

# SOUTHERN ENVIRONMENTAL LAW CENTER

Telephone 404-521-9900

TEN 10TH STREET NW, SUITE 1050  
ATLANTA, GA 30309-3848

Facsimile 404-521-9909

August 5, 2019

*Via U.S. Mail and email*

Hon. Richard E. Dunn  
Director  
Environmental Protection Division  
Georgia Dept. of Natural Resources  
2 Martin Luther King Jr. Drive, SE  
Floyd Towers East Suite 1456  
Atlanta, GA 30334-9000  
c/o  
Dir. of Legal Services, Laura Williams, Esq.,  
[laura.williams@dnr.ga.gov](mailto:laura.williams@dnr.ga.gov)

Mr. Chuck Mueller  
Branch Chief  
Land Protection Branch  
Environmental Protection Division  
Georgia Dept. of Natural Resources  
2 Martin Luther King Jr. Drive, SE  
Suite 1054 East Floyd Tower  
Atlanta, GA 30334-9000  
[chuck.mueller@dnr.ga.gov](mailto:chuck.mueller@dnr.ga.gov)

RE: Georgia Power Company's applications for solid waste handling permits for closure of coal ash ponds at Plant Scherer (AP-1), Plant Wansley (AP-1), Plant Yates (AP-B' and AP-3 "Ash Management Area" and R6 landfill), Plant McDonough (AP-1, AP-3, AP-4), and Plant Hammond (AP-3)

Dear Director Dunn and Branch Chief Mueller:

On our own behalf and on behalf of the Altamaha Riverkeeper, Chattahoochee Riverkeeper, Inc., and Coosa River Basin Initiative, the Southern Environmental Law Center writes to request that EPD deny Georgia Power Company's solid waste permit applications to dispose of coal combustion residuals (CCR or coal ash) in place at the above five plants. Denial of these permits is required for numerous reasons, the most glaring of which is that Georgia Power's closure plans are illegal under both Georgia and federal solid waste laws.

In exercising permitting authority over coal ash disposal for the first time in Georgia, EPD has a historic opportunity, and a duty, to assure that coal ash handling and disposal in Georgia "does not adversely affect the health, safety, and well-being of the public" and that such practices "do not degrade the quality of the environment by reason of their location, design, method of operation, or other means ...." O.C.G.A. § 12-8-21(a).

EPD must fulfill this mandate by rejecting the current permit applications and closure plans, because they propose disposal of coal ash in crude unlined impoundments that fail to meet requirements of Georgia and federal solid waste laws. This letter explains in detail how Georgia Power's CCR permit applications and closure plans fail to meet these requirements. We also submit for your consideration the written reports of Mark Hutson, P.G., one of the nation's most

experienced technical experts on the subject of coal ash disposal. In the enclosed reports, Attachment 1 through Attachment 5, Mr. Hutson identifies and explains the flaws in Georgia Power's closure-in-place plans at Plants Scherer, Wansley, Yates, McDonough, and Hammond.

Critical takeaways from the application materials, the available science, and publicly-available evidence include the following:

- The evidence disproves Georgia Power's misleading characterizations that the proposed closure of these coal ash ponds will be protective of groundwater, and disproves the safety and effectiveness of so-called "advanced engineering" to protect the environment and achieve required state and federal standards.
- All of these close-in-place impoundments are unlined, and the company proposes to leave them submerged beneath the groundwater table, up to more than 80 feet deep in Georgia's aquifers, forever.
- These waste sites were originally selected for the convenience of the company, not for suitability for permanent waste disposal – as a result, they are in some of the *least* suitable locations imaginable: flood zones, state-designated "most significant groundwater recharge areas," and populated areas.
- These unlined impoundments will continue leaching toxic metals after closure, and placing a cap on top won't change that: the waste is fed by buried streams and springs, flows that become polluted as they infiltrate the waste and then exit the basin.
- The science concerning human health risks and environmental pollution caused by unlined coal ash impoundments is now impossible to ignore or credibly downplay. EPD must consider these risks; the growing consensus from states in our region is that excavation to lined disposal is the only viable option to protect human health and the environment.
- The known evidence warrants denial of the permits, yet despite what's known concerning pollution that's *already occurring*, Georgia Power has failed to form a true picture of the extent of environmental contamination caused by its coal ash dumps, instead performing selective groundwater monitoring and analysis tailored to explain away detected pollution. These flaws prevent EPD from performing a meaningful human health and environmental impacts analysis, warranting denial of the applications.

## **I. Introduction and background.**

### ***a. Coal ash toxins and Georgia Power's permit applications.***

Coal ash is the waste byproduct left behind when coal-fired power plants burn coal. This waste contains a host of carcinogens and neurotoxins, such as arsenic, barium, boron, beryllium, cadmium, chromium, lead, mercury, nickel, selenium, and silver. *See* Hazardous and Solid Waste Mgmt. Sys.; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals from Elec. Utils. ("Proposed CCR Rule"), 75 Fed. Reg. 35,128, 35,153, 35,168–69 (U.S. Env'tl. Prot. Agency June 21, 2010). <sup>1</sup> Each of these toxic pollutants has been detected near Georgia Power's coal ash ponds, among others. (*See, e.g., Attachments 1 – 5*, identifying detected pollutants, and discussion pp. 21–22, *infra*, detailing additional toxic metals detected polluting the environment at and from Georgia Power's coal ash disposal sites).

Arsenic causes cancer, including lung cancer, skin tumors, and internal organ tumors, and is connected to heart problems, nervous system disorders, and stomach pain. EPA estimates that nearly 140,000 people per year experience increased cancer risk due to arsenic from coal-fired power plants that accumulates in fish. <sup>2</sup>

Mercury is a highly toxic compound and dangerous even in small concentrations, as it bioaccumulates and impairs brain development in children and causes nervous system and kidney damage in adults. EPA estimates that almost 2,000 children per year are born with lower IQs because of mercury in fish that their mothers have eaten. <sup>3</sup>

Even at low concentrations, nickel can inhibit the growth of microorganisms and algae; and depending on exposure, can damage the kidney, lungs, immune system, liver and kidneys of

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<sup>1</sup> Available at <https://www.federalregister.gov/documents/2010/06/21/2010-12286/hazardous-and-solid-waste-management-system-identification-and-listing-of-special-wastes-disposal-of>.

<sup>2</sup> U.S. ENVTL. PROT. AGENCY, BENEFIT AND COST ANALYSIS FOR THE PROPOSED EFFLUENT LIMITATIONS GUIDELINES AND STANDARDS FOR THE STEAM ELEC. POWER GENERATING POINT SOURCE CATEGORY, Docket No. EPA-HQ-OW-2009-0819-2238 at 3-6 (Apr. 2013) ("2013 EPA ELG Benefits and Costs Analysis"), <https://nepis.epa.gov/Exe/ZyNET.exe/P100MZC1.TXT?ZyActionD=ZyDocument&Client=EPA&Index=2011+Thru+2015&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5Czyfiles%5CIndex%20Data%5C11thru15%5CTxt%5C00000016%5CP100MZC1.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=hpfr&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=x&ZyPURL>.

<sup>3</sup> *See id.* at 3-13.

aquatic life.<sup>4</sup> Human exposure to high concentrations can cause gastrointestinal and kidney damage.<sup>5</sup>

The harmful effects of lead exposure are well-known. As to coal ash contamination, EPA concludes that “[e]xposure to lead can cause a variety of adverse health effects in adults and children,” noting peer-reviewed scientific studies that suggest “a decrease of 0.25 IQ points can be expected for every 1 [parts per billion] increase” in lead exposure to a modeled childhood population used in EPA’s calculations.<sup>6</sup> Sufficiently high human exposure via drinking water can cause serious damage to the brain, kidneys, nervous system, and red blood cells.<sup>7</sup>

Boron can be toxic to vegetation and wildlife at certain aquatic concentrations and when ingested. Human exposure to high concentrations of boron can cause nausea, vomiting, and diarrhea.<sup>8</sup>

“EPA determined that cadmium is a probable human carcinogen.”<sup>9</sup> “Cadmium tends to bioaccumulate readily” in studied aquatic species. *Id.* “In humans, chronic, low-level exposure to cadmium from contaminated air, drinking water, or food can cause kidney failure. Chronic low-level exposure from contaminated drinking water or food can also lead to fragile bones.” *Id.*

Selenium readily moves up the food chain (bioaccumulation).<sup>10</sup> Short-term human exposure to selenium can cause hair and fingernail changes, damage to the peripheral nervous system, and fatigue and irritability, whereas long-term exposure can damage the kidneys, liver, and nervous and circulatory systems.<sup>11</sup> Selenium is acutely poisonous to fish and aquatic life in even small doses; concentrations below 3 to 8 micrograms per liter (that is, 3 to 8 parts per

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<sup>4</sup> See U.S. ENVTL. PROT. AGENCY, ENVTL. ASSESSMENT FOR THE EFFLUENT LIMITATIONS GUIDELINES AND STANDARDS FOR THE STEAM ELEC. POWER GENERATING POINT SOURCE CATEGORY, Docket No. EPA-821-R-15-006 at 3-4 (Sept. 2015) (“2015 ELG Environmental Assessment”), [https://www.epa.gov/sites/production/files/2015-10/documents/steam-electric-envir\\_10-20-15.pdf](https://www.epa.gov/sites/production/files/2015-10/documents/steam-electric-envir_10-20-15.pdf). EPA’s 2015 Environmental Assessment of coal power plant pollution “evaluated the threats to human health and the environment associated with pollutants leaching into ground water from surface impoundments and landfills containing combustion residuals,” *id.* at 2-3 n.6, the very wastes that Georgia Power would leave submerged in Georgia’s aquifers.

<sup>5</sup> *Id.*

<sup>6</sup> 2013 EPA ELG Benefits and Costs Analysis at 3-6 – 3-7.

<sup>7</sup> See 2015 ELG Environmental Assessment at 3-3.

<sup>8</sup> See *id.* at 3-8.

<sup>9</sup> *Id.* at 3-7.

<sup>10</sup> See *id.* at 3-4.

<sup>11</sup> *Id.* at 3-4.

billion in water) can kill fish, and lower concentrations can leave fish deformed or sterile.<sup>12</sup> Selenium can impair ecosystems by interfering with fish reproduction. EPA has concluded that pollutants commonly released to the environment from coal power plants “cause environmental harm by contaminating surface water and ground water (*e.g.*, selenium concentrations from steam electric power plants have resulted in fish kills).<sup>13</sup> After being released into the environment, pollutants can reside for a long time in the receiving waters, bioaccumulating and binding with the sediment. There is documented evidence of slow ecological recovery as a result of these pollutant discharges . . . Some impacts might not be realized for years due to the persistent and bioaccumulative nature of the pollutants released.”<sup>14</sup>

Despite the known presence of these and many other toxins in coal ash, Georgia Power has for decades employed “wet-handling” to manage and dispose of this waste. As opposed to “dry handling” – an approach that does not involve the addition of water as a means of transporting this waste from the boiler<sup>15</sup> – wet-handling is a crude and vastly more harmful affair, whereby soils are merely dug up or a region diked to form a pond (or lagoon) to hold the wastes which are sluiced there via gravity. 40 C.F.R. § 257.2 (definition of surface impoundment); *History of Construction, Hammond AP-3* at pp. 2-3.<sup>16</sup>

Burning coal to generate electricity does not have to result in any pollution of water resources from coal ash. The dry remnants of burning (coal ash) could have been transported to a safe, lined landfill for disposal. In other words, the problem Georgia and EPD now face is one that Georgia Power voluntarily created for its own convenience and to save short-term, marginal dollars. It is now for EPD to decide whether the public and Georgia’s natural resources will bear the consequences for Georgia Power’s short-sighted, poorly-conceived decisions.

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<sup>12</sup> *Id.* at 3-5.

<sup>13</sup> *Id.*

<sup>14</sup> *Id.* at 3-1.

<sup>15</sup> Georgia Power has only recently opted to convert to dry handling at all of its operating coal plants following federal regulation of CCRs, stating that “[i]n 2016, the company committed that all ash ponds will stop receiving coal ash within three years and the significant construction work necessary to accommodate the dry-handling of ash at each plant is expected to be completed by 2019.” Georgia Power, *Environmental Compliance; CCR Management & Ash Pond Closures* (last updated 2018), <https://www.georgiapower.com/company/research-conservation-and-stewardship/management-closures.html>.

<sup>16</sup> Available at [https://www.georgiapower.com/content/dam/georgia-power/pdfs/company-pdfs/plant-hammond/20180417\\_constrhist\\_ham\\_ap3.pdf](https://www.georgiapower.com/content/dam/georgia-power/pdfs/company-pdfs/plant-hammond/20180417_constrhist_ham_ap3.pdf).

**i. Georgia Power’s ongoing pollution unearthed by 2015 Federal CCR disclosure rules.**

It was inevitable that these unlined pits would pollute Georgia’s environment with toxic metals that are contained within the ash. Georgia Power’s own evidence now confirms the magnitude and pervasiveness of its pollution.

Requirements imposed by EPA’s 2015 Coal Combustion Residuals Rule, 40 C.F.R. §§ 257 *et seq.* (“Federal CCR Rule”),<sup>17</sup> and Georgia EPD’s adoption of a state counterpart, the Georgia Rules for Solid Waste Management, Ga. Comp. R. & Regs. (hereinafter “State Rule”) 391-3-4-.10 Coal Combustion Residuals (“Georgia CCR Rule”), have prompted Georgia Power for the first time to disclose an alarming state of affairs concerning its coal ash ponds in Georgia.

Mark Hutson is a geologist and hydrogeologist with over 38 years of experience in a range of environmental matters, including regulatory permitting, site environmental characterization, groundwater remediation, and directing human health and ecological risk assessments. Mr. Hutson is one of the nation’s most experienced technical experts on the subject of coal ash disposal, groundwater and surface water impacts, and remediation. For the past 13 years, Mr. Hutson has been engaged as an expert consultant in permitting, site investigation and remediation at coal ash sites across the United States, including neighboring Alabama, South Carolina, and North Carolina, as well as Virginia, Mississippi, Maryland, Arizona, Colorado, Illinois, Indiana, Kansas, Minnesota, Montana, New Mexico, Nevada, Pennsylvania, and Wisconsin.

As noted above, Attachment 1 – Attachment 5 are expert reports of Mr. Hutson, detailing preliminary findings from his technical review of Georgia Power’s permit applications, as well as other documents and information related to Georgia Power’s proposed closure of unlined coal ash impoundments at Plant Scherer, Plant Wansley, Plant Yates, Plant McDonough, and Plant

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<sup>17</sup> Effective October 19, 2015, EPA published its final rule to regulate the disposal and storage of CCR as solid waste under Subtitle D of the Federal Resource Conservation and Recovery Act, or RCRA. Hazardous and Solid Waste Mgmt. Sys.; Disposal of Coal Combustion Residuals From Elec. Utils.; Final Rule, 80 Fed. Reg. 21,302, 21,312 (Apr. 17, 2015) (“Final Rule”) (codified at 40 C.F.R. Parts 257 and 261), as amended by Technical Amendments to the Hazardous and Solid Waste Mgmt. Sys., Disposal of Coal Combustion Residuals from Elec. Utils. – Correction of the Effective Date, 80 Fed. Reg. 37,988 (July 2, 2015), *available at* <https://www.federalregister.gov/documents/2015/04/17/2015-00257/hazardous-and-solid-waste-management-system-disposal-of-coal-combustion-residuals-from-electric> and <https://www.federalregister.gov/documents/2015/07/02/2015-15913/technical-amendments-to-the-hazardous-and-solid-waste-management-system-disposal-of-coal-combustion>.

Hammond (respectively, the “Scherer Report,” “Wansley Report,” “Yates Report,” “McDonough Report,” and “Hammond Report”).<sup>18</sup>

As Mr. Hutson details in these reports and as discussed below, Georgia Power’s closure plans entail leaving a massive, indisputable source of toxic metals in unlined impoundments, *submerged* in Georgia’s groundwater at depths up to more than 85 feet, which the proposed closure plans confirm will *remain* submerged post-closure. (See Attachments 1 – 5). As Mr. Hutson explains, unlike other forms of waste such as municipal solid waste (or “MSW”), “inorganic coal combustion residuals and the metals they contain do not biodegrade. Coal ash that is left in unlined basins will be capable of leaching toxic metals into Georgia’s groundwater at any time in the present, the near, or distant future for as long as soluble metals in the ash are allowed to come into contact with water.” (E.g., Wansley Report at 1, Attachment 2; Yates Report at 1, Attachment 3).

Despite the rosy picture painted by Georgia Power’s various press statements concerning the safety and effectiveness of its so-called “advanced engineering methods”<sup>19</sup> tied to its

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<sup>18</sup> To date, Mr. Hutson has not undertaken a review of all of Georgia Power’s waste permit applications in the State. For instance, Mr. Hutson’s accompanying expert letter report addressing Plant McDonough Ash Ponds AP-3 and AP-4 does not specifically address McDonough’s AP-1, another unlined basin sited next to the Chattahoochee River. Nevertheless, the litany of technical failures addressed herein and in the accompanying expert reports suggest that Georgia Power’s waste handling and disposal permit applications for impoundments not specifically addressed in this letter are plagued by similar flaws and material omissions. We reserve the right to address them separately in the future.

<sup>19</sup> Georgia Power Company, *Ash Pond Closure Efforts Continue Across Georgia* (Mar. 2, 2018), <https://www.georgiapower.com/company/news-center/2018-articles/ash-pond-closure-efforts.html> (Company references to so-called “advanced engineering methods” to close its unlined impoundments); see also Russell Grantham, *Arsenic, Other Toxins Found at Three Georgia Power Plants*, THE ATLANTA-JOURNAL CONSTITUTION (June 29, 2016), <https://www.ajc.com/business/arsenic-other-toxins-found-three-georgia-power-plants/2OaqtJ2k28iM4DhWyC4v7L/> (Georgia Power spokesperson statements that detected contaminants were located “all on the utility company’s property”). As Mr. Hutson notes, however, *none* of the permit applications are supported by sufficient on-site or downgradient well data or analysis, nor is there *any* modeling performed to assess or predict the extent of current or future downgradient contamination of groundwater and surface waters attributable to the known source of pollutants at *any* of these waste sites – although the evidence does indicate that the contamination is occurring, and will continue post-closure. (Scherer Report at 6-10, Attachment 1; Wansley Report at 7, 9-10, Attachment 2; Yates Report at 7-9, Attachment 3; McDonough Report at 2-3, 11-12, Attachment 4; Hammond Report at 8-9, Attachment 5). Georgia Power’s statements are likewise disproven by a published, peer-reviewed scientific study concluding that its coal plants at Arkwright and Branch are leaking toxic metals to both

proposed coal ash closure efforts throughout the State of Georgia, the evidence now proves otherwise. As Mr. Hutson details in the accompanying expert reports, the permit applications and available information reveal:

- The bottoms of the ash impoundments will remain unlined post-closure;
- Coal ash within these impoundments is submerged in and degrading groundwater quality and the environment, which will continue post-closure – that is, a massive volume of Georgia Power’s coal ash lies *beneath* the groundwater table saturating the ash, and the closure plans call for *leaving* it there, *forever*;
- When placed in contact with water, either from percolation from above, or from the sides / from beneath by infiltration, coal ash generates “leachate” in an amount that is greater than the equivalent toxic-weighted water pollution from the entire coal mining industry; it is this leachate that is polluting Georgia’s groundwater from these unlined basins, which will continue post-closure;
- The ash basins are fed by perennial or intermittent streams and creeks, providing continual flows of water that infiltrate the unlined waste basins; the closure plans will not preclude infiltration of water into the waste, and the ash basins will *continue to release contaminants* from the waste post-closure, yet the plans do not take these facts into account – a critical, obvious omission that must be fully disclosed;
- For the same reasons, the closure plans will not preclude the probability of future impoundment of water, sediment or slurry, nor eliminate free liquids in the waste, given that, among other factors, coal ash will remain unlined and submerged in groundwater in a porous media – the *coal ash* itself;
- Flawed as they are, the existing groundwater monitoring systems have detected elevated concentrations of common ash-related contaminants, yet the company has not determined the extent and nature of the plume of contamination migrating from the waste impoundments, which will continue post-closure; and
- In light of the company’s failure to delineate the true magnitude and extent of current and foreseeable post-closure releases of contaminants from these unlined basins, there is insufficient information upon which EPD can evaluate actual or potential impacts to human health and the environment from the proposed closures.

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groundwater and the adjacent surface waters. *See infra*, page 22 (citing J. Harkness *et al.* Duke University study, [Attachment 6](#)).

As the accompanying reports detail, it is in *no* sense “advanced engineering”<sup>20</sup> to leave millions of tons of industrial waste containing toxic metals in unlined pits submerged in groundwater, buried on top of Georgia’s streams and creeks, and sitting beside lakes and rivers. Georgia Power’s invented public relations terminology simply does not square with the overwhelming evidence to the contrary.

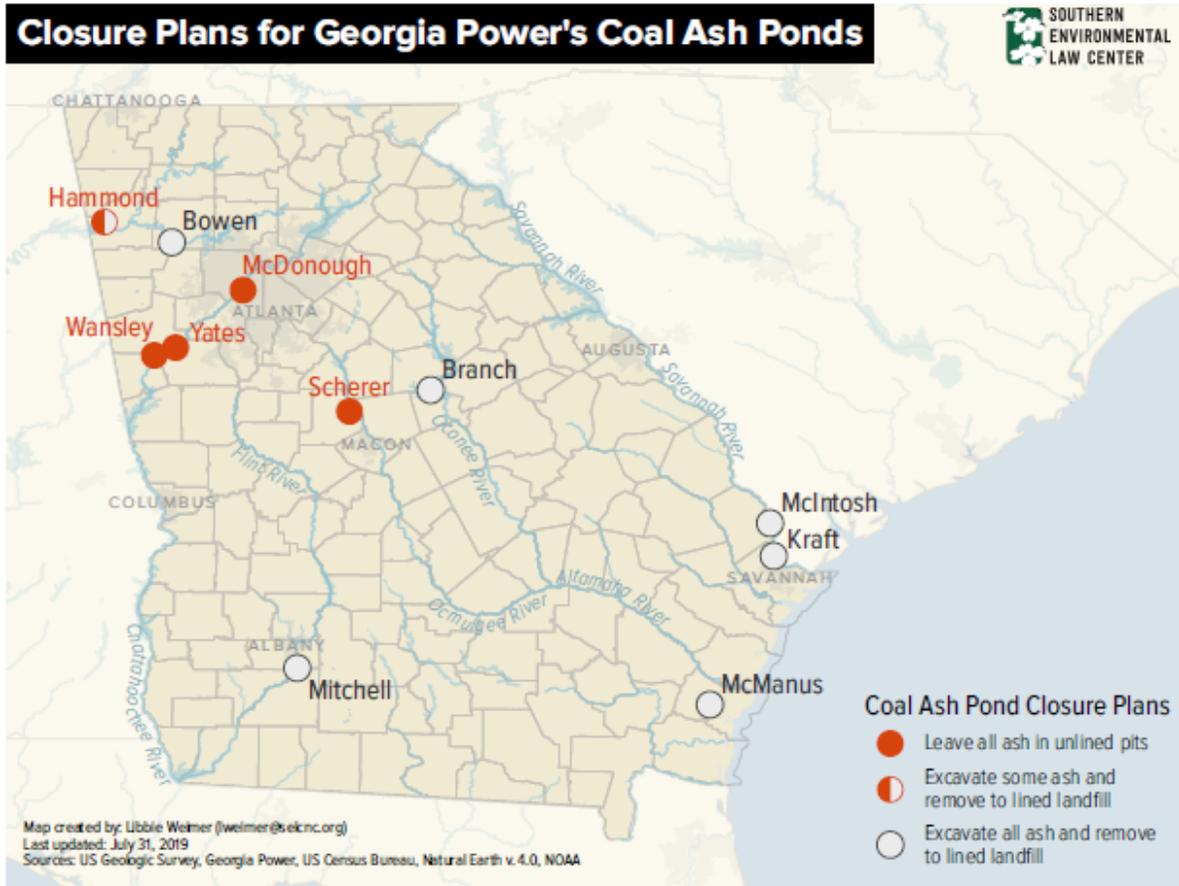
EPD’s solid waste permit decisions governing the means by which Georgia Power is allowed to permanently close its coal ash waste dumps are enormously consequential for Georgians and the State’s natural resources. *Figure 1* below depicts the location of the nearly 50-million tons of coal ash waste that Georgia Power proposes to “close in place” unlined at its various coal plants addressed herein:

*[see next page]*

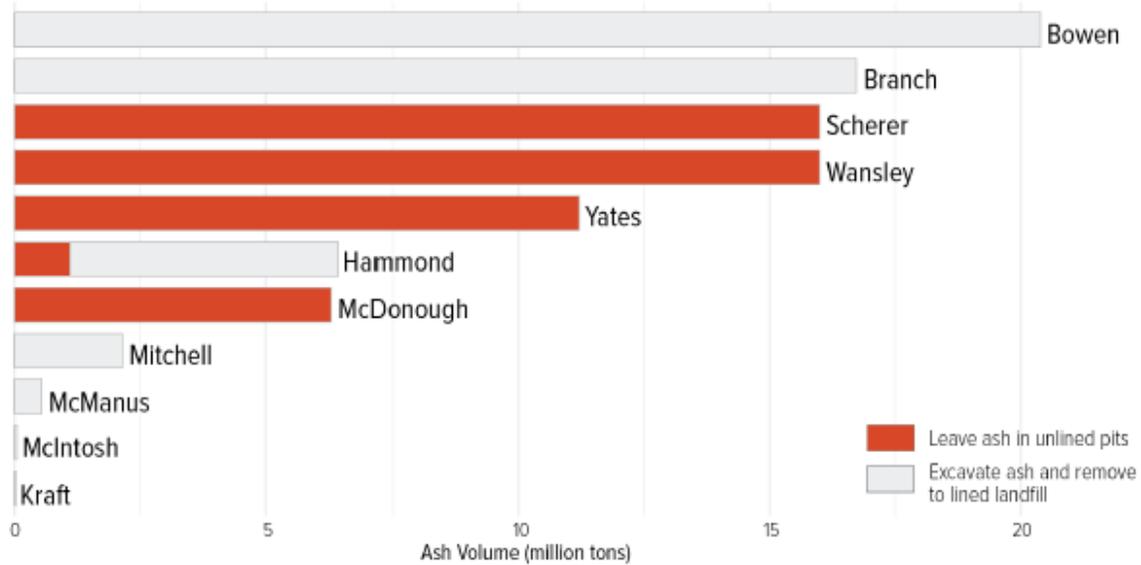
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<sup>20</sup> Georgia Power Company, *Ash Pond Closure Efforts Continue Across Georgia* (March 2, 2018), <https://www.georgiapower.com/company/news-center/2018-articles/ash-pond-closure-efforts.html>.

Figure 1



### Coal Ash Volume and Closure Plans



**ii. The closure sites are unsuitable for unlined disposal.**

Further compounding the threat posed by Georgia Power's closure plans is that the location of these pits can scarcely be *less* suitable for unlined waste disposal. Many of these waste basins lie in residential areas, floodplains, and in state-designated significant groundwater recharge areas, factors that EPD has to consider in its permitting determinations. State Rule 391-3-4-.02(8) (EPD must review "such other information" "necessary to ascertain the effect of such solid waste handling upon air, water, and land resources and human health.").

*1. Threat to residential areas – Plant McDonough*

Plant McDonough's closure plan proposes to combine two ash ponds (AP-3 and AP-4) totaling nearly five million tons, and leave their ash directly adjacent to the Chattahoochee River. (McDonough Report at 5–7, Attachment 4). Located in Cobb County in the City of Smyrna, Plant McDonough lies within densely populated metropolitan Atlanta, alongside a critical waterway serving millions of Georgians, the state's agricultural industry, and neighboring Alabama and Florida. As proposed, the combined ash disposal area (AP-3/4) would remain unlined, leaving a substantial volume of ash submerged in groundwater. *See id.* at 2–3, 7–8. As Mr. Hutson concludes, Georgia Power has not disclosed the thickness of coal ash that will remain saturated in groundwater post-closure in the combined waste disposal area, or the extent of post-closure releases of pollutants from the ash – *critical* omissions if EPD is to properly evaluate post-closure impacts to human health and the environment. *See id.* at 3, 6–7.<sup>21</sup>

But the serious flaws with Georgia Power's proposed closure of McDonough's ash ponds hardly end there. As Mr. Hutson details, Georgia Power's closure plans propose leaving a 1970s-era fiberglass-lined corrugated metal pipe in place to route the flow of a buried perennial stream that runs just *50 feet* from the combined unlined disposal area, from across a former portion of Ash Pond 4 (to be removed and dumped nearby in the unlined disposal area) discharging to the Chattahoochee River. *See id.* at 5–6. A perennial stream is a waterway that flows continuously year-round under normal rainfall conditions. *Id.* at 5 n. 11. According to Mr. Hutson, the perennial stream right next to the proposed closure area (combined AP-3/4) will exist *forever* – it predates the time when Georgia Power appropriated that area as a waste dump – and so that flow shall "continue" "in perpetuity" under the proposed plan. *See id.* at 6. Referring to a cross-section provided in the application materials, Mr. Hutson notes that the pipe had been buried by about 90

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<sup>21</sup> As discussed below, pp. 41–43, Georgia Power has misclassified McDonough's AP-1 and AP-3, which appears to be a reason for why it has failed to disclose critical information concerning the volume of saturated ash it proposes to leave at the site, as well as the depth of ash it proposes to leave submerged beneath the groundwater table. Yet, given EPD's obligation to review "such other information" "necessary to ascertain the effect of such solid waste handling upon air, water, and land resources and human health," granting a permit without disclosure of this critical information would be arbitrary and capricious. State Rule 391-3-4-.02(8).

feet of coal ash, *id.* at 5, and that given site conditions, “it is clear that Georgia Power has for decades allowed ash-related contaminants to discharge into the buried stream, and eventually into the Chattahoochee River.” *Id.* at 6.

According to Mr. Hutson, “[t]he importance of having a perennial stream routed beneath a coal ash waste disposal facility cannot be overstated,” having “significant ramifications for current and future environmental impacts and maintenance costs of AP-3/4.” *Id.* As proposed, Mr. Hutson concludes that this buried, 1,500 foot long pipe “will require regular maintenance and replacement *in perpetuity* in order to avoid potential flooding and/or undermining of the toe of the ash landfill. In the event that a future breach in the pipes develops without being detected, the soil and waste that overlies the pipes could be eroded and carried downstream with stream flow. Erosion of the soil in the vicinity of the breach in the pipes could eventually remove enough material to undermine the foundation of the soil buttress and/or bottom of AP-3/4.” *Id.*

These concerns with respect to the long-term structural stability of this enormous toxic-metals-containing waste disposal site in Smyrna, metropolitan Atlanta, are far from unfounded. Mr. Hutson observes that the area in which Plant McDonough’s ash ponds are located may be more prone to corroding underground pipes. Just recently, in June 2019, a seven-year old water main owned by Cobb County located *just across the street* from Plant McDonough’s ash basins ruptured. *See id.* at 6–7. <sup>22</sup> The failed, buried water line in Cobb County had been replaced *twice* over just the past *20 years*, using materials that are rated to last a *century*. *See id.*

While the cause of Cobb County’s water main rupture remains undetermined as of the date of Mr. Hutson’s report, it “does raise unanswered questions about the expected longevity of the pipes that transmit water below the McDonough site.” *Id.* at 7. As Mr. Hutson observes, “[o]nce the 30-year post-closure period [under the CCR Rule] has ended at Plant McDonough AP-3/4 it is unclear who would be left with the task and expense of maintaining the subterranean drainage system, in perpetuity.” *Id.*

Georgia Power’s proposed closure plan at Plant McDonough, and its reliance on the permanent structural integrity of a buried pipe is reminiscent of a coal ash disposal configuration at the Duke Energy Dan River Steam station, which in 2014 ended in disaster. In that buried pipe failure, over 20 million gallons of coal ash polluted water and 39,000 tons of coal ash to the Dan

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<sup>22</sup> The June 11, 2019 water main break near the intersection of Maner Road and Plant Atkinson Road in Smyrna, Georgia, directly next to Plant McDonough, resulted in a rapid decrease in water pressure for residents in the region and a boil water advisory. Tim Darnell, *Water Pressure Main Break Causes Low Pressure, Outages in Cobb*, PATCH.COM (June 11, 2019, 8:04 AM), <https://patch.com/georgia/smyrna/water-outages-reported-throughout-cobb-county>.

River when a corrugated metal pipe running beneath the ash pond ruptured due to corrosion.<sup>23</sup> Noting the critical implications for public safety raised by Georgia Power's proposed closure plan for Plant McDonough's combined AP-3/4, Mr. Hutson concludes that "[a]lthough all coal ash disposal sites are site specific, the well documented failure of a buried pipe at an unlined coal ash impoundment at Duke Energy's Dan River Steam Station in 2014 serves as an illustration of how a poorly conceived disposal configuration relying on the long term structural integrity of buried pipes can lead to potentially disastrous results." *Id.* at 7.

Georgia Power has known that it had buried a fiberglass-lined corrugated metal pipe routing a stream deep underneath AP-4 at Plant McDonough for years. Recently-available documents show that the company now proposes to remove ash from above that pipe and dispose of it nearby in an unlined ash pit. Thus, aside from groundwater pollution beneath and downgradient from AP-3/4 caused by the unlined basin sitting *right next* to this nearly half-century old pipe, Mr. Hutson concludes that given the risks detailed in his report, this closure configuration "is exactly the type of short-sighted closure scenario that a properly functioning regulatory oversight and permitting system should prevent." *Id.*

2. *Threat to Georgia's designated Significant Ground-Water Recharge Areas – Plants Scherer and Yates*

In another example of how unsuitable these sites are for unlined waste disposal, both Plant Scherer's AP-1 and Plant Yates's R6 Landfill and its "Ash Management Area" (or "AMA") sit within regions whose groundwater purity is so critical to Georgia state law bans unlined household garbage landfills in these designated areas – yet Georgia Power seeks a permit from EPD to leave a massive volume of waste known to contain toxic metals, unlined and submerged in groundwater, in the *same* protected areas.

According to Georgia's Department of Natural Resources, the regions designated as the Most Significant Ground-Water Recharge Areas of Georgia are "those recharge areas where the State of Georgia should direct ground-water protection efforts."<sup>24</sup> As Mr. Hutson explains in his report for Plant Scherer and Plant Yates, the proposed waste disposal areas *are within* these protected areas. (Scherer Report at 5, Attachment 1; Yates Report at 3, 7, Attachment 3). The following depicts the location of Scherer's AP-1, Yates's AMA and the R6 landfill totaling over 20 million tons of ash submerged in unlined disposal pits within these state-designated areas:

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<sup>23</sup> A more detailed discussion of the 2014 Dan River coal ash disaster is presented below, pp. 18–20 and footnotes 35 and 38.

<sup>24</sup> Kenneth R. Davis et al., *Most Significant Ground-Water Recharge Areas of Georgia*, GA. DEP'T OF NATURAL RES., GA. ENVTL. PROT. DIV., GA. GEOLOGIC SURVEY, HYDROLOGIC ATLAS 18 (1989), [https://epd.georgia.gov/sites/epd.georgia.gov/files/related\\_files/site\\_page/HA-18.pdf](https://epd.georgia.gov/sites/epd.georgia.gov/files/related_files/site_page/HA-18.pdf).

## Location of Georgia Power Coal Ash Ponds within Groundwater Recharge Areas



### Legend

#### Coal Ash Ponds & Landfills

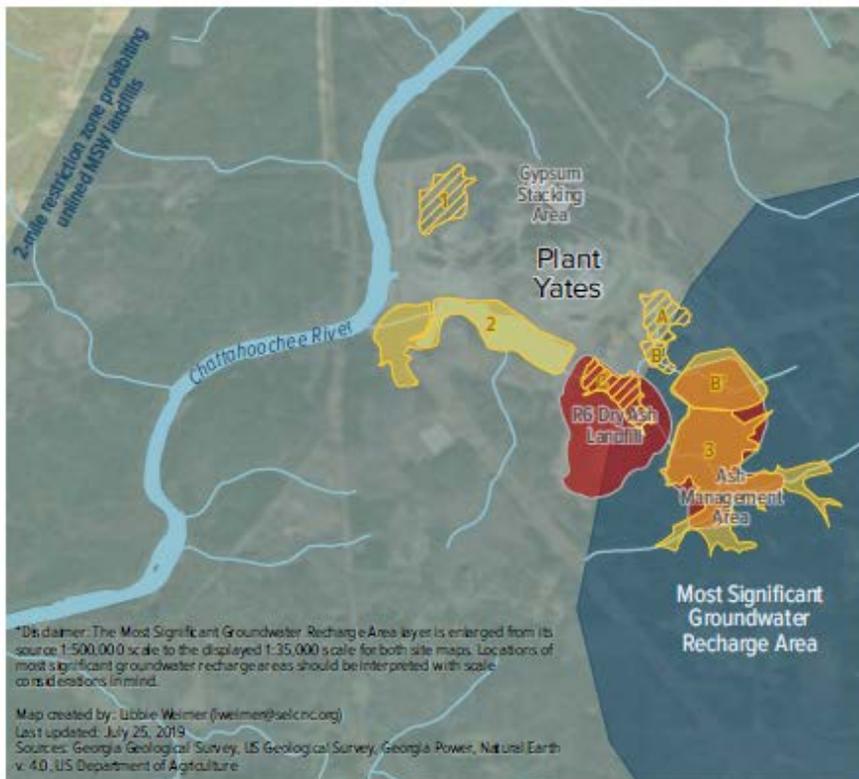
- Lined Landfill
- Unlined Landfill
- Coal Ash Pond
- Excavated Coal Ash Pond

#### Areas Prohibiting Unlined MSW Landfills

- Most Significant Groundwater Recharge Area\*
- 2-mile Restriction Zone

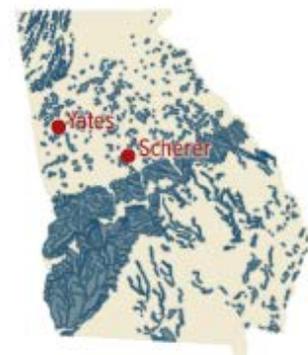
### Plant Scherer

16 million tons of ash will be capped in place at the current site of the ash pond, which is within the 2-mile restriction zone of a groundwater recharge area.



### Plant Yates

4.2 million tons of ash will be placed in unlined landfills or capped in place at the site. The eastern portion of the Ash Management Area, which will cap in place Ash Pond B Prime and Ash Pond 3 along with the excavated ash from Ash Pond 2, is within a groundwater recharge area. The R6 Dry Ash Landfill, which contains ash from AP-1 and AP-C, is on the outermost edge of a recharge area.



\*Disclaimer: The Most Significant Groundwater Recharge Area layer is enlarged from its source 1:500,000 scale to the displayed 1:35,000 scale for both site maps. Locations of most significant groundwater recharge areas should be interpreted with scale considerations in mind.

Map created by: Libbie Weimer (lweimer@selcnc.org)  
 Last updated: July 25, 2019  
 Sources: Georgia Geological Survey, US Geological Survey, Georgia Power, Natural Earth v. 4.0, US Department of Agriculture

Municipal solid waste (MSW) landfills are prohibited by Georgia’s Comprehensive Solid Waste Management Act within this same “significant ground-water recharge area,” unless such MSW landfill features a *liner and leachate collection system*. O.C.G.A. § 12-8-25.2. Given that, unlike municipal solid waste, coal ash contains heavy metals and other toxic substances that persist, do not biodegrade, and that will continue to leach into groundwater, the very purpose underlying Georgia’s ban on unlined household garbage landfills in these regions – protection of these protected zones from water pollution “applies with at least equal force to the pollutants contained in coal ash” – “*it shouldn’t be allowed to pollute Georgia’s sensitive groundwaters in perpetuity.*” (Yates Report at 7, Attachment 3; Scherer Report at 5, Attachment 1) (italics in original).

3. *Threats from siting in flood zones – Plants Wansley, Scherer, and Hammond*

Georgia Power’s impoundments at three sites are subject to flooding – an untenable situation given that they will remain unlined under these closure plans. As Mr. Hutson details, the ash ponds at Plant Wansley, Plant Scherer, and Plant Hammond are each on the 100-year flood plain. (Wansley Report at 5–6, Attachment 2; Scherer Report at 5–6, Attachment 1; Hammond Report at 5, Attachment 5). As such, water will infiltrate the ash basins anew by the rising waters accompanying even “relatively minor” flood events, resulting in additional groundwater pollution as the floodwaters enter and leave the basins, carrying mobilized pollutants with them. *See id.*

Additionally, as Mr. Hutson explains, such flood events will increase the danger of enhanced erosion and catastrophic releases from the basin, as exemplified just last year when floodwaters caused by Hurricane Florence breached the ash landfill at Duke Energy’s retired L.V. Sutton plant in North Carolina, releasing an unknown amount of ash to nearby waters. (*See* Wansley Report at 5-6, Attachment 2; Scherer Report at 5-6, Attachment 1). The following is a photograph of the breach of an embankment at Duke Energy’s L.V. Sutton plant soon after Florence in 2018, in a scenario whose possibility will always exist for Plants Scherer and Wansley under the current closure plans, given that they too will remain unlined in flood zones:<sup>25</sup>

[next page]

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<sup>25</sup> Photograph of a portion of a coal ash landfill in the aftermath of Hurricane Florence, Valarie Bauerlein & Russell Gold, *Florence Washes Away Portion of Coal-Ash Landfill in North Carolina: Duke Energy, Owner of the Landfill, Says Some of the Coal Ash Escaped into a Nearby Lake*, WSJ.COM (Sept. 16, 2018), <https://www.wsj.com/articles/florence-washes-away-portion-of-coal-ash-landfill-in-north-carolina-1537137771>.



Georgia Power appears to recognize these risks ... to its closure plan for Plant Scherer AP-1. Rather than propose a closure plan that will adequately safeguard the unlined ash basins from a 100-year flood event, Georgia Power instead has requested that the Federal Emergency Management Agency (FEMA) simply *redraw* the floodplain in the region, to carve out Scherer's AP-1.<sup>26</sup> It is unjustified. The ash basin will remain unlined under the closure plan; rising floodwaters, rewetting of the porous ash, erosion, and possibly sudden breaches will remain perpetual risks. (Scherer Report at 3, 5-6, Attachment 1). This remains true, notwithstanding the results of Georgia Power's efforts to convince a federal agency charged with protection of the public from natural disasters<sup>27</sup> to redraw its map to suit the company's closure plans.

As the following discussion and Mr. Hutson's reports detail, Georgia Power proposes to cover up decades of accumulated coal ash waste that will *perpetuate* pollution, rather than

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<sup>26</sup> HODGES, HARBIN, NEWBERRY, & TRIBBLE, PLANT SCHERER COAL COMBUSTION RESIDUALS (CCR) LANDFILL PERMIT APPLICATION, PART B, SECTION 1 (Nov. 2018), Appendix B, "Schnabel Engineering, LLC – Conditional Letter of Map Revision combined with FEMA Forms 086-0-27, -27A, and -27B (Dec. 21, 2017) (attached as Attachment 7) (excerpted).

<sup>27</sup> FEMA's mission is "to lead America to prepare for, prevent, respond to and recover from disasters with a vision of 'A Nation Prepared.'" See <https://www.fema.gov/about-agency>.

correct and prevent it. Because the evidence demonstrates that these closure plans fail to satisfy the requirements of Georgia's solid waste laws, the applications must be rejected until they do.<sup>28</sup>

***b. Unlined coal ash impoundments adversely affect the health, safety, and well-being of the public, and degrade the environment.***

About one and a half million Georgians (15% of the population) rely on self-supplied groundwater for drinking, cooking, bathing, washing clothes and other domestic uses, according to the U.S. Geological Survey and U.S. Department of the Interior.<sup>29</sup> As noted above, several of Georgia Power's coal ash ponds are located in residential areas, including Plant McDonough, Plant Wansley, and Plant Scherer, the latter of which lies in a neighborhood where residents obtain their drinking water from groundwater wells.<sup>30</sup> Likewise, agriculture – Georgia's largest industry – relies on the quality of Georgia's waters to thrive.<sup>31</sup>

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<sup>28</sup> The closure plans likewise entail open dumping barred by the Federal Resource Conservation and Recovery Act, 42 U.S.C. §§ 6901 *et seq.* ("RCRA"). The Federal CCR Rule states that "[p]ractices failing to satisfy any of the criteria in ... §§ 257.50 through 257.107 constitute open dumping, which is prohibited under section 4005 of the [RCRA]." 40 C.F.R. § 257.1(a)(2). These criteria include the performance standards governing closure in place under § 257.102(d). These Federal criteria, adopted in Georgia via the Georgia CCR Rule, likewise prohibit the manner in which Georgia Power seeks to leave its waste in these unlined pits.

<sup>29</sup> U.S. GEOLOGICAL SURVEY, WATER AVAILABILITY AND USE SCIENCE PROGRAM, ESTIMATED USE OF WATER IN THE UNITED STATES IN 2015 23, Table 6 (hereinafter, "2015 USGS Report"), <https://pubs.usgs.gov/circ/1441/circ1441.pdf>.

<sup>30</sup> *E.g.*, Samantha Max, *Residents Worried Coal Ash Was Contaminating Their Water. New Data Suggests It Might Be*, MACON TELEGRAPH (Dec. 15, 2018, 3:42 PM) (detailing health impacts and concerns voiced by "many residents who live near the plant" who rely on well water for domestic use), <https://www.macon.com/news/local/article223110165.html>; S. Heather Duncan, *Regulation of Coal Ash Ponds Like Plant Scherer's is Minimal*, MACON TELEGRAPH (updated Apr. 30, 2012 1:36 PM) ("Although Monroe County commissioners are considering extending water lines to some neighborhoods with uranium contamination in their wells, those areas are generally south of the plant, whose immediate neighbors also rely on well water."), <https://www.macon.com/news/article28648366.html>.

<sup>31</sup> "Despite all the changes in society, farming remains the foundation of the state's economic well-being. Approximately one in seven Georgians works in agriculture, forestry, or a related field." GA. FARM BUREAU, <https://www.gfb.org/education-and-outreach/about-ga-agriculture.cms>; "With over \$75 billion in economic impact every year, agribusiness is Georgia's leading industry." GA. DEP'T OF ECON. DEV., <https://www.georgia.org/industries/agribusiness>.

EPD recognizes “prevention of contamination as an important tool in the protection of public water supplies.”<sup>32</sup> As Mr. Hutson explains, “[a] central tenet of responsible waste management is that it be prevention-based. ... ‘Ground water is ... used extensively for agricultural, industrial, and recreational purposes. Landfills can contribute to the contamination of this valuable resource if they are not designed to *prevent* waste releases into ground water ... Cleaning up contaminated ground water is a long and costly process and in some cases may not be totally successful.’” (Scherer Report at 1, Attachment 1) (citing U.S. ENVTL. PROT. AGENCY, CRITERIA FOR SOLID WASTE DISPOSAL FACILITIES, A GUIDE FOR OWNERS/OPERATORS 3 (EPA/530-SW-91-089, Mar. 1993) (emphasis added)).<sup>33</sup>

Reflecting this central tenet, Georgia’s solid waste rules expressly prohibit “solid waste handling in a manner which will ... impair the quality of the ground or surface waters; impair the quality of the environment; or likely create other hazards to the public health, safety, or well-being ...” State Rule 391-3-4-.04(1). Issuing solid waste permits that enable the *perpetuation* of pollution, rather than *prevention* of it, would fundamentally violate these principles, which form the bedrock of Georgia’s Comprehensive Solid Waste Management Act. O.C.G.A. §§ 12-8-21(a), (d) (state policy prohibiting solid waste practices that degrade the environment and adversely affect public health, safety, or well-being, and directing EPD to “conform to” and “implement” such policy and express intent of the law in exercising its permitting duties).

The mishandling of coal ash serves as a prime example of where owners/operators and agencies charged to police them have failed to prevent pollution, resulting in irreparable harm to both human health and the environment. EPA Region 4 (encompassing the southeastern U.S., including Georgia), has seen two of the largest coal ash catastrophes in our nation’s history due to mismanagement by coal-fired electric utilities – at the Tennessee Valley Authority’s (TVA) Kingston Fossil Plant in 2008<sup>34</sup> and Duke Energy’s Dan River Steam Station in 2014.<sup>35</sup>

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<sup>32</sup> GA. ENVTL. PROT. DIV., SOURCE WATER ASSESSMENT AND PROTECTION IMPLEMENTATION PLAN 8 (Mar. 28, 2000), [https://epd.georgia.gov/sites/epd.georgia.gov/files/related\\_files/site\\_page/swapfinal.pdf](https://epd.georgia.gov/sites/epd.georgia.gov/files/related_files/site_page/swapfinal.pdf)

<sup>33</sup> Available at <https://www.epa.gov/sites/production/files/2016-03/documents/landbig.pdf>.

<sup>34</sup> About 5.4 million tons of coal ash and over *one billion gallons* of slurry spilled into the Emory River channel from TVA’s Kingston Fossil Plant in Roane County, Tennessee just before Christmas in 2008, caused by a sudden failure of an earthen dike used to hold back the massive waste pile. See U.S. ENVTL. PROT. AGENCY, EPA RESPONSE TO KINGSTON TVA COAL ASH SPILL (last updated Dec. 23, 2016), <https://www.epa.gov/tn/epa-response-kingston-tva-coal-ash-spill>; Final Rule, 80 Fed. Reg. at 21,313.

<sup>35</sup> About 39,000 tons of coal ash spilled into the Dan River near Eden, North Carolina in February 2014, discoloring the Kerr Reservoir located *80 miles* downstream with ash and visibly polluting the water. See U.S. ENVTL. PROT. AGENCY, DUKE ENERGY COAL ASH SPILL IN EDEN,

The Kingston disaster is the largest industrial pollution spill in U.S. history, covering about 300 acres with coal ash waste when an earthen dam used to impound an immense coal ash storage facility at the waterfront site suddenly collapsed.<sup>36</sup> In its aftermath, about 40 workers hired to clean up the coal ash have died from various ailments including brain cancer, lung cancer, leukemia and other ailments, and 400 have been severely sickened, all caused by exposure to coal ash, according to allegations in at least two lawsuits against a contractor hired by TVA to remediate the spill.<sup>37</sup>

In another illustration of utility cost-cutting that ended in disaster, Duke Energy engineers at the Dan River Plant twice requested \$20,000 from company headquarters to inspect the aging drainage pipe running beneath the waste impoundment that later collapsed from corrosion.<sup>38</sup> Those requests were denied both times by Duke executives. *Id.* Duke Energy subsequently pled guilty to nine criminal violations of the Clean Water Act, following federal enforcement that held the utility “responsible for violating federal environmental requirements.”<sup>39</sup>

In a baffling proposal given its similarity to Dan River, as set forth above, Georgia Power proposes to leave a massive unlined coal ash basin 50 feet from a continuously flowing stream routed through a buried 1,500 foot fiberglass-lined corrugated metal pipe along the banks of the Chattahoochee River in densely populated Cobb County – a closure configuration that

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NC: HISTORY AND RESPONSE TIMELINE (last updated Mar. 14, 2017),  
<https://www.epa.gov/dukeenergy-coalash/history-and-response-timeline>.

<sup>36</sup> The Kingston disaster was over 40 times bigger than the 1989 Exxon Valdez oil spill in Alaska and 10 times bigger than the Deepwater Horizon oil spill in the Gulf of Mexico. *Coal Ash: 130 Million Tons of Waste: 60 Minutes Investigates a Potentially Harmful Waste Byproduct that Inundated a Tenn. Town*, CBSNEWS.COM (Oct. 1, 2009), <https://www.cbsnews.com/news/coal-ash-130-million-tons-of-waste-01-10-2009/>.

<sup>37</sup> See Joel K. Bourne, Jr., *Coal’s Other Dark Side: Toxic Ash That Can Poison Water and People*, NAT’L GEOGRAPHIC (Feb. 19, 2019), <https://www.nationalgeographic.com/environment/2019/02/coal-other-dark-side-toxic-ash/>; Jamie Satterfield, *TVA Contractor Jacobs Faces Another Worker Lawsuit Over Coal Ash Cleanup*, KNOXNEWS.COM (May 20, 2019, 6:00 AM), <https://www.knoxnews.com/story/news/local/tennessee/tvacoalash/2019/05/20/tva-contractor-jacobs-faces-another-lawsuit-over-coal-ash-cleanup/1193943001/>.

<sup>38</sup> *Prosecutors: Duke Energy Could have Avoided Dan River Spill in North Carolina*, NBCNEWS.COM (May 14, 2015, 10:11 PM), <https://www.nbcnews.com/news/us-news/prosecutors-duke-energy-could-have-avoided-dan-river-spill-north-n359301>.

<sup>39</sup> Press Release, U.S. Dep’t. of Justice, *Duke Energy Subsidiaries Plead Guilty and Sentenced to Pay \$102 Million for Clean Water Act Crimes* (May 14, 2015), <https://www.justice.gov/opa/pr/duke-energy-subsidiaries-plead-guilty-and-sentenced-pay-102-million-clean-water-act-crimes>.

guarantees the need for continual inspection and maintenance to prevent failure, in a neighborhood that has seen *two* buried pipe failures in recent history. (See McDonough Report at 5–7, Attachment 4). Neither the citizens of Cobb County nor the downstream public should bear the risks posed by such a “short-sighted” closure plan. See *id.* 7. Such a proposal is the very example of one that “adversely affect[s] the health, safety, and well-being of the public” that must be rejected by EPD in its permit decisions. O.C.G.A. § 12-8-21(a).

Notwithstanding Georgia Power’s repeated public statements to the contrary,<sup>40</sup> the company’s coal ash impoundments are plagued by a history of failure:

- Plant Hammond’s Ash Pond 3 suffered from a substantial breach soon after being placed in operation in the 1970s. A subsequent investigation reported that AP-3 was leaking approximately one million gallons per day of coal ash wastewater onto adjacent property. (Hammond Report, Attachment 5, Enclosure 1 thereto at 6).<sup>41</sup> A “subsurface investigation” found “low to very high permeability measurements in materials below the dike” at Hammond’s AP-3, “including solution cavities” beneath the pond. *Id.* A sinkhole investigation was conducted at AP-3 in March 1980, but “[n]o documentation related to subsequent sinkhole repair or final disposition of the sinkhole issue was found” – leaving unresolved critical questions concerning the long term integrity of the soils beneath Hammond’s AP-3, which is unlined. *Id.* Notwithstanding the leak and the significant lack

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<sup>40</sup> In its 2016 “Coal Combustion Residuals” brochure, Georgia Power’s parent company, Southern Company, maintains that “Some metals such as arsenic, mercury and lead that occur naturally in coal in trace amounts remain in the ash. By using appropriate procedures, the metals are contained within the ash management facilities on site at the power plants.” (Attachment 8, at p. 2, <https://www.southerncompany.com/content/dam/southern-company/pdf/reports/CoalCombustionResiduals2016.pdf>.) As detailed herein, any characterization that these toxic metals “are contained” within Georgia Power’s unlined impoundments is flatly belied by the evidence. Likewise, in press statements, Georgia Power has characterized its closure plans, including those that it proposes to cap and close in place, as “exceeding federal CCR Rule requirements and complying with the more stringent state rule,” – a conclusion that simply cannot square with the numerous, manifest failures to meet the closure performance standards imposed under both the Georgia CCR Rule and its Federal analogue, as set forth herein. Compare Georgia Power Company, *Ash Pond Closure Efforts Continue Across Georgia* (March 2, 2018), <https://www.georgiapower.com/company/news-center/2018-articles/ash-pond-closure-efforts.html> with discussion and citations therein, Section II.b.ii-iii. *infra*, and the expert reports of Mark Hutson, Attachments 1 – 5 (detailing failures).

<sup>41</sup> The Hammond Report cites to AMEC Earth & Env’tl. Inc., Report of Safety Assessment Coal Combustion Surface Impoundments, Plant Hammond, .pdf p. 62 (Dec, 10, 2010) (prepared for the U.S. EPA), [https://archive.epa.gov/epawaste/nonhaz/industrial/special/fossil/web/pdf/gp\\_hammond\\_final.pdf](https://archive.epa.gov/epawaste/nonhaz/industrial/special/fossil/web/pdf/gp_hammond_final.pdf).

of information concerning the results of the 1980s-era sinkhole investigation, in Georgia Power's public disclosures required by the Federal (and now Georgia) CCR Rule concerning the History of Construction of AP-3, a consultant to the company reports that, as to the "Known record of structural instability," that "No structural instability issues have been observed for AP-3."<sup>42</sup> To say the least, it is difficult to square this denial of a known record of structural instability with the information reported to EPA in 2010, detailing a leak on the order of 1 million gallons per day from AP-3, prompting a sinkhole investigation whose outcome remains undocumented. (See Hammond Report at 5–6, Attachment 5, and Enclosure 1 thereto).

- On July 28, 2002, a 4-acre wide, 30-foot deep sinkhole developed under Plant Bowen's 1960s-era surface impoundment, dumping 2.25 million gallons of coal ash slurry containing 281 tons of ash into Euharlee Creek near Cartersville. See Proposed CCR Rule 75 Fed. Reg. 35,128, 35,237 (June 21, 2010) (Table of EPA's Proven Damage Cases).<sup>43</sup>
- Also in 2002, an environmental investigation at Plant Branch revealed that zinc, silver, selenium, mercury, nickel, copper, lead, chromium, beryllium, cadmium, barium, and arsenic were detected in groundwater in the vicinity of the plant's coal ash waste ponds above their naturally-occurring background concentrations. (See, e.g., Ga. Dep't of Natural Res. Admin. Order No. EPD-HSR-317 (Aug. 19, 2002) ("2002 Administrative Order"), Attachment 9; see also Ga. Env'tl. Prot. Div. Hazardous Sites Response Program Release Notification (Mar. 22, 1994) ("1994 Release Notification") (identifying soil and groundwater pollution attributable to "coal or coal ash storage"), Attachment 10).
- In its preamble to the proposed Federal CCR Rule, EPA detailed published, peer-reviewed scientific literature that "observed deformities and reproductive effects in amphibians living on or near CCR disposal sites in Georgia." Proposed CCR Rule, 75 Fed. Reg. at 35,171 (citing Hopkins, W.A. et al., *Reproduction, embryonic development, and maternal transfer of contaminants in the amphibian *Gastrophryne carolinensis**, ENVIRONMENTAL HEALTH PERSPECTIVES. 114:(5):661-666 (2006)).
- In 2016, a team of Duke University researchers performed seep,<sup>44</sup> groundwater and surface water sampling at 15 coal ash sites in 5 states, including unlined impoundments at

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<sup>42</sup> STANTEC, HISTORY OF CONSTR., 40 C.F.R. 257.100(e)(3)(iv) PLANT HAMMOND ASH POND 3 (AP-3), GA. POWER CO. 4, [https://www.georgiapower.com/content/dam/georgia-power/pdfs/company-pdfs/plant-hammond/20180417\\_constrhist\\_ham\\_ap3.pdf](https://www.georgiapower.com/content/dam/georgia-power/pdfs/company-pdfs/plant-hammond/20180417_constrhist_ham_ap3.pdf).

<sup>43</sup> Available at <https://www.govinfo.gov/content/pkg/FR-2010-06-21/pdf/2010-12286.pdf>.

<sup>44</sup> As Mr. Hutson explains, "seeps" refer to locations in earthen dams where leaks are prone to occur. (E.g., Scherer Report at 4, Attachment 1).

Georgia Power's Plant Branch and Plant Arkwright. (See Jennifer Harkness, Barry Sulkin and Avner Vengosh, *Evidence for Coal Ash Ponds Leaking in Southeastern United States*, ENVTL. SCIENCE AND TECH., (June 10, 2016) ("CCR Leak Study") Attachment 6).<sup>45</sup> This published, peer-reviewed study concluded that there was "strong evidence for the leaking of coal ash ponds to adjacent surface water and shallow groundwater" – "systemic evidence" of toxic pollution at "levels above drinking water and ecological standards..." See *id.* at 6583 (Abstract). The CCR Leak Study concluded that unlined impoundments at Georgia Power's Plant Branch was polluting nearby Lake Sinclair with boron and strontium. See *id.* at 6587. At Georgia Power's Plant Arkwright, the CCR Leak Study concluded that the unlined impoundment there – one that had been "closed" for 13 years – was "still" leaking CCR pollutants to the adjacent surface waterbody, including "high" concentrations of boron. See *id.* at 6588.

- Beginning in 2018 Georgia Power confirmed largely for the first time in disclosures required by the Federal CCR Rule that nearly *all* of its coal ash pond sites for which it published data (10 of 11) were contaminating groundwater with one or more toxic pollutants at levels exceeding the groundwater protection standard or other health-based standards, at Plant Bowen (boron and antimony); Plant Branch (cobalt); Plant Hammond (arsenic and molybdenum); Plant McIntosh (arsenic and lithium); Plant Scherer (cobalt); Plant Wansley (cobalt, boron, lithium, radium, and sulfate); and Plant Yates (beryllium, boron, and cobalt).<sup>46</sup>

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<sup>45</sup> See also Tim Lucas, *Coal Ash Ponds Found to Leak Toxic Chemicals: Long-lasting contamination won't be cleaned up by ash removal alone*, DUKE TODAY (June 10, 2016), <https://today.duke.edu/2016/06/ashpondleaks> (summarizing CCR Pond Leaking Study, reporting that "In all of the investigated sites, we saw evidence of leaking" and "high levels of contaminants" in polluted surface waters, according to Duke geochemistry and water quality professor Avner Vengosh).

<sup>46</sup> Groundwater monitoring reports and data for Plants Bowen, Hammond, McDonough, McIntosh, Scherer, Wansley, and Yates are available on Georgia Power's CCR Rule Compliance Plant Specific Data website at <https://www.georgiapower.com/company/environmental-compliance/ccr-rule-compliance-data/ccr-rule-compliance-plant-list.html>; see also Abel Russ, Env'tl. Integrity Project, Lisa Evans, Earthjustice, *Report: Georgia at a Crossroads – Groundwater contamination from coal ash threatens the Peach State* (Dec. 13, 2018), <https://assets.documentcloud.org/documents/5625742/GA-RPT-FINAL-1.pdf> (reporting and summarizing groundwater contamination at Georgia Power's coal ash impoundments). Yet as Mr. Hutson details in the enclosed expert reports, these reported contaminants tell only *part* of the story concerning the extent of environmental contamination occurring at these sites – the true magnitude of pollution caused by these unlined impoundments is far more extensive.

- In November 2018, Georgia Power submitted its solid waste permit applications to EPD, providing largely for the first time evidence detailing the extent and nature of the environmental pollution inflicted by the company’s unlined coal ash impoundments, as detailed in the accompanying expert reports of Mr. Hutson and discussed herein.
  - i. Coal ash and leachate degrade and impair water quality, degrade the environment, and adversely affect human health.**

Georgia Power’s coal ash impoundments generate leachate as water passes through the waste and leaks to the surrounding environment – a continual state of affairs given that *all* of the closure plans addressed herein propose leaving coal ash waste unlined and submerged under the groundwater table. As Mr. Hutson explains, “leachate’ ‘includes liquid, including any suspended or dissolved constituents in the liquid, that has percolated through or drained from waste or other materials placed in a landfill, or that passes through the containment structure (e.g., bottom, dikes, berms) of a surface impoundment.’” (E.g., Scherer Report at 1-2, Attachment 1) (citing Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category, 80 Fed. Reg. 67,838, 67,847 (U.S. Env’tl. Prot. Agency Nov. 3, 2015) (codified at 40 C.F.R. Part 423) (“ELG Rule”)); *see also* 40 C.F.R. § 257.2 (definition of leachate).<sup>47</sup>

But unlike lined landfills that are designed to capture and collect leachate *before* it escapes to the environment, e.g. O.C.G.A. § 12-8-22(15) (definition of leachate collection system), unlined coal ash impoundments simply “allow the leachate to potentially migrate to nearby ground waters, drinking water wells, or surface waters,” given that unlined impoundments simply *have no bottom liner to prevent it*. ELG Rule, 80 Fed. Reg. at 67,847.

As Mr. Hutson observes, EPA has calculated the startling magnitude of toxic pollution inflicted by coal ash leachate from unlined coal ash impoundments: 70,300 toxic-weighted pound equivalents per year – *more pollution from toxic metals than the entire coal mining industry*. (E.g., Scherer Report at 2, Attachment 1 (citing U.S. ENVTL. PROT. AGENCY, TECH. DEV. DOCUMENT FOR THE EFFLUENT LIMITATIONS GUIDELINES AND STANDARDS FOR THE STEAM ELEC. POWER GENERATING POINT SOURCE CATEGORY, EPA-821-R-15-007 (Sept. 2015), at 10-39 (Table 10-18));<sup>48</sup> U.S. ENVTL. PROT. AGENCY, 2015 ANNUAL EFFLUENT GUIDELINES REVIEW REPORT, EPA-821-R-16-002 (June 2016), at 2-26 (listing equivalent pollution from other industries, including coal mining);<sup>49</sup> *see also* *Southwestern Elec. Power Co. v. EPA*, 920 F.3d

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<sup>47</sup> Available at <https://www.govinfo.gov/content/pkg/FR-2015-11-03/pdf/2015-25663.pdf>.

<sup>48</sup> Available at <https://nepis.epa.gov/Exe/ZyPDF.cgi/P100NTDT.PDF?Dockey=P100NTDT.PDF>.

<sup>49</sup> Available at [https://www.epa.gov/sites/production/files/2016-06/documents/2015-annual-eg-review-report\\_june-2016.pdf](https://www.epa.gov/sites/production/files/2016-06/documents/2015-annual-eg-review-report_june-2016.pdf).

999, 1012 (5th Cir. 2019) (federal appeals court decision striking down overly-weak federal regulation of leachate pollution treatment regulations at coal-fired plants under the Clean Water Act, given EPA’s own scientific studies acknowledging “ground water contamination from surface impoundments” “threatens drinking water, as evidenced by more than 30 documented cases.”) (*citing* ELG Rule, 80 Fed. Reg. at 67,840)).

Consequently, as discussed in further detail below, it would be arbitrary and capricious to simply rely on a groundwater monitoring network, no matter how well designed,<sup>50</sup> to detect further contamination at some point in the future, rather than impose a closure method that ceases and prevents further water quality impairments and degradation, which is already demonstrated by Georgia Power’s application materials and the public disclosures now required by the Federal and Georgia CCR Rule.

## **II. The permit applications violate Georgia’s solid waste laws, and must be rejected.**

Georgia’s solid waste laws are intended to prevent and clean up pollution. The recently-adopted Georgia CCR Rule further these goals, imposing additional technical requirements on the means by which coal ash may be disposed of in the State. Both sets of requirements bar Georgia Power’s proposed closure plans, for the reasons detailed below. EPD must therefore reject the applications.

And while this letter and the accompanying expert reports address unlined coal ash disposal at the above-captioned sites, the flaws detailed herein, and the reasons for why EPD must deny the applications, apply with equal force to all of Georgia Power’s unlined closures, including those sites, such as at Plant Arkwright, that have already been closed, but for which EPD has not rendered a solid waste permit decision governing those closures. As a representative of Georgia Power recently admitted, “[i]n our minds, if we were to do something less and not meet the [CCR Rule closure] performance standards, then EPD would *force us to go back and redo what we . . . did not do right the first time.*” (Integrated Res. Plan Hearing Transcript before the Ga. Pub. Serv. Comm’n, Testimony of Mark Berry, Vice President of Env’tl. and Natural Res., Ga. Power Co., Tr. 834 (Apr. 9, 2019) (“2019 IRP Testimony”), Attachment 11 (excerpted transcript) (emphasis added)).

That is precisely what EPD must do for these unlined disposal sites.

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<sup>50</sup> As Mr. Hutson details in the accompanying reports, “the nature and extent of current groundwater contamination” at these sites have “not been adequately characterized.” (Wansley Report at 9, Attachment 2; *see also* “Groundwater Quality Monitoring” sections in Attachments 1 through 5). Hence, the current groundwater monitoring network at these sites, and the self-serving interpretation of the data, are deeply flawed and paint an inadequate picture of the true extent of contamination that these waste pits have inflicted in these regions of the State.

***a. EPD's authority and responsibility to enforce Georgia's solid waste laws.***

To engage in solid waste handling and disposal in the state, Georgia Power must apply for and obtain a permit issued by the Director of EPD that complies with Georgia's solid waste laws. O.C.G.A. § 12-8-24(a); State Rules 391-3-4-.02(1) and 391-3-4-.04(1), (2). This requirement specifically encompasses coal ash disposal. State Rule 391-3-4-.10(9)(a). Importantly, the EPD Director has the authority to issue permits, impose conditions, or deny permits that do not comply with state law, including federal requirements adopted into state law via federally- delegated programs. O.C.G.A. §§ 12-8-23.1(a)(1), (a)(3)(A); State Rules 391-3-4-.04(1), (4)(c); 391-3-4-.10(9)(a). In reviewing Georgia Power Company's permit applications, Georgia EPD must impose those conditions necessary to implement the requirements, restrictions, standards, and conditions that will ensure that Georgia's solid waste laws are met. O.C.G.A. § 12-8-21(d).<sup>51</sup>

***b. Georgia's Solid Waste Management Act and the state's solid waste rules prohibit Georgia Power's proposed closure plans for its unlined coal ash disposal sites.***

It is the express policy and legislative intent of the Georgia Comprehensive Solid Waste Management Act to "assure that solid waste does not adversely affect the health, safety, and well-being of the public[,] and that solid waste facilities [including coal ash disposal sites] ... do not degrade the quality of the environment by reason of their location, design, method of operation, or other means...." O.C.G.A. § 12-8-21(a). Georgia EPD "shall conform to and implement" these policies in its permitting decisions. *Id.* at (d). In doing so, EPD must perform a rigorous examination of the evidence supporting Georgia Power's proposed closure of its ash basins. Georgia Power's waste permit applications "will be reviewed" by EPD "together with such other information as may be necessary to ascertain the effect of such solid waste handling upon air, water, and land resources and human health." State Rule 391-3-4-.02(8).

***i. USWAG v. EPA: landmark federal appeals court CCR Rule ruling and a roadmap for EPD's proper coal ash permit decisions.***

Last summer, the D.C. Circuit Court of Appeals handed down a unanimous per curiam decision striking down overly-weak provisions of the Federal CCR Rule in a decision whose

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<sup>51</sup> Once again, Georgia Power does not dispute EPD's authority to demand compliance with Georgia's solid waste laws, including those governing closure of its coal ash impoundments. (*See* 2019 IRP Testimony, Attachment 11). In this regard, it is noteworthy that Georgia Power began the process of "closing" many of its waste pits, such as Plant McDonough's Ash Pond 1, combined AP-3/4 and Plant Hammond's ash ponds, without first receiving a permit from EPD approving the methods used – an approach akin to self-regulation and permitting after-the-fact to which EPD owes no deference in its permit decisions. This is particularly so, since it is the public who will bear the consequences of the inherently flawed methods proposed for closure of these ash dumps.

reasoning, and the evidence upon which it is based, hold significant implications for EPD's permitting decisions concerning the proper method to close Georgia Power's coal ash ponds. The federal appeals court decision is *USWAG v. EPA*, 901 F.3d 414 (D.C. Cir. 2018) (Attachment 12). The losing party in that case was the Utility Solid Waste Activities Group, a trade group that represents and has represented numerous power companies, including Southern Company (Georgia Power's corporate parent) and Georgia Power itself in solid waste and coal ash issues.

This case decided a number of challenges to EPA's 2015 CCR Rule and ordered EPA to strengthen the rule in a number of key respects. Among other things, the Court of Appeals required EPA to strengthen the Rule's provisions governing unlined coal ash impoundments, based on the exhaustive administrative record establishing the extent to which they adversely affect both human health and the environment. Importantly, a federal appeals court will overturn portions of an EPA rule established under the federal Resource Conservation and Recovery Act (such as the Federal CCR Rule) only if the EPA was arbitrary and capricious in its failure to establish criteria for disposal of coal ash sufficient to meet RCRA's baseline requirement that solid waste disposal pose "no reasonable probability of adverse effects on health or the environment." RCRA, 42 U.S.C. § 6944(a).

Under Georgia's Solid Waste Management Act, O.C.G.A. § 12-8-20 *et seq.*, the standard under which EPD must make its permitting decisions here is even stronger: EPD cannot lawfully issue a solid waste permit approving a coal ash impoundment closure unless it "[1] does not *adversely affect* the health, safety and well-being of the public and [2] that such solid waste facilities ... *do not degrade the quality of the environment* by reason of their location, design, method of operation, or other means," O.C.G.A. § 12-8-21(a) (emphasis added). The "director, in exercising any authority" granted to issue or deny such permits, "shall conform to and implement" Georgia's express policies and legislative intent, O.C.G.A. § 12-8-21(d). This mandate is mirrored in Georgia's solid waste rules, flatly prohibiting "solid waste handling in a manner which will ... *impair the quality of the ground or surface waters; impair the quality of the environment; or likely create other hazards to the public health, safety, or well-being ...*" State Rule 391-3-4-.04(1) (emphasis added).

Before being partially struck down, the 2015 Federal CCR Rule allowed unlined impoundments to continue to operate (*i.e.*, receive more waste) *until* groundwater contamination was established – enabling, essentially "one free leak" until the federal rule required remedial action. *USWAG v. EPA*, 901 F.3d at 433. As compared with the situation here, the challenged provisions of the federal rule relied on future groundwater monitoring to detect migrating pollution from unlined coal ash basins *before* imposing more stringent measures. After reviewing evidence concerning coal ash handling and disposal, the D.C. Circuit unanimously concluded that EPA acted arbitrarily and capriciously by allowing unlined impoundments to continue operating at all, when measured against the RCRA standard of eliminating the "reasonable probability of adverse effects on health or the environment" as a result of waste storage practices. *Id.* at 433–34. In the face of the "considerable dangers" posed by unlined impoundments given the scientific evidence presented, the Court found that "EPA's decision to shrug off preventative

regulation makes no sense.” *Id.*<sup>52</sup> (See also Scherer Report at 1, [Attachment 1](#) (detailing the “central tenet” of prevention-based waste management)).

The EPA’s record for the Federal CCR Rule is the most comprehensive data collection regarding the handling and disposal of coal ash in the United States.

The D.C. Circuit reviewed the extensive scientific and technical record, noting EPA’s unambiguous conclusion “that unlined impoundments are dangerous” and that among the studied disposal methods, putting CCR “in unlined surface impoundments and landfills presents the *greatest risks to human health and the environment.*” *Id.* at 427 (citing Final Rule, 80 Fed. Reg. at 21,451) (emphasis added). The Appeals Court observed based on EPA scientific studies “that unlined impoundments have a 36.2 to 57 percent chance of leakage at a harmfully contaminating level during their foreseeable use” and “generally will be considered to pose a substantial present or potential hazard to human health and the environment.” *Id.* (citation omitted).

The evidence presented to the D.C. Circuit also established without doubt that composite lined<sup>53</sup> coal ash storage is protective of public health, safety, and welfare, the environment, and natural resources, *while unlined storage is not*: “The record evidence shows that an impoundment with composite lining, which the Rule requires of all new impoundments, has a 0.1 per cent chance of contaminating groundwater at drinking-water wells a mile distant from the impoundment perimeter over the course of a 100-year period,” while an “unlined impoundment, in contrast, has a 36.2 percent chance of contaminating groundwater at such a distance.” *Id.* at 428. Moreover, “the probability of contamination is higher at distances closer to the impoundment site.” *Id.*

Importantly, the Court of Appeals recognized that based on EPA’s own risk assessments, leakages are not only more likely for unlined coal ash impoundments, but they “pose substantial risks to humans and the environment.” *Id.* Even groundwater that is not currently used as a

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<sup>52</sup> The 2016 Water Infrastructure Improvements for the Nation Act (“WIIN Act”) enables the EPA Administrator to approve qualified state CCR solid waste permit programs to “operate in lieu of [EPA] regulation” in the state. 42 U.S.C. 6945(d)(1)(A). But, as the Court of Appeals explained, EPA “may only approve a state plan if its standards ‘are at least as protective as the criteria’ set out by EPA in its corresponding [Federal CCR Rule].” *USWAG v. EPA*, 901 F.3d at 426 (concluding that the WIIN Act “provides that a Coal Residuals disposal site can only qualify as a ‘sanitary landfill’ if it is in full compliance with, among other things, the EPA’s extant (or successor) regulations governing Coal Residuals waste sites” – the Federal CCR Rule) (*citing* 42 U.S.C. § 6945(d)). Consequently, should EPD issue a permit under Georgia’s CCR permit program in a manner that is not at least as protective as the criteria set forth in the Federal CCR Rule, EPA cannot lawfully approve Georgia’s state CCR program.

<sup>53</sup> A *composite liner* is a liner system consisting of two components – a geomembrane and a two-foot layer of compacted soil – installed in direct and uniform contact with one another. See, e.g., Final Rule, 80 Fed. Reg. at 21,304. None of Georgia Power’s coal ash ponds addressed herein feature a bottom liner – composite or otherwise. (See Hutson reports, [Attachments 1 to 5](#)).

source of drinking water raises concerns, because “[s]ources of drinking water are finite, and future users’ interests must also be protected.” *Id.* (citing Final Rule, 80 Fed. Reg. at 21,452).

The D.C. Circuit compared leakage at lined and unlined impoundments based on the voluminous technical record evidence before it, concluding that “[l]eakage from unlined impoundments is typically quicker, more pervasive, and at larger volumes than from lined impoundments,” and that “leakage from unlined impoundments is more pervasive and less amenable to any quick, localized fix.” *Id.* at 429.

After reviewing the entire voluminous technical and scientific record before it, and considering the arguments presented by both EPA and the Utility Solid Waste Activities Group seeking to defend the weaker portions of the Federal CCR Rule at issue, the Court of Appeals found that unlined impoundments failed so badly to prevent a “reasonable probability of adverse effects on health or the environment” that allowing them to continue under the Federal CCR Rule was arbitrary and capricious.

*1. EPD’s permit decisions based on standards even more stringent than those in USWAG v. EPA.*

The evidence set out herein and in the accompanying Hutson expert reports shows that a decision by EPD to issue solid waste handling permits allowing Georgia Power to close its unlined impoundments in place at Plants Scherer, Wansley, McDonough, Yates, and Hammond would be, if anything, even more arbitrary and capricious than the provisions of the 2015 Federal CCR Rule struck down by the D.C. Circuit in *USWAG v. EPA*. The court in that case found that the EPA’s decision to simply exempt the older, leakier unlined impoundments from the requirements of the Federal CCR Rule was unlawful under RCRA’s standard of “no reasonable probability of adverse effects on health or the environment from disposal of solid waste.” 42 U.S.C. § 6944(a). In part, the court rendered its decision because of the propensity of unlined impoundments to leak at harmful levels, violating RCRA’s baseline requirement for “sanitary landfills” under § 6944(a).

Here, the evidence establishes not only that Georgia Power’s waste pits are unlined and therefore prone to the very leaks at issue in *USWAG v. EPA*, but that the *waste itself* is occupying Georgia’s groundwater to a massive extent – a situation that is simply untenable under Georgia’s solid waste laws. If even *leaks* from a known source of toxic metals fail RCRA’s baseline requirement of “no reasonable probability of adverse effects on health or the environment from disposal of solid waste” as the D.C. Circuit held, based on the most comprehensive scientific data collection and analysis on the subject in the nation, the wholesale appropriation of Georgia’s ground water as a permanent waste dump at depths up to 85 feet is obviously unlawful.

We trust that EPD will make the same conclusion.

Here, EPD cannot lawfully issue a solid waste permit approving a coal ash pond closure plan unless it:

1. Does not adversely affect the health, safety and well-being of the public, O.C.G.A. §§ 12-8-21(a), (d);
2. Does not degrade the quality of the environment by reason of their location, design, method of operation, or other means, *id.*; and
3. Does not impair the quality of the ground or surface waters; impair the quality of the environment; or likely creates other hazards to the public health, safety, or well-being, State Rule 391-3-4-.04(1).

Simply put, Georgia Power's closure plans do not, and *cannot* satisfy these requirements. As Mr. Hutson details in his expert reports, the evidence establishes that each of these unlined impoundments are adversely affecting public health, safety and well-being; degrading the quality of the Georgia's waters, and impairing the environment, despite the Company's flawed sampling and implausible attempts to attribute detected contamination to sources *other* than its immense coal ash pits.

For example:

**At Plant Scherer** (776-acres, 15.7 million tons of ash):

- The closure plan proposes leaving from 75-85 feet of coal ash in AP-1 (more than an 8-story building occupying a decently-sized downtown metropolitan region) submerged beneath the groundwater table, within an ash delta fed by Berry Creek, a perennial stream that will continue to infiltrate the unlined basin "in perpetuity" post-closure, which "will in turn promote the generation of leachate that will eventually discharge into the creek, carrying mobilized ash pollutants with it" (Scherer Report at 7-8, Attachment 1). "Minimizing the potential for leachate generation and subsequent migration out of the containment are key goals of permanent waste site closure that *are not achieved* under the Georgia Power Closure Plan." *Id.* at 6 (emphasis added).
- The ash basin sits within a state designated "significant groundwater-recharge area" requiring a liner and leachate collection system by state law for MSW landfills. *Id.* at 5. "The logic behind that law flatly barring unlined MSW applies with at least equal force to the pollutants contained in coal ash as it does for household garbage – *it shouldn't be allowed to pollute Georgia's sensitive groundwaters in perpetuity.*" *Id.* (italics in original).
- The extent of pollution is almost certainly worse than currently reported, yet Georgia Power has not even *attempted* to fully delineate current or future impacts. Downgradient on-site Monitoring Well SGWC-18 southeast of the pond reports concentrations of cobalt, boron, sulfate and total dissolved solids. But rather than perform a "comprehensive sampling protocol" "necessary to render an accurate

picture of the sources of contamination,” ... “Georgia Power has made no apparent effort to determine the magnitude and extent of ash-related groundwater contamination caused by AP-1. The Company appears more interested in attributing away the detected pollution to sources other than its massive coal ash waste disposal unit than in providing an accurate picture of site contamination” for example by failing to disclose sample depths used to report its well data – a critical omission given the “commonly understood” reality that samples collected from upper layers of an ash basin often report relatively *lower* contaminant concentrations in comparison with samples collected lower in the ash column at the same location, given settling by gravity – the very mechanism that these ash ponds were originally designed to employ. (See Scherer Report at 9–10, Attachment 1).

**At Plant  
McDonough** (23  
acres and 41 acres,  
for a total 4.9  
million tons)

- The closure plan proposes to combine AP-3 and AP-4 into a single disposal area. 2018 potentiometric data shows that groundwater “continues to flow through the ash toward discharge areas along the unnamed creeks to the southwest and east.” (McDonough Report at 10). The higher upgradient groundwater elevations along the northwestern side of the combined disposal area are up to 50-feet higher than those along the eastern creek. The data shows that groundwater will flow from the higher elevations on the northwest towards discharge areas along the unnamed streams, or directly to the Chattahoochee. As Mr. Hutson concludes based on the evidence, “[t]his fact in itself is enough to make the continued existence of saturated waste following capping of AP-3/4 a probable outcome.” *Id.*
- Georgia Power has failed to disclose essential information sufficient to fully evaluate the extent of its contamination, or how its coal ash pollution will continue post-closure. As Mr. Hutson explains, “Other generation facilities that have proposed similar Cap-In-Place closure scenarios for ash impoundments have typically conducted multiple phases of groundwater flow and transport monitoring in at least an *attempt* to predict how much of the buried waste will remain saturated, and to further predict how far downstream water quality impacts may persist after waste consolidation and capping. Here, no such predictive modeling effort has been conducted in support of the AP-3/4 Closure Permit Application. This omission results in the lack of important data. Nevertheless, currently available information supports the findings set forth above concerning present and future groundwater degradation, future impoundment and release of leachate, and contamination of the unnamed creek by post-closure discharge of leachate from AP-3/4.” *Id.* at 10–11 (italics in original).
- Yet again, the extent of the Company’s coal ash pollution is almost certainly worse than it has reported to EPD (and the public). Despite

detections of common coal ash contaminants arsenic, beryllium, cadmium, sulfate, selenium, and total dissolved solids above health standards near combined AP-3/4 “Georgia Power has made no apparent effort to determine the magnitude and extent of the ash-related groundwater contamination caused by AP-3/4.” *Id.* at 11. “The proposed groundwater monitoring system is completely inadequate. There are no groundwater monitoring points proposed to be located between the newly excavated cut face of AP-3/4 and the buried unnamed stream. Monitoring groundwater quality downgradient of the ash and upgradient of the local discharge area is a basic necessity of any monitoring plan.” *Id.* at 3.

- Well DGWC-12 located downgradient of the combined ash disposal area that the company proposes to leave in place is the “most highly impacted” groundwater well, situated immediately adjacent to the discharge area of the unnamed perennial creek at Plant McDonough. *Id.* at 11. The relatively high concentrations of boron – a common coal ash tracer toxic metal reported at Well DGWC-12 and the picture of contamination provided by relative reported concentrations at Wells DGWC-20 and DGWC-21 “confirmation, in the form of chemical data, that the eastern unnamed creek and associated backfill was and may still be functioning as a linear groundwater /leachate drain, and that flow toward the southwest was transporting ash *Under this proposed closure, ash-related groundwater contaminants will continue to be transported toward offsite discharge areas*” to the Chattahoochee River. *See id.* at 11-12 (emphasis added).

At **Plant Yates**  
(285 acres  
combined; about 12  
million tons):

- Georgia Power proposes to close the R6 Landfill and a consolidated “Ash Management Area” (“AMA”) at Plant Yates, unlined, and submerged in groundwater. (Yates Report at 3, Attachment 3).
- Both the R6 Landfill and AMA are within a Georgia-designated “Significant Ground-Water Recharge Area” – a protected region that bars the siting of a MSW landfill without a liner and leachate collection system under Georgia law. *Id.* at 3, 7. It is contrary to the science, the evidence, and the very purpose of the significant groundwater recharge designation to ban unlined household garbage landfills in these regions under Georgia law, yet issue a permit for unlined toxic coal ash disposal in the same protected regions. *See id.* at 7.
- The R6 Landfill permit application is supported by insufficient information: Georgia Power has failed to evaluate the thickness or amount of saturated ash in the landfill (a critical omission endemic to *all* of the applications); groundwater flow beneath the landfill has not been adequately defined; and no groundwater monitoring results have been reported for the landfill. (*See id.* at 3, 5, 10).

- The company proposes to cover the R6 landfill with a final cover system whose specifications are *grossly insufficient* to minimize rainwater from entering the waste in violation of legal requirements: standards imposed for capping an MSW landfill would require a top cover providing over *two orders of magnitude* more protection from infiltration than Georgia Power has proposed as final cover for the R6 Landfill. *See id.* at 8. “There is no technical or logical explanation for how GAEPD could approve closure of an unlined landfill holding 7,000,000 cubic yards of coal ash waste, covered with only a soil cover, directly over a designated significant ground-water recharge area.” *Id.*
- Neither the R6 Landfill nor the Ash Management Area features a bottom liner or leachate collection system. There is no subsurface confining layer below either the landfill or the AMA, so water will continue to infiltrate the submerged waste, driving further contamination from the disposal area post-closure. *See id.* at 10. There is insufficient groundwater monitoring to map out the full extent of contamination caused by these storage areas, or to predict contamination that will continue post-closure. *See id.*
- Monitoring Well SGWC-33S is the most highly impacted at the site, reporting higher concentrations of beryllium, boron, sulfate, and total dissolved solids than other wells; beryllium concentrations actually increased in 2018. *See id.* at 11. The location of this well leaves open the possibility that the detected contamination is coming from the R6 Landfill, the proposed Ash Management Area, or both sources. A proper monitoring system must be implemented to identify contamination sources, and the true nature and extent of site contamination by all pollutants caused by the immense coal ash deposited at the site. But “[r]ather than take actions to correct this problem, Georgia Power proceeded to develop closure plans that will leave coal ash in the impoundments submerged below the water table and allow continued release of contaminants.” *Id.* at 12.
- Hammond’s AP-3 is partially submerged in groundwater and is unlined, with groundwater flowing within and through the ash and underlying unconsolidated soils “toward discharge areas in the adjacent wetlands and/or creek.” (Hammond Report at 8, [Attachment 5](#)). Placing a cap over the disposed coal ash “will have minimal impact on the thickness of saturated ash within AP-3” given groundwater elevation data and the nature of the unconsolidated subsurface. *See id.* “Groundwater will continue to flow from west to east across AP-3 regardless of the presence of a cap over the disposed waste.” *Id.*

**At Plant  
Hammond** (25  
acres, 1.1 million  
tons):

- Georgia Power has not even attempted to determine the amount of ash that will remain submerged in groundwater post-closure, nor has the company attempted to predict how far downstream water quality may be impacted after closure – both of which are material omissions in the application. *Id.* at 8.
- Hammond’s AP-3 is located on the 100-year floodplain of Cabin Creek and the Coosa River, subjecting the unlined impoundment to rewetting during flood events, even where the entire footprint is not within the area of inundation. *Id.* at 5.

At **Plant Wansley**  
(343 acres, about  
14.2 million tons):

- Plant Wansley’s AP-1 is massive, with coal ash waste burying a creek “under 97-feet of saturated coal ash” ... or more. (Wansley Report at 5). The proposed closure plan is woefully inadequate to protect the environment from current pollution and future pollution. Among the litany of poorly-conceived failures to achieve the fundamental purpose of responsible solid waste disposal practices, the proposed plan would leave a mountain of coal ash waste submerged 80 feet deep into Georgia’s groundwater table. *See id.* at 7.
- Plant Wansley’s AP-1 is located on the 100-year floodplain, which will result in the risk of “damage and/or catastrophic releases of coal ash” and infiltration of water at levels even higher than normal elevation during flood events. *Id.* at 5.
- Georgia Power proposes to cover up its ash dump and leave its waste to steep in the groundwater table without submitting any modeling of site hydrology “to predict the directions of groundwater flow following closure, nor to predict the extent of current or future water contaminants.” *Id.* at 7. These and other endemic failures “illustrate the fact that Georgia Power is asking GAEPD to approve a closure plan without a complete understanding of the human health and environmental consequences” of the proposed closure plan. *Id.*
- Georgia Power has failed to adequately characterize the nature and extent of its groundwater pollution at Plant Wansley. For example, no monitoring wells are placed in the shallow soil units (saprolite or partially weathered rock) located downgradient of the ash delta “where contaminant migration from the ash pond can reasonably be expected to exist, given the existing data.” *Id.* at 9. Rather, Georgia Power completed groundwater wells only in bedrock downgradient of the ash basin – an obvious ploy to avoid detection of migrating pollution, while at the same time claiming that downgradient wells have been

placed at the site. *See id.* As Mr. Hutson explains, “[t]he lack of shallow overburden monitoring wells in this critical location should be explained or additional wells should be installed and sampled” “to accurately evaluate the nature and extent of groundwater contamination that is occurring as a result of the unlined impoundment located upgradient of this area.” *Id.*

- In keeping with its attempts at other sites to address detected pollution by seeking to point the finger to sources other than its immense waste dump, Georgia Power seeks to attribute the common coal ash contaminant Lithium reported at Well WGWC-19 off the southeast corner of the impoundment to natural site conditions via an “Alternate Source Demonstration.” *See id.* Once again, the company’s finger-pointing exercise is belied by the fact that other wells where migrating pollution near the impoundment that reasonably can be expected to detect coal ash pollution at Wansley – *are detecting coal ash pollution at Wansley*. In other words, multiple downgradient wells near WGWC-19, save for one well, report common coal ash contaminants in addition to Lithium at significant concentrations, yet the company “has not attempted to explain how these common coal ash contaminants could be attributable to another source nor made any apparent effort to determine the magnitude and extent of ash-related groundwater contamination caused by AP-1.” *Id.* at 10.

The location, design, method of operation, and the impacts on human health and the environment that will continue under the proposed closure plans, as detailed in Mr. Hutson’s reports, cannot meet the requirements imposed on them by Georgia’s solid waste permit laws. The evidence detailed in the accompanying reports establishes that Georgia Power’s unlined impoundments are not only leaking toxic pollutants and leachate into Georgia’s groundwater and will continue to do so post-closure, the *waste itself is occupying the groundwater*. As Mr. Hutson explains, the proposed closures seek to perpetuate this environmental pollution – that is, Georgia Power’s closure plans seek to appropriate vast swaths of Georgia’s groundwater aquifer – an indisputably public resource – as a permanent waste dump occupying hundreds of acres throughout Georgia. And the Company is asking EPD for a *permit* to do so, which would be an unprecedented giveaway of Georgia’s natural resources to a single company.

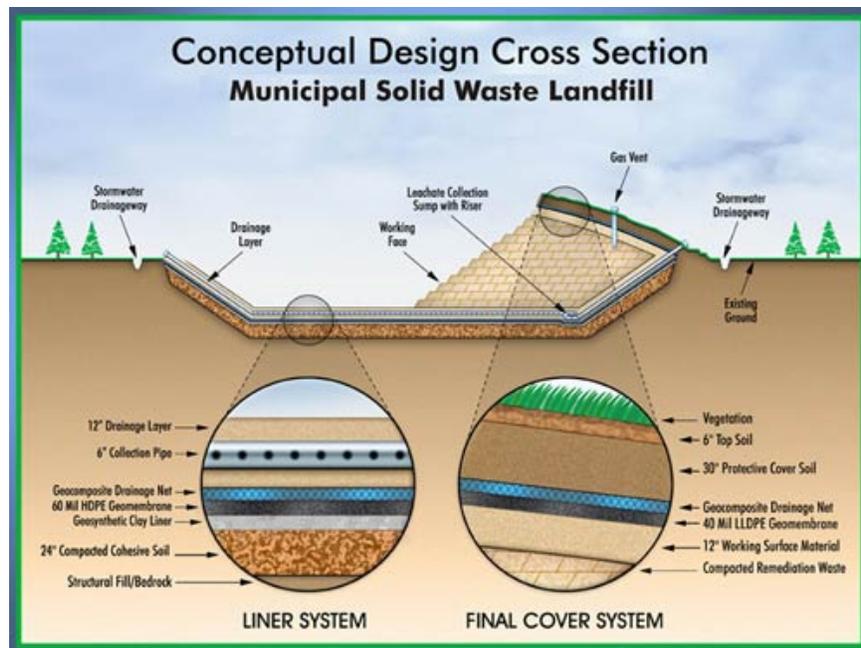
Placing a cap on top of these waste pits at best only reduces the amount of additional rainwater that would fall directly into the lagoon; it does *nothing* to eliminate the groundwater contained in the impoundment or to stop the continued flow of groundwater through their unlined bottom and sides. As Mr. Hutson explains, these sites all include creeks, streams, springs, or other continuing flows of water that will serve as recharge, perpetuating infiltration,

impoundment of water, and water pollution from the coal ash. (See, e.g., “Impoundment Site Geology” and “Hydrology” sections, Attachments 1 – 5).

The fact that Georgia Power seeks permits in order to regulatorily “close” them (sometimes, as with Plants McDonough and Hammond, after the fact) makes *no* difference to Georgia’s environment, if coal ash is allowed to remain in these unlined impoundments. Although Georgia Power will add no more ash to the waste ponds, nearly fifty million tons of coal ash will remain, continuing to degrade and occupy the aquifer, and continuing to leak coal ash and its pollutant-laden leachate into the environment and surrounding public waters. Under Georgia Power’s closure plans, these “closed” or “capped” impoundments will cause the same environmental and public harm that they caused when they operated (*i.e.*, when they continued receiving more waste): *they will continue to occupy the groundwater and leak coal ash and coal ash leachate pollutants into the environment.* This truth was confirmed recently at two of Georgia Power’s shuttered coal power plants – at Plant Branch and Plant Arkwright, in which a 2016 Duke University peer-reviewed study confirmed that the ash ponds at those plants – a filthy remnant of the past, were still leaking toxic metals above health standards into the surrounding groundwater and surface waters. (See CCR Leak Study, Attachment 6). The unlined impoundments at Arkwright had been “closed” for 13 years. *Id.* It is virtually certain that the leaks continue, given that the impoundments have no liner to prevent it.

For purposes of comparison Figure 2 is a conceptual design of a modern MSW landfill featuring a composite liner and leachate collection system, and a final cover system:

Figure 2



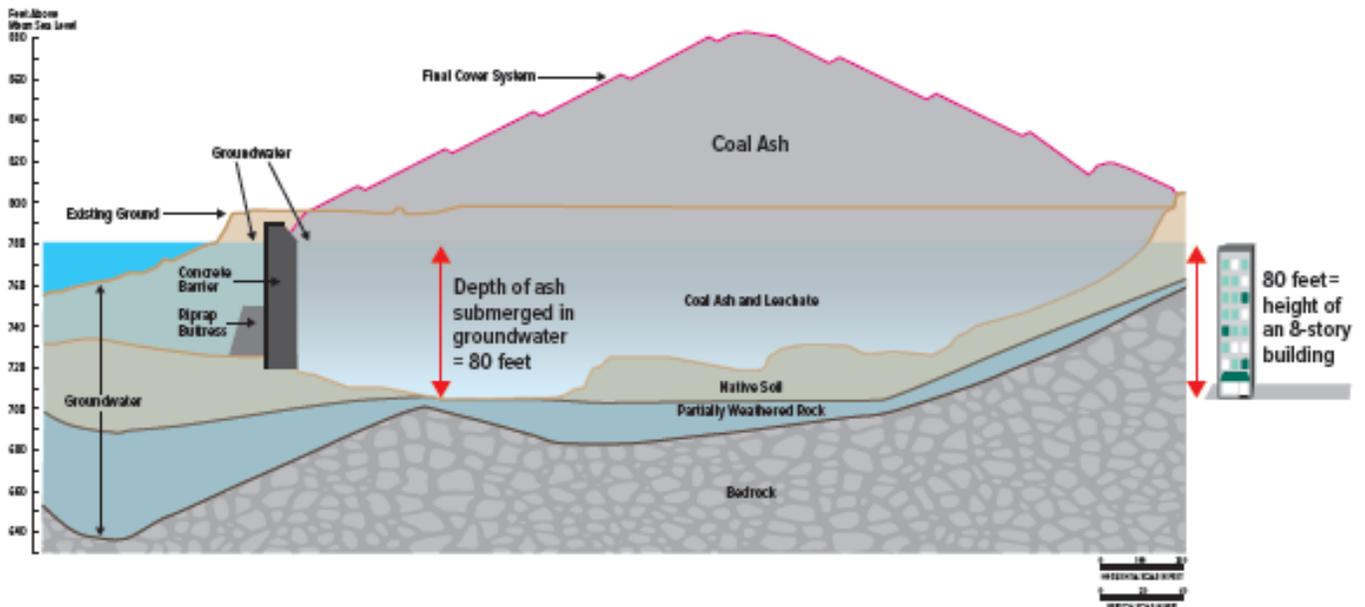
As explained in detail by Mr. Hutson in the enclosed expert reports, Georgia Power’s proposed closure plans bear no resemblance to the above conceptual design.

In a typically egregious example, Figure 3 below illustrates a cross section of how Georgia Power proposes to “close” its 343-acre coal ash pond at Plant Wansley’s AP-1 – placing a *partial* wall atop the porous soil next to the deepest portions of the ash, dumping relatively thinner layers of the ash within the consolidated footprint, placing a cover on top, then leaving nearly *80 feet* of ash to sit *submerged* in groundwater that will continue to leak after closure:

**Figure 3** [compare with Annotated Closure Drawing appended to Hutson’s Wansley Report]

### PLANT WANSLEY COAL ASH POND 1 ENHANCED ANNOTATED CROSS SECTION

Heard & Carroll Counties, GA



As Mr. Hutson details, in the proposed closure illustrated in Figure 3, the concrete secant pile wall depicted above (shaded dark gray, labeled “Concrete Barrier”) “does not act as a lateral barrier to the further infiltration of water into the ash basin, or migration of contaminants out of the ash basin post closure” because, among other reasons, the “Barrier” extends *no further* downward than part way, resulting in “no control of groundwater flow through native soils beneath, within, or adjacent to the so-called ‘containment’ structure within the consolidated ash footprint...” (Wansley Report at 6, Attachment 2 and annotated closure drawing appended thereto). For these and “many” other reasons, Mr. Hutson concludes Wansley’s AP-1 closure plan “to be one of the most poorly conceived Closure Plans that I have ever reviewed.” *Id.* at 10 (emphasis added).

In a feeble attempt to persuade EPD to disbelieve the reality of what is depicted in Figure 3 and shown in the closure plan materials, Georgia Power submits with its application a “Professional Engineer Certification” in purported compliance with State Rule 391-3-4-10(9)(b)5 (requiring a “qualified professional engineer’s certification that all application requirements have been met”). The one-page letter amounts to little more than parroting the Georgia CCR Rule’s certification language to the effect that the CCR Rule’s “closure performance standards” adopting the Federal standards “have been met.” The applications for the other waste permits for Hammond, Yates, Scherer, and McDonough are likewise accompanied with perfunctory certifications, despite the overwhelming evidence to the contrary.

But Georgia’s solid waste rules require more than simply accepting an applicant’s word for it. EPD must review “such other *information* as may be necessary to ascertain the effect of” Georgia Power’s solid waste handling that these closure sites might impose “upon air, water, and land resources and human health,” State Rule 391-3-4-.02(8) (emphasis added). It would be arbitrary and capricious decision-making that is both unsupported by and contrary to the evidence to accept such a self-serving “certification” given the evidence detailed herein.

Georgia’s solid waste laws simply do not countenance these proposed closures, if EPD is to assure “that solid waste does not adversely affect the health, safety, and well-being of the public” and that “solid waste facilities ... do not degrade the quality of the environment by reason of their location, design, method of operation, or other means” in its permitting decisions. O.C.G.A. 12-8-21(a), (d). As the D.C. Circuit recognized in *USWAG v. EPA*, “the threat of contamination from unlined units exceeds the EPA’s cancer risk criteria and thus ‘generally will be considered to pose a substantial present or potential hazard to human health and the environment.’” 901 F.3d at 427 (citing Final Rule 80 Fed. Reg. at 21,449–50; EPA, *Human & Ecological Risk Assessment of Coal Combustion Residuals*, 4-8 to 4-9).

The D.C. Circuit Court of Appeals in *USWAG v. EPA* heard all the arguments of the trade association that represents Georgia Power and its parent, Southern Company. It unanimously rejected those arguments (and USWAG did not appeal). Instead, after reviewing all of the facts and an extensive record, the Court of Appeals found that it was arbitrary and capricious to allow unlined coal ash impoundments. That is precisely what Georgia Power is asking EPD to do here under the guise of its solid waste permit applications – to allow unlined impoundments to continue polluting Georgia’s environment in perpetuity.

But Georgia’s waters and the environment belongs to the citizens of Georgia, and cannot be lawfully coopted as a permanent dumping ground for Georgia Power’s coal ash waste. Georgia’s Department of Natural Resources is entrusted with, and charged by law, to safeguard these resources. Likewise, the D.C. Circuit held that the 2015 Federal Rule’s “approach of relying on leak detection followed by closure” for unlined coal ash impoundments violated RCRA’s “no reasonable probability of adverse effects on health or the environment” standard

because such reliance “does not address the identified health and environmental harms” that the extensive scientific record established. *USWAG v. EPA*, 901 F.3d at 429.

Just as it is arbitrary and capricious for EPA to allow unlined coal ash impoundments to continue and instead rely on subsequent groundwater monitoring to uncover more problems later, so it would be arbitrary and capricious for EPD to allow unlined coal ash impoundments to continue in existence in Georgia and perpetuate the same harms, only covered by a “cap” that allows coal ash to remain in groundwater and that does nothing to stop lagoons from leaking from their sides and bottoms.

2. *The era of allowing these crude waste dumps to continue polluting is ending; Georgia EPD’s permit decisions should comply with the law and recognize the evidence and science.*

There is a growing consensus in our region that coal ash cannot remain in unlined impoundments if human health and the environment are to be properly safeguarded. With the fate of many sites still undecided, over 70 per cent of the unlined coal ash lagoons in the Southeast (including Georgia) have been excavated or are now required to be excavated in the future – not capped in place.

On April 1 of this year, the North Carolina Department of Environmental Quality announced its decision to order the excavation of nine active and retired ash basins located at the last six coal ash sites operated by Duke Energy that had not already been slated for excavation to lined storage.<sup>54</sup> As with the unlined impoundments that Georgia Power proposes to close in place here in Georgia, all of Duke Energy’s coal ash impoundments are submerged in groundwater, between 20 and 81 feet deep.<sup>55</sup> In its permitting decision turning on facts that are similar to those that EPD now has before it, North Carolina’s DEQ concluded that “science points us clearly to excavation as the only way to protect public health and the environment.”<sup>56</sup> The statewide coal ash cleanups in North Carolina have already created 4,000 jobs between

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<sup>54</sup> Press Release, N.C. Dep’t of Env’tl. Quality, DEQ Orders Duke Energy to Excavate Coal Ash at Six Remaining Sites (Apr. 1, 2019), <https://deq.nc.gov/news/press-releases/2019/04/01/deq-orders-duke-energy-excavate-coal-ash-six-remaining-sites>.

<sup>55</sup> See N.C. DEP’T OF ENVTL. QUALITY, CLOSURE OPTIONS EVALUATION: SATURATED ASH CONSIDERATIONS (last visited Aug. 1, 2019), <https://files.nc.gov/ncdeq/Coal%20Ash/2019-april-decision/Saturated-Ash.pdf>, Attachment 13. It is noteworthy that no such summary is provided by Georgia Power in support of its various permit applications, despite the enormous environmental consequences that will follow from its proposed disposal of nearly 50 million tons of coal ash in unlined basins throughout the state.

<sup>56</sup> See N.C. DEQ Excavation Order Announcement, *supra* note 54.

October 2017 and September 2018 for the 8 of 14 coal ash disposal sites that had already been slated for excavation to lined storage.<sup>57</sup>

Virginia came to the same conclusion. On March 20 2019, Virginia passed a law requiring Dominion Virginia Energy to excavate all its unlined coal ash lagoons and to move the coal ash into lined landfills or recycle it for beneficial use, given that the potential human health and water quality impairment from unlined coal ash ponds is “far too great” ... “continue with business as usual.”<sup>58</sup>

All the utilities in South Carolina are safely excavating all the coal ash from all their coal ash lagoons. Predictably, pollution source removal resulted in plummeting contamination near the waste sites,<sup>59</sup> rendering unnecessary the sort of “cat and mouse” groundwater (non)sampling and data cherry-picking exercise that Georgia Power appears to be engaged in at its proposed close-in-place sites. (*See, e.g.*, Scherer Report at 8–10, Attachment 1; Wansley Report at 9–10, Attachment 2).

In June 2019, the Tennessee Valley Authority announced an agreement to remove 12 million tons of coal ash at its Gallatin Fossil Plant in middle Tennessee, following suit by the Tennessee Department of Environmental Quality and environmental groups, seeking to cease coal ash pollution that had plagued the region for decades.<sup>60</sup> Previously, TVA had agreed also to excavate coal ash in an unlined pit near Memphis.

Georgia’s environment and its citizens deserve the same protections as its neighbors. The Georgia Comprehensive Solid Waste Management Act requires it. For these reasons, and as set forth in the accompanying reports from Mark Hutson, Georgia EPD must deny all of Georgia Power’s waste handling permit applications seeking to close its unlined coal ash basins in place, because they violate Georgia’s solid waste laws.

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<sup>57</sup> *See* Duke Energy Carolinas, LLC’s and Duke Energy Progress, LLC’s Resp. to Comm’n Order Req. Additional Information, Appl. of Duke Energy Progress for Adjustment of Rates and Charges Applicable to Elec. Util. Serv. in N.C. & Appl. of Duke Energy Carolinas for Adjustment of Rates and Charges Applicable to Elec. Util. Serv. in N.C., Docket Nos. E-2, Sub 1142 & E-7, Sub 1146 (N.C. Util. Comm’n Jan. 22, 2019), Attachment 14.

<sup>58</sup> Press Release, Commonwealth of Va. Office of Gov. Ralph S. Northam, Gov. Northam Signs Historic Coal Ash Clean Up Legislation (Mar. 20, 2019), <https://www.governor.virginia.gov/newsroom/all-releases/2019/march/headline-839594-en.html>.

<sup>59</sup> David Wren, *South Carolina Utilities Lead the Region in Efforts to Clean Up Coal Ash Pollution*, THE POST & COURIER (July 15, 2017), [https://www.postandcourier.com/business/south-carolina-utilities-lead-the-region-in-efforts-to-clean/article\\_bcfb1eec-670a-11e7-a2ea-e778e26af132.html](https://www.postandcourier.com/business/south-carolina-utilities-lead-the-region-in-efforts-to-clean/article_bcfb1eec-670a-11e7-a2ea-e778e26af132.html).

<sup>60</sup> Jamie Satterfield, *TVA Agrees to Remove 12 Million Tons of Coal Ash from Gallatin Plant, Clean Contamination*, KNOXNEWS.COM (June 13, 2019, 7:33 PM), <https://www.knoxnews.com/story/news/crime/2019/06/13/tva-agrees-dig-up-12-million-tons-coal-ash-gallatin-plant/1443294001/>

3. *Georgia's CCR Rule bars Georgia Power's proposed closure plans.*

Georgia Power's closure plans also fail to satisfy Georgia's CCR Rule, providing additional, independent grounds for denial of these permit applications.

Following EPA's adoption of the first ever federal minimum criteria governing the handling and disposal of CCR in October 2015, Georgia's DNR Board in October 2016 amended Georgia's solid waste laws, incorporating the requirements and standards set forth in the Federal CCR Rule and in part expanding upon it<sup>61</sup> as the Georgia CCR Rule, State Rule 391-3-4.-10. As such, the Georgia CCR Rule supplements, but does not supplant, Georgia's pre-existing solid waste laws which apply with equal force to EPD's permitting decisions and enforcement responsibilities discussed above, *e.g.*, O.C.G.A. § 12-8-21(a), (d); State Rule 391-3-4.-04(1).

In any event, the Georgia CCR Rule also bars the Company's proposed methods for simply covering up its unlined waste dumps.

**ii. The closure plans do not entail “remedial” or “corrective” action under the CCR Rule, but rather perpetuation of pollution.**

Upon detection of groundwater contamination in excess of background concentrations or maximum contaminant levels (MCLs), the owner of an unlined surface impoundment must begin work on two, distinct remedial obligations. State Rule 391-3-4.-10(6)(a) (incorporating the corrective action requirements of the Federal CCR Rule, including 40 C.F.R. §257.95(g)). First, the owner must begin the process for remediating groundwater contamination: assessment of corrective measures, selection of remedy, and implementation of a corrective action plan. 40 C.F.R. §§ 257.95(g)(3)(i), 257.96-98. Second, within six months of the detection, the owner must stop all discharges of waste into the impoundment and begin closing or retrofitting the impoundment. *Id.* §§ 257.95(g)(5) and 257.101(a)(1). As the preamble to the Federal CCR Rule explains, the closure or retrofit requirement must be completed “in addition to complying with all of the corrective action requirements.” Final Rule, 80 Fed. Reg. 21,301, 21,406. It is not enough to satisfy only the CCR Rule's closure requirements – the owner must *separately* meet standards for remedying groundwater contamination under §§ 257.97–98, State Rule 391-3-4.-10(6)(a).

The remedial action requirement is as clear as it is logical – one could hardly expect to properly close a coal ash impoundment contaminating the environment before cleaning up the contamination it caused. Indeed, the cleanup requirements triggered by the remedial action provisions of the Georgia CCR Rule would naturally explain Georgia Power's efforts to posit a

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<sup>61</sup> For instance, the Georgia CCR Rule applies to CCR surface impoundments at inactive power plants, defined as a “NPDES -CCR Surface Impoundment.” State Rules 391-3-4.-10(2)(a)2 and (9)(c)7.

dubious “Alternate Source Demonstration” for detected cobalt at Plant Scherer, and for detected lithium at Wansley, each an attempt to point the finger to supposed “natural” site conditions, rather than the upgradient, massive coal ash waste disposal pits. (Scherer Report at 8–10 “Groundwater Quality Monitoring,” [Attachment 1](#); Wansley Report at 9–10, [Attachment 2](#)). It would also explain Georgia Power’s failure to disclose complete groundwater data. (*E.g.*, Yates Report at 10–12, [Attachment 3](#)).

Nevertheless, as detailed in Mr. Hutson’s reports, the groundwater data that Georgia Power *has* disclosed confirms that closure-in-place will not and *cannot* satisfy the Georgia CCR Rule’s requirements for remedial action. Among other things, the selected groundwater remedy must “[b]e protective of human health and the environment,” “[a]ttain the groundwater protection standard” (the higher of the MCL or the background concentration), “[c]ontrol the source(s) of releases so as to reduce or eliminate, to the maximum extent feasible, further releases of constituents in appendix IV,” and “[r]emove from the environment as much of the contaminated material that was released from the CCR unit as is feasible.” 40 C.F.R. 257.97(b)(1)–(4); State Rule 391-3-4.-10(6)(a) (adopting these requirements). The selected remedy will not be considered complete until groundwater protection standards are met at the waste boundary for three consecutive years. 40 C.F.R. § 257.98(c)(2); State Rule 391-3-4.-10(6)(a) (adopting these requirements). Remedies must be selected based on their “long- and short-term effectiveness and protectiveness,” the “[m]agnitude of residual risks in terms of likelihood of further releases,” and the “[t]ime until full protection is achieved,” among other factors. *See id.* § 257.97(c)(1)(i)–(viii). Notably, the Georgia CCR Rule does not employ risk-based remedial standards; Georgia Power must restore groundwater quality to the standard at the waste boundary.

None of these remedial criteria will be achieved by Georgia Power’s current closure plans. Closing the waste in place, without liners, submerged in Georgia’s groundwater and continually fed by the springs, perennial and intermittent creeks that Georgia Power had buried for use as a waste dump long ago will *not* be protective of human health or the environment, for the reasons detailed above. The Company’s proposed closures in place likewise will not control the sources of releases of leachate and coal ash pollutants to the environment, nor will the plans reduce or eliminate future releases, or remove from the environment contaminated material, as detailed in each of Mr. Hutson’s reports. Instead, Georgia Power proposes to leave coal ash forever buried beneath the groundwater table in primitive unlined pits, submerged at depths of as much as 85 feet. (*E.g.*, Scherer Report at 5 (75 to 85 feet deep), [Attachment 1](#); Wansley Report at 7 (80 feet deep), [Attachment 2](#); McDonough Report at 3, [Attachment 4](#)).

Indeed, rather than propose *remedial* action complying with the Georgia CCR Rule, Georgia Power’s closure plans do just the opposite – seeking a permit authorizing the perpetual contamination and degradation of Georgia’s groundwater and neighboring surface waters in

violation of the CCR Rule's fundamental remedial action requirements. State Rule 391-3-4.-10(6)(a) (adopting 40 C.F.R. § 257.97(b)). EPD must reject these applications to the extent they purport to propose any "remedial action" concerning these waste sites.

**iii. The proposed closure plans do not meet the CCR Rule closure performance standards.**

Both the Georgia and Federal CCR Rule contemplate two options for closure of an ash pond for these impoundments – either removal of the ash, also described as clean closure / closure by removal, or leaving the ash in place, sometimes called "closure in place," as Georgia Power refers to it in its permit applications. *E.g.*, State Rule 391-3-4.-10(7), (9)(c)5-7; 40 C.F.R. § 257.102. But the circumstances under which placement of a cap over the waste and leaving it in place are limited and specific. Georgia Power's closure plans fail to meet those circumstances; stated differently, ash ponds submerged in groundwater are ineligible for the closure in place option at the outset. EPD must therefore reject the permit applications.

*1. Closure Performance Standards governing "existing surface impoundments."*

Under the Georgia CCR Rule, by no later than November 2018, owners/operators of all coal ash impoundments or landfills in the state had to apply for a permit from EPD meeting the requirements of Georgia's CCR Rule. *See* State Rule 391-3-4.-10(9)(a)2. Permit application requirements vary depending on the type of coal ash "impoundment" or "landfill" at issue.

For so-called "Existing Surface Impoundments," (ponds that received coal ash both before and after October 19, 2015) the application must include, among other things, a "location restriction demonstration" under the federal rule (40 C.F.R. §§ 257.60-64), and an "explanation of how closure and post-closure care requirements" imposed by the federal rule, including how the closure performance standards imposed by 40 C.F.R. § 257.102 will be met. State Rule 391-3-4.-10(9)(c)5(i), (v). Georgia's CCR rule likewise imposes the federal substantive closure standards on existing surface impoundments, including those governing close-in-place impoundments under 40 C.F.R. § 257.102. State Rule 391-3-4.-10(7)(b).

**A. Misclassification of McDonough's AP-1 and AP-3.**

As an initial matter, Georgia Power has misclassified each of Plant McDonough's Ash Ponds 1 and 3 as "inactive CCR Surface Impoundment" in an apparent attempt to sidestep the more rigorous Closure Performance Standards and disclosure timelines imposed on "existing surface impoundments." While it appears from Georgia Power's permit application materials that it contends that McDonough AP-1 and AP-3 no longer received CCR on or after October 19, 2015, its own submissions to EPD prove otherwise. For example, in its November 2018 permit application for McDonough's ponds, Georgia Power admits:

Closure activities in accordance with 40 CFR 251.100 *were initiated in January 2016 for AP-2 and AP-3/4* ahead of the promulgation of the Georgia CCR permit program. ... AP-2 closure activities consisted of closure by removal of CCR, where *CCR removed from AP-2 was placed in the adjacent Plant McDonough units AP-1 and AP-3.*

(GOLDER ASSOCS. INC., PLANT McDONOUGH-ATKINSON CCR SURFACE IMPOUNDMENTS (CCR UNIT AP-2, COMBINED CCR UNIT AP-3/4), COBB CNTY., GA., PART A: PERMIT DOCUMENTS, Section 1 – Page 2) (Nov. 2018) (emphasis added), Attachment 15 (excerpted)).

Thus, both McDonough AP-1 and AP-3 “receive[d] CCR both before and after October 19, 2015” for purposes of the Federal and Georgia’s CCR Rule, 40 C.F.R. 257.53, State Rule 391-3-4.-10(2)(a) (definition of Existing CCR Surface impoundments). McDonough AP-1 and combined AP-3/4 are therefore each subject to the CCR Rule’s Closure Performance Standards.

The subjective intent behind the physical placement of ash in the waste impoundment is irrelevant– what matters is whether the impoundments “receives CCR” after October 19, 2015, for the simple reason that this is what the language says. The inquiry concerning whether these impoundments “receive[d] CCR” after the date in question is answered by Georgia Power in its permit applications – beginning January 2016. (*See Attachment 15*). Manifestly self-serving assertions to the contrary cannot be accepted by EPD, given this evidence. As EPA explains, for example, “the rule does not distinguish between placement that might be considered beneficial use and placement that might be considered disposal.”<sup>62</sup> By further example, according to EPA, in a situation “*when CCR from an existing impoundment at an active power plant is dredged (i.e., pursuant to state legislation or other legal requirement) and the CCR is moved to a different unlined impoundment at the same site...*” then, “both units would be defined as existing CCR surface impoundments subject to all the applicable provisions of the rule. ...”<sup>63</sup> Once again, the reason for deposit of the ash is not the salient inquiry – it is when the storage feature in question “receives CCR” – since that is what the CCR Rule’s language says.

Therefore, McDonough AP-1 and combined AP-3/4 are each subject to the CCR Rule’s Closure Performance Standards for “Existing” impoundments. Likewise, and undisputed by Georgia Power, Plant Scherer’s AP-1, Yates’s combined Ash Management Area, and Wansley’s

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<sup>62</sup> Hazardous and Solid Waste Mgmt. Sys.: Disposal of Coal Combustion Residuals From Elec. Utils.; Amendments to the Nat’l Minimum Criteria (Phase One); Proposed Rule, 83 Fed. Reg. 11,584, 11,605 (Mar. 15, 2018), <https://www.govinfo.gov/content/pkg/FR-2018-03-15/pdf/2018-04941.pdf>.

<sup>63</sup> U.S. ENVTL. PROT. AGENCY, FREQUENT QUESTIONS ABOUT SCOPE AND PURPOSE AND IMPLEMENTING THE FINAL RULE REGULATING THE DISPOSAL OF COAL COMBUSTION RESIDUALS (CCR) (accessed July 24, 2019), <https://www.epa.gov/coalash/frequent-questions-about-scope-and-purpose-and-implementing-final-rule-regulating-disposal>.

AP-1 fall within the definition of “Existing Surface Impoundment” under State Rule 391-3-4.-10(2)(a) (incorporating the Federal definitions under 40 C.F.R. § 257.53). In sum, all of Georgia Power’s proposed closure-in-place sites must meet the CCR Rule’s Closure Performance standards for such impoundments imposed by State Rule 391-3-4.-10(7)(b), (9)(a), (9)(c)5.

- B. The existing impoundments at Scherer, Yates, Wansley, and McDonough do not meet the Georgia CCR Rule’s Closure Performance Standards.

Adopting the Federal CCR Rule’s closure criteria in full, the Georgia CCR Rule requires that if the ash is to be closed in place, the closure plan must demonstrate it will achieve the following performance standards (“Closure Performance Standards”) to:

- (a) “Control, minimize or eliminate, to the maximum extent feasible, post-closure infiltration of liquids into the waste and releases of CCR, leachate, or contaminated run-off to the ground or surface waters...” 40 C.F.R. § 257.102(d)(1)(i);
- (b) “Preclude the probability of future impoundment of water, sediment, or slurry;” *Id.* § 257.102(d)(1)(ii);
- (c) “Minimize the need for further maintenance of the CCR unit;” *Id.* § 257.102(d)(1)(iv); and the requirement that
- (d) “Free liquids must be eliminated by removing liquid wastes or solidifying the remaining wastes and waste residues.” *Id.* § 257.102(d)(2)(i).

State Rule 391-3-4.-10(7)(b) (adopting and incorporating 40 C.F.R. § 257.102).

Likewise, to comply with the Georgia CCR Rule, the solid waste permit applications themselves, which include the proposed closure plans, must “meet the requirements of [the Georgia CCR] Rule,” State Rule 391-3-4.-10(9)(a), including an explanation of “how closure and post-closure care requirements” imposed by the Closure Performance Standards “will be met.” State Rule 391-3-4.-10(9)(c)5(v).

The post-closure standards are identified below, along with the reasons Georgia Power’s proposed closure plans do not, and cannot comply with them.

- (a) **The closure plans fail the prohibition against post-closure infiltration, or release of leachate, CCR, or contaminated run-off to ground or surface waters.**

Georgia Power must demonstrate that groundwater will not interact with and flow through the coal ash at Yates, Scherer, Wansley, and McDonough’s existing impoundments, to meet the Performance Standard that the closure must “[c]ontrol, minimize or eliminate, to the maximum extent feasible, post-closure infiltration of liquids into the waste and releases of CCR,

leachate, or contaminated run-off to the ground or surface waters.” 40 C.F.R. § 257.102(d)(1)(i) (incorporated into Georgia law by State Rules 391-3-4.-10(7)(b) and 391-3-4.-10(9)(a), (c)5(v). For the same reason, for a pond located in a flood plain, the closure plan must demonstrate that the floodwaters will not inundate or rewet the basin, infiltrate the waste, cause such inundation or infiltration, or cause further releases of coal ash and pollutants.

Post-closure “infiltration” of “liquids into the waste” will occur post-closure at these sites by definition, since groundwater will not only have “infiltrated” the ash waste basins even after a cover is placed on top of these impoundments – they will be left sitting *in* and submerged *under* tens of feet of it. (*E.g.*, Wansley Report at 1–2, 7, Attachment 2; Scherer Report at 2–3, 5–6, Attachment 1; Yates Report at 3–4, 9–12, Attachment 3; McDonough Report at 2–3, 7–8, Attachment 4). As these waste pits are fed by buried perennial and intermittent streams, the liquids infiltration will continue through the unlined bottoms, generating recharge and leachate, to perpetually pollute Georgia’s environment for as long as the conditions exist. *See id.* The Closure Performance Standards require a method that controls, minimizes, and eliminates liquid infiltration and leachate/contaminant releases from the closed pit “to the maximum extent feasible” 40 C.F.R. § 257.102(d)(1)(i) (incorporated into Georgia law by State Rules 391-3-4.-10(7)(b) and 391-3-4.-10(9)(a), (c)5(v)). The proposed closure plans do nothing of the sort, as Hutson details in his reports.

Finally, as set forth above, a rote “engineer’s certification” that post-closure infiltration or releases will be minimized, much less controlled in the slightest in the face of the overwhelming evidence to the contrary is simply not credible, where EPD will review “[a]pplications for permits” “together with such other information as may be necessary to ascertain” the human health and environmental impacts that form the very basis for the Closure Performance Standards in the first place. State Rule 391-3-4-.02(8).

**(b) The closure plans fail the prohibition against post-closure impoundment of water, sediment, or slurry.**

To comply with the law, the closure plan must also “[p]reclude the probability of future impoundment of water, sediment, or slurry.” 40 C.F.R. § 257.102(d)(1)(ii) (incorporated into Georgia law by State Rules 391-3-4.-10(7)(b) and 391-3-4.-10(9)(a), (c)5(v)). “[I]mpoundment means a natural topographic depression, man-made excavation, or diked area, which is designed to hold an accumulation of CCR and liquids, and the unit treats, stores, or disposes of CCR.” 40 C.F.R. § 257.53 (incorporated into Georgia law by State Rule 391-3-4.-10(2)(a); *see also* State Rule 391-3-4-.01(10) (definition of “CCR Surface Impoundment”, which includes within that definition “both active and inactive surface impoundments, ... dewatered surface impoundments, and NPDES-CCR surface impoundments.”). If groundwater will remain in the coal ash pond, the pond remains an impoundment that stores an accumulation of CCR and liquids within the meaning of Georgia’s solid waste rules. Further, if the closure plan features the coal ash pond’s

dam or other lateral barrier entailing a man-made excavation, diked area or other feature designed to hold an accumulation of CCR and liquids, in whole or in part, then the closure plan likewise fails to preclude the impoundment of water.

By the same token, a closure plan that leaves coal ash saturated with groundwater within the pond leaves the wet coal ash impounded behind the dam or other lateral barrier of the ash pond, and thus fails to “preclude” the impoundment of coal ash sediments and slurry as required by both the Georgia CCR Rule and the Federal Rule. State Rule 391-3-4.-10(7)(b) (incorporating the federal closure performance standards, 40 C.F.R. § 257.102(d)(1)(ii)). To “preclude” an impoundment means “to make impossible by necessary consequence: rule out in advance.”<sup>64</sup>

Post-closure conditions entailing an “accumulation of [both] CCR and liquids” within these impoundments, whose very purpose is to “dispose[]” of CCR, 40 C.F.R. § 257.53, is by very definition impoundment of water, sediment, or slurry, given that all of them would be closed in place partially submerged in groundwater – the very state of affairs that the Closure Performance Standard says *cannot* happen to comply with the CCR Rule if a unit is to be closed in place. 40 C.F.R. § 257.102(d)(1)(ii) (incorporated into Georgia law by State Rule 391-3-4.-10(7)(b); State Rule 391-3-4.-10(9)(a), (c)5(v). Yet, the ash pond closure plans for Scherer, Yates, McDonough, and Wansley each propose leaving coal ash submerged in massive, liquid-saturated pits in Georgia’s groundwater aquifer – rendering it impossible to “preclude” that which by design will be *an absolute certainty* post-closure: Scherer AP-1, Yates Ash Management Area, McDonough AP-1 / AP-3/4, and Wansley AP-1 will continue to “hold an accumulation of CCR and liquids” to “store[] or dispose[]” CCR. 40 C.F.R. § 257.53 (incorporated into Georgia law by State Rule 391-3-4.-10(2)(a). No engineering “certification” to the contrary can change that state of affairs, and it would be arbitrary and capricious for EPD to accept such a “certification” in the face of such evidence.

**(c) The closure plans fail the requirement that closure minimize the need for further maintenance.**

To lawfully close an impoundment in place, the closure plan must “[m]inimize the need for further maintenance...”, reflecting the need for a viable long term disposal method for waste that contains a host of toxic metals that do not degrade over time. 40 C.F.R. § 257.102(d)(1)(iv).

Leaving ash exposed to, in contact with, and submerged in groundwater merely perpetuates pollution of the aquifer and downgradient waters, rather than maintaining an actual remedy. Hence, these closure plans fail the “minimize” the “need for further maintenance”

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<sup>64</sup> MERRIAM-WEBSTER, <https://www.merriam-webster.com/dictionary/preclude> (last visited Aug. 1, 2019). Similarly, to “preclude” as defined by the Cambridge Dictionary means “to prevent something or make it impossible.” CAMBRIDGE ACADEMIC CONTENT DICTIONARY (Cambridge Univ. Press, 2019), <https://dictionary.cambridge.org/us/dictionary/english/preclude>.

Closure Performance Standard at the outset. (McDonough Report at 3, 5–6, Attachment 4; Wansley Report at 2, Attachment 2; Scherer Report at 3, Attachment 1; Yates Report at 3, 8–9, Attachment 3). As Yates AP-1 and Scherer AP-1 reside on a floodplain continually at risk for erosion or even catastrophic failure following even “relatively minor” high water events (or major ones, as recently exemplified by the Duke L.V. Sutton dam failure following Hurricane Florence in 2018), the need for further maintenance at those unlined impoundments is anything *but* “minimized” – rendering the need for inspection and maintenance a seasonal affair well past the 30-year post closure inspection period for these sites. (Yates Report at 3, Attachment 3; Scherer Report at 3, 5–6, Attachment 1).

Of course, the “need for further maintenance” is likewise anything but “minimized” at Plant McDonough. Rather, further maintenance of the aging pipe used to route a buried perennial stream adjacent to Georgia Power’s nearly 5 million ton ash pit in Smyrna, metropolitan Atlanta, will be an *absolute necessity* for perpetuity. (See McDonough Report at 2–3, 6–7, Attachment 4). Furthermore, while the proposed AP-3/4 closure will feature no bottom liner, the McDonough closure plan specifies placement of an “under slope drain” feature along the eastern cut slope of the waste dump, “designed to collect leachate that would otherwise discharge to the surface from the saturated lower portions of the impounded coal ash.” *Id.* at 8. <sup>65</sup> Modeled (but unverified) leachate flow through this collection system purportedly predicts a “steady state flow” of 7 gallons of this highly polluted waste per minute. *See id.* <sup>66</sup>As Mr. Hutson observes, however, if this system is to operate as intended, the collection and treatment systems must be maintained for perpetuity. *See id.*

**(d) The closure plans fail the requirement that closure must eliminate free liquids.**

Finally, if groundwater continues to saturate coal ash within the proposed “close-in-place” disposal area, then the closure plan cannot satisfy the requirements that “[f]ree liquids

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<sup>65</sup> Georgia Power proposes no collection system for other portions of the unlined disposal area, including groundwater flowing through the ash along the west side, or either of the flows through the ash “toward discharge areas along either of the unnamed creeks or the Chattahoochee River.” *Id.* As Mr. Hutson wryly observes, “[i]t appears that collection and treatment of coal ash leachate is only being considered for implementation in locations where leachate is likely to discharge to the surface and be observed.” *Id.*

<sup>66</sup> It bears noting that if a *partial* leachate collection system at McDonough is predicted to flow at a “long term steady state flow” of 7 gallons per minute, McDonough Report at 8, the remaining *unlined* portions of the AP-3/4 waste pit will almost certainly be leaking a massive amount of uncollected leachate to the groundwater post-closure. Georgia Power’s application materials notably omit this obvious conclusion, and EPD must require such information prior to rendering its permit decision as to Plant McDonough’s ash pond closure plans to properly evaluate environmental and human health impacts.

must be eliminated by removing liquid wastes or solidifying the remaining wastes and waste residues.” 40 C.F.R. § 257.102(d)(2)(i) (incorporated into Georgia law by State Rule 391-3-4.-10(7)(b)). Such failure likewise dooms the solid waste permit applications themselves. Under the Georgia CCR Rule, solid waste handling permit applications require a written closure plan providing an “[e]xplanation of how closure ... requirements” requiring elimination of free liquids will be met. State Rule 391-3-4.-10(9)(c)5.

“Free liquids” are defined as “liquids that readily separate from the solid portion of a waste under ambient temperature and pressure.” 40 C.F.R. § 257.53 (incorporated into Georgia law by State Rule 391-3-4.-10(2)(a)). Groundwater that saturates coal ash in an unlined impoundment readily separates from the solid portion of the waste, thereby falling squarely within the “free liquids” definition. For example, utilities regularly separate the water that saturates their impoundment coal ash by “stacking” the ash, *e.g.*, by piling up the ash on dry land to let the free liquids within the ash drain out via gravity. In addition, groundwater readily separates from coal ash because it flows through the coal ash, as shown by the movement of pollutants out of unlined coal ash basins into the surrounding groundwater; it does not remain in the coal ash indefinitely, but rather flows out of the ash and is replaced by new groundwater infiltrating into the basin. For this reason, a solid waste permit application and closure plan that fails to stop the ongoing flow of groundwater into an unlined impoundment violates the Georgia CCR Rule, because such plans do not, and *cannot*, eliminate free liquids, and fail to solidify the wastes in the impoundment. 40 C.F.R. § 257.102(d)(2)(i) (incorporated into Georgia law by State Rule 391-3-4.-10(7)(b)); State Rule 391-3-4.-10(9)(c)5 (regulating Existing Surface Impoundments).

As discussed above and detailed in Mr. Hutson’s reports, these ash pond closure plans plainly fail the “elimination of free liquids” Closure Performance Standard – liquids will continue to enter the waste basins through their unlined bottoms and sides, recharged by springs, buried creeks and streams, seasonal floods, and the obvious fact that the plans specifically contemplate leaving massive volumes of ash below the groundwater table, submerging the waste in the aquifer. “Elimination” of free liquids is simply an impossible state of affairs under the proposed closure plans, yet it is required by the Georgia CCR Rule if Georgia Power is to legally close in place these ash dumps. An engineer’s “certification” to the contrary simply cannot square with this evidence.

In light of these failures, EPD must reject the applications for solid waste handling permits for each of Scherer AP-1, Yates Ash Management Area and R6 Landfill, McDonough AP-1 and combined AP-3/4, and Wansley’s AP-1.

**(e) The final cover system for Plant Yates's R6 Landfill is grossly inferior to other available methods.**

Lastly, the Yates R6 Landfill deserves special mention. As Georgia Power proposes a final cover system for the R6 Landfill that is vastly inferior to other readily available methods, and the closure plan therefore fails the Closure Performance Standards for this additional, independent reason. Georgia's CCR Rule requires that a closure plan describe "how the final cover system will achieve the performance standards specified in paragraph (d)" of the Federal Rule. 40 C.F.R. § 257.102(b)(1)(iii) (incorporated into Georgia law by State Rule 391-3-4.-10(7)(b) ("Closure ... of existing, new, and lateral expansions of CCR units shall be conducted in accordance with ... 40 CFR § 257.102 ..."). This is a critical requirement, since rainwater entering the ash through a cap will percolate through the porous ash, driving further pollution as the water transports mobilized pollutants from within the ash to the underlying aquifer and beyond – a condition that Mr. Hutson's report concludes is occurring and will continue under the proposed closure of the landfill. (*See, e.g.*, Yates Report at 9–10, Attachment 3).

As noted above, the Closure Performance Standards require that owners "ensure that, at a minimum," the disposal area "is closed in a manner that will:" "Control, minimize or eliminate, to the maximum extent feasible, post-closure infiltration of liquids into the waste..." among other requirements. 40 CFR § 257.102(d)(1)(i), incorporated by State Rule 391-3-4.-10(7)(b). Yet, as Mr. Hutson details in his expert report, Georgia Power's closure plan specifies a final cover system with a "hydraulic conductivity of  $1 \times 10^{-5}$  cm/sec or less" – equivalent to that which "would be expected from a silt or silty sand cover." (Yates Report at 7–8, Attachment 3). This specification is grossly inferior to other available techniques, and therefore plainly fails the Closure Performance Standards, calling for the "Control," minimization or elimination, "to the *maximum* extent feasible, post-closure infiltration of liquids into the waste" as well as post-closure leaks. 40 CFR § 257.102(d)(1)(i) (emphasis added).

Rather than propose a final cover arguably even *approaching* this standard, Mr. Hutson observes that the proposed final cover specifications for the R6 Landfill would allow rainwater penetration with a "hydraulic conductivity ... *two orders of magnitude higher* than what would be required of a MSW landfill in the same location." (Yates Report at 7, Attachment 3). That is, the final cover system specified for the Yates R6 Landfill would allow rainwater to enter the waste through the "cap" by a factor of *100 times more* than a final cover system required for a MSW landfill.

Plainly, given that a household garbage landfill would require a final cover that is two orders of magnitude more protective than that specified by Georgia Power at the landfill, the proposed closure plan fails to 'minimize' or 'eliminate' post-closure infiltration of liquids through the cap to the "maximum extent feasible" – on the contrary, the method proposed by

Georgia Power is grossly *inferior* to other available methods. Yet again, a “certification” to the contrary is simply not credible in light of these facts.

EPD must reject the permit application for the R6 Landfill for this additional, independent reason.

2. *Georgia Power’s applications fail the CCR Rule’s closure performance standards governing inactive surface impoundments.*

For so-called “inactive surface impoundments,” (ponds that no longer received coal ash on or after October 19, 2015) that had not completed closure by April 2018, a solid waste permit application is likewise required. State Rule 391-3-4.-10(9)(a), (c)6. For these waste impoundments – entailing the older, leakier waste dumps addressed by the D.C. Circuit Court of Appeals in *USWAG v. EPA* discussed above, the Georgia CCR Rule doesn’t let them off the hook – free liquids cannot remain in the waste post-closure, nor can they later infiltrate the waste. This requirement is critical and must be stringently enforced by EPD if Georgia’s waters and human health is to be properly safeguarded as Georgia law requires.

As Mr. Hutson explains, “[a]n effective closure of coal ash storage sites requires that the coal ash waste be securely and permanently isolated from water: including precipitation, surface water, and groundwater. Failure to isolate coal ash waste from water will result in leaching of contaminants, i.e. formation of leachate.” (Hammond Report at 2, Attachment 5). Once again, it is this leachate – equivalent to more toxic water pollution than that generated by the coal mining industry nationally, that stands to pollute Georgia’s waters for perpetuity if the “free liquids” ban is not properly enforced by EPD in its permit decisions as to Hammond and McDonough.

Here, Georgia Power appears to contend that Plant Hammond’s AP-3 and Plant McDonough’s AP-1 and AP-3 fall within Georgia’s definition of “Inactive Surface Impoundment” based on their applications. Setting aside for purposes of argument that McDonough’s AP-1 and AP-3 are misclassified as set forth above, these applications nevertheless must be rejected as inactive surface impoundments.

For inactive surface impoundments, State Rule 391-3-4.-10(9)(c)6(v)(I) requires a written closure plan setting forth one of two options: closure through removal (excavation), or a “[n]arrative describing how the CCR unit will be closed including the elimination of free liquids and stabilization of remaining waste...” Plainly, “elimination of free liquids” from these unlined, submerged ash pits cannot be achieved by the proposed closures for the reasons exhaustively set out above and in Mr. Hutson’s accompanying reports (Hammond Report at 2–3, 6–8, Attachment 5; McDonough Report 2–3, 6–8, Attachment 4). And given the mandate imposed on EPD to review these applications “together with such other information” necessary to ascertain the effect of this waste on the environment and human health, State Rule 391-3-4-.02(8), accepting a rote engineer’s certification that “free liquids” *will* be eliminated simply does

not square with the evidence that these basins will remain *under water* post-closure in unlined basins. EPD must consider this evidence in its permit decisions, and should reject the applications given the Georgia CCR Rule's unambiguous prohibition banning the existence of free liquids in the waste.

### III. Conclusion.

The intent of this letter is to identify issues that should be of great interest and concern to EPD. For the reasons detailed herein, it is clear that EPD must deny Georgia Power's solid waste permit applications for these unlined coal ash waste sites.

In light of the systemic, substantial pollution established by the evidence, EPD should exercise its permit authority, and incidental powers under O.C.G.A. 12-8-23.1(a)(20) to: (1) order the company to immediately halt all closure in place activities at these sites; and (2) order the company to immediately withdraw its pending permit applications, to develop closure plans that will comply with the requirements of the Georgia Solid Waste Management Act, and the Georgia CCR Rule, which will not be achieved under the current applications.

We request that this letter and its attachments be placed in the permit file for each of the identified waste disposal sites. Should you wish to discuss these matters, we would be eager to address them with you in further detail.

Sincerely,



Christopher J. Bowers

Southern Environmental Law Center  
[cbowers@selcga.org](mailto:cbowers@selcga.org)

Enclosures

cc:

Via email (w/encl.)

Laura Williams, Esq.  
Director of Legal Services  
Georgia Environmental Protection Division  
2 Martin Luther King, Jr. Drive SE  
Suite 1456 East Tower  
Atlanta, Georgia 30334  
[laura.williams@dnr.ga.gov](mailto:laura.williams@dnr.ga.gov)

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August 5, 2019  
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Mary S. Walker  
Regional Administrator  
USEPA REGION 4  
61 Forsyth Street, S.W.  
Mail Code: 9T25  
Atlanta, GA 30303-8960  
[Walker.mary@Epa.gov](mailto:Walker.mary@Epa.gov)