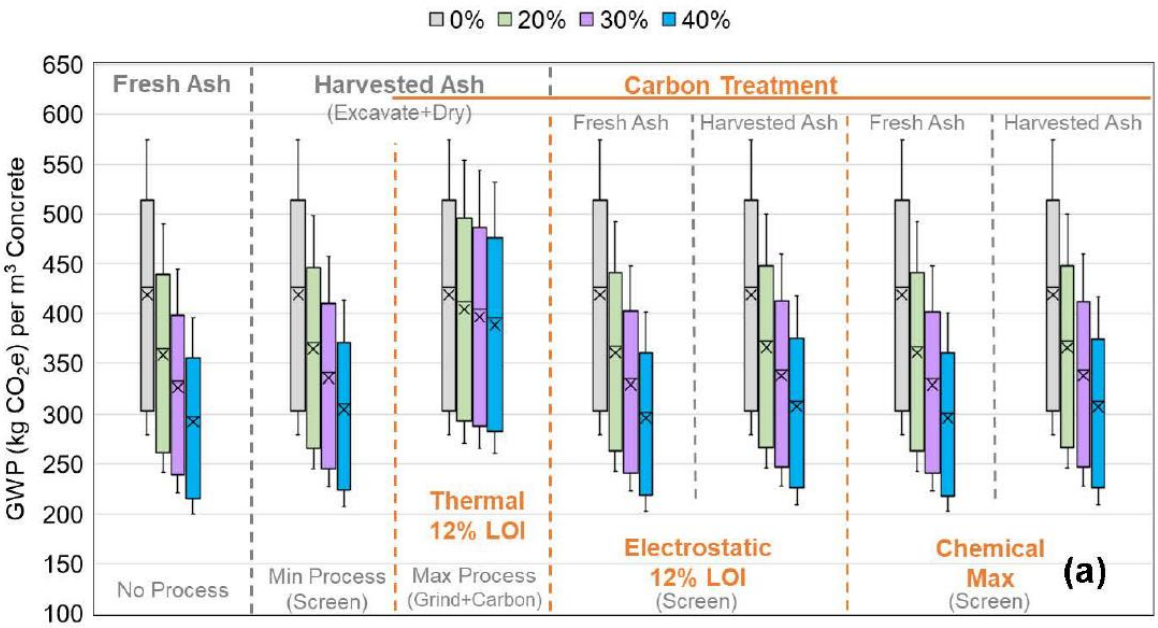
carbon content of coal ash: thermal treatment, electrostatic treatment, and chemical treatment.[94] Thermal treatment involves essentially reburning the coal ash, which may release various air pollutants into the atmosphere and impact the nearby community, depending on control technologies. Thermal treatment simultaneously dries the ash, so a separate drying step is unnecessary when this method is used. Electrostatic treatment relies on electricity to separate carbon from the rest of the ash. Chemical treatment does not actually change the LOI of the ash, but the chemical surfactant attaches to the carbon particles and effectively neutralizes the carbon such that it no longer interferes in future stages of the concrete process. Chemical treatment necessitates a constant feedstock of the chemical surfactant as well as electricity.

As calculated by EPRI in their 2023 report investigating the lifecycle impacts of replacing Portland cement with harvested coal ash, on average, there is always some amount of lifecycle emissions reduction when coal ash is used to replace some amount of Portland cement in concrete.[95] However, the magnitude of this reduction varies substantially depending on the characteristics of the coal ash and the technology implemented to process it for use. Portland cement is responsible for 90% of the total embodied carbon in concrete both because producing it requires high heat achieved via combustion of fossil fuels and because the raw materials that become Portland concrete release CO_2 at these high processing temperatures.[96] Thus, when even a small percentage of Portland concrete can be replaced by coal ash, there may be substantial

[94] EPRI, Harvested Coal Ash Used as a Cement Replacement in Concrete: Life-Cycle Impacts at 7-14 (August, 2023), https://www.epri.com/research/products/000000003002024165.
[95] EPRI, Harvested Coal Ash Used as a Cement Replacement in Concrete: Life-Cycle Impacts at 39 (August, 2023), https://www.epri.com/research/products/000000003002024165.
[96] Charles Cannon, Valentina Guido, and Lachlan Wright, Concrete Solutions Guide: Six Actions to Lower the Embodied Carbon of Concrete, Action 2 – Mix It Up, RMI, 2021, https://rmi.org/insight/concrete-solutions-guide/.

lifecycle emissions reductions. Material standards recommend substituting no more than 40% of Portland cement with coal ash in a given batch of concrete.[97]

The figure below is reproduced from EPRI's 2023 report.[98] It shows that when electrostatic or chemical carbon treatment strategies are used (thermal processing has significantly higher CO_2e emissions), there are substantial reductions in the lifecycle emissions of the cement product, and that emissions reductions are highest when the highest percentage of Portland cement is substituted with coal ash. The graph below shows the results for ash with a 12% LOI, which was the highest end of their assumed LOI range. The moisture content of the original ash was fixed in their analysis. For ash treated with electrostatic or chemical carbon treatment, the drying and grinding processes account for the majority of carbon emissions.



Any climate benefits of coal ash reuse in concrete that are touted for a given project should be carefully assessed to ensure that the operator accounted for the full lifecycle emissions

[97] *Id.* at 3.
[98] EPRI, Harvested Coal Ash Used as a Cement Replacement in Concrete: Life-Cycle Impacts at 39 (August, 2023), https://www.epri.com/research/products/000000003002024165.

of their process. For example, a 2003 emissions accounting guidance document from EPA[99] assumed that there would be no pre-processing of coal ash prior to replacement of Portland cement in concrete, resulting in an estimate of approximately 0.24 metric tons avoided CO_2e per ton of ash reused. This vastly overestimates the climate benefits of this type of reuse. As can be seen from EPRI's results, when the coal ash has a higher LOI and thermal treatment is used, the climate benefits of Portland cement replacement are slim.

When proper safeguards are in place to protect workers and nearby communities, this reuse of coal ash can successfully divert ash from landfills and surface impoundments, protecting groundwater from potential contamination.

i. Gypsum Panel Products

Another encapsulated reuse of coal ash is by incorporating it into gypsum panel products, such as wallboard. Specifically, coal ash produced from the flue gas desulfurization phase of coal burning (often referred to as FGD gypsum or synthetic gypsum) can be reused in this way. Both FGD gypsum and mined gypsum contain metals, including radionuclides that can pose risks, especially when the materials are ultimately landfilled as construction waste. However, an EPA evaluation and several independent researchers have concluded that FGD gypsum does not contain radionuclides at higher levels than mined gypsum and that FGD gypsum radionuclide activities are consistently lower than activities found in fly ash.[100]

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[99] US EPA, Background Document for Life-Cycle Greenhouse Gas Emission Factors for Fly Ash Used as a Cement Replacement in Concrete (November, 2003), https://19january2017snapshot.epa.gov/www3/epawaste/conserve/tools/warm/pdfs/FlyAsh_11_07.pdf.

[100] US EPA, Coal Combustion Residual Beneficial Use Evaluation: Fly Ash Concrete and FGD Gypsum Wallboard (February, 2014), https://www.epa.gov/sites/default/files/2014-12/documents/ccr_bu_eval.pdf; R. Kardos et. al., Radionuclide content of NORM by-products originating from the coal-fired power plant in Oroszlány (Hungary), Radiat Prot Dosimetry (November 2015), https://pubmed.ncbi.nlm.nih.gov/25944954/; D. Fungaro et. al., Physicochemical and radiological characterization of flue gas desulfuration waste samples from Brazilian coal-fired power plants (June, 2023), https://bjrs.org.br/revista/index.php/REVISTA/article/view/2275.

According to the ACAA's coal ash reuse data, from 2002 through 2023, between 30 and 70 percent of all FGD coal ash was reused in gypsum panels annually.[101] Similar to encapsulation in concrete, this type of reuse can offer benefits compared to landfilling or impounding the FGD ash. When gypsum panel products are ultimately landfilled at the end of their life, proper protections must be in place to ensure groundwater resources are not impacted by the metals in these materials.

C. Mineral Extraction from Coal Ash

Under no circumstances should the use of coal ash as a source of rare earth elements (REEs) and other minerals incentivize the creation of new ash. Coal ash at existing dump sites in the U.S. contain a significant amount of REEs. NETL has estimated that, assuming full recovery, 113 million tons of coal ash would generate close to 9,000 tons of rare earth oxides (which represents 94% of 2018 rare earth demand).[102] Currently, there are likely upwards of 3 billion tons of coal ash stored in impoundments and landfills at or near hundreds of active and retired coal fired power plants.[103] These dump sites could theoretically provide approximately 25 times 2018 demand levels for REEs, using the same NETL assumptions referenced above. These existing waste sites should be the focus of any mineral processing operations, as opposed to new coal ash. Under no circumstances should the US seek to mine and burn more coal or create more coal ash for the purpose of extracting REEs or other minerals from either coal mining wastes or coal ash. Given the magnitude of REEs in existing coal ash and coal mine wastes and the potential for end-of-life recycling, doing so would be entirely unnecessary.

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[101] ACAA, Coal Combustion Product (CCP) Production & Use Survey Reports, 2000 – 2023, available https://acaa-usa.org/publications/production-usereports/.
[102] NETL, *Improved Rare Earth Element Extraction Method from Coal Ash* (Nov. 2020) https://netl.doe.gov/node/10318.
[103] See Earthjustice, Where are Coal Ash Dump Sites (April 17, 2025), https://earthjustice.org/feature/coal-ash-map-sites-legacy-inactive-regulated.

Importantly, proper protections, including agency oversight, air, groundwater, and surface water must be in place prior to, during, and after processing coal ash as a source for REEs and other minerals. Whenever coal ash, including "spent" ash, is stored, it must comply with the Coal Ash Rule in order to adequately protect surrounding communities and habitats from harm. In addition, coal ash processing facilities may create new sources of potentially hazardous waste, given that harsh chemicals are often involved in this type of extraction. The wastes that result from this process must be disposed of in an environmentally secure manner.

VII. BENEFITS OF COAL ASH CLEANUPS: CLOSURE BY REMOVAL

When utilities comply with the 2015 Coal Ash Rule and address their leaking toxic dumps, closure and cleanup can protect human health and benefit communities long plagued by coal ash pollution. Although timely and effective coal ash remediation is not the norm, the following examples indicate that large-scale cleanups can be successful and enormously beneficial.

A. Closure by Removal in North Carolina, South Carolina, and Kentucky

Utilities have successfully addressed large leaking coal ash ponds by closing the ponds through removal of all waste. For example, Duke Energy excavated 15 unlined coal ash ponds in North Carolina, South Carolina, and Kentucky by removing 66.3 million tons of ash for disposal or recycling. Duke will close another 21 ponds in North and South Carolina by removal of an additional 65.84 million tons by 2028-2038 (*See* Attachment 1).[104] In testimony before the South

[104] See Duke Energy, Inc., Coal Ash Basin Closure Progress, *available at* https://www.duke-energy.com/-/media/pdfs/our-company/ash-management/duke-energy-ash-metrics.pdf?la=en&rev=f233114f2d764aacab521d9c6c375381 , Attached as Attachment 1.

Carolina Public Service Commission, Duke Energy stated that excavation of coal ash from coal ash ponds is better and less expensive than capping the waste in place.

B. Removal from Groundwater Results in Significant Improvements in Water Quality and Substantial Community Benefits

The closure of the Grainger Generating Station's ash pond illustrates the positive environmental and economic impacts of clean closure (removal of coal ash from coal ash ponds).[105] Santee Cooper's Grainger Generating Station was a 170-MW coal-fired power station in Conway, South Carolina. Constructed in 1966, the power plant stored coal ash in two 40-acre unlined ponds. The plant was retired in 2012, and Santee Cooper was required to close its coal ash ponds to stop severe groundwater contamination. Groundwater monitoring onsite showed arsenic contamination at more than 3,000 parts per billion (ppb), which is 300 times over state and federal standards for drinking water.[106] Offsite, coal ash contaminated the groundwater in the Grainger plant area with heavy metals and toxins, including arsenic contamination at 450 ppb (45 times state and federal drinking water standards).

Initially, Santee Cooper proposed a cap-in-place closure plan, but that plan was strongly opposed by the local community and the Conway City Council who argued that closure by removal was the only acceptable approach. The various litigants reached an agreement for a clean closure and restoration of the site back to wetlands.[107] The excavated coal ash was

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[105] Earthjustice, Cleaning Up Coal Ash for Good: How clean closure of coal ash impoundments provides jobs, economic benefits and redevelopment opportunities for host communities (July 2021), *available at* https://earthjustice.org/wp-content/uploads/coal_ash_addendum_new_final_email.pdf (hereinafter "Cleaning Up Coal Ash for Good")

[106] Southern Environmental Law Center (2016, June 1). Arsenic pollution plummets at Grainger Site as coal ash is removed in South Carolina. [Press Release]. Retrieved from: https:// www.southernenvironment.org/news-and-press/pressreleases/arsenic-pollution-plummets-at-grainger-site-ascoal-ash-is-removed-in-south

[107] Southern Environmental Law Center (2013, Nov. 19). Another South Carolina utility agrees to remove coal ash from river shared by North and South Carolina. [Press Release]. Retrieved from: https://www.southernenvironment.org/ news-and-press/press-releases/another-south-carolinautility-agrees-to-remove-coal-ash-from-river-shared

transported offsite for beneficial reuse in the concrete/cement market. Restoration activities included replanting wetland vegetation and ongoing groundwater monitoring. **After excavation, monitoring wells showed arsenic contamination had dropped more than 90 percent.**

In 2018, Earthjustice performed an economic analysis that quantified the full spectrum of job creation, income, and gross domestic product (GDP) impacts of Grainger's clean closure compared to the proposed cap-in-place closure.[108] The analysis demonstrated that clean closure created 4 to 5 times greater economic benefits to the area than cap-in-place would have.[109] In terms of South Carolina GDP (which includes labor income, profits and taxes), clean closure at Grainger resulted in an estimated $67 million additional GDP (an average of $8.3 million per year) above cap-in-place over the eight-year closure phase. This was accomplished without increasing rates for residential energy customers during the analysis period.[110] In addition, the site no longer threatens to human health or the environment, and is no longer a blighted property draining the local economy. Redevelopment plans for the area include a marina, hotel, boardwalk, and inland beach.[111]

VIII. CONCLUSION

Thank you for the opportunity to participate in this Subcommittee hearing and to submit this testimony on behalf of Earthjustice.

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[108] Cleaning Up Coal Ash for Good, fn 41, *supra.*
[109] *Id*. at 18-19.
[110] *Id.* at 14.
[111] See WPDE News, Andrew James, "From smokestacks to inland beach: Conway is one step closer to 'game changer' amenity," Dec. 5, 2023, available at https://wpde.com/news/local/conways-inland-beach-lake-busbee-acquisition-gets-key-approval-grainger-plant-horry-county-santee-cooper-conway-riverwalk-marina-coal-ash-ponds-developing-project-master-plan-game-changer-amenity-south-carolina-december-4-2023 and My Horry News, Charles D. Perry, Santee Cooper finishes work at former Grainger plant site. What will happen to the property?,(March 21, 2021), *available at* https://www.myhorrynews.com/news/local/conway/santee-cooper-finishes-cleanup-at-grainger-plant-near-conway/article_0f9b949e-8dd4-11eb-a768-9b9558102718.html

Attachment 1

Coal Ash Basin Closure Progress

Corporate Communications

DUKE ENERGY.

North Carolina

Plant	Basins Already Excavated	Basins Remaining	Basin Closure Method	Ash to Be Excavated (Million Tons)	Ash Already Excavated (Million Tons)	Basin Closure Deadline/ *Actual*
Allen		2	Excavation	18.2	1.7	December 2038
Asheville[1]	2	0	Excavation	0	8.5	*June 2022*
Belews Creek		1	Excavation	6.7	2.9	December 2034
Buck		3	Excavation for Recycling	3.8	2.0	December 2035
Cape Fear[1]	1	4	Excavation for Recycling	3.6	1.7	December 2035
Cliffside[1]	2	1	Excavation	2.1	5.9	December 2029
Dan River[1]	2	0	Excavation	0	4.0	*May 2019*
H.F. Lee		4	Excavation for Recycling	3.8	1.8	December 2035
Marshall		1	Excavation	11.5	5.6	December 2035
Mayo		1	Excavation	2.3	4.3	December 2029
Riverbend[1]	2	0	Excavation	0	5.4	*March 2019*
Roxboro		2	Excavation	12.6	4.8	December 2036
Sutton[1]	2	0	Excavation	0	7.7	*July 2019*

Weatherspoon		1	Excavation for Recycling	0.2	1.8	April 2028
TOTAL	11	20		64.8	58.1	

1. Pending regulator review of final closure, figures reflect the completed excavation of the Asheville 1982 and 1964 basins (fall 2016, summer 2022); Cliffside inactive 1-4 basin (spring 2017) ash storage area and inactive ash basin (fall 2023); Cape Fear 1956 basin (fall 2022); Dan River primary and secondary basins (summer 2019), ash stack 1 and ash stack 2; Riverbend primary and secondary basins (spring 2019), structural fill and cinder pit; Sutton 1971 and 1984 basins (summer 2019) and lay-of-land area.

South Carolina

Plant	Basins Already Excavated	Basins Remaining	Basin Closure Method	Ash to Be Excavated (Million Tons)	Ash Already Excavated (Million Tons)	Basin Closure Deadline
Robinson[1]	1	0	Excavation	0.04	3.4	2035
W.S. Lee[1]	2	1	Excavation	1.0	3.7	2029
TOTAL	3	1		1.04	7.1	

1. Figures reflect completed excavation of the H.B. Robinson 1960 Fill Area, W.S. Lee inactive ash basin and ash fill area (fall 2017), and W.S. Lee secondary ash basin (relocated to primary ash basin, summer 2019). Ash relocated from the secondary ash basin is included in the "Ash to Be Excavated" value.

Indiana

Plant	Basins Already Closed	Basins Remaining	Basin Closure Method	Ash to Be Excavated or Closed in Place (M/Tons)	Ash Already Excavated or Closed in Place (M/Tons)	Basin Closure Deadline
Cayuga[1]	4	1	Excavation/ Closure in Place	3.4	10.2	2033
Gallagher[1]	3	3	Excavation/ Closure in Place[2]	3.6	6.1	2027

Gibson[1]	4	2	Excavation/ Closure in Place	8.2	36.4	2033
Wabash River		5	Excavation/ Closure in Place	3.8	6.6	2034
TOTAL	11	11		19	59.3	

1. Figures reflect completed excavation of Cayuga Secondary Basin (summer 2017) and Primary Ash Settling Pond (fall 2021); Gallagher Secondary Settling Basin (summer 2016), Coal Pile Ash Fill Area (June 2020), and Ash Pond A (December 2024); Gibson South Settling Basin (summer 2017) and East Settling Basin (summer 2020); and closure in place of Cayuga Lined Ash Disposal Area (fall 2022) and Ash Disposal Area 1 (fall 2023); Gibson East Basin - Cell 1 (fall 2014), Cell 2 (spring 2020), Cell 3 (fall 2012), and South Ash Fill Area (winter 2023).

2. Remaining basins undergoing in-place closure (North Ash Pond, Primary Pond and Primary Pond Ash Fill) will include a cut-off wall constructed around the perimeter of the three impoundments to minimize groundwater infiltration into the ash to the maximum extent technicallyfeasible.

Kentucky

Plant	Basins Already Excavated	Basins Remaining	Basin Closure Method	Ash to Be Excavated (Million Tons)	Ash Already Excavated (Million Tons)	Basin Closure Deadline/ *Actual*
East Bend[1]	1	0	Excavation	0	1.1	*July 2019*
TOTAL	1	0		0	1.1	

1. Figure reflects completed excavation of East Bend ash basin (2019), pending regulatory approval of final closure.

Data as of December 31, 2024 | Figures may be updated as new information becomes available