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Carey A. Johnston
Water Docket
Environmental Protection Agency
Mail Code: 4203M
1200 Pennsylvania Avenue, NW
Washington, DC 20460
Attention Docket ID No. EPA-HQ-OW-2008-0517
Certified Mail and www.regulations.gov

Re: Comments of the Environmental Integrity Project on the U.S. EPA's Notice of Final 2008 Effluent Guidelines Program Plan and 2009 Annual Review for the Steam Electric Power Generation Industry, Docket ID No. EPA-HQ-OW-2008-0517

Dear Mr. Johnston:

Thank you for the opportunity to comment on the U.S. Environmental Protection Agency's (EPA) Notice of Final 2008 Effluent Guidelines Program Plan and notice of EPA's preliminary thoughts concerning 2009 annual reviews for the Steam Electric Power Generating Industry. EPA, Notice of Final 2008 Effluent Guidelines Program Plan, 73 Fed. Reg. 53,218 (Sept. 15, 2008) [hereinafter 2008 ELG Plan]. The Environmental Integrity Project (EIP) submits these comments on behalf of the groups below to supplement the comments submitted on our behalf by Abigail Dillen, Staff Attorney, Earthjustice, Docket ID No. EPA-HQ-OW-2008-0517 (July 27, 2009) and we incorporate those comments in their entirety by reference.

EPA has a duty under Section 304(b) of the Clean Water Act to "revise, if appropriate," its existing effluent limitation guidelines (ELGs) pursuant to the requirements for setting effluent limitations set forth in Section 301(b) at least once every year. 33 U.S.C. § 1314(b).¹ This

¹ As EPA has combined its requirements under Section 301 (regarding setting ELGs) and 304 (regarding setting effluent limitations) of the Clean Water Act into a single process whereby "ELGs" provide the effluent limitations applicable to a category or industry, these comments will refer to promulgation of ELGs and effluent limitations interchangeably. The Clean Water Act requires EPA to promulgate ELGs pursuant to Section 304(b), which were to be used to set effluent limitations pursuant to Section 301. See 33 U.S.C. §§ 1314(b), 1311(b). However, the complexity of undertaking both processes caused "EPA to telescope into one proceeding per industry the identification of the attainable effluent reductions and the factors relevant thereto under § 304(b) and the actual establishment of the various industry-wide limitations under § 301(b)." *Weyerhaeuser Co. v. Costle*, 590 F.2d 1011, 1020 n.2 (D.C. Cir. 1978). EPA has been promulgating effluent regulations without making distinctions between effluent limitations and ELGs, and courts have found this permissible. See *American Frozen Food Inst. v. Train*, 539 F.2d 107, 130-31 (D.C. Cir. 1976); *E. I. du Pont de Nemours & Co. v. Train*, 430 U.S. 112, 124 (1977). Thus,

requirement is expressly “[f]or the purpose of adopting or revising effluent limitations under this chapter.” *Id.* Section 301(b) requires point sources to achieve effluent limitations that reflect the best available technology economically achievable (BAT) for toxic and non-conventional pollutants and the best conventional pollutant control technology (BCT) for conventional pollutants. 33 U.S.C. § 1311(b)(2). Best practicable control technology (BPT) is also required for all pollutants by Section 301(b)(1). *Id.* § 1311(b)(1). If the Administrator finds it is “technologically and economically achievable for a category or class of point sources,” then effluent limitations promulgated pursuant to BAT “shall require the elimination of discharges of all pollutants” from that category or class. 33 U.S.C. § 1311(b)(2)(A).

Steam electric power plants are the second largest discharger of toxic and nonconventional pollutants, and the toxicity of these discharges is primarily attributable to metals from coal combustion wastes (CCW), particularly ash handling and wet scrubber systems. *See* EPA, Notice of Availability of Preliminary 2008 Effluent Guidelines Program Plan, 72 Fed. Reg. 61,335, 61,342 (Oct. 30, 2007). The overwhelming evidence before EPA makes it not only “appropriate,” but *imperative* for EPA to limit discharges of toxic metals from scrubber, coal ash transport, and CCW disposal systems by promulgating ELGs for typical CCW contaminants, phasing out wet CCW ponds, and revising existing effluent limitations. In addition, because the elimination of discharges from scrubber and ash transport systems has been achieved at sources in this industry and constitutes BAT, a zero discharge standard must be adopted for these systems.

I. EPA Should Set ELGs to Curb Toxic Discharges of Heavy Metals from All CCW Effluents.

Steam electric power plants nationwide have been discharging heavy metals and other toxic pollutants into the nation’s waters from their scrubbers, ash transport waters, and other CCW effluents. EPA must finally update its effluent limitation guidelines (ELGs) for this source to curb the toxic discharges. *See, e.g.,* EPA, *Interim Detailed Study Report for the Steam Electric Power Generating Point Source Category 5-7*, tbl.5-4 (Nov. 2006), *available at* www.regulations.gov (Doc. Id. No. EPA-HQ-OW-2004-0032-2781) [hereinafter *2006 Detailed Study*] (providing that, in 2002 alone, steam electric facilities reporting to the TRI database discharged *19,732,398,817 pounds* of just the following fifteen pollutants: Copper, Aluminum, Arsenic, Boron, Chlorine, Selenium, Lead, Fluoride, Iron, Mercury, Cadmium, Zinc, Manganese, Hexavalent Chromium, and Nickel, directly and indirectly, to surface waters). *See* Table 1.

“for over three decades, EPA has implemented sections 301 and 304 through the promulgation of effluent limitations guidelines.” 2008 ELG Plan, at 53,221.

Table 1. Steam Electric PCS 2002 Pollutant Loads for Selected Pollutants

Pollutant	Number of Facilities Reporting >0 Pounds of Pollutant	Total Load (pounds)	Total Load (TWPE)
Copper	214	318,114	201,946
Aluminum	53	3,040,130	196,670
Arsenic	55	46,359	187,352
Boron	28	1,007,098	178,473
Chlorine	279	257,551	131,135
Selenium	68	28,892	32,398
Lead	44	8,822	19,762
Fluoride	13	488,405	17,094
Iron	176	2,709,160	15,171
Mercury	31	111	13,019
Cadmium	25	541	12,513
Zinc	163	237,219	11,122
Manganese	41	108,565	7,647
Hexavalent Chromium	12	12,068	6,234
Cyanide	12	3,981	4,446
Nickel	53	27,948	3,044
TSS	605	502,018,895	NA
BOD ₅	172	3,618,349	NA
Total P	79	1,809,019	NA
Total for all Pollutants^a	718	20,239,849,061	1,057,131

Source: 2006 Detailed Study, at 5-7, tbl.5-4 (citing U.S. EPA, *PCSLoads2002 Database v.04*, (Sept. 2006) (DCN 03654)).

^a Totals shown represent all facility pollutant load data reported to PCS in 2002. The table shows individual pollutant loads for the top 15 pollutants (by TWPE), as well as an additional four pollutants that were selected for the study.

EPA acknowledges in its 2008 ELG Plan that “EPA’s previous annual reviews have indicated that the toxic-weighted loadings for this category are predominantly driven by the metals present in wastewater discharges, and that the majority of these metals are associated with ash handling and wet flue gas desulfurization (FGD) systems.” 2008 ELG Plan, at 53,226 (citing EPA-HQ-OW-2004-0032-2781). As “toxic-weighted loadings” estimate the hazard of the pollutant mass loads in the discharges by multiplying the product of the pounds of pollutant discharged and the hazard of each pollutant (using toxic weighting factors), EPA is acknowledging that the *predominant* hazards posed by the steam electric category’s discharges are from the industry’s discharges of metals from CCW-related discharges. See 2006 Detailed Study, at 2-3.

Despite this acknowledgment, EPA has not revised the effluent guidelines for the Steam Electric Power Generating Category since 1982—*27 years ago*. See 2008 ELG Plan, at 53,226 (citing 47 Fed. Reg. 52,290 (Nov. 19, 1982)). Since years of EPA data have concluded that metals from CCW effluents pose the highest hazards from the steam electric industry’s discharges and since the technology exists to limit and even eliminate these discharges, EPA should revise ELGs for the steam electric category to limit toxic metal discharges from the industry’s CCW operations.

a. Allowing States to Rely on BPJ to Regulate Scrubber Sludge and Other CCW Effluents Has Resulted in Extensive Discharges of Toxic Metals Throughout the Steam Electric Generating Industry.

ELGs are necessary to halt the dangerous and unnecessary, yet common, practice of discharging toxic pollutants into waterways from steam-electric power plants nationwide. EPA has not set ELGs limiting any heavy metal discharges from coal combustion waste (CCW) waste streams. *See* 40 C.F.R. § 423. Although EPA has promulgated ELGs for chromium and zinc of 0.2 ug/L and 1 ug/L, respectively, these limitations apply to cooling tower blowdown, not to CCW effluents, and the limit for “chromium” fails to distinguish between Chromium VI, which is hexavalent chromium and poses grave health and environmental concerns, and Chromium III, which poses fewer risks. *See id*; *see also infra* Section I.b. In the absence of federal ELGs for heavy metals typically found in CCW from scrubber sludges or coal ash handling, disposal, or transport systems, states have either failed to require technology-based standards for metals altogether, or have set weak standards based on “best professional judgment” (BPJ) that do not reflect effective technologies that are available. *See* 33 U.S.C. § 1342(a)(1)(B); 40 C.F.R. § 125.3 (discussing permits issued on a case-by-case BPJ standard establishing effluent limitations).

Using this BPJ standard, power plants throughout the country, rather than installing the pollution control devices that are both available and economically achievable, have been discharging toxic pollutants from their coal ash transport, handling, and disposal systems and scrubber sludges into the waters of the United States. *See, e.g., Coal Combustion Waste Storage and Water Quality: Hearing Before the Subcomm. on Water Resources & Environment of the H. Comm. on Transportation & Infrastructure, 111th Cong. (Apr. 30, 2009)* (written testimony of Eric Schaeffer, Executive Director, Environmental Integrity Project (EIP), including four attachments: EIP, Selenium Monitoring Results at Select Facilities; EIP, Arsenic Monitoring Results at Select Facilities; EIP, Selenium Bar Chart; *and* EIP, Arsenic Bar Chart) (attached as Attachment 1). Although facilities have often not been required to even monitor the types or quantities of pollutants in their discharge monitoring reports, EIP’s preliminary review of NPDES Form 2C data submitted to EPA reveal the toxic composition of the CCW effluent discharges from these facilities.

NPDES Form 2C data provided to EPA and Sampling Episode Result data collected by EPA for its 2007-2008 Detailed Study of the Steam Electric Industry reveal alarmingly high discharges of Arsenic and Selenium from scrubber sludge and CCW effluents. *See* EPA, *Steam Electric Power Generating Point Source Category: 2007/2008 Detailed Study Report* (2008), available at <http://www.epa.gov/guide/304m/2008/steam-detailed-200809.pdf> (821-R-08-011, DCN 05516) [hereinafter *2008 Detailed Study Report*]. Despite amassing the Form 2C and Sampling Episode data, EPA claims to have failed to either finish collecting data or evaluate the data it had collected before issuing its 2008 ELG Plan, as it stated:

EPA has not yet completed its wastewater sampling activities. The UWAG Form 2C database was recently delivered to EPA; however, EPA has not had sufficient time to fully evaluate this data. The database provides substantial information on wastewater generation and wastewater management and treatment practices for a

large number of plants. EPA believes it is important to take additional time to evaluate the Form 2C data, in concert with EPA's sampling data and the responses to EPA's data request.

2008 ELG Plan, at 53,226.

Using the Form 2C data and the available Sampling Episode Reports, the Environmental Integrity Project (EIP) has conducted a preliminary analysis of discharges from CCW effluents of two particularly dangerous constituents—Arsenic and Selenium. This preliminary analysis indicates that steam electric power plants are discharging both Arsenic and Selenium at alarmingly high levels, often directly into receiving waters without any additional treatment. *See* EIP, Selenium Monitoring Results at Select Facilities *and* EIP, Arsenic Monitoring Results at Select Facilities (Attachment 1). Even these limited data show that the concentration levels at which these toxic constituents are entering surface waters are frequently tens or hundreds of times higher than National Recommended Water Quality Criteria. *Id.* Furthermore, even at the handful of facilities that are mixing their CCW effluents with other wastewaters before discharging (thereby likely decreasing the concentrations at which the Arsenic and Selenium discharges enter the receiving waters), very significant masses of these toxic metals are being discharged to surface waters due to the high flow rates at which these metals are being discharged. This is corroborated by the significant discharges to surface waters reported to the TRI index. *See* Table 1.

b. The Metals Discharged from Scrubber Sludge and Coal Ash Systems are Toxic Pollutants with Grave Human Health and Environmental Impacts.

Toxic metal discharges from steam electric power generating facilities have grave environmental and human health impacts and must be eliminated. EPA has identified 41 heavy metals and other constituents of FGD and other coal combustion wastes (CCW) that are “potential constituents of concern in CCW.” EPA, *Constituent Screening for Coal Combustion Wastes*, at 2-2 to 2-3 (Oct. 2002) (prepared by RTI), *available at* www.regulations.gov, with Docket No. EP-HQ-RCRA-2006-0796-0470. These constituents are: Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Selenium, Silver, Strontium, Thallium, Vanadium, Zinc, Chloride, Cyanide, Fluoride, Total Nitrate Nitrogen, Phosphate, Silicon, Sulfate, Sulfide, Ammonia, Calcium, pH, Potassium, Sodium, Inorganic Carbon, Total Elemental Sulfur, Total Dissolved Solids, Total Organic Carbon, and Dissolved Organic Carbon. *Id.* *See* Table 2.

Table 2. EPA's Potential Constituents of Concern in CCW

<i>Metals</i>	<i>Metals (cont'd)</i>	<i>Inorganic Anions</i>	<i>Inorganic Cations</i>	<i>Nonmetallic Elements</i>	<i>Measurements</i>
Aluminum	Magnesium	Chloride	Ammonia	Inorganic Carbon	Total Dissolved Solids
Antimony	Manganese	Cyanide	Calcium	Total Elemental Sulfur	Total Organic Carbon
Arsenic	Mercury	Fluoride	pH		Dissolved Organic Carbon
Barium	Molybdenum	Phosphate	Potassium		
Beryllium	Nickel	Silicon	Sodium		
Boron	Selenium	Sulfate			
Cadmium	Silver	Sulfide			
Chromium	Strontium	Total Nitrate Nitrogen			
Cobalt	Thallium				
Copper	Vanadium				
Iron	Zinc				
Lead					

Source (adapted from): EPA, *Constituent Screening for Coal Combustion Wastes*, at 2-2-2-3, tbl. 2-1 (Oct. 2002) (prepared by RTI); EPA, *Human and Ecological Risk Assessment of Coal Combustion Wastes (Draft)*, at 2-4, tbl. 2-4 (2007).

As potential constituents of concern, most of these pollutants have known adverse impacts on human health and the environment if they come into contact with human or ecological receptors. Vertebrates exposed to the trace metals in CCW have suffered respiratory, metabolic, hormonal, physiological, and other impairments, including death, and these toxic metals bioaccumulate in animal tissues up the food chain, creating impacts observable for decades. See, e.g., *Coal Combustion Waste Storage and Water Quality: Hearing Before the Subcomm. on Water Resources & Environment of the H. Comm. on Transportation & Infrastructure*, 111th Cong. (Apr. 30, 2009) (testimony of Dr. Conrad Volz, Assistant Professor of Environmental and Occupational Health, University of Pittsburgh), available at <http://transportation.house.gov/hearings/Testimony.aspx?TID=10034&NewsID=884>.

In addition, some of the human health effects from the CCW metals listed above include:

- **Arsenic** is a known carcinogen and can cause death, and at lower levels can cause nausea and vomiting, decreased production of red and white blood cells, abnormal heart rhythm, and damage to blood vessels;
- **Boron** exposure can cause stomach, intestinal, kidney, liver, and brain damage, negative effects on male reproduction, or even death;
- **Cadmium** is a known carcinogen, and can also result in diarrhea, stomach pains, severe vomiting, fragile bones, and kidney and lung damage;
- **Chromium VI (Hexavalent Chromium)** is a known carcinogen, and may also cause irritation and ulcers of the stomach and small intestine, anemia, sperm damage, damage to the male reproductive system, and skin ulcers;
- **Cobalt** has been linked to vomiting, nausea, dermatitis, lung and heart problems, and is classified as a possible carcinogen;

- **Copper** ingestion can cause nausea, vomiting, and diarrhea, and at very high doses can cause liver and kidney damage and even death;
- **Lead** exposure causes learning disabilities, kidney, blood, and nerve damage (children are especially vulnerable to Lead exposure);
- **Manganese** exposure can cause behavioral changes and other nervous system effects, which include movements that may become slow and clumsy, and nervous system and reproductive effects;
- **Selenium** exposure can result in nausea, vomiting, and diarrhea in the short term, and chronic oral exposure to high concentrations of selenium compounds can cause selenosis, which causes hair loss, nail brittleness, and neurological abnormalities; and
- **Thallium** can cause vomiting, diarrhea, temporary hair loss, effects on the nervous system, lungs, heart, liver, and kidneys, and has caused death.

See U.S. Dep't of Health & Human Services, Agency for Toxic Substances & Disease Registry, *Frequently Asked Questions About Contaminants Found at Hazardous Waste Sites*, available at <http://www.atsdr.cdc.gov/toxfaq.html>.

Furthermore, the damage caused by these hazardous constituents of CCW is not simply theoretical, but has been the root of contamination at CCW sites throughout the country. In fact, of the CCW potential constituents of concern listed in Table 2, *supra*, 31 of the 41 constituents—including 22 of the 23 metals listed—were present in at least one case of proven or potential damage from CCW as identified by EPA in its report entitled *Coal Combustion Waste Damage Case Assessments*. See EPA, *Coal Combustion Waste Damage Case Assessments* (July 9, 2007), available at http://graphics8.nytimes.com/packages/pdf/national/07sludge_EPA.pdf. The only metal that was not mentioned in the CCW damage or potential damage cases was Cobalt, which has known adverse human health effects (see list *supra*), and was one of thirteen in a subset of CCW constituents of potential concern specifically selected and studied by EPA due to the constituents' potential for adverse health or environmental effects from leaching ash disposal sites. EPA, *Human and Ecological Risk Assessment of Coal Combustion Wastes (Draft)*, at 2-6, tbl.2-3 (2007) [hereinafter *2007 Risk Assessment*]. This same list of thirteen was then again utilized when EPA analyzed characteristics of CCW from electric utilities using wet scrubbers. EPA, *Characterization of Coal Combustion Residues from Electric Utilities Using Wet Scrubbers for Multi-Pollutant Control* xvi (July 2008), available at <http://www.epa.gov/nrmrl/pubs/600r08077/600r08077.pdf>. The other twelve constituents specifically targeted in these studies (in addition to Cobalt) are Mercury, Aluminum, Antimony, Arsenic, Barium, Boron, Cadmium, Chromium, Lead, Molybdenum, Selenium, and Thallium.

Despite the ubiquitous prevalence of at least 13 and up to 41 toxic contaminants in FGD and other coal combustion wastes, EPA has not set ELGs for these metals and other constituents from CCW effluents. The evidence available to EPA supports that it would be “appropriate,” if not, *necessary*, to revise the ELGs to set limitations for discharges of the metals common to CCW effluents of all types. The technology exists to limit and even eliminate the toxic

discharges of metals ubiquitous in scrubber and CCW transport, handling, and disposal systems, but unless federal effluent limitations are imposed for these metals, these toxic discharges will continue to pollute our nation's waters.

c. ELGs Established for the Steam Electric Generating Industry Must Apply to Discharges from All CCW Disposal Units.

CCW disposal sites discharge the same heavy metals as CCW transport, handling, and scrubber systems, and must be subject to the same ELGs applied to other CCW effluents. Although EPA's 2007-2008 *Detailed Study Report* has primarily set out to analyze scrubber sludge and ash sluice water discharges, ELGs limiting heavy metal discharges from the steam electric generating industry must also apply to discharges from CCW disposal units—landfills, surface impoundments, and minefills. Toxic metals and other constituents are discharged in high concentrations and in high masses from CCW surface impoundments. *See, e.g.*, EIP, Selenium Monitoring Results at Select Facilities; EIP, Arsenic Monitoring Results at Select Facilities (Attachment 1) (providing examples of discharges from CCW ponds as well as scrubber sludges).

For example, although EPA's Chronic Recommended Freshwater Quality Criteria for Aquatic Life is 5 ug/L for Selenium, direct surface water discharges of Selenium from CCW surface impoundments (CCW ponds) were as high as:

- 59 ug/L from Georgia Power's Yates Plant in Georgia;
- 50 ug/L from Duke Energy's Cayuga Plant in Indiana;
- 130 ug/L from Vetren's A.B. Brown Plant in Indiana;
- 95.4 ug/L from Dayton Power & Light's J.M. Stuart Plant in Ohio;
- 40 ug/L from TVA's Gallatin Plant in Tennessee;
- 152 ug/L from Appalachian Power's Mountaineer Plant in West Virginia; and
- 94.7 ug/L from Ohio Power's Mitchell Plant in West Virginia. *Id.*

In addition, although EPA's Chronic Recommended Freshwater Quality Criteria for Aquatic Life is 150 ug/L for Arsenic and EPA's Recommended Water Quality Criteria for Human Health for the Consumption of Organisms is 0.14 ug/L for Arsenic, direct surface water discharges of Arsenic from CCW surface impoundments (CCW ponds) were as high as:

- 184 ug/L from Alabama Power's Gadsden Plant in Alabama;
- 181 ug/L from Duke's Wabash River Plant in Indiana;
- 320 ug/L from AEP's Cardinal Plant in Ohio;
- 72 ug/L from Santee Cooper's Grainger Plant in South Carolina;
- 243 ug/L from TVA's Johnsonville Plant in Tennessee;
- 158 ug/L from Dominion Energy's Bremo Plant in Virginia; and
- 138 ug/L from Ohio Power's Mitchell Plant in West Virginia. *Id.*

Although the Water Quality Criteria referenced are not enforceable for any of these plants unless they have been incorporated as case-by-case BPJ effluents into individual NPDES permits, they serve as an indicator of the high discharges of Arsenic and Selenium into surface

waters specifically from coal combustion waste disposal units in a variety of states. Discharges from CCW disposal units must be held to the same effluent limitations that other CCW effluents should be subject to based on their heavy concentrations of hazardous pollutants.

d. ELGs Established for the Steam Electric Generating Industry Must Apply to Groundwater Discharges with a Hydrological Connection to Surface Waters.

The ELGs applicable to surface water discharges must also be applicable to discharges to groundwater where there is a hydrological connection to surface water. EPA has already acknowledged, as well as analyzed, the grave risks to human health and the environment from CCW constituents leaching from waste managements units (WMU) through the groundwater-to-surface-water exposure pathway. In fact, the two main exposure pathways for human and ecological receptors that EPA analyzed in its *2007 Risk Assessment* were the groundwater-to-drinking-water and the groundwater-to-surface-water pathways. EPA, *2007 Risk Assessment*, at 3-10 (explaining that “[l]eachate forms in both landfills and surface impoundments, migrates from the WMU through soil to groundwater, and is transported in groundwater to drinking water wells (groundwater-to-drinking-water pathway) and into surface waterbodies near the WMU (groundwater-to-surface-water pathway). These are the groundwater pathways evaluated in the full-scale CCW risk assessment”); *see also id.* at 3-25.

EPA found that risks to human health from the groundwater-to-surface-water pathway exceeded the risk criteria for unlined surface impoundments, creating unacceptable risks of cancer from arsenic contamination and of other health hazards from selenium contamination. *Id.* at ES-8. In addition, EPA found that risks to ecological receptors from contaminants leaching from landfills and surface impoundments via the groundwater-to-surface-water pathway exceeded acceptable risk levels for several parameters, namely arsenic, boron, cadmium, lead, selenium, aluminum, barium, cobalt (for surface impoundments only), chromium VI (hexavalent chromium), vanadium, beryllium (for landfills only), copper, nickel (for surface impoundments only), silver, and zinc (for landfills only). *Id.* at 2-6, tbl.2-3. In particular, EPA noted that boron and selenium exceedances “are consistent with reported ecological damage cases, which include impacts to waterbodies through the groundwater-to-surface-water pathway.” *Id.* at ES-2. The unacceptably high risks of damage to human health and the environment from CCW contaminants leaching via the groundwater-to-surface-water pathway justify extending ELGs for all typical CCW constituents to groundwater discharges that are hydrologically connected to surface waters.

EPA has been “studying” toxic metal discharges from steam electric power plants for years, and can no longer ignore the overwhelming evidence before it. EPA should revise the ELGs to include limitations for heavy metals from all CCW effluents.

II. Zero Discharge is BAT for Scrubber Sludge and Coal Ash Transport and Disposal Systems, So EPA Must Set ELGs Requiring the Elimination of All Discharges from These Systems.

EPA is required to set BAT standards that “require the elimination of discharges of all pollutants if the Administrator finds . . . that such elimination is technologically and economically achievable.” 33 U.S.C. § 1311(b)(2)(A). As zero discharge is both technologically and economically achievable for scrubber, ash handling, and leachate treatment systems, EPA should promulgate ELGs requiring zero discharge as BAT for these effluents. See Comments Submitted by Abigail Dillen, Staff Attorney, Earthjustice, Docket Id. No. EPA-HQ-OW-2008-0517 (July 27, 2009), for further analysis.

III. CCW Surface Impoundments Pose Unjustifiably High Health and Environmental Risks, and the Best Management Practice Would be to Phase Them Out Entirely.

Storage of coal combustion wastes in surface impoundments (wet ponds) poses significantly greater cancer and other risks than storage in landfills, so the best management practice for ash ponds would be to phase them out entirely. EPA’s 2008 ELG Plan specifically requested comments on best management practices for CCW ash ponds, and, in addition to the need for strict effluent limitations for all CCW ash ponds *and* dry landfills, the true best management practice for safe disposal of CCW and its hazardous constituents is to phase out all wet disposal of CCW from ash ponds and other surface impoundments.

EPA’s *2007 Risk Assessment* concluded that wet disposal of CCW in surface impoundments poses dramatically increased risks of cancer and other adverse environmental and human health impacts when compared to dry disposal in landfills. *See, e.g., 2007 Risk Assessment*, at ES-1; *see generally EIP & Earthjustice, Coming Clean: What the EPA Knows About the Dangers of Coal Ash* (May 2009), available at <http://www.environmentalintegrity.org/pub640.cfm>. Although EPA adopted a 1 in 100,000 risk of cancer from Arsenic exposure to be the threshold beyond which risk is unacceptable, CCW disposal in surface impoundments, particularly those that mix CCW with coal refuse and are not lined, pose a cancer risk of 1 in 50—*2,000 times* what EPA deems acceptable. *Id.* Disposal in dry landfills significantly reduces these risks, and “ash ponds” and other CCW surface impoundments can and must be phased out.

In addition to the use of landfills rather than surface impoundments for new CCW disposal sites, other best management practices needed to reduce risks of adverse ecological and human impacts from exposure to toxic CCW constituents include requiring:

- Composite liners, comprised of a double liner of synthetic and clay materials (rather than no liners or simply clay liners), at all disposal sites;
- Placement of disposal sites well above the water table and pursuant to a stringent hydrogeological review for suitability of the site to prevent leaching or discharges to surface waters;
- Leachate collection systems to redirect leachate away from groundwater supplies;

- Regular leachate monitoring for all common CCW heavy metal and other constituents to ensure toxic constituents are not reaching groundwater sources;
- At least monthly surface water monitoring for all common CCW heavy metal and other constituents;
- Caps to prevent overflowing of disposal sites; and
- The removal of all unlined landfills, surface impoundments, and other unlined CCW disposal sites to units that meet the requirements of this list. *See id.*

IV. Conclusion

For the foregoing reasons, it is abundantly appropriate for EPA to rely on the data before it and finally revise the outdated ELGs for the Steam Electric Generating Industry to curb discharges of toxic metals from all CCW effluent sources. EPA should establish that zero discharge is BAT for CCW effluents in this industry and require zero discharge for all CCW systems, including CCW disposal units.

Respectfully submitted,



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