

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)
)
COAL COMBUSTION WASTE (CCW) ASH) R14-10
PONDS AND SURFACE IMPOUNDMENTS) (Rulemaking - Water)
AT POWER GENERATING FACILITIES:)
PROPOSED NEW 35 ILL. ADM. CODE 841)

NOTICE OF ELECTRONIC FILING

To: **Attached Service List**

PLEASE TAKE NOTICE that on October 20, 2014, I electronically filed with the Clerk of the Illinois Pollution Control Board the **Post Hearing Comments of the Environmental Integrity Project, Environmental Law & Policy Center, Prairie Rivers Network, and Sierra Club**. A copy is attached hereto and herewith served upon you.

Dated: October 20, 2014

Respectfully submitted,



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POST-HEARING COMMENTS OF
ENVIRONMENTAL INTEGRITY PROJECT,
ENVIRONMENTAL LAW AND POLICY CENTER,
PRAIRIE RIVERS NETWORK, AND SIERRA CLUB

The Environmental Integrity Project, Environmental Law and Policy Center, Prairie Rivers Network, and Sierra Club (collectively, “Environmental Groups”) submit the following post-hearing comments on the new Part 841 regulations proposed by the Illinois Environmental Protection Agency (“Agency”) concerning the State’s coal combustion waste (“CCW”) surface impoundments. The Environmental Groups generally support the Agency’s effort to more systematically regulate a category of waste that for too long has been dealt with on an ad hoc basis, and appreciate the amendments that the Agency has proposed in response to concerns raised by the Environmental Groups and thousands of other public commenters. These amendments—requiring among other things the Agency’s consideration of sensitive geological features, groundwater modeling results, potential impacts to surface waters, and alternatives to proposed corrective action and closure plans—will enable better-informed planning to address the water and land pollution threats posed by the State’s numerous, typically inadequately-lined CCW impoundments. See Agency’s Prefiled Answers (July 17, 2014) at PDF pages 7-16.

Further amendments are needed, though. The Agency’s proposal leaves large gaps in the State’s regulation of CCW impoundments. The Board should adopt the Agency’s proposed

rules, as improved by the Environmental Groups' proposal filed July 21, 2014. The Environmental Groups' comments below provide support for amendments to the Agency's proposal in six critical areas:

- (1) The rules should apply at least in part to all CCW impoundments in the State, and include a broad definition of non-exempt "operating" impoundments;
- (2) The rules should require more vigilant monitoring of CCW impoundments and more thorough site characterizations.
- (3) The rules should set out a clear path for the safe and swift closure of CCW impoundments. The regulations should require closure plans for all impoundments and financial assurance that owners and operators can carry them out.
- (4) The rules should set design standards for new and existing CCW impoundments that include a composite liner and leachate collection system.
- (5) For CCW impoundments that are causing or contributing to groundwater contamination, corrective action requirements should be rigorous and lead to either prompt compliance with groundwater quality standards or closure. The State should not continue to allow open-ended corrective actions that fail to control toxic contamination at its source.
- (6) The rules should allow for greater public participation by allowing 60 days for public comments on corrective action, closure, and post-closure care plans and proposed alternative cause demonstrations, and should require public meetings if the Agency finds a significant degree of public interest.

Some of these subjects—including financial assurance requirements and design standards—are likely to be addressed in the United States Environmental Protection Agency's ("USEPA") upcoming nationally applicable regulations on CCW impoundments, currently due to be finalized by December 19, 2014. *See* Ex. 54, Consent Decree, *Appalachian Voices, et al. v. McCarthy*, Civ. No. 1:12-cv-00523-RBW (D. D.C.) (filed Jan. 29, 2014), at 5. Whether or not USEPA acts on schedule, though, the Environmental Groups urge the Board to adopt rules now that comprehensively address Illinois' CCW impoundments.

BOARD AUTHORITY

The Illinois General Assembly granted the Board the responsibility to “determine, define and implement the environmental control standards applicable in the State of Illinois.” 415 ILCS 5/5. The Board has broad authority to adopt rules to implement the Illinois Environmental Protection Act (“Act”), limited only by the principle that the rules must promote the purposes and provisions of the Act. 415 ILCS 5/5 and 5/27. The Board specifically has the authority to modify rules proposed by the Agency, after comments, objections, or suggestions, without the agreement of the Agency as the proponent. 415 ILCS 5/28(b)(2).

The Board therefore has expansive powers to regulate the threats of water and land pollution posed by CCW impoundments in Illinois. With regard to water pollution, the Board “may adopt regulations to promote the purposes and provisions of [Title III of the Act (“Water Pollution”)],” which includes the specific purpose to:

restore, maintain and enhance the purity of the waters of this State in order to protect health, welfare, property, and the quality of life, and to assure that no contaminants are discharged into the waters of the State . . . without being given the degree of treatment or control necessary to prevent pollution, or without being made subject to such conditions as are required to achieve and maintain compliance with State and federal law.

415 ILCS 5/11(b). Title III of the Act further prohibits “caus[ing] or threaten[ing] or [allow]ing the discharge of any contaminants into the environment . . . so as to cause or tend to cause water pollution in Illinois” and “deposit[ing] any contaminants upon the land in such place and manner so as to create a water pollution hazard.” 415 ILCS 5/12(a) and (d).

With respect to land pollution, the Board “may adopt regulations to promote the purposes and provisions of [Title V of the Act (“Land Pollution and Refuse Disposal”)].” 415 ILCS 5/22. Title V of the Act specifically authorizes the Board to require financial assurance from “waste

disposal operations” that require a permit under Section 21(d) of the Act, 415 ILCS 5/21(d). *See* 415 ILCS 5/21.1.

In promulgating regulations under the Act, the Board shall take into account:

the existing physical conditions, the character of the area involved, including the character of surrounding land uses, zoning classifications, the nature of the existing air quality, or receiving body of water, as the case may be, and the technical feasibility and economic reasonableness of measuring or reducing the particular type of pollution.

415 ILCS 5/27(a).

BACKGROUND

The Agency’s proposed rules would apply potentially to every CCW surface impoundment at a power generating facility in the State. The Agency proposed these rules on October 28, 2013 “to fill a regulatory gap in the Board’s rules governing [coal combustion waste] surface impoundments,” noting that the Board’s regulations “do not provide a method for closure or corrective action at these facilities.” Statement of Reasons at 8. Additionally, the Agency proposed these rules in response to a site-specific rulemaking proposal filed by Ameren Energy Resources in April 2013, proposing rules to govern closure of multiple CCW impoundments. Ex. 5, Agency’s Prefiled Answers (Feb. 26, 2014), at PDF page 42.

According to the Agency, there are at least 91 CCW impoundments at 24 operating and closed power generating facilities in the State, collectively containing billions of gallons of CCW, leachate, and wastewater. *Id.* at PDF page 2 (including Agency’s latest count of 91 impoundments); Agency’s Post Hearing Comments (Apr. 30, 2014), Attachment B (Agency’s corrected table of impoundments, identifying 86 impoundments and the volume and size of some of these impoundments). The Agency admits that there may be other CCW impoundments at these facilities that it is unaware of at this time. Feb. 26, 2014 Tr. at 20:22-21:2; Agency’s

Prefiled Answers (July 17, 2014), at PDF page 4. With the possible exception of the Kincaid Generating Station, groundwater contamination by chemicals associated with CCW has been detected at all 24 of these facilities. *See* Ex. 67.¹

CCW is dangerous and toxic. It “can contain antimony, arsenic, barium, boron, beryllium, cadmium, chromium, chloride, iron, lead, mercury, manganese, nickel, selenium, silver, sulfate, and thallium.” Statement of Reasons at 3. As USEPA summarized in its 2010 rulemaking proposal for CCW impoundments, the chemicals associated with CCW “are sufficiently toxic that they are capable of posing a substantial present or potential hazard to human health and the environment” when improperly managed. USEPA, *Hazardous and Solid Waste Management System; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals From Electric Utilities*, 75 Fed. Reg. 35128, 35168 (June 21, 2010). Moreover, these chemicals are present in CCW “at relatively high concentrations,” such that mismanagement poses serious threats. *Id.* at 35169.

CCW impoundments threaten human health and the environment through both groundwater and surface water. *See* Soderberg Testimony at 4 (citing USEPA, *Human and Ecological Risk Assessment of Coal Combustion Wastes* (draft) (Apr. 2010)). CCW’s toxic chemicals can leach continuously from unlined and inadequately lined impoundments into groundwater, rendering it dangerous for human consumption or agricultural use. Contaminated groundwater also migrates into surface waters, threatening both downstream drinking water supplies and aquatic life. *Id.*, Barkley Testimony at 2-3 (citing studies of CCW pollution’s impacts on aquatic ecosystems). Finally, poorly sited, constructed, and maintained

¹ Exhibit 67 is a table based on Attachment B to the Agency’s April 30, 2014 Post Hearing Comments, and identifies all 24 power generating facilities in the State and describes their CCW impoundments. The right-most column, when cross-referenced with the index at the bottom of the table, indicates sources of information regarding groundwater contamination at the facilities.

impoundments carry the threat of catastrophic releases into surface waters, as demonstrated by recent massive discharges at the Duke Energy Dan River Steam Station in North Carolina and the TVA Kingston Fossil Plant in Tennessee.

Threats to Groundwater

First, toxic chemicals from CCW can leach into groundwater, rendering it dangerous for human consumption. USEPA estimates, for example, that the excess cancer risk for people drinking groundwater contaminated with arsenic from unlined CCW impoundments to be as high as 1 in 50. 75 Fed. Reg. at 35145. According to USEPA, lining CCW impoundments with composite liners can “very significantly reduce the probability of adverse effects” from leaching. *Id.* at 35175. By contrast, USEPA’s risk assessment “point[ed] to very high potential risks from unlined surface impoundments” and “call[ed] into question the reliability of clay liners, especially in surface impoundments.” *Id.* at 35144. Consequentially, USEPA has proposed design standards for CCW surface impoundments requiring a composite liner and leachate collection system for all impoundments, with a five year window for all impoundments to either reline or close. *Id.* at 35202-203.

Unfortunately, most of the State’s CCW impoundments are unlined and therefore present the “very high potential risks” flagged by USEPA. *Id.* at 35144. Based on the table attached as Attachment B to the Agency’s April 30, 2014 comments, there are at least 23 “inactive” unlined CCW impoundments in the State at 14 different facilities (Baldwin, Coffeen, Duck Creek, Havana, Hennepin, Hutsonville, Joppa, Marion, Meredosia, Powerton, Vermillion, Venice, Will County, and Wood River).² The Agency has issued violation notices for groundwater contamination at 7 or more of these facilities. (Cobb Testimony, Attachment 1). There also are at least 30 “active” unlined impoundments at 13 different facilities (Baldwin, Coffeen, Edwards,

² 23 is the difference between the total number of “Number Inactive (I)” and “Number Lined (Inactive)” ash ponds.

Grand Tower, Hutsonville, Joppa, Kincaid, Southern Illinois Power Cooperative's Marion Station, Meredosia, Newton, Prairie Power's Pearl Station, Springfield City Water Light and Power's Lakeside and Dallman Stations, and Vermillion).³ Agency Posthearing Comments (Apr. 30, 2014), Attachment 2. The Agency has issued violation notices for groundwater contamination at 7 or more of these facilities. Cobb Testimony, Attachment 1. Combined, these 53 unlined CCW impoundments constitute the majority of the CCW impoundments in the State identified by the Agency.

The violations cited by the Agency at the above facilities reflect levels of groundwater contamination that are dangerous to human health. These violations include exceedences of the groundwater quality standard for arsenic. *See* Environmental Groups' Prefiled Answers (July 17, 2014), at PDF page 73.⁴ Moreover, the violations reflect concentrations of other chemicals so high as to threaten human health:

Boron. Boron has proven to be toxic to the developing fetus and the male reproductive system in animal studies. USEPA therefore developed drinking water guidelines to protect against low birth weight and testicular atrophy. *See* Ex. 9, USEPA, *Drinking Water Health Advisory for Boron* (May 2008). USEPA's Child Health Advisory for boron is 3 mg/L. *Id.*

The Agency's Technical Support Document ("TSD") provides monitoring results for boron for 11 Illinois facilities. Statement of Reasons, Ex. A, TSD, at 13. Of these 11, 10 facilities have maximum concentrations of boron above the Health Advisory and 9 have mean concentrations above the Health Advisory. *Id.* Concentrations at 3 facilities reached levels more than 10 times higher than the Health Advisory. *Id.* In short, the groundwater near these facilities has been contaminated with unsafe concentrations of boron.

In this proceeding, the Agency testified that it was unaware of any human health impacts from boron. Feb. 26, 2014 Tr. at 255:21-256:1.

Manganese. Although manganese is an essential element at low doses, it has been associated with neurological toxicity at higher doses. *See* Ex. 10, USEPA, *Drinking Water Health Advisory for Manganese* (January 2004), at 31. USEPA's Lifetime Health Advisory for manganese is 0.3 mg/L. *Id.*

³ 30 is the difference between the total number of "Number Active (A)" and "Number Lined (Active)" ash ponds.

⁴ In addition to the facilities cited in Ms. Barkley's answer, Exhibit A to Richard Cobb's testimony indicates that the arsenic groundwater quality standard has been exceeded at the Midwest Generation Waukegan Generating Station.

The Agency's TSD provides monitoring results for manganese for 14 Illinois facilities. Statement of Reasons, Ex. A, TSD, at 15. Every one of them has maximum concentrations above the Health Advisory, and all but one have mean concentrations above the Health Advisory. *Id.* Concentrations at 6 plants reached levels more than 10 times higher than the Health Advisory. *Id.* As with boron, the groundwater near these facilities has been contaminated with unsafe concentrations of manganese.

In this proceeding, the Agency testified that it was unaware of any human health impacts from manganese. Feb. 26, 2014 Tr. at 256:11-17.

Sulfate. Sulfate concentrations above 500 mg/L in drinking water can cause diarrhea, which can be particularly dangerous to infants, and USEPA established a drinking water advisory at this level. Ex. 11, USEPA, *Drinking Water Advisory: Consumer Acceptability Advice and Health Effects Analysis on Sulfate* (Feb. 2003).

The Agency's TSD for the proposed rule provides sulfate statistics for 13 coal plants. Statement of Reasons, Ex. A, TSD, at 11. Every one of them has maximum concentrations above the 500 mg/L Drinking Water Advisory, and all but one have mean concentrations above the Advisory. *Id.* As with boron and manganese, the groundwater near these coal plants has been contaminated with unsafe concentrations of sulfate.

In this proceeding, the Agency testified that it was unaware of any human health impacts from sulfate. Feb. 26, 2014 Tr. at 257:3-6.

Beyond these already-documented impacts to groundwater, it is important to note that more impacts to Illinois groundwater reasonably can be expected in coming decades—particularly if already-leaking impoundments are allowed to remain open indefinitely. USEPA has projected peak well concentrations for coal ash pollutants to arrive many decades after the operation of a coal ash impoundment begins. *See* USEPA, *Human and Ecological Risk Assessment of Coal Combustion Wastes (Draft)* (April 2010), at 4-10 to 4-12 (attached to the prefiled testimony of Keir Soderberg). For example, USEPA has modeled the median time to peak boron concentration at 74 years for unlined surface impoundments, and 90 years for surface impoundments with a compacted clay liner. *Id.* at 4-12. The time to peak concentration also differs by pollutant. For arsenic III, the median time to peak concentration is 78 years for unlined surface impoundments, and 110 years for a compacted clay liner. *Id.*

These figures are significant because the Agency does not have a great many years of groundwater monitoring data for the State's CCW impoundments. For many unlined impoundments, the State does not have monitoring data until 2010, when monitoring began under the Agency's "ash impoundment strategy." See Statement of Reasons, Attachment D, *Illinois EPA's Ash Impoundment Strategy Progress Report*, at 3-4 (discussing 15 "priority 1 and 2" facilities). As for the State's lined impoundments, the Agency states that it began requiring lining and monitoring for new CCW impoundments in "the early 1990s." *Id.* at 1. However, the Agency has not required composite liners for new impoundments, but only compacted clay liners or synthetic liners with a comparable permeability. Feb. 26, 2014 Tr. at 228:14-21; Feb. 27, 2014 Tr. at 95:19-96:21 (acknowledging that USEPA's proposed design standard of a composite liner with leachate collection system would be "more protective" than Agency's requirement of "two feet of clay"). As discussed above, USEPA has questioned the safety of compacted clay liners; modeled median times to peak concentration for impoundments with compacted clay liners not much higher than those of unlined surface impoundments; and proposed a much more protective design standard. While there is not yet any monitored groundwater contamination from these relatively newer impoundments, there is little reason to conclude that they will not begin contaminating groundwater in coming decades if allowed to continue operating.

In summary, the State's CCW impoundments are currently contaminating groundwater at unsafe levels across the State, and will continue to do so unless they are closed or safely retrofitted in accordance with USEPA's proposed design standard of composite liners and leachate collection systems.

Threats to Surface Waters

CCW surface impoundments are designed to discharge to surface waters through permitted outfalls. In addition, though, CCW impoundments may impact surface waters through the migration of contaminated groundwater, unpermitted seeps, and occasional but catastrophic release of massive quantities of coal ash.

As to the migration of contaminated groundwater, the Agency in prefiled answers to the Environmental Groups' questions acknowledged that the proximity of CCW impoundments to surface waters creates a pathway for groundwater-to-surface water contamination:

[QUESTION:] Is the Agency aware of any CCW impoundments that have caused contamination of groundwater that is connected hydrologically to surface waters?

[ANSWER:] Any groundwater that has been contaminated by a CCW impoundment is fairly near the land's surface. Therefore, it can be assumed that a diffuse flow of groundwater has crossed the interface from groundwater to surface water.

Ex. 5, Agency's Prefiled Answers (Feb. 26, 2014), at PDF page 69. In other words, given that contaminated groundwater has been detected at all of the State's coal plants, the Agency would assume that the surface waters nearby the coal plants have been polluted by CCW as well, via the groundwater.

Even small amounts of CCW surface water pollution can cause a significant ecological impact. As the Environmental Groups' witness Traci Barkley testified, "While concentrations of particular coal ash pollutants may be low in some cases, those numbers belie the effect of cumulative loading of pollutants into a waterbody and accumulation in aquatic organisms and community food webs." Barkley Testimony at 3. Ms. Barkley's testimony cited, among other sources, a study of coal ash impoundments in North Carolina concluding that "even low concentrations of some contaminants, such as [arsenic] with concentrations below health

benchmarks at the NPDES outfall, could become problematic as [arsenic] is retained in suspended sediments and remobilized with environmental changes in reduced bottom and pore waters.” Ex. 30, Ruhl, et al., “The Impact of Coal Combustion Residue Effluent on Water Resources: A North Carolina Example,” at page 6. Ms. Barkley also cited to a report prepared for the Office of Management and Budget by Dr. A. Dennis Lemly, a researcher for the United States Forest Service, concluding that a “surface impoundment of coal combustion waste unnecessarily jeopardizes fish and wildlife populations, causes significant long-term environmental damage, and results in high economic costs that could be avoided or minimized if other disposal practices were used.” Ex. 28.

Recent catastrophic incidents have demonstrated that a CCW surface impoundment’s structural failure can create water pollution on a massive scale. In its proposed rulemaking for CCW impoundments, USEPA cited, for example, (1) the failure of a dike at TVA’s Kingston, Tennessee facility, leading to the release of 5.4 million cubic yards of fly ash sludge over an approximately 300 acre area and into a branch of the Emory River in 2008, and (2) a 0.5 million cubic yard release of water and fly ash to the Delaware River at the Martin’s Creek Power Plant in Pennsylvania in 2005, leading to a response action costing \$37 million. 75 Fed. Reg. at 35147. Just this year, a ruptured storm water management line at Duke Energy’s Dan River Steam Station led to a massive discharge of CCW into the Dan River. Exs. 15 and 16.

The threat of catastrophic failure should be of great concern in Illinois. Four Illinois plants—Baldwin, Hennepin, Hutsonville, and Marion—received poor condition reports during USEPA’s recent assessments of their structural integrity. Environmental Groups’ Answers to Prefiled Questions (Traci Barkley) (July 17, 2014), at Agency Question 50. Further, the Agency during this proceeding identified at least 7 impoundments that were built over mine voids, which

could cause subsidence and undermine stability of the impoundment. *See* Agency's Post Hearing Comments (Mar. 25, 2014), at PDF pages 5-6. In other cases, such as at Dynegey's Vermilion Power Station, the owner or operator does not know the details of embankment construction or other features that would improve stability. *See* Environmental Groups' Answers to Prefiled Questions (Traci Barkley) (July 17, 2014), at Agency Question 50 (citing Exs. 42 and 43).

THE ENVIRONMENTAL GROUPS' PROPOSED MODIFICATIONS

Illinois needs new rules for CCW surface impoundments, and they must ensure the protection of human health and the environment for generations to come. In its Statement of Reasons, the Agency stated that its proposed rules are intended "to fill a regulatory gap in the Board's rules governing CCW surface impoundments," noting that the Board's Subtitle C regulations "do not provide a method for closure or corrective action at these facilities," (Statement of Reasons at 8). The Agency's proposed rules fail to completely fill that gap. Specifically, they fail to address all CCW impoundments in the State; do not require sufficiently thorough characterization and monitoring of CCW impoundments; make safe closure and effective corrective actions entirely optional; and do not allow for an adequate public notice-and-comment period on decisions that will impact communities nearby CCW impoundments. The Environmental Groups therefore offer the following modifications to the Agency's proposed rules.

1. The Rules Should Apply to All CCW Impoundments in the State and Include a Broad Definition of Non-Exempt "Operating" Impoundments.

The Agency's proposed rules should apply to all surface impoundments at power generating facilities containing CCW or leachate from CCW in Illinois (i.e., all "units," as

defined in the Agency's proposed Section 841.110). This does not mean that every unit needs to be subject to each of the rules' provisions. It would, however, ensure that the Agency and the public have full knowledge of the State's CCW impoundments and are better able to ensure that they are not contaminating groundwater and are properly closed. In order to expand the rules' applicability and clarify the Agency's proposed Sections 841.105 (Applicability) and 841.110 (Definitions)⁵, the Environmental Groups propose the following modifications:

- a) The rules should apply to all units in Illinois, at least for the purpose of requiring the unit to demonstrate that an exemption applies (see the Environmental Groups' proposed Section 841.105)⁶;
 - b) The rules should define "operating" units broadly, as including all units that actively receive CCW, other wastes, or stormwater flow, or that are open to precipitation, and should define narrowly the exemption for units that are not "operating" (see the Environmental Groups' proposed Sections 841.105 and 841.110); and
 - c) Exemptions from the rules for permitted landfills or landfills operated without a permit pursuant to 35 Ill. Adm. Code Part 815 should be removed as unnecessary (see the Environmental Groups' proposed Section 841.105).⁷
- a. The rules should apply to all units in Illinois, at least for the purpose of requiring the unit to demonstrate that an exemption applies.**

As drafted, the Agency's proposed rules do not apply to several types of units, including units that are not "operated" after the effective date of the rules, if the unit does not cause or contribute to a groundwater quality exceedence on or after the rules' effective date, and units containing less than certain threshold amounts of CCW or leachate. *See* Agency's proposed Section 841.105(a)(2) and (b)(4) and (5). According to the Agency, it is aware of only two units

⁵ All citations in these comments to the Agency's proposal are to the version of the proposal in the Agency's Prefiled Answers filed July 17, 2014.

⁶ All citations in these comments to the Environmental Groups' proposed modifications of the Agency's proposal are to the redlined proposal filed July 21, 2014.

⁷ The Environmental Groups incorporate by reference their July 17, 2014 responses to the Agency's prefiled questions 1 through 7.3 and the Board's prefiled question 11, and their August 19, 2014 responses, numbers 1 and 14.

that would not be covered by the rule as a consequence of the first “exemption.” Agency’s Prefiled Answers (July 17, 2014), at PDF page 4. The Agency concedes, though, that there may be other units subject to both of these exemptions of which it is currently unaware. *Id.*; Feb. 26, 2014 Tr. at 20:22-21:2.

As proposed by the Agency, the rules do not impose any obligations whatsoever on these exempt units. After being asked by the Board about whether the owner or operators of exempt units to which the rule is inapplicable should at least be required to keep records regarding how the claimed exemption applies, the Agency proposed an unenforceable Board note opining that such units should maintain records, but stated that it “does not believe that such a requirement should be codified into the rules.” Agency Post-Hearing Comments (Mar. 25, 2014), at PDF page 11.

The Agency’s approach is perplexing. The Environmental Groups urge the Board to modify the Agency’s proposal to make all impoundments containing CCW and leachate from CCW subject to the rules, at least for the purpose of demonstrating that an exemption applies. Such a rule would not impose any cognizable economic burden on the owners and operators of exempt units but would provide some needed regulatory oversight to the Agency’s scheme. In practice, if the Agency’s proposed rule is adopted, any owner or operator of a surface impoundment containing CCW or leachate from CCW at a power generating facility in Illinois will need to determine whether or not it believes that impoundment qualifies for an exemption. If the owner or operator concludes that the impoundment does not qualify for an exemption, the owner or operator would then need to comply with the rules’ requirements. On the other hand, if the owner or operator concludes that the impoundment qualifies for an exemption, then it would not perform any of the rules’ requirements, thereby exposing itself to liability if it were incorrect

in its applicability determination. It is not plausible that the owner or operator facing this decision would not generate any internal records or written analysis to document its decision. Requiring the owner or operator to maintain all such records until the impoundment has been closed is entirely reasonable.

So too is requiring the owner or operator to report on the continuing justification for the unit's exemption in any other submissions to the Agency on units at the same facility. *See* Environmental Groups' proposed Section 841.405(c). The Environmental Groups' proposal intentionally does not require any specific elements for this "justification." Instead, the intent is simply that the owner or operator states the information it is relying upon to justify its decision that the impoundment is exempt, so that the Agency may evaluate whether it agrees that the impoundment is exempt, or whether additional investigation may be required. This requirement offers regulatory efficiency at virtually no cost, and is entirely reasonable. The owner or operator's reporting the existence of all units at facilities could bring to the Agency's attention units of which it is currently unaware, at minimal cost to owners and operators.

- b. The rules should define "operating" units broadly, as including all units that actively receive CCW, other wastes, or stormwater flow, or that are open to precipitation, and should define narrowly the exclusion for units that are not "operating."**

While the Agency's proposed rules provide an exemption for units that are both (1) not "operated" on or after the effective date of the rules and (2) not causing or contributing to an exceedence of groundwater quality standards (Agency's proposed Section 841.105(a)), the Agency's proposal does not provide any definition of "operate." Without a definition, the extent of the rules' applicability is ambiguous. "Operation" could be limited to the ongoing addition of new coal combustion waste and leachate to a unit, or it could also encompass the maintenance of the unit as a repository for earlier-deposited CCW and leachate. The Environmental Groups

propose a definition of “operate” as meaning “receiving waste or stormwater flow,” including any surface impoundment that “is open to receive stormwater as direct precipitation, runoff, or process water.” *See* Environmental Groups’ proposed Section 841.110. The Environmental Groups have also incorporated two modifications suggested by Board questions: (1) further limiting the exemption for units that are not “operating” to units that have initiated closure in accordance with the proposed rules’ closure requirements and (2) requiring that all exempt units close in accordance with the proposed rules’ closure requirements. *See* Environmental Groups’ proposed Sections 841.105(b)(2) and (c).

The Environmental Groups’ definition of “operating” units is consistent with the Board’s regulations regarding solid waste disposal facilities:

“Operator” means the person responsible for the operation and maintenance of a solid waste disposal facility.

“Disposal” means the discharge, deposit, injection, dumping, spilling, leaking or placing of any solid waste into or on any land or water or into any well such that solid waste or any constituent of the solid waste may enter the environment by being emitted into the air or discharged into any waters, including groundwater. [415 ILCS 5/3.185] If the solid waste is accumulated and not confined or contained to prevent its entry into the environment, or there is no certain plan for its disposal elsewhere, such accumulation will constitute disposal.

35 Ill. Adm. Code 810.103 (underlining added). The accumulation of CCW and leachate in a surface impoundment that will allow leaching to groundwater, with no certain plan for disposal elsewhere, constitutes the “operation” of a solid waste disposal facility pursuant to the Board’s regulations. As Keir Soderberg testified, this expansive definition of “operation” for purposes of these rules is also scientifically justified. Unlined and inadequately lined surface impoundments receiving stormwater and runoff will continue to leach chemical compounds and contribute to

groundwater contamination, even if they no longer receive additional CCW. Soderberg Testimony at 2.

This broad coverage of all units that have not yet closed is also reflected in USEPA's proposed rules on CCW impoundments. As USEPA described its design standards, they:

would require that . . . all surface impoundments that have not completed closure prior to the effective date of the rule, can only continue to operate if composite liners and leachate collection and removal systems have been installed. Units must be retrofitted or closed within five years of the effective date of the final rule

75 Fed. Reg. at 35202. *See also id.* at 35244 (proposed 40 C.F.R. 257.71(g)) (“CCR surface impoundments⁸ shall be dredged of CCRs and lined with a composite liner system, as defined in paragraph (d)(2) of this section, by [date five years after the effective date of the final rule] or closed in accordance with § 257.100.”).⁹

The Environmental Groups also support the Board's suggestion in its June 11, 2014 Prefiled Questions, Question 11 to the Environmental Groups, that a unit that is exempt pursuant to the Environmental Groups' proposed Section 841.105(b)(2) should be required to comply with the proposed closure requirements of Part 841 Subpart D. The Environmental Groups also urge that any CCW impoundment that has not yet been properly closed should be subject to the rules in full. This was an impetus for the Environmental Groups' proposed definition of “operate” in

⁸ USEPA defines a “CCR surface impoundment” as:

a facility or part of a facility which is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials), which is designed to hold an accumulation of CCRs containing free liquids, and which is not an injection well. Examples of CCR surface impoundments are holding, storage, settling, and aeration pits, ponds, and lagoons. CCR surface impoundments are used to receive CCRs that have been sluiced (flushed or mixed with water to facilitate movement), or wastes from wet air pollution control devices, often in addition to other solid wastes.

75 Fed. Reg. at 35130.

⁹ The Environmental Groups believe that it is USEPA's intent, as stated in the Federal Register notice, to regulate “all surface impoundments that have not completed closure prior to the effective date of the rule,” whether or not they are receiving coal combustion waste at the time of the rule's adoption. 75 Fed. Reg. at 35202. During the Board's June 18, 2014 hearing, a witness for AmerenEnergy MedinaValley Cogen, LLC alluded to May 2014 comments submitted by the Environmental Groups regarding USEPA's proposed rules. Those comments reflected concerns that USEPA's rules as drafted did not adequately capture USEPA's intent on this point. The Environmental Groups expect that the ambiguity will be resolved when USEPA finalizes its rules.

their proposed Section 841.110. The Environmental Groups therefore also support the modification to the Agency's proposed Section 841.105(a)(2) suggested by the Board in its June 11, 2014 Prefiled Questions, Question 1(d) to the Agency, that the exemption apply only if the unit has initiated closure, with the further qualification that the exemption should apply only if the unit has initiated closure pursuant to a closure plan that will require the removal of all coal combustion waste and leachate, or cover with a final cover system meeting the standards of the Environmental Groups' proposed Section 841.420, before the effective date of the proposed regulations.

Notably, the Agency in its latest proposal also has proposed a "clarifying" amendment to its proposed Section 841.105 stating that the proposed rules also apply to all units within a groundwater management zone, if the exceedence is attributable to a release from the unit, corrective action has not been completed, and applicable groundwater quality standards have not been attained. The Environmental Groups do not object to the rules' applicability to such units. The Environmental Groups further note that their proposed rule similarly would encompass all such impoundments, so long as the impoundment had not (a) initiated closure prior to the effective date of the rules and/or (b) been covered to prevent stormwater inflow. *See* Environmental Groups' proposed section 841.105(b)(2).

Finally, with respect to the remaining definitions in proposed Section 841.110, the Agency's definitions of "compliance point," "fault," "flood plain," "natural water table," and "wetlands" are acceptable to the Environmental Groups. The Environmental Groups removed the definition of "high priority resource groundwater," as discussed in Section 5, below. In addition to the definition of "operate," the Environmental Groups added definitions of "nearby," "release," and "waters." The term "nearby" is discussed in Section 2, below. The terms

“release” and “waters” both are used throughout the proposed Rules, but are not defined therein. The Environmental Groups propose using the definitions provided by Sections 3.395 and 3.550 of the Illinois Environmental Protection Act, respectively. 415 ILCS 5/3.395 and 3.550.¹⁰ The Environmental Groups also propose modifying the definition of “surface impoundment,” as discussed immediately below.

c. Exemptions from the rules for permitted landfills or landfills operated without a permit pursuant to 35 Ill. Adm. Code Part 815 should be removed as unnecessary.

Finally, the Environmental Groups do not understand the basis for the Agency’s continued inclusion of exemptions in proposed Section 841.105(b)(1) and (2) for permitted landfills or landfills operated without a permit pursuant to 35 Ill. Adm. Code Part 815. The Agency has testified that there are, by definition, no CCW surface impoundments in Illinois that fit into either category. Ex. 5, Agency’s Prefiled Answers (Feb. 26, 2014), at PDF page 69. The Environmental Groups recommend the exemptions be stricken.

The distinction between “surface impoundments” and “landfills” is drawn in existing Board regulations, including 35 Ill. Adm. Code 810.103 (defining a “landfill” as “not . . . a surface impoundment”). As the Agency stated in a prefiled answer to a question from the Board:

[QUESTION]: Please clarify whether CCW surface impoundments operating under Part 815 are subject to all operating, closure and postclosure care requirements under 35 Ill. Adm. Code 811, 813, and 814. If not, please identify the specific requirement under those Parts that apply to the CCW surface impoundments. Also, please comment on whether the CCW surface impoundments operating under Part 815 are subject to all recordkeeping and reporting requirements of that Part.

¹⁰ The proposed definition of “release” removes from the Act’s definition four exclusions that are not relevant to this rulemaking. See 415 ILCS 5/3.395 (“Release” excludes “(a) any release which results in exposure to persons solely within a workplace, with respect to a claim which such persons may assert against the employer of such persons; (b) emissions from the engine exhaust of a motor vehicle, rolling stock, aircraft, vessel, or pipeline pumping station engine; (c) release of source, byproduct, or special nuclear material from a nuclear incident, as those terms are defined in the Atomic Energy Act of 1954, if such release is subject to requirements with respect to financial protection established by the Nuclear Regulatory Commission under Section 170 of such Act; and (d) the normal application of fertilizer.”).

[ANSWER]: There are no CCW surface impoundments operating under Part 815. Section 815.101 states that Part 815 applies to exempt landfills. Under Section 810.103, surface impoundments are excluded from the definition of landfills. See 35 Ill. Adm. Code 815.101; 35 Ill. Adm. Code 810.101; 35 Ill. Adm. Code 810.103.

Ex. 5, Agency's Prefiled Answers (Feb. 26, 2014), at PDF pages 10-11. Given these definitions, in the Environmental Groups' view, it is possible to identify whether a particular structure is serving as a "surface impoundment" or a "landfill" at any given time. The two categories are mutually exclusive under the definitions.

Notably, the Board and courts consistently have interpreted the exemption from permitting requirements for landfills in 415 ILCS 5/21(d)(1)(i) to apply only to "those on-site facilities that generate minor amounts of waste that can be disposed of without a significant threat of environmental harm." See *People v. Dixon-Marquette Cement, Inc.*, 343 Ill. App. 3d 163, 175 (2d Dist. 2003) (citing Board and court decisions). Moreover, based on that line of cases, the Board has held that a CCW disposal site—the Joliet Lincoln Stone Quarry—did not qualify for the exemption because of the relatively large amount of waste disposed of at the site. See *People v. Commonwealth Edison Co.*, PCB No. 75-368 (Nov. 10, 1976), at 5.

Putting aside the regulatory definitions demonstrating that CCW "surface impoundments" simply are not, and cannot be, "landfills," there is no basis to conclude the CCW impoundments discussed in these hearings could ever be subject to a permit exemption under Section 21(d) of the Act and operable pursuant to Part 815, given the amount and toxic nature of the CCW and leachate that is deposited in them. Therefore, the Environmental Groups have proposed in Section 841.110 a definition of "surface impoundment" distinguishing landfills "permitted under Illinois Solid Waste Disposal rules at 35 Ill. Adm. Code 813 or 814."

2. The Rules Should Require More Vigilant Monitoring of Impoundments and More Thorough Site Characterization.

The Environmental Groups support the Agency's proposed requirements of hydrogeologic site characterizations, groundwater monitoring plans, and ongoing inspections and groundwater monitoring at every CCW surface impoundment subject to the rule. Further, the Environmental Groups appreciate modifications that the Agency has made to these requirements in response to concerns raised by the Environmental Groups, including the Agency's addition of fifteen specific types of information required to be part of hydrogeologic site characterizations in proposed Section 841.200(c). To better characterize and monitor the threats posed by the State's coal ash impoundments, the Environmental Groups propose the following further modifications:

- a. Groundwater monitoring frequency should not be reduced below semiannually for certain contaminants associated with coal ash contamination, and should never be less than annually for any constituents monitored under the rules.
- b. The hydrogeologic site characterization, groundwater monitoring plan, and groundwater monitoring system should reflect consideration of potential impacts on surface waters through the groundwater-to-surface water pathway;
- c. Monitoring should include the measurement of water levels in monitoring wells and the production of regular potentiometric surface maps;
- d. The groundwater monitoring requirements should provide for more statistical rigor, including an evaluation of statistical power, in accordance with USEPA's *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities—Unified Guidance* (March 2009);
- e. Post-closure care plans should include a minimum of 30 years of groundwater monitoring; and
- f. The inspection requirements should include monitoring of parameters to assess dam stability, such as moisture content or pore water pressures.¹¹

¹¹ The Environmental Groups incorporate by reference their July 17, 2014 responses to the Agency's prefiled questions 8 through 18 and the Board's prefiled question 15 and 17, and their August 19, 2014 responses, numbers 2, 4, and 11.

- a. Groundwater monitoring frequency should not be reduced below semiannually for certain constituents associated with coal ash contamination, and should never be less than annually for any constituents monitored under the rules.**

The Environmental Groups urge the Board to reject the Agency's proposed modifications in its proposed Section 841.230(c), which would allow the owners and operators of certain impoundments to reduce groundwater monitoring frequency to once every five years for any constituent that has not been detected within the last five years. These modifications contradict the Agency's earlier testimony in this proceeding; are inconsistent with landfill regulations, which are designed to detect groundwater contamination at units that are better protected than current CCW surface impoundments in Illinois; and do not provide enough data for the Agency or the public to be confident in the results.

The Agency itself has provided some of the best arguments against this proposed modification. The Agency's rules as originally proposed required at least semi-annual monitoring from the inception of the rules through the end of the post-closure period, for all chemical constituents monitored under the Part. The Agency explained the basis for this requirement on several occasions. In its Technical Support Document, the Agency stated:

The Agency believes a semiannual monitoring schedule will be protective of human health and the environment provided that the selected statistical method allows a semi-annual sampling frequency and there will not be a loss of relevant data

Groundwater monitoring is required to continue at least semiannually until the end of the post-closure care period to insure that applicable groundwater quality standards are met.

Statement of Reasons, Attachment A, TSD (Oct. 28, 2013) at 32-33 (emphasis added). The Agency was asked about the requirement at hearing by both the Board and Midwest Generation, and reiterated its stance that semi-annual monitoring was necessary. When asked by the Board's Senior Environmental Scientist whether the Agency was aware of an allowance in landfill

regulations for the removal of specific contaminants from groundwater monitoring requirements, the Agency responded that it had not looked to landfill regulations on that issue because of:

the fact that landfills aren't defined as surface impoundments, and the fact that . . . landfills have liners, I think our data shows that the majority of these sites haven't had liners. So you're dealing with a little bit . . . different situation than the landfills.

Feb. 26, 2014 Tr. at 73:15-74:10. Moreover, when the Agency was asked by Midwest Generation why the rules did not include a provision for removing from groundwater monitoring requirements constituents that had not been detected at an impoundment, the Agency responded:

The rationale is based upon the fact that of the sites and units we have evaluated, many have had various sources and types of CCW material deposited in these units over time. In addition, future sources and types of CCW may also change. Therefore, in order to detect any potential problems that may be related to the various types of current and possible future sources, data needs to continue to be gathered. The Agency needs to have a history of parameter concentrations at the site on an on-going basis in order to evaluate any changes that may be related to current and new sources.

Ex. 5, Agency's Prefiled Answers (Feb. 26, 2014), at PDF page 65; *see also id.* at PDF page 57 ("Given the changing technologies that are being applied to meet more stringent air quality regulations, the Agency believed it premature to include [a provision allowing cessation of monitoring for specific constituents after non-detects] in the proposed rules.").

The Agency provided strong justifications for requiring semi-annual monitoring for all constituents monitored under the rules, given the unique challenges posed by inadequately protected surface impoundments with variable historic and future waste-streams. By contrast, the Agency's proposal to allow monitoring frequency to be reduced to once every five years is insupportable. The Agency's new proposal would mean that monitoring of CCW surface impoundments could be far less thorough than monitoring of municipal solid waste landfills

(“MSWLFs”), which are protected not only by liners but also by leachate collection systems. See 35 Ill. Adm. Code 811.306.

The Board’s landfill regulations set out a list of constituents that must at a minimum be monitored semi-annually for the operating life of a MSWLF and then for 15 years after closure in a “detection monitoring” program. See 35 Ill. Adm. Code 811.319(a)(1)(A) and (B).¹² The Board’s regulation does allow for the removal of certain constituents from monitoring, but this is only for “additional” constituents that are added for purposes of “assessment monitoring” after a monitored increase discovered during “detection monitoring.” 35 Ill. Adm. Code 811.319(b)(5)(E). The core list of “detection monitoring” constituents must continue to be monitored semi-annually.

By contrast, the Agency’s proposal potentially would allow a CCW surface impoundment to go without any monitoring for five years. In his prefiled testimony, Keir Soderberg pointed out additional flaws in this proposal:

First, if a constituent is only monitored once every five years in an upgradient well, and it is subsequently detected in a downgradient well, alternative causes would be much more difficult to demonstrate and evaluate compared to having semi-annual monitoring. Second, late detection of contamination will make remediation more difficult and costly, and will unnecessarily threaten human health and the environment. Third, monitoring once every five years would place a large amount of statistical weight on one individual sample. Individual samples can be affected by seasonal variations, sampling errors, and analytical problems such as matrix interference. Fourth, it is likely that CCW leachate plumes will have multiple concentration fronts based on variability in infiltration due to the use of different impoundments at different times, precipitation pulses, and changes to the type of waste deposited in a given impoundment. Sampling once every five years is insufficient to capture these variabilities. Fifth, chemical constituents in CCW leachate travel at different rates in the subsurface due to conditions in the groundwater (pH, redox potential) and the type of soil or aquifer material to which they are exposed. Thus, the first rise in concentration and the peak concentration will be seen at different times for different chemical constituents Reduced sampling due to a series of non-detects could be

¹² Monitoring frequency can be reduced to annually after 15 years of post-closure care. 35 Ill. Adm. Code 811.319(a)(1)(B).

premature due to a delayed rise in or peak concentration of a contaminant, and subsequent sampling once every five years could similarly miss the peak concentration of this contaminant.

Soderberg Testimony at 7-8.

Because of the deficiencies in the Agency's proposed amendments, the Environmental Groups urge the Board to require at least annual monitoring of all constituents monitored under the rules, and no less than semi-annual monitoring of a suite of constituents very closely linked to CCW contamination. This would more closely align the rules' monitoring requirements with those of the landfill regulations' requirement of "detection monitoring" for a minimum specified list of constituents. The Environmental Groups propose that arsenic, boron, manganese, sulfate, and total dissolved solids ("TDS") should all be monitored semi-annually through the post-closure monitoring period. USEPA has recognized that boron, sulfate, and TDS move quickly through the subsurface and therefore provide early detection of CCW contamination. *See* 75 Fed. Reg. at 35206. The Environmental Groups further propose arsenic and manganese because, as discussed above, they both have been detected at several Illinois coal plants. Moreover, arsenic is a particularly potent toxin and should be carefully monitored. The Agency's turnabout on monitoring frequency is unjustified, and the rules should require at least semi-annual monitoring of constituents particularly indicative of CCW contamination and annual monitoring of all other constituents monitored under the rules.

b. The hydrogeologic site assessment, groundwater monitoring plan, and groundwater monitoring system should reflect better consideration of potential impacts on surface waters through the groundwater-to-surface water pathway.

CCW impoundments present unique threats because of their proximity to surface waters. As the Agency testified, if groundwater is contaminated by CCW, it should be assumed that surface water has been, too. Ex. 5, Agency's Prefiled Answers (Feb. 26, 2014), at PDF page 69.

The only question is the extent of the surface water contamination. The Agency has stated that surface water impacts “would be taken into account as part of the groundwater monitoring system and groundwater monitoring plan and in any proposed corrective action plan or closure plan under the rule.” *Id.* at PDF page 81. The Environmental Groups propose the following amendments to codify this commitment.

First, proposed Sections 841.200(b) and (c) (Hydrogeologic Site Characterization) and 841.210(a) and (b)(4) (Groundwater Monitoring Plan) should reflect that one of the goals of site characterization and monitoring is to determine whether contaminated groundwater has impacted or will impact any surface waters. The Environmental Groups propose that:

- the initial hydrogeologic site characterization should supply information for assessing impacts to surface water, along with groundwater (*see* the Environmental Groups’ proposed modifications of Sections 841.200(b)(1) and (3));
- the hydrogeologic site characterization shall not only identify “nearby” surface water bodies and pumping wells, as proposed by the Agency, but also shall identify any potential hydrologic connections between the unit and those nearby surface water bodies and pumping wells (Section 841.200(c)(5)), any nearby hyporheic zones where exchanges between groundwater and surface water occurs (Section 841.200(c)(3)), and any nearby down gradient or downstream community water supplies (Section 841.200(c)(4));
- the groundwater monitoring plan for the unit must yield monitoring capable of determining the potential for any release of a contaminant to surface water through groundwater contaminated by the unit (Section 841.210(a)) and must include the previously identified potential hydrologic connections between the unit and surface waters as well as a map of the potentiometric surface (Section 841.210(b)(4)).

These amendments are particularly appropriate now, in light of the Agency’s proposed “alternative impact assessment” for corrective action and closure plans. *See* Agency’s proposed Sections 841.310(e)(6) and 841.410(a)(6). The alternative impact assessment will require both “identification and characterization of any surface water . . . affected” by the proposed corrective action or closure and “potential impacts” of the proposed corrective action or closure on surface

water quality. *See* Agency's proposed Sections 841.310(e)(6)(B) and (C) and 841.410(a)(6)(B) and (C).

That is precisely the type of analysis the Environmental Groups intended to support through their proposed amendments to the rules on hydrogeologic site characterizations and groundwater monitoring plans. Because the Agency's proposed Section 841.200 on hydrogeologic site characterizations referred to "nearby" surface waters and pumping wells without defining the term, the Environmental Groups proposed a definition of "nearby" as meaning that a "surface water or pumping well could be impacted by groundwater contaminated by the unit." Environmental Groups' proposed Section 841.110. This definition is now perfectly compatible with the Agency's newly-proposed requirement that the alternative impact assessment identify "potential impacts" to surface water quality. *See* Agency's proposed Section 841.310(e)(6)(C) and 841.410(a)(6)(C). The Board should adopt the Environmental Groups' proposed amendments of Sections 841.200 and 841.210 to ensure that site characterizations and monitoring are capable of providing the information necessary for alternative impact assessments.

A second reason for the rules to require careful assessment of the groundwater-to-surface water pathway is to fill a regulatory gap. NPDES permits regulate direct discharges to surface water, but they are not guaranteed to regulate the pollution of surface waters through groundwater. To fill this gap, the Environmental Groups proposed the above requirements, as well as a new Section 841.205(c)(6). This new section would require that a unit's groundwater monitoring system be capable of: "establish[ing] the hydraulic gradient between the unit and any nearby surface water, including as necessary the installation and/or identification of monitoring

points for measuring water levels and collecting water samples from multiple depths within the hyporheic zone where exchange between groundwater and surface water occurs.”

Groundwater monitoring and modeling can supply useful information about potential groundwater-to-surface water pathways. *See* Soderberg Testimony at 10-11. Conventional groundwater monitoring wells can serve to establish the hydraulic gradient between CCW impoundments and areas where groundwater may discharge to surface water. *Id.* Even more useful, though, is actual monitoring of the hyporheic zone where exchange between groundwater and surface water occurs. *Id.* Keir Soderberg testified that mini-piezometers can be installed in the hyporheic zone to assess its hydrology. *Id.* at 11. Dr. Soderberg further testified that these piezometers are “typically quite inexpensive to install.” May 14, 2014 Tr. at 255:23-256:10. The Environmental Groups recommend that the Board adopt their proposed amendments to ensure that hyporheic zone monitoring is required in cases where groundwater is suspected to be contaminating surface water.

c. Monitoring should include the measurement of water levels at each well and the production of regular potentiometric surface maps.

The Environmental Groups also propose modifications to proposed Sections 841.205(c) (“Groundwater Monitoring Plans”) and 841.235(d) (“Statistical Analyses”), requiring: (1) the measurement of water levels at each monitoring well in order “to assess the overall groundwater flow and direction at the site, as well as changes to the flow regime due to leachate from the unit,” and (2) the production of a new potentiometric surface map with each new statistical analysis.

Water level measurements are necessary to understand groundwater movement. Soderberg Testimony at 4. They provide the underlying data for potentiometric surface maps, which can be used to help track the flow and direction of contaminated groundwater over time.

Id. The potentiometric surface is likely to be especially dynamic in areas close to surface water, like CCW surface impoundments. *Id.* Therefore, in order to accurately map and characterize a CCW surface impoundment's impact on groundwater and surface waters, it is critical to have an evolving understanding of the potentiometric surface. *Id.*

The Environmental Groups therefore ask the Board to require both periodic water level monitoring and production of potentiometric surface maps as part of the proposed rules. An example of an analogous existing regulation can be found in the Board's rules for municipal solid waste landfills. These rules also require measurement of groundwater elevation and determination of the rate and direction of groundwater every time a well is sampled. *See* 35 Ill. Adm. Code 811.318(e)(8)(A). While the rules do not specify the production of a potentiometric surface map, that requirement is uniquely appropriate for CCW surface impoundments located in close proximity to surface waters. *See* Soderberg Testimony at 4.

d. The groundwater monitoring requirements should provide for more statistical rigor, including an evaluation of statistical power, in accordance with USEPA's Unified Guidance.

The Agency's proposed rules incorporate by reference USEPA's *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities—Unified Guidance* (March 2009) ("Unified Guidance"). *See* Agency's proposed Section 841.120. The Agency's proposed rules also specify that the numbers and kinds of samples used to determine background "must be appropriate for the statistical test employed, as prescribed in . . . the 2009 Unified Guidance . . ." *See* Agency's proposed Section 841.220(b).

Despite their incorporation of the Unified Guidance, the proposed rules do not follow its recommendations in two areas. First, the proposed rules do not require statistical methods that assure any level of statistical power. *See* Environmental Groups' Prefiled Answers (July 17,

2014), Agency Question 72. Second, the proposed rules do not require recalculation of background no less than every three years. *See* Agency's Prefiled Answers (Feb. 26, 2014), at PDF page 9.

First, Section 841.225(b) as proposed by the Agency provides performance criteria for statistical tests, but only specifically addresses minimizing the false-positive rate of proposed tests. Environmental Groups' Prefiled Answers (July 17, 2014), Agency Question 72. The Unified Guidance cautions that this approach can increase the false-negative rate. *Id.* (citing Chapters 5 and 7 of the Unified Guidance). The Unified Guidance recommends a procedure that relates the desired level of statistical power to the achievable false-positive rate for a given data set. *Id.* (citing Chapter 22 of the Unified Guidance). The Agency's proposed Section 841.225 ("Statistical Methods") therefore should require an evaluation of statistical power as part of the justification for using a particular statistical test.¹³

Second, as the Agency admitted in answering a prefiled question from the Board, the Unified Guidance "recommends updating statistical calculations for background every one to three years as long as there is enough data to make statistically valid comparisons." Ex. 5, Agency's Prefiled Answers (Feb. 26, 2014), at PDF page 9. In spite of that recommendation, the Agency's proposed rules require a recalculation of background no less than every five years. *See*

¹³ The Board also could require, as is generally required by the Unified Guidance and was originally proposed by the Environmental Groups, a minimum of eight data points in establishing background. While this proposal by the Environmental Groups triggered many pages of questions by the Agency and Midwest Generation, Midwest Generation itself identified the Unified Guidance's requirement in a prefiled question to the Agency. *See* Agency's Prefiled Answers (Feb. 26, 2014), at PDF page 64. The Agency responded that the requirement of eight data points could be met without problem with a year's worth of monitoring data:

[QUESTION]: Do you agree that under the Unified Guidance, the minimum data requirements are generally 8 rounds of data, and sometimes more, before an evaluation can be made as to what is the most appropriate statistical method to be applied . . . ?

[ANSWER]: Under the assumption that eight rounds of sampling are required to establish background, and the sampling frequency is quarterly, two years of sampling data would be required. However, if eight rounds of sampling are required and the sampling frequency was monthly, one year would provide an adequate data set.

Agency's proposed Section 841.220(d). The Board should adopt the timeframe recommended by the Unified Guidance and require a recalculation no less than every three years.

e. Post-closure care plans should include a minimum of 30 years of groundwater monitoring.

The Agency has proposed a post-closure care period as brief as 10 years. *See* Agency's proposed Section 841.440(a). This short duration is inconsistent with USEPA's proposed rules, rules for municipal solid waste landfills, and the relatively lengthier times to peak contamination from CCW surface impoundments modeled by USEPA.

USEPA's proposed regulations for CCW surface impoundments require a baseline 30-year post-closure care period. *See* 75 Fed. Reg. at 35253 (proposed 40 C.F.R. 257.101). As USEPA noted in discussing its proposed requirement: "The 30-year proposal is consistent with the period required under the criteria for municipal solid waste landfills." 75 Fed. Reg. at 35209; *see, e.g.*, 35 Ill. Adm. Code 811.111 (setting postclosure maintenance requirements for municipal solid waste landfills at 30 years). Further, USEPA stated that it had "no information to indicate that a different period would be appropriate for post-closure care for coal combustion residual disposal units." 75 Fed. Reg. at 35209.

Even a 30-year post-closure care period is less than ideal given USEPA's projections of the arrival of peak well concentrations for coal ash pollutants decades or centuries after a coal ash disposal operation begins. USEPA, *Human and Ecological Risk Assessment of Coal Combustion Wastes (Draft)* (April 2010), at 4-10 to 4-12. Leaching progresses over long time periods, on the order of 74 or 90 years to median peak concentrations for boron from unlined and clay-lined impoundments, respectively. Soderberg Testimony at 10 (citing *id.*). A post-closure care period of ten years is not sufficient given the possibility of additional contamination migration after monitoring has ceased. Because the Environmental Groups urge the Board to

require a baseline 30-year post-closure period, they also request that proposed Section 841.135 be amended to require the owner or operator to retain the site's closure report for 30 years after its approval.

f. Inspections of CCW impoundments should include monitoring of water content or pore water pressure within earthen dams and require prompt repairs to correct any problem observed during an inspection.

Finally, the Environmental Groups propose that the Board adopt two additional requirements relating to the inspection of CCW impoundments in the Agency's proposed Section 841.170. First, for all units including an earthen dam, the owner or operator should "install, maintain, and monitor instruments to monitor the water content or pore water pressures within the earthen dam." *See* Environmental Groups' proposed Section 841.170(e). Second, the owner or operator should "promptly perform repairs necessary to correct any problem observed during an inspection." *See* Environmental Groups' proposed Section 841.170(b).

The monitoring of moisture content or pore water pressures in earthen dams is intended to provide an indication of the dam's structural integrity. Recent catastrophic incidents have demonstrated that a CCW surface impoundment's structural failure can create water pollution on a massive scale. The Board has authority to require the owner or operators to ensure the structural integrity of CCW impoundments that are adjacent to surface waters, the failure of which would cause water pollution in violation of Section 12 of the Illinois Environmental Protection Act, 415 ILCS 5/12(a). Moreover, maintaining a CCW impoundment containing hundreds of millions of gallons of CCW and wastewater containing toxic chemicals, in an impoundment in dangerous condition, would constitute a threat of water pollution under 415 ILCS 5/12(d). The Board therefore would be well within its authority to require owners and

operators to install equipment designed to yield information that could be used to prevent such catastrophic releases.

The Environmental Groups' witness Keir Soderberg testified that instruments to remotely monitor dam stability parameters like water content are "now available at a reasonable cost" and can provide real-time data tracking slope stability. Soderberg Testimony at 3. The Environmental Groups are not proposing any specific threshold over which an owner or operator would have to take a response action. Instead, the Environmental Groups' intent is that instruments be installed so that information that is relevant to assessing the structure's stability is known and available for consideration by the Agency and the public.

Second, the Environmental Groups have proposed a requirement that the owner or operator promptly perform repairs necessary to correct any problem observed during an inspection. *See* Environmental Groups' proposed Section 841.170(b). The Environmental Groups proposed this language because nothing in the Agency's proposed rules would actually require the owner or operator to address any problems observed during an inspection of a CCW impoundment. The requirement that owner or operator "must repair [a problem] promptly" is used elsewhere in the Board's regulations, for example at 35 Ill. Adm. Code 724.1101(c)(3).¹⁴

3. The rules should set out a clear path for the safe and swift closure of CCW impoundments. The regulations should require closure plans for all impoundments and financial assurance that owners and operators can carry them out.

The State's impoundments collectively hold billions of gallons of CCW, leachate, and wastewater, and most are old and unlined. As discussed in the Environmental Groups' June 9,

¹⁴ The Environmental Groups also propose a minor amendment to proposed Section 841.170(a) clarifying that the owner or operator is responsible for conducting inspections. This amendment conforms this section with other sections of the proposed rules that make the owner or operator responsible for compliance. *See* Environmental Groups' Prefiled Answers (June 17, 2014), at Agency Question 82.

2014 comments, the question is when, not if, the State will have to deal with closing them. The Environmental Groups urge that the rule adopted by the Board include the following components to ensure that CCW impoundments are closed in a timely and safe manner:

- a) All impoundments should have closure and post-closure plans up front;
- b) Closure by removal is the most reliable method of source control, and the rules should provide that it is a critical option to consider in any closure plan;
- c) The rule should include modeling of corrective action and closure plans' effects on attainment of groundwater quality standards, to avoid undermining the later antidegradation assessment in the NPDES permitting process;
- d) Closure rules should prohibit exposed CCW on final grade and slope, including earthen berms; and
- e) The rules should require financial assurance for closure and post-closure care.

a. All impoundments should have closure and post-closure plans up front.

Putting plans in place now for closure and post-closure care means facing up to the challenge of dealing with the State's impoundments sooner rather than later. This is akin to preventative medicine—and the State should take its medicine now, not wait until it gets sick. The Environmental Groups propose that each unit subject to the rules be required to submit a closure and post-closure plan to the Agency within one year of the rules' effective date. *See* Environmental Groups' proposed Sections 841.130(b); 841.410. The Board's landfill regulations have an analogous requirement at 35 Ill. Adm. Code 811.110(d)(1) and 812.115, as discussed in the Environmental Groups' June 9, 2014 comments. The proposed federal RCRA rule takes the same approach: it would require a closure plan no later than the initial receipt of CCW, or for existing CCW impoundments and landfills, no later than the effective date of the rule. 75 Fed. Reg. at 35252.¹⁵ The proposed federal rule based its requirements on the federal

¹⁵ Proposed 40 C.F.R. 257.100(h) reads: "The owner or operator of the CCR landfill or surface impoundment must notify the state that a closure plan, certified by an independent registered professional engineer, has been prepared

MSWLF closure rules at 40 C.F.R. § 258.60(d). *See id.* These landfill rules show that closure plan requirements can reasonably be incorporated into business operations.

The Board should similarly require closure and post-closure plans for all impoundments up front, for several additional reasons. First, it provides a basis for the amount of financial assurance, needed if the Board adopts the Environmental Groups' proposal to include financial assurance requirements in these rules. Second, it gives the Agency a greater opportunity to require changes to the plans if needed, knowing that the owner or operator will have ample time to adjust its operations accordingly. Third, it gives the owner or operator a longer time frame in which to build the requirements into its business plan and operations. For instance, if the Agency were to find that removal were the proper closure option, the owner or operator could begin to set aside funds to cover those costs well in advance, or could change its disposal practices to facilitate removal in the future. The longer time horizon should help owners and operators minimize the costs of the closure and post-closure activities, too, and this could make a wider range of closure options viable for planning purposes in the first place. Fourth, it gives local communities a different type of "closure": the assurance that a thorough plan exists, it has been vetted, and it will responsibly manage a potential hazard in their midst.

The Agency's concern about the potential need to amend a plan is not a good reason for not requiring it in the first place. At hearing, and as discussed in the Environmental Groups' June 9, 2014 comments, the Agency explained that it rejected the idea that every impoundment should have a closure plan because of "uncertainties" about its final size and method of closure. *See* Feb. 27, 2014 Tr. at 62:5-16. It conceded that the owner or operator could amend the plan if necessary. *Id.* at 62:5-13. The Agency further expressed concern about the economic impact of

and placed in the operating record and on the owner's or operator's publicly accessible internet site no later than the effective date of this part, or by the initial receipt of CCRs, whichever is later."

this requirement in a prefiled question, but as the Environmental Groups explained in response, every impoundment will need a closure plan in order to close under the current Agency proposal –and may have to amend it if needed, even as the rule is currently drafted. *See* Answer to Agency q. 35. Thus the only identifiable impacts of this requirement would be the time-value of the cost of producing the plan earlier (to the owner or operator), and the time-value of the cost of reviewing the plan earlier (to the Agency). *See id.* And as the examples in other regulatory schemes show, this small cost is outweighed by the benefits of having these plans in place early.¹⁶

b. Closure by removal is the most reliable method of source control, and is a critical option to consider in any closure plan.

The Environmental Groups support the Agency’s proposed “alternative impact analysis” for corrective action and closure plans in Sections 841.310(e) and 841.410(a). Closing an impoundment in place is generally a worse source control alternative and is less protective of human health and the environment than closure by removal. As Keir Soderberg stated at hearing, the point of closure by removal is “to provide long-term source control for this source of contamination.” May 15, 2014 Tr. at 73:13-15. Without long-term source control, CCW may leach into groundwater over time, and this risk increases substantially for impoundments constructed in sensitive areas: the Agency identified 7 units constructed over mine voids, 56 over groundwater recharge areas, 9 over wetlands, and 62 over a shallow aquifer. *See* Agency’s Post Hearing Comments (March 25, 2014), at PDF pages 5-6; Environmental Groups’ Prefiled Answers (Traci Barkley) (July 17, 2014), Agency Question 52. In these unfortunately common cases, closure by removal is very likely more protective of health and the environment. At a

¹⁶ The Environmental Groups have proposed another minor modification to the Agency’s proposed Section 841.130(a). The Environmental Groups suggest specifying that the compliance date referred to in this Section is the compliance date “for this Part,” to distinguish the compliance date for groundwater standards, which apply at all times. *See* Agency’s proposed Section 841.125.

minimum, closure by removal is an important consideration. As Dr. Avner Vengosh, author of several published studies on coal ash including the studies admitted in this proceeding as Exhibits 29 and 30, stated regarding closure by removal: “If there is evidence of groundwater contamination and surface water contamination at the coal ash pond, then leaving it as is obviously isn’t an option if the environment is something you care about.” Ex. 18, *Expert: Concerns about moving ash ponds “pure speculation”*, available at <http://www.wral.com/expert-concerns-about-moving-ash-ponds-pure-speculation-/13410831/>.

The Environmental Groups therefore support the Agency’s proposed “alternative impact analysis” in Sections 841.310(e) and 841.410(a) of the proposed rule, and especially the requirement that every corrective action and closure plan consider removal. Closure by removal not only limits the risk of leaching toxic constituents into the environment, but also the catastrophic risks of impoundments failing or collapsing. The Kingston, Tennessee spill and the Dan River spill in North Carolina are just two recent examples that highlight the very real risk that one of Illinois’ 91 impoundments could fail, particularly since 16 of the 38 Illinois impoundments included in USEPA’s structural integrity assessment rated “poor,” and another 16 rated “fair.” See Barkley Testimony at 5. Owners and operators would do a disservice to the Agency and to Illinois residents if they did not even examine the viability of closure by removal.

In general, removal can be a technically feasible and economically reasonable option, as evidenced by the numerous CCW impoundments that have chosen to close by removal around the country, and others that have investigated the costs and found them to be reasonable. See Soderberg Testimony at 9; USEPA “Questionnaire for the Steam Electric Power Generating Effluent Guidelines (detailing closure by removal activities for 14 impoundments). For instance, in South Carolina, Santee Cooper committed to removing 11 million tons of coal ash from three

impoundments for a total cost of roughly \$250 million. *See* Ex. 45. In Illinois, Springfield City Water Power & Light estimated that dredging one of its ash ponds would cost \$5 per cubic yard of CCW, and that dredging and hauling would cost \$8 per cubic yard of CCW. *See* Ex. 44. These merely illustrate that in many cases, removal is a viable option from an owner or operator's financial perspective, not to mention the human health and environmental benefits over closing a unit in place. The Board should therefore adopt the Agency's proposed alternative impact analysis in both the corrective action and closure sections of the proposed rule.

c. The rule should include modeling of corrective action and closure plans' effects on attainment of groundwater quality standards, to avoid undermining the later antidegradation assessment in the NPDES permitting process.

The Environmental Groups further support the Agency's proposed revisions of Sections 841.310(e)(6) and 841.410(a)(6) in its July 17, 2014 Prefiled Answers because the Agency has included considerations similar to those required in an antidegradation assessment. Illinois antidegradation regulations require, among other things, an evaluation of alternatives to proposed increases in pollutant loading. 35 Ill. Adm. Code 302.105(f)(1)(D). That consideration of alternatives is typically undertaken during the NPDES permitting process.

However, in the case of a corrective action plan or a closure plan for a CCW impoundment, the NPDES process comes too late for alternatives to the discharge to be seriously considered. Once the Agency has approved a corrective action plan or a closure plan, it may be several years before the owner/operator seeks an NPDES permit or modification. If the owner/operator has invested years of time and money into the corrective action plan or closure plan, it will likely be much more onerous to change that plan to comply with antidegradation requirements. Instead, alternatives to pollution discharges should be considered at the time corrective action or closure alternatives are considered, and before the corrective action plan or

closure plan is approved. The Environmental Groups therefore approve of the Agency's proposal of an alternative impact analysis for corrective action and closure plans.

The Environmental Groups additionally have proposed another amendment to proposed Section 841.150 to take into account the interaction between the preventive action, corrective action, and closure processes and other State permitting processes. As proposed by the Agency, Section 841.150 requires that an owner or operator submit an application to revise any state operating or NPDES permits as necessary as a result of a preventive action, corrective, or closure plan. The Environmental Groups believe that it is important to acknowledge that such permit revisions could be denied. Moreover, if the activity for which an owner or operator seeks a permit revision is necessary in order to carry out a proposed preventive response, corrective action, or closure plan, and the permit revision is denied, then the Environmental Groups find it clear that the plan cannot be legally completed and must be modified. Therefore, the Environmental Groups have proposed that:

If any activities required under the proposed preventive response, corrective action, or closure plan cannot be completed because of the denial of an operating permit or NPDES permit, then the owner or operator must submit a revised preventive response, corrective action, or closure plan to the Agency within 90 days of the denial or the conclusion of an unsuccessful subsequent appeal by the owner or operator, whichever is later.

See Environmental Groups' Proposed Section 841.150.

The Environmental Groups' proposal therefore would allow all appeal rights of an owner or operator, while still ensuring that it promptly submits a modified plan for Agency review. At hearing, the Agency questioned the necessity of this rule in two respects: (1) whether the rule was unnecessary in light of the Agency's authority to request a modified plan; and (2) whether, instead of submitting a modified plan, the owner or operator could instead submit an amended permit application. First, the Environmental Groups do not generally argue for a limited view of

the Agency's authority to request modifications of plans. However, the Environmental Groups do not find in the rules any provisions that clearly mandate a timeframe for the submission of modified preventive action, corrective action, or closure plans in this circumstance. Second, the Environmental Groups' proposal requires the submission of a modified plan only after the denial of a permit for activities that are "required" by a plan. If an owner or operator could, for example, meet Clean Water Act requirements by rerouting a surface water discharge to lessen its impact, and could do so consistently with the preventive response, corrective action, or closure plan earlier proposed to the Agency, then the Environmental Groups' rule would not apply. The rule would only take effect if a plan cannot be carried out because of a permit denial. The proposed rule is a reasonable mechanism for ensuring the timely implementation of preventive action, corrective action, and closure plans, comparable to the Agency's proposed requirement in its proposed Section 840.310(i) that an owner or operator should submit a revised corrective action plan within 90 days if the owner or operator "determines that the corrective action program no longer satisfies the requirements of this Section."¹⁷

d. Closure rules should prohibit exposed CCW on final grade and slope, including earthen berms.

For closure-in-place of a unit, the rules do not bar an owner or operator from using CCW to establish the final grade and slope, including the earthen berms. *See* 841.415(d). Exposed CCW could erode and lead to contamination of groundwater or surface waters, as discussed in the Environmental Groups' June comments. *See* Environmental Groups' Comments (June 9, 2014) at 18-19; May 15, 2014 Tr. at 69:18-70:1.

¹⁷ The Environmental Groups also propose extending authority to the Agency to require a revised corrective action plan if the Agency determines that a corrective action program no longer satisfies the requirements of the rules. *See* the Environmental Groups' proposed Section 841.310(j).

The Environmental Groups therefore support the Agency's proposal to require that the final cover extend over all CCW used to establish the final grade and slope, *see* Agency's proposed Section 841.420(a)(5), and to include the earthen berms as part of the final slope design requirements, *see* Agency's proposed Section 841.415(a). This will prohibit a unit that is closed in place from leaving exposed CCW on the final slope or earthen berms, which could lead to groundwater or surface water contamination.

e. The rule should require financial assurance for closure and post-closure care.

The Environmental Groups propose financial assurance requirements in a new Subpart F of the rule. *See* Environmental Groups' proposed Sections 841.600-610. This proposal requires each CCW impoundment owner or operator to provide assurance, through a wide range of allowable mechanisms, to show that it has enough resources to safely complete the closure and post-closure care described in its plans, which must be submitted to and approved by the Agency. *See id.* As discussed in the Environmental Groups' June 9, 2014 comments, the question of the Board's authority to require financial assurance arose much earlier in this proceeding. Indeed, the Environmental Groups' proposed Subpart F was adapted from the draft regulations proposed by the Illinois Attorney General's Office during the stakeholder process. *See* Statement of Reasons at 26. These requirements are justified both legally and practically and they fill an important gap in these rules. The Board should adopt them.

A. Legal authority for financial assurance

The Board's power to require financial assurance is grounded both in its general rulemaking authority under the Act and in its specific authority under Section 21.1 of the Act, 415 ILCS 5/21.1.

1. General authority to require financial assurance to fulfill the purposes of the Act

The Board has broad general rulemaking authority. See 415 ILCS 5/27(a) (“The generality of this grant of [rulemaking] authority shall only be limited by the specifications of particular classes of regulations elsewhere in this Act.”). As discussed above, the Board is legally empowered to adopt rules to accomplish the purposes of the Act,¹⁸ and the Act further commands that it “shall be liberally construed” to fulfill these purposes. 415 ILCS 5/2(c). One stated purpose of the Act is to “assure that adverse effects upon the environment are fully considered and borne by those who cause them.” 415 ILCS 5/2(b). Thus, as the Illinois Supreme Court has observed, “the authority granted to the Board is a general grant of very broad authority and encompasses that which is necessary to achieve the broad purposes of the Act.” *Granite City Div. of Nat’l Steel Co. v. IPCB*, 155 Ill. 2d 149, 182 (Ill. 1993). This broad mandate comes with wide rulemaking discretion: the Board must merely avoid actions that are “clearly arbitrary, unreasonable, or capricious.” *Environmental Prot. Agency v. IPCB*, 86 Ill. 2d 390, 401-02 (Ill. 1981) (quoting *Rockford Drop Forge Co. v. IPCB*, 79 Ill. 2d 271, 278 (Ill. 1980)).

The Board’s general rulemaking authority therefore encompasses any reasonable measures that fulfill the Act’s purposes, including rules to ensure that adverse environmental effects be borne by those who cause them. In this case, requiring financial assurance for the closure and post-closure care of CCW impoundments from the owners or operators of those impoundments falls well within that broad, discretionary authority. The need for financial assurance and the large risk that may be avoided by imposing these requirements are discussed further below.

¹⁸ See 415 ILCS 5/27; *Landfill, Inc. v. IPCB*, 74 Ill. 2d 541, 554 (Ill. 1978).

2. Specific authority to require financial assurance for waste disposal operations

The Board also has specific authority to require financial assurance for closure and post-closure care of any “waste disposal operation” that requires a permit under 415 ILCS 5/21.1. The Act states that no private entity may own or operate a waste disposal operation permitted under 415 ILCS 5/21(d) “unless such person has posted with the Agency a performance bond or other security” for closure and post-closure care in accordance with the Act and its regulations. 415 ILCS 5/21.1(a). CCW impoundments qualify as waste disposal operations under the terms of the Act: CCW is waste, and the impoundment is a disposal operation. Therefore, financial assurance requirements are specifically authorized.

Regarding “waste,” the Act defines waste to include discarded material from industrial operations, which would include CCW. *See* 415 ILCS 5/3.535. While the definition of waste excludes “coal combustion by-products as defined in Section 3.135,” that section makes clear that coal combustion *by-products* are a mere subset of coal combustion *waste*: those that are used beneficially in certain enumerated ways. 415 ILCS 5/3.135. Coal combustion waste is separately defined as fly ash, bottom ash, slag, or flue gas or fluid bed boiler desulfurization by-products generated by burning coal. 415 ILCS 5/3.140. Thus any coal combustion waste that is not used beneficially is not a “by-product” and is therefore properly classified as a “waste.” In the case of a CCW impoundment, the CCW is not being used beneficially and is therefore “waste” for the purposes of the Act and Section 21.1 in particular.

Regarding “disposal operation,” the Act defines disposal as “the discharge, deposit, injection, dumping, spilling, leaking or placing of any waste or hazardous waste into or on any land or water or into any well so that such waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including

ground waters.” 415 ILCS 5/3.185. This definition does not require permanent disposal; it contains no time component. Thus any operation to put waste on land or in water such that its constituents *may* enter the environment constitutes disposal under Section 3.185. CCW impoundments fit this description. Whether the ash will be kept permanently in the impoundment and whether its constituents are currently leaching into the environment do not affect this classification: a CCW impoundment is the placement of coal combustion waste in land or water such that its constituents may enter the environment, and is therefore a disposal operation under the Act’s definition of “disposal.” The Board has previously found that depositing coal ash in an impoundment constitutes disposal. *See In the Matter of: Petition of Ameren Energy Generating Company for Adjusted Standards from 35 Ill. Adm. Code Parts 811, 814, and 815 (Hutsonville Power Station)*, PCB AS09-1 (Mar. 5, 2009), slip op. at 11.¹⁹

No exceptions to Section 21(d) permitting requirements apply to the CCW impoundments at issue in this rulemaking. The Act does contain an exception from Section 21(d) permitting requirements for persons conducting waste-disposal operations “for wastes generated by such person’s own activities which are stored, treated, or disposed within the site where such wastes are generated.” 415 ILCS 5/21(d)(1). But the Board allows this exception only for “minor amounts of refuse which could be disposed of without environmental harm on the site where it was generated.” *In the Matter of: Development, Operating and Reporting Requirements for Non-Hazardous Waste Landfills*, PCB R88-7, slip op. at 41 (Feb. 25, 1988). Courts have repeatedly upheld this narrow interpretation of the exception to avoid creating a “loophole or gap” in the permit system. *See People ex rel. Madigan v. Dixon-Marquette*

¹⁹ While not at issue in this rulemaking, landfills also fit the description of a waste disposal operation. Thus, as discussed in our June 9, 2014 comments, the fact that the Board found the Hutsonville Pond D ash impoundment to be outside of the Board’s landfill regulations does not mean that a CCW impoundment is not a waste disposal operation (just that it is not a landfill).

Cement, Inc., 343 Ill. App. 3d 163, 173 (Ill. App. Ct. 2003).²⁰ A “literal interpretation of section 21(d)(1) would result in operators disposing their waste product or by-product indiscriminately” and “achieves nothing other than circumventing both the permit system and the purposes of the Act.” *Id.* at 173-74. Plainly CCW impoundments do not contain “minor amounts” of waste that could be disposed without environmental harm; fourteen of the impoundments were already violating numerical groundwater standards when the Agency initiated this rulemaking. Statement of Reasons at 5. This exception to Section 21(d)’s permitting requirements does not apply.

CCW impoundments are waste disposal operations within the meaning of Section 21.1 of the Act, based on the plain text, and the Board may impose financial assurance requirements on their owners and operators.

B. Financial assurance fills an important gap in the regulations

Without financial assurance requirements, the Board runs the risk that an owner or operator of a CCW impoundment will not be able to pay for the costs of closure and post-closure care. As discussed in the Environmental Groups’ June 9, 2014 comments, the financial stakes are high, and the Board is in the position now to require proof that the money will be there and thus avoid facing a terrible choice down the road—between a huge cost to taxpayers or a huge

²⁰ The Board has examined the 21(d) exception in detail and explained why it demands a narrow interpretation:

Since its inception, the exemption has been troublesome to the Board and the Agency; while the exemption serves to reduce paperwork requirements on generators, the exemption is a blanket one which does not by its terms require consideration of the suitability of the site for disposal of the type of wastes there generated. Beginning in 1975, the Board began construing the exemption as applicable to “minor amounts of refuse which could be disposed of without environmental harm on the site where it was generated”, a position which has been consistently sustained by the courts, despite the “plain language” of Section 21. See *Pielet Bros. Trading, Inc. v. Pollution Control Board*, 442 N.E. 2d 1374, 1377-1378, 110 Ill. App. 3d 752 (5th Dist. 1982) which traces the legislative history of the exemption and case law at the Board and appellate court levels.

In the Matter of: Development, Operating and Reporting Requirements for Non-Hazardous Waste Landfills, PCB R88-7, slip op. at 41 (Feb. 25, 1988).

cost to public health and the environment if the owner or operator cannot pay for closure and post-closure care. Financial assurance requirements provide a significant benefit to the people of the State of Illinois, in the form of the avoided risk of an insolvent or unreachable owner or operator. *See* July 24, 2014 Tr. at 146:6-18.

The cost of closure and post-closure care can run into the hundreds of millions of dollars. For instance, the Little Blue Run Impoundment in Pennsylvania recently posted a financial assurance bond of \$169 million as a condition of its permit, based on the estimated cost of closure and associated cleanup of groundwater contamination at the site. *See* Environmental Groups' Comments (June 9, 2014) at 8.

The threat that the State could be left on the hook for closure and post-closure care is not an idle one in the case of Illinois CCW impoundments. Illinois coal-fired power plants are owned by merchant generators, rather than regulated utilities. *See id.* at 9. As shown by the recent events of Dynegy's purchase of former Ameren plants and Midwest Generation's bankruptcy and sale to NRG Energy, the merchant generation market is volatile. The multiple-decades-long time horizon for closure and post-closure care compounds the risk that the owner or operator may not be available to pay for the full and proper care of the closed impoundment.

The Board would be well served and well within its authority to adopt the Environmental Groups' proposed Subpart F and require financial assurance for the closure and post-closure care of CCW impoundments.

4. The rules should set design standards for new and existing CCW impoundments that include a composite liner and leachate collection system.

Unlined or inadequately lined CCW impoundments are causing widespread groundwater contamination in Illinois, and they should not be allowed to continue degrading groundwater—

which means either relining or closing them. Nor should new impoundments be allowed to begin operation without appropriate liners and safeguards against contamination. The Agency has stated it “believes including design criteria for new CCW surface impoundments is a good idea.” Ex. 5, Agency’s Prefiled Answers (Feb. 26, 2014), at PDF page 6. The Environmental Groups ask the Board to adopt design criteria now, and not to wait for the results of a subdocket.

Preventing groundwater contamination from unlined or inadequately lined CCW impoundments is precisely what this rule is intended to do.²¹ Without design standards governing new impoundments and any existing impoundments that are not closing imminently, though, the rules will allow this hazard to continue virtually unchecked. As discussed in the Environmental Groups’ June comments, USEPA has proposed design standards that include a composite liner and leachate collection system for both new and existing impoundments, with a five year window for existing impoundments to reline or close. *See* Environmental Groups’ Comments (June 9, 2014) at 11 (*citing* 75 Fed. Reg. at 35243-245); *see also* 75 Fed. Reg. at 35202-203.²² The Board should do the same. The Environmental Groups therefore urge the Board to add basic design standards for both new and existing CCW impoundments to the proposed rules. *See* Environmental Groups’ proposed Section 841.450.

Composite liners are much more protective than either compacted clay liners or no liner at all. *See* Soderberg Testimony at 11; 75 Fed. Reg. at 35202-203.²³ Modeling shows that the times to median peak boron concentrations in a receptor well are 74 years for an unlined

²¹ “When the CCW surface impoundments are not lined with impermeable material, these contaminants may leach into the groundwater, affecting the potential use of the groundwater.” Statement of Reasons at 3.

²² “The co-proposed subtitle D design standards would require that new landfills and all surface impoundments that have not completed closure prior to the effective date of the rule, can only continue to operate if composite liners and leachate collection and removal systems have been installed. Units must be retrofitted or closed within five years of the effective date of the final rule, which is the time frame EPA is proposing for surface impoundments to retrofit or close under the subtitle C alternative.” 75 Fed. Reg. at 35202.

²³ “The CCR damage cases and EPA’s quantitative groundwater risk assessment clearly show the need for effective liners—namely composite liners—to very significantly reduce the probability of adverse effects.” 75 Fed. Reg. at 35202.

impoundment, 90 years for a clay-lined impoundment, and 4,400 years for a composite lined impoundment. Soderberg Testimony at 11 (citing USEPA, *Human and Ecological Risk Assessment of Coal Combustion Wastes* (draft) (Apr. 2010)). Composite liners with a leachate collection system, or an equivalent level of protection, are a widely accepted and significantly more protective approach to preventing contamination from CCW impoundments. *See id.* USEPA proposed such a design standard in its rule. 75 Fed Reg. at 35174, 35243-245. Pennsylvania requires the same combination of components for both new coal ash storage impoundments and new Class II residual waste disposal impoundments, at 25 Pa. Code 290.410 and 25 Pa. Code 289.531, respectively. Illinois should follow suit.

The Environmental Groups' proposal purposefully does not prescribe a detailed design for the leachate collection system; as discussed in Environmental Groups' prefiled answers, the final design may be determined based on the size and technical specifications of each unit. *See* Environmental Groups' Prefiled Answers (July 17, 2014), Answers to Agency Questions 88-89.2. It is critical, though, that the rules establish a basic, minimal standard for the design of new and existing impoundments' liner systems, however, rather than omit such a requirement altogether.

As raised by the Board in a question to the Environmental Groups, siting requirements could also be included in the design standards. They should prohibit siting impoundments in areas where leachate or dam failure could threaten surface waters, in unstable areas, and where CCW would directly contact groundwater. *See* 75 Fed. Reg. at 35197-98; Soderberg Testimony at 11. The Environmental Groups support the inclusion of location restrictions comparable to those contained in the USEPA's proposed rule at 40 CFR 257.60-257.65. *See* 75 Fed. Reg. at

35241-43; Environmental Groups' Prefiled Answers (July 17, 2014), Answers to Agency Question 91.

The Board need not delay the adoption of design standards in this rulemaking, which would forestall a critical protection for groundwater, human health, and the environment. The Agency has filed a motion to sever and open a subdocket on numerous topics, including design standards. *See* Agency Motion, June 11, 2014. But the issue of design standards is not a recent revelation in this rulemaking. Indeed, the Agency itself examined the USEPA's proposed rule, which included design standards for both its Subtitle C and Subtitle D alternatives, and noted this in its Statement of Reasons (at page 7). Expert witness Keir Soderberg advocated for design standards in his prefiled testimony. And as noted above, the proposed design standards simply establish the best practice of utilizing a composite liner and leachate collection system, while leaving further design details to the discretion of the Agency. Setting a minimal design standard now will allow owners and operators of impoundments to more swiftly address the unlined and inadequately lined impoundments that have caused widespread groundwater contamination already, rather than let the problem linger even further into the future. We urge the Board to adopt the proposed design standards.

5. For CCW impoundments that are causing or contributing to groundwater contamination, corrective action requirements should be rigorous and lead to either prompt compliance with groundwater quality standards or closure.

By design, the Agency's proposed rules do not require any CCW surface impoundments to close, even if an impoundment is old, unlined, and documented to have caused groundwater contamination. Instead, the rules would allow such an impoundment to remain open indefinitely, with only an open-ended corrective action that would not require compliance for decades, if ever.

Given that groundwater contamination is virtually universal at the State's coal plants, the Environmental Groups do not view this approach as sufficiently protective of human health and the environment. The Environmental Groups urge the Board to ensure that the proposed rules contain the following components:

- a. The rules' provision for alternative cause demonstrations should require a better explanation of the alternative cause, and should be better integrated with groundwater quality standards with respect to naturally occurring contaminants.
 - b. The rules should require a thorough evaluation of alternatives to a proposed corrective action plan, to choose the most comprehensive and responsible plan.
 - c. The rules should require an impoundment to close if corrective action is not effective in achieving compliance within five years.
- a. The rules' provision for alternative cause demonstrations should require a better explanation of the alternative cause, and should be better integrated with groundwater quality standards with respect to naturally occurring contaminants.**

The Environmental Groups have recommended the addition of two requirements to the Agency's proposed sections governing alternative cause demonstrations. *See* Ex. 1 at Section 841.305. First, as proposed by the Agency, the requirements for an alternative cause demonstration are lacking in detail. The Environmental Groups recommend that the alternative cause demonstration report "describe and justify," with documentation, the specific cause in the demonstration according to the categories identified in the rule: error, natural cause, or alternate contamination source. *See* Environmental Groups' proposed Section 841.305(a). As the Environmental Groups stated in response to the Agency's prefiled questions, this does not mean that the owner or operator of an impoundment would need to "prove" that a specific source caused the contamination, or conduct an offsite investigation—just "describe and justify" the alternative cause. Environmental Groups' Prefiled Answers (July 17, 2014), Agency Questions 24 and 24.1.

The Environmental Groups note that the Board's regulations for new solid waste landfills include a requirement for alternative cause demonstrations that is more descriptive than the Agency's proposal. These regulations require that an owner or operator that seeks to make an "alternative source demonstration" for a monitored increase of a constituent "must demonstrate a source other than the facility and provide the rationale used in such a determination." 35 Ill. Adm. Code 811.319(a)(4)(B)(iii) (emphasis added). The Environmental Groups prefer their originally proposed sentence, but also would support the Board's addition, instead, of the standard from the Board's landfill regulations. *See* Environmental Groups' proposed Section 841.305(a).

Second, the Environmental Groups propose a clarification in proposed Section 841.300, that for purposes of that section of confirmation sampling, "concentrations of chemical constituents due to natural causes are not considered in determining the applicable groundwater standard." The purpose of that clarification is to ensure that, when contamination in excess of a numerical groundwater quality standard is first detected, and the owner or operator intends to make the case that the exceedence is due to natural causes, the owner or operator should go through the full alternative cause demonstration described in proposed Section 841.305.

b. The rules should require a thorough evaluation of alternatives to a proposed corrective action plan, to choose the most comprehensive and responsible long-term plan.

The Environmental Groups are concerned that past corrective actions at Illinois coal plants have too often resulted in ineffective remedies that fall short on protecting surface waters, do not require source control, and allow too long of a timeline for problems to continue on. For example, the Environmental Groups' witness Traci Barkley cited two groundwater management zones that were put in place at Dynege Hennepin Station in 1996. *See* Ex. 5, Ex. N.;

Environmental Groups' Prefiled Answers (Traci Barkley) (July 17, 2014), Agency Question 39. The Environmental Groups submitted monitoring reports from Dynegy showing that groundwater quality standards are still being exceeded at the plant, nearly twenty years later. Exs. 65 and 66.

The Environmental Groups therefore support the Agency's proposal of an alternative impact assessment in proposed Section 841.310 and detailed standards for plan approval in 841.500(c) that include, among other things, consideration of the short-term and long-term effectiveness of corrective action and closure plans. The Environmental Groups believe that the information and analysis required by these sections can help promote well-informed and more transparent decisions.

c. Closure should be required if corrective action fails.

To ensure that future corrective actions do not allow violations to continue in perpetuity, though, the Environmental Groups also propose the addition of a requirement that the failure of corrective action to promptly control contamination triggers a requirement of closure. *See* Environmental Groups' proposed Section 841.405(a)(2)(B). The Agency's proposed rule allows existing unlined and inadequately lined impoundments that are causing groundwater contamination to remain open without a truly viable corrective action plan. Consequently, the Board should adopt a rule that contains a requirement for closure where the owner or operator fails to implement a viable corrective action plan.

The Environmental Groups view this requirement as particularly needed if the Board does not adopt design standards requiring the closure of inadequately-lined CCW impoundments within 5 years, as proposed by USEPA. In contrast to USEPA's proposed rule, the Agency's proposed rules would allow unlined and inadequately lined CCW surface impoundments to remain open indefinitely. Under the Agency's proposed rules, impoundments need close only if

an owner or operator elects to do so. Allowing owners or operators to pursue long-term corrective action plans that could require decades to come into compliance with numerical groundwater quality standards is not as effective of a remedy, and is not as protective of human health and the environment, as cutting off the contamination at its source by requiring the responsible closure of leaking impoundments.

6. The rules should allow for greater public participation by allowing 60 days for public comments on proposed corrective action, closure, and post-closure care plans and alternative cause demonstrations and requiring public meetings if the Agency finds a significant degree of public interest.

The Agency's proposed framework for approval of corrective action and closure plans demonstrates that decisions on how to remediate and close CCW impoundments are complex and fact-intensive. These decisions also can be very meaningful for the members of the communities near CCW impoundments. The public may have site-specific information about the facility and surrounding land uses useful for the Agency's consideration, as well as a very different perspective on the impoundments than the facility's owner or operator. The Environmental Groups therefore have proposed three modifications to the Agency's proposed Section 841.165 to allow for more, and better, public participation.

a. The rules should allow for a 60-day public notice-and-comment period.

The Agency's proposal commendably includes a 30-day public notice-and-comment period for proposed corrective action and closure plans. *See* Agency's proposed Section 841.165(a) and (b). 30 days is not enough time, though, for the public to locate proposed plans on the Agency's website, review the plans, and submit comments. The Board's Senior Environmental Scientist offered similar concerns during the Board's February 26, 2014 hearing. Feb. 26, 2014 Tr. at 123:5-15.

The Environmental Groups therefore propose a 60-day public notice-and-comment period for corrective action, closure, and post-closure plans and alternative cause demonstrations.²⁴ Extending the public comment period would allow for better, more transparent decision-making at no cost, and therefore is clearly a reasonable modification of these rules. The Agency has expressed openness to this revision, so long as the Agency could also have additional time—120 days, rather than 90—to make its final determination on whether to approve proposed plans. *See* Agency’s Post Hearing Comments (Mar. 25, 2014) at PDF page 24. The Environmental Groups support allowing the Agency an additional 30 days to make these important decisions, as well. *See* Environmental Groups’ July 21, 2014 Redline at proposed Section 841.500(a).

b. A public informational meeting should be held if Agency finds a “significant degree of public interest.”

The Agency’s decisions on remediation and closure of CCW impoundments are potentially of intense interest to the communities near the impoundments. In this proceeding, the public demonstrated their interest in CCW impoundments through thousands of comments, from across the State, calling for strong, protective standards. As just one example, in May 2014, the Vermilion County Board, supported by the Vermilion County Conservation District and other local authorities, passed a unanimous resolution calling on the Illinois Pollution Control Board to enact rules requiring the removal of coal ash from impoundments at the Dynegy Vermilion Power Station, located near the Middle Fork of the Vermilion River, the State’s only National Scenic River. *See* May 14, 2014 Tr. at 50:18-51:12; 53:23-54:8.

An inclusive public participation process including informational meetings can be beneficial both to the Agency and to the affected community. The Environmental Groups

²⁴ *See* Section 6.c. below for discussion of the inclusion of alternative cause demonstrations and post-closure plans in the rules’ public notice-and-comment requirements.

therefore propose that Section 841.165 require the Agency to hold a public informational meeting if it finds a “significant degree of public interest” in a proposed corrective action, closure, or post-closure plan or alternative cause demonstration (or modifications thereto).

A public informational meeting would allow residents of the community the opportunity to provide comments and to hear, in person, the Agency’s explanation of the issues and consequences presented by its pending decisions. Members of the community may have local and historical knowledge that could be useful to the Agency in its decision-making. *See* July 24, 2014 Tr. 131:13-132:2. The public also may not understand the scope or nature of the Agency’s decision-making process, and the Agency’s explanation of it can be useful in increasing public understanding, eliciting specific comments and concerns, and promoting community acceptance. *See id.* at 130:20-132:2.²⁵ All of this is true whether or not the Agency has made a determination on the plan at issue. *Id.*

The requirement for the Agency to hold a public information meeting if it finds a “significant degree of public interest” is imposed by other existing Board regulations, among them 35 Ill. Adm. Code 309.115, applicable to public hearings on NPDES permit applications,

²⁵ As the Environmental Groups’ witness Traci Barkley explained during the Board’s July 24, 2014 hearing:

Many members of the public have absolutely no idea how the state system works and they don’t understand what decisions are being made, how they’re being made, how they can affect the process, what information that is local and important to them can be brought to you as decisionmakers in Springfield. This is an opportunity for them to say “this is a river that I care about, this is what I do on that river, I use this drinking water to water my garden or this groundwater to water my garden or pets or horses or use for my own potable water.”

It is an opportunity for you to get information that is localized that might not be in your records that you might not have gathered. . . they might have something to bring to the table about what happened 50 years ago at that site that might be relevant and they might also have some very serious concerns that maybe aren't already being addressed by the state.

July 24, 2014 Tr. at 131:1-132:2.

and 35 Ill. Adm. Code 705.182, relating to the issuance of RCRA and UIC (Underground Injection Control) permits. The standard should be familiar to the Agency.²⁶

The Agency raised concerns about the amount of resources that would be required by public informational meetings. First, and foremost, the requirement of a meeting would be triggered only if the Agency finds that there is a “significant degree of public interest” in a particular proposed plan or determination. The standard vests discretion in the Agency to determine what level of interest is “significant” and therefore warrants a public hearing. Therefore, there is by no means any certainty that every proposed plan or determination would require a meeting—though, as shown by the Vermilion County Board resolution cited above, some certainly will.

Moreover, even if the Agency in its discretion found “significant” public interest in every proposed plan or determination that was submitted to it under these rules, the public meeting requirement would not entail a separate meeting for each individual document. The Agency could choose to group facilities by geographical areas, and then hold regional public informational meetings, or multiple meetings for different facilities on the same day, at the same location, with the same Agency personnel. Thus, even in the Agency’s “worst-case” scenario requiring meetings on closure and post-closure plans for every impoundment in the State within one year of the rules’ effective date, these meetings potentially could be conducted over only a handful of days.

Given that public meetings would be limited only to circumstances where the public has expressed significant interest—as found by the Agency in its discretion—this requirement is reasonable. The Board should reject the Agency’s alternative, which would not guarantee public

²⁶ On this issue, and on public notice-and-comment generally, the Environmental Groups incorporate by reference their responses to the Agency’s prefiled questions 76 through 82.1 [sic], filed July 17, 2014.

meetings even to communities deeply concerned about the impacts of the closure of nearby CCW impoundments.²⁷

c. Public notice-and-comment should include proposed alternative cause demonstrations and post-closure plans.

While the Agency has limited its proposal for a public notice-and-comment period to closure and post-closure plans, the Environmental Groups propose that the Board also include alternative cause demonstrations and post-closure plans.

Alternative cause demonstrations have both high stakes and a high need for outside information, both of which argue for public notice and comment. The stakes are high because a successful demonstration by an owner or operator effectively exempts the CCW impoundment from any corrective action or closure requirements—and means that any exceedences of groundwater quality standards may continue unabated. *See* Agency's proposed Sections 841.310 and 841.405(a) (corrective action and closure requirements exempting impoundments for which the owner or operator has made an alternative cause demonstration). The communities surrounding a potentially exempted CCW impoundment should, at a minimum, be advised that such a determination is pending. Moreover, the owner or operator may claim that the cause of an exceedence is from a source other than the CCW impoundment. This type of claim often relies on local and historical information about other potential sources—information that may well be available from long-standing members of the community, and is therefore precisely the sort of

²⁷ The Environmental Groups have proposed one other minor modification to the Agency's proposed Section 841.165(d) to enhance public participation. The Environmental Groups propose that the Agency post final decisions on plans and demonstrations on its website for 35 days, instead of 30. The Environmental Groups' proposal specifies that the notice period begins on the date that notice is mailed to the owner or operator. *See* Environmental Groups' Proposed Section 841.165(e) (July 21, 2014). This modification synchronizes the public notice period of a final determination with the time for the owner or operator to appeal the determination. *See* Agency's Proposed Section 841.500(e). It would allow additional time for the public to notice and review the Agency's final determination, at no cost to the Agency.

inquiry that is well served by public notice and input. For both reasons, proposed alternative cause demonstrations should be open for notice and comment.

Post-closure plans are also important, of course, but an additional factor makes their inclusion in the public notice provisions sensible: they must be submitted concurrently with closure plans, for which notice is already required under the Agency's proposed Section 841.165. The plans for care and maintenance after a unit is closed have obvious importance: they determine the scope and nature of the owner and operator's post-closure responsibility, they may be the basis for financial assurance, and for many units, post-closure care will be the single longest-lasting requirement in this rule. But at an even simpler level, these plans are required concurrently with closure plans. *See* Agency's proposed Section 841.435(a). The Agency would merely need to post additional notice of the post-closure plan along with the closure plan, at the same time and on the same timeline, and could then accrue all the benefits of public notice and comment discussed in the preceding sections. The Environmental Groups therefore propose including both alternative cause demonstrations and post-closure plans in the public notice requirements of the Agency's proposed Section 841.165.

WHEREFORE, the Environmental Groups respectfully request that the Board adopt the rules proposed by the Agency, including the modifications proposed by the Environmental Groups.

Respectfully submitted,



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CERTIFICATE OF SERVICE

I, Andrew Armstrong, hereby certify that I have filed the attached **Post-Hearing Comments of the Environmental Law & Policy Center, Environmental Integrity Project, Sierra Club, and Prairie Rivers Network** in R14-10 upon the attached service list by depositing said documents in the United States Mail, postage prepaid, in Chicago, Illinois on October 20, 2014.

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