

**BEFORE THE  
ILLINOIS POLLUTION CONTROL BOARD**

IN THE MATTER OF:

PETITION OF SOUTHERN ILLINOIS  
POWER COOPERATIVE FOR  
AN ADJUSTED STANDARD FROM  
35 ILL. ADMIN. CODE PART 845 OR, IN  
THE ALTERNATIVE, A FINDING OF  
INAPPLICABILITY

AS 2021-006

(Adjusted Standard)

**NOTICE OF FILING**

To: Pollution Control Board, Attn: Clerk  
100 West Randolph Street  
James R. Thompson Center, Suite 11-500  
Chicago, Illinois 60601-3218

Division of Legal Counsel  
Illinois Environmental Protection Agency  
1021 N. Grand Avenue East  
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Springfield, Illinois 62794-9276

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Pollution Control Board the attached Amended Petition of Southern Illinois Power Cooperative for an Adjusted Standard from 35 Ill. Admin. Code Part 845 or, in the Alternative, a Finding of Inapplicability and a Certificate of Service, copies of which are herewith served upon you.

/s/ Amy Antonioli  
Amy Antonioli

Dated: September 2, 2021

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**CERTIFICATE OF SERVICE**

I, the undersigned, certify that on this 2nd day of September, 2021:

I have electronically served a true and correct copy of the attached AMENDED PETITION OF SOUTHERN ILLINOIS POWER COOPERATIVE FOR AN ADJUSTED STANDARD FROM 35 ILL. ADM. CODE PART 845 OR, IN THE ALTERNATIVE, A FINDING OF INAPPLICABILITY by electronically filing with the Clerk of the Illinois Pollution Control Board and by e-mail upon the following persons:

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The e-mail transmission took place before 5:00 p.m.

/s/ Amy Antonioli  
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AS 2021-006

(Adjusted Standard)

**AMENDED PETITION FOR AN ADJUSTED STANDARD  
FROM 35 ILL. ADMIN. CODE PART 845 OR, IN THE ALTERNATIVE,  
A FINDING OF INAPPLICABILITY**

Submitted on behalf of  
Southern Illinois Power Cooperative

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**I. INTRODUCTION**

This Amended Petition for an Adjusted Standard (“Petition”) concerns eight existing and former ponds located at Southern Illinois Power Cooperative’s (“SIPC”) Marion Generating Station (“Marion Station”) in Williamson County, Illinois. These ponds are as follows: Pond 3 (including Pond 3A), Pond 4, former Pond B-3, South Fly Ash Pond, and Pond 6 (collectively, the “De Minimis Units”), and the former Fly Ash Holding Area, the former Replacement Fly Ash Holding Area, and the former Fly Ash Holding Area Extension (collectively, the “Former Fly Ash Holding Units”)<sup>1</sup>. This Amended Petition amends the Petition for Adjusted Standard filed by SIPC on May 11, 2021, including to reflect the results of a Pond Investigation Report for Certain Ponds at Southern Illinois Power Company’s Marion Station (“Pond Investigation Rep.”), attached as Ex. 29<sup>2</sup>, as well as the Updated Opinion of Lisa Bradley, which is attached as Updated Ex. 28 (“Updated Bradley Op.”), and the Supplemental Declaration of Kenneth W. Liss, which attached as Ex. 30 (“Supp. Liss Dec.”).<sup>3</sup> A redline comparison showing changes made since the initial Petition is attached as Ex. 31.

As discussed herein, neither the De Minimis Units nor the Former Fly Ash Holding Units are regulated “CCR surface impoundments” for purposes of Illinois’s newly enacted Standards for the Disposal of Coal Combustion Residuals (“Part 845”). Nor are they CCR surface impoundments regulated by the federal CCR regulations upon which Part 845 was based. None

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<sup>1</sup> The De Minimis Units and the Former Fly Ash Holding Units are depicted on the Site Map prepared by Andrews Engineering for SIPC (May 2021) (“Site Map”), Ex. 3.

<sup>2</sup> For Exhibit 29, the Pond Investigation Report, SIPC has attached to the electronically filed version of this Petition only the Report itself and not the appendices, as they are several hundred pages long. Those appendices are being transmitted separately to the Board and to IEPA. *See* Pond Investigation Rep., Ex. 29.

<sup>3</sup> SIPC has attached only new or updated (labeled “Updated Ex. \_\_\_\_”) exhibits to this Petition. All other exhibits referred to within are attached to SIPC’s original petition.

of these former or current ponds poses the types of risks to the environment and human health that federal and state CCR regulations aim to address. Indeed, some of the ponds at issue closed decades ago and have not contained water since then, while another had any water and CCR removed years ago. Nevertheless, while discussions continue, the Illinois Environmental Protection Agency (“IEPA”) has so far taken the incorrect position that all eight current and former ponds are covered by Part 845.

Compliance with Part 845 is plainly not required for the ponds and former ponds at issue, which do not fall under the definition of “CCR surface impoundment” and therefore are not covered by Part 845. And, to the extent the Board finds that any of the units at issue are regulated CCR surface impoundments (they are not), an adjusted standard is warranted because they differ from the surface impoundments the Board targeted for regulation under Part 845 and the exorbitant costs of compliance with Part 845 are not warranted in light of the fact that the units at issue pose minimal—if any—risk to human health and the environment.

Accordingly, for the reasons set forth herein, SIPC respectfully requests that the Board issue a finding of inapplicability with respect to the current and former ponds at issue or, in the alternative, an adjusted standard exempting the units at issue from Part 845 requirements.

## **II. FACTUAL AND PROCEDURAL BACKGROUND.**<sup>4</sup>

### **A. Nature of Petitioner’s Activity and General Plant Description**

Marion Station is a gas and coal-fired power plant located approximately seven miles south of the City of Marion in Williamson County, Illinois. *See* Site Map, Ex. 3. Marion Station

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<sup>4</sup> The Declarations of Wendell Watson and Todd Gallenbach, Exs. 1 and 2, are provided in support of facts stated herein regarding Marion Station and the current and former ponds at issue. SIPC’s investigation into the facts set forth herein is ongoing, and SIPC reserves the right to further supplement or amend its Amended Petition to reflect receipt of new or additional information.

currently consists of one operating coal-fired unit (Unit 123), with a nominal capacity of 1402 mmBtu/hour, and two additional gas-fired combined-cycle units (Units 5 and 6).

Unit 123 was constructed in the early 2000s, repowering the existing steam turbine that had been powered by retired Units 1, 2, and 3. Units 1, 2, and 3 were 33 MW coal-fired cyclone generating units constructed in the 1960s. An additional 173 MW coal-fired unit (Unit 4) came online in 1978. Unit 4 shut down permanently in October 2020. A 109 MW circulating fluidized bed boiler provides steam to generating Unit 123. The two gas-fired simple-cycle units (Units 5 and 6) are nominally rated at 969 mmBtu/hr each (dependent upon ambient air temperature). Marion Station uses Illinois basin bituminous coal for Unit 123. Since 1978, SIPC also has burned more than ten million tons of mine waste, helping to clean up many abandoned mines.

SIPC owns 4,674 acres around Marion Station and employs seventy-eight people. Nearby Lake of Egypt (the “Lake”) was constructed in 1963 to provide cooling water for the station’s coal-fired generating units. The Lake provides some local public water supply and is also used for recreational purposes, such as boating and fishing. The local water authority periodically tests the Lake water for public use. *See, e.g.*, Lake Egypt Water District IL 1995200, Annual Drinking Water Quality Report (Jan. 1–Dec. 30, 2019), Ex. 4. SIPC owns several parcels bordering the plant property. Other nearby land uses include agricultural and recreational use, including a golf course and a country club. Shawnee National Forest is located approximately fifteen miles to the south of Marion Station. The closest identified potential groundwater well is at the Lake of Egypt Country Club, located more than 2,000 feet away from any pond at issue in this proceeding. That well is up gradient from the Station’s pond system.

**B. CCR Management at Marion Station.**

Coal combustion residuals (“CCR”) are a byproduct of the coal-fired power generation process. Currently, only Unit 123 generates CCR (in the form of ash) at the Station. One hundred percent of the CCR generated from Unit 123 is handled dry and used for mine reclamation beneficial use off-site. Unit 123 controls SO<sub>2</sub> through its combustion process, and thus, no scrubber is needed.

There is no wet handling of CCR generated from current operations at Marion Station. While in operation, prior Units 1, 2, and 3 generated CCR in the form of fly ash and bottom ash. Former Unit 4 generated CCR in the form of fly ash and bottom ash, as well as scrubber sludge from an SO<sub>2</sub> scrubber installed around 1978. This was the first wet SO<sub>2</sub> scrubber installed in Illinois—and one of the first in the nation—and reflects SIPC’s early environmental commitment, which continues to this day. The historic handling, storage, and disposal of CCR at Marion Station is described below.

1. Fly Ash.

SIPC began collecting fly ash from former Units 1, 2, and 3 after installing electrostatic precipitators (“ESPs”)<sup>5</sup> at each unit in 1975 in accordance with the Clean Air Act.<sup>6</sup> Because Units 1, 2, and 3 were cyclone units, they generated relatively small amounts of fly ash as compared to other types of coal-fired boilers. Cyclone boilers produce less than twenty-five percent of the fly ash pulverized coal units produce.

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<sup>5</sup> ESPs are control devices that capture particulate matter in the exhaust gas, including fly ash.

<sup>6</sup> Prior to installation of the ESPs, most of the fly ash from Units 1, 2, and 3 would have been expected to exit the stack with exhaust gases, and only minimal amounts of fly ash may have been collected from the cyclone Units 1, 2, and 3. On information and belief, any minimal amounts of fly ash collected would likely have been conveyed to Pond 1, Pond 2, or the Initial Fly Ash Holding Area, which had an outlet to Pond 3.

Between 1975 and 1978, on information and belief, fly ash was collected wet using a hydroveyer system and conveyed to an area labeled on historic documents as a “fly ash holding area” (the “Initial Fly Ash Holding Area”) located just to the west of Pond 3. *See* Site Map, Ex. 3. In 1977, SIPC received a permit from IEPA to abandon and cover the Initial Fly Ash Holding Area and to construct an additional holding area for fly ash (the “Replacement Fly Ash Holding Area”). *See* IEPA Water Pollution Control Permit, No. 1977-EN-5732 (Nov. 14, 1977) (“1977 Permit”), Ex. 5.

In 1978, Unit 4 was constructed. Around the same time the hydroveyer system was modified to allow for dry collection of fly ash. From 1978 until 2003, most of the fly ash collected from Unit 4 was collected dry using the hydroveyer system. Most of that fly ash was disposed of at a former on-site, permit-exempt landfill (“Former Landfill”), often mixed with scrubber sludge as discussed further below.

Also around 1978, documents indicate that SIPC constructed the Replacement Fly Ash Holding Area to the North of Pond 2. *See* 1977 Permit, Ex. 5. The Replacement Fly Ash Holding Area likely received spent water from the hydroveyer system, which is believed to have contained only *de minimis* amounts of fly ash. *See* Letter from SIPC to IEPA (July 27, 1982), Ex. 6. On information and belief, the Replacement Fly Ash Holding Area also was designated to receive sluiced fly ash from Unit 4 during intermittent emergencies in which the fly ash was unable to be conveyed to the Former Landfill. *Id.*

In or around 1981, SIPC received a permit from IEPA to build a fly ash holding area extension (the “Fly Ash Holding Area Extension”), to the west of the Replacement Fly Ash Holding Area, and a berm around a portion of the Former Landfill area that received fly ash and scrubber sludge from Unit 4. *See* IEPA Water Pollution Control Permit, No. 1981-EN-2776-1

(Oct. 13, 1981) (“1981 Permit”), Ex. 7. That bermed area collected storm water runoff from the landfill, and that collected water eventually became what is now denominated as Pond 6 (discussed *infra*).

On information and belief, between 1978 and 1985, limited fly ash from Units 1, 2, and 3<sup>7</sup> may have been sluiced to the Replacement Fly Ash Holding Area. In 1985, former Pond A-1 was constructed. After 1985, water from the hydroveyer system and, on information and belief, any fly ash from Units 1, 2, and 3 were conveyed to Pond A-1 or, in limited cases of Pond A-1 outages between 1985 and 2003 (*see infra* at 12–13), Pond B-3. *See, e.g.*, Letter from SIPC to IEPA (Sept. 16, 1993) (“1993 Letter”), Ex. 8.

On information and belief, the Replacement Fly Ash Holding Area and the Fly Ash Holding Area Extension stopped receiving wastes after former Pond A-1 was built. Subsequently, those two units were drained of water—other than occasional storm water runoff—and, by the early 1990s, were covered at least in part by the Former Landfill. Currently, the area that previously contained those units is within the landfill cover area that SIPC has proposed to IEPA, as described further below. Declaration of Kenn Liss (“Liss Dec.”), Ex. 9; *see also* Andrews Engineering, SIPC’s Proposed Closure Plan for IEPA Site No. 199055505 (Dec. 16, 2020) (“Former Landfill Closure Plan”), Ex. 10.

In 2003, SIPC repowered the old boilers 1, 2, and 3 with a Circulating Fluidized Bed (“CFB”), now referred to as Unit 123. The CFB allowed SIPC to convert its fly ash system to one hundred percent dry ash handling and disposal and ended even the minimal wet fly ash discharge that had previously occurred at Marion Station.

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<sup>7</sup> Units 1, 2 and 3 were run infrequently after the installation of Unit 4.

2. Scrubber Sludge.

Unit 4 came online in 1978 and produced scrubber sludge, which was predominately calcium sulfite. The scrubber sludge was mixed with fly ash, and moved via a conveyer to the Former Landfill, which ceased accepting waste prior to October 2015 and for which SIPC has submitted a landfill closure plan to IEPA at IEPA's request (*see infra* at 15–16). Former Landfill Closure Plan, Ex. 10. In 2009, the scrubber was modified to a forced oxidation system, which produced calcium sulfate, better known as gypsum. One hundred percent of the gypsum generated at Marion Station was sold as an agricultural modifier or an ingredient for cement. With the closure of Unit 4, Marion Station no longer generates scrubber sludge or gypsum.

3. Bottom Ash.

Historically, bottom ash from now-retired Units 1, 2, 3, and 4 was sluiced to Ponds 1 and 2. On information and belief, SIPC sold one hundred percent of its bottom ash to shingle manufactures, grit blasting companies, and local highway departments for more than forty years. For almost the entire lives of the ponds, the water in Ponds 1 and 2, from which bottom ash was removed, discharged to Pond 4 and, from there, through permitted Wastewater Discharge Outfall 002. Beneficial use Ponds 1 and 2 are no longer in use with the closure of Unit 4 and are undergoing closure. Ash from Unit 123's fluidized bed boiler is handled dry and beneficially used offsite.

4. Other Non-CCR Waste Streams.

Minor other non-CCR waste streams from the Marion Station, including air heater wash water and flue gas desulfurization decant excess water, were historically discharged to the former Emery Pond. Former Emery Pond was built in the late 1980s as a storm water storage structure for drainage from the adjacent plant area, including the more recent Gypsum Loadout Area. *See*

Hanson, Emery Pond Corrective Action and Selected Remedy Plan, Including GMZ Petition (Mar. 29, 2019), Ex. 11. Process waste water discharges to former Emery Pond have ceased and any water or CCR in the former Emery Pond has been removed pursuant to closure and related plans overseen by IEPA. Former Emery Pond's closure has been conducted consistent with Part 257, and although the field work was completed before adoption of Part 845, the closure was generally consistent with Part 845 as well. A new storm basin is located in the area of former Emery Pond.

**C. The Ponds Subject to This Petition.**

This Petition concerns the De Minimis Units: five current or former ponds at SIPC's Marion Generating Station—the South Fly Ash Pond, Pond 3 (including Pond 3A), Pond 6, Pond 4 and Pond B-3, which have contained only *de minimis*, if any, amounts of CCR. These current and former ponds are described in Section C.1. This Petition also addresses the Former Fly Ash Holding Units: three former fly ash ponds that closed and were dewatered decades ago and are now part of the Former Landfill, which are described below Section C.2.

**1. The De Minimis Units.**

A map showing the location of the De Minimis Units is attached to SIPC's May 11, 2021 Petition. Site Map, Ex. 3. As discussed below, none of the De Minimis Units receive or received meaningful direct discharges of CCR and, to the extent they contain CCR as a result of limited historic or incidental discharges, such CCR should be *de minimis* in light of historic practices. In addition, as discussed *infra* at 30–32, Haley & Aldrich, Inc., on behalf of SIPC, has completed an investigation of the De Minimis Units pursuant to an investigation protocol negotiated with IEPA, which confirmed that the De Minimis Units contain only *de minimis* amounts of CCR and thus are not the types of units that were intended to be regulated under Part 257 or Part 845, and do not

pose an appreciable threat to human health or the environment warranting regulation under Part 845. *See infra* at 30–32; *see also* Pond Investigation Rep., Ex. 29.

South Fly Ash Pond – The South Fly Ash Pond was built around 1989 as a potential replacement for Pond A-1, in case one was needed. *See* IEPA Water Pollution Control Permit, No. 1989-EN-3064 (May 17, 1989), Ex. 12. Ultimately, Pond A-1 did not need replacement and operated until 2003, as described above. The South Fly Ash Pond has historically received decant water from former Emery Pond, which has ceased since former Emery Pond stopped receiving process waste water discharges in the Fall of 2020. No fly ash, bottom ash, or scrubber sludge was ever directly sent to or placed into the South Fly Ash Pond. If the pond received any CCR throughout its life, it was *de minimis*, consisting only of any residual CCR in pond overflow or storm water.

The Pond Investigation Report confirms that the South Fly Ash Pond contains minimal sediments, with a mean sediment thickness of approximately 1.57 feet, representing approximately 11 percent of historic pond volume<sup>8</sup>. *See* Pond Investigation Rep., Ex. 29 at 7. That is far less than the amount of sediment present in a typical CCR surface impoundment which is used for the storage, treatment or disposal of CCR. *Id.* at 7–8 (“In Haley & Aldrich’s experience, for typical CCR impoundments, the volume of CCR materials is often a major portion (>50%) of the overall impoundment volume.”). Further, of that small amount of sediment, only a fraction (ranging from

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<sup>8</sup> As explained in the Pond Investigation report, the South Fly Ash Pond’s water level was lowered for operational reasons during the time the bathymetric survey. *See* Ex. 29 at 7. As a point of comparison, Haley & Aldridge also estimated sediment volume as a percentage of pond volume using the 2007 pond elevation for the South Fly Ash Pond and Pond 4, which was determined to be more representative of historical conditions. *See id.*

10 percent to 64 percent in the sediment samples that were taken from the South Fly Ash Pond) is estimated to include CCR material. *Id.* at 14.

Pond 3 (including 3A) – Water from the South Fly Ash Pond is permitted to flow to Pond 3, then Ponds 6 and 4, before discharging through Outfall 002.<sup>9</sup> *See* IEPA Reissued National Pollutant Discharge Elimination System Permit, No. IL0004316 (February 1, 2007) (“2007 NPDES Permit”), Ex. 13. On information and belief, Pond 3 may have received some overflow from the Initial Fly Ash Holding Area and later the Fly Ash Holding Area Extension. *See* IEPA Water Pollution Control Permit, No. 1973-ED-1343-OP (June 1973), Ex. 14. Pond 3 also received storm water runoff, coal pile runoff, and water from the plant’s floor drains. Later, by 1982, a berm was built within Pond 3 to separate Pond 3 from the pond now known as Pond 3A.

Pond 3 has been cleaned to remove pond sediment and debris, including vegetation, twice—once in 2006 and again in 2011. Pond 3A was drained of water and cleaned of debris and sediment in 2014. Those cleanings would also have removed any CCR that may have collected in the pond from historic operations. Starting around 2007, SIPC built a berm around Pond 3 to prevent landfill runoff from reaching that pond. Since the pond’s last cleanings, any CCR that has entered Pond 3 or Pond 3A is *de minimis*, such as through storm water, potential overflow from South Fly Ash Pond, or air deposition; no ash has been placed in the pond for treatment, storage, or disposal.

The Pond Investigation Report confirms that Pond 3 (including 3A) contains minimal sediments, with a mean sediment thickness of approximately 1.38 feet in Pond 3 and 1.45 feet in Pond 3A, representing approximately 9 percent and 13.3 percent of pond volume, respectively.

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<sup>9</sup> SIPC timely applied for NPDES permit renewal and is currently working with IEPA on permit reissuance.

*See* Pond Investigation Rep., Ex. 29 at 7. That is far less than the amount of sediment present in a typical CCR surface impoundment which is used for the storage, treatment or disposal of CCR. *Id.* at 7–8 (“In Haley & Aldrich’s experience, for typical CCR impoundments, the volume of CCR materials is often a major portion (>50%) of the overall impoundment volume.”). Further, of that small amount of sediment, only a fraction (ranging from 20 percent to 34 percent in the samples that were taken from Pond 3/3A) is estimated to include CCR material. *Id.* at 14.

Pond 6 – Pond 6 was developed to manage storm water associated with the Former Landfill at the facility and grew within a berm built for runoff capture that was addressed in a 1982 construction permit. Originally, Pond 6 discharged through Outfall 001. In or around 1993, in accordance with another IEPA-issued permit, SIPC extended Pond 6 and installed pumps to pump water from Pond 6 to Pond 4, where it then discharged through Outfall 002 to Little Saline Creek. *See* 1993 Letter, Ex. 8. Outfall 001 was subsequently eliminated. Any CCR discharges Pond 6 received throughout its life were *de minimis*, consisting of incidental amounts of CCR inflow from other ponds and storm water runoff. Pond 6 was not designed to accumulate CCR and liquids or to treat, store, or dispose of CCR.

The Pond Investigation Report confirms that Pond 6 contains minimal sediments, with a mean sediment thickness of approximately 0.84 feet, representing approximately 8.2 percent of pond volume. *See* Pond Investigation Rep., Ex. 29 at 7. That is far less than the amount of sediment present in a typical CCR surface impoundment which is used for the storage, treatment or disposal of CCR. *Id.* at 7–8 (“In Haley & Aldrich’s experience, for typical CCR impoundments, the volume of CCR materials is often a major portion (>50%) of the overall impoundment volume.”). Further, of that small amount of sediment, only a fraction (ranging from 30 percent to

53 percent in the samples that were taken from Pond 6) is estimated to include CCR material. *Id.* at 14.

Moving forward, Pond 6 is expected to receive non-CCR runoff from the Former Landfill, and SIPC plans to manage Pond 6 in conjunction with the closure and post-closure management requirements of Part 811 with IEPA oversight.

Pond 4 – Pond 4 has primarily served two purposes at the facility: to receive decant water from Ponds 1 and 2, when they were in operation before Unit 4's shutdown, and to receive coal pile runoff. Pond 4 currently receives overflow from Pond 6 and discharges through Outfall 002 into the Little Saline Creek.

During an outage in 2012, Pond 4 was cleaned down to the clay, removing plant debris and any ash and coal fines that may collected in the pond. Since its cleaning in 2012, any CCR that has entered Pond 4 is *de minimis*, such as through storm water, overflow from Pond 6, or air deposition.

The Pond Investigation Report confirms that Pond 4 contains minimal sediments, with a mean sediment thickness of approximately 1.67 feet, representing approximately 10.9 percent of pond volume. *See* Pond Investigation Rep., Ex. 29 at 7. That is far less than the amount of sediment present in a typical CCR surface impoundment which is used for the storage, treatment or disposal of CCR. *Id.* at 7–8 (“In Haley & Aldrich’s experience, for typical CCR impoundments, the volume of CCR materials is often a major portion (>50%) of the overall impoundment volume.”). Further, of that small amount of sediment, only a fraction (ranging from 25 percent to 68 percent in the samples that were taken from Pond 4) is estimated to include CCR material. *Id.* at 14.

Pond B-3 – Pond B-3 was built by 1985 and was used primarily as a secondary pond to Pond A-1. Pond A-1 received some fly ash (as described above) and coal pile runoff until 2003,

at which time all fly ash was handled dry and the runoff was directed to Pond 4. During periodic, intermittent outages of Pond A-1, Pond B-3 may have received some discharges of fly ash from Units 1, 2, and 3 prior to their shut down in 2003. On information and belief, Pond A-1 was taken offline at most three to four times between 1985 and 2003, and each of those outages lasted approximately two weeks. Most (or all) of those outages would have occurred during boiler shutdowns, when Marion Station was operating at less than full capacity and generating less ash. Accordingly, any fly ash sluiced to Pond B-3 during these intermittent outages would have been minimal.

In 2017, Pond B-3 was cleaned out down to the clay and has not held water since that time. A BTU analysis showed the material removed had a heat content comparable to coal—not CCR—and at least a portion of the material was consumed for energy production.

Because former Pond B-3 no longer holds any significant amount of water, except in a small area of the former pond where storm water may collect after storms before drainage and evaporation, it was not able to be included as part of the bathymetric survey conducted in conjunction with the pond investigation. However, Haley & Aldridge performed an analysis of two samples taken of a berm associated with former Pond B-3 in conjunction with the pond investigation report, as well as nine samples taken in 2017, and concluded that those samples contained little, if any, CCR material.<sup>10</sup> *See* Pond Investigation Rep., Ex. 29 at 12.

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<sup>10</sup> Hanson Engineering, which performed the bathymetric survey and collected the data analyzed in the Pond Investigation Report, attempted to take a soil boring from the area of former Pond B-3 but was unable to access the agreed-upon IEPA sampling location. *See* Pond Investigation Rep. Ex. 29 at 6.

2. The Former Fly Ash Holding Units.

As discussed below, the Former Fly Ash Holding Units no longer contain water and are covered by the Former Landfill (or, in the case of the Fly Ash Holding Area Extension, a combination of dry CCR disposed in the landfill area, as well as sediments and other materials cleaned out from the pond system). The Former Fly Ash Holding Units were located within the green area on the site map attached to SIPC's May 11, 2021 original Petition. Site Map, Ex. 3.

The Initial Fly Ash Holding Area – On information and belief, the Initial Fly Ash Holding Area received wet fly ash that was collected from Units 1, 2, and 3 until approximately 1977. In October 1977, IEPA issued a permit to SIPC for the Replacement Fly Ash Holding Area with a condition that required the Initial Fly Ash Holding Area to be abandoned and covered. *See* 1977 Permit, Ex. 5. In the early 1990s, plant personnel observed that while storm water might on occasion collect for short periods after precipitation, the Initial Fly Ash Holding Area contained no pond or other area that continuously held water. Further, as of that time, the area was covered by a combination of the Former Landfill and a soil/vegetation cover. Based upon these area observations and in light of the “abandon and cover” permit condition, SIPC believes that the area was covered before the 1990s pursuant to the permit condition.

The Replacement Fly Ash Holding Area – In October 1977, IEPA issued a permit to SIPC to construct the Replacement Fly Ash Holding Area to the north of Pond 2. *See* 1977 Permit, Ex. 5. On information and belief, the Replacement Fly Ash Holding Area likely received spent water from the hydroveyer system, which likely contained *de minimis* amounts of fly ash. The Replacement Fly Ash Holding Area also may have received discharges of fly ash from Units 1, 2, and 3 prior to the construction of Pond A-1 in 1985. On information and belief, the Replacement Fly Ash Holding Area may have also been designated to receive sluiced fly ash from Unit 4 during

intermittent emergencies in which the fly ash was unable to be conveyed to the Former Landfill. It is unknown whether the Replacement Fly Ash Holding Area ever received sluiced fly ash from Unit 4 during emergencies. By the early 1990s, the Replacement Fly Ash Holding Area had been drained of water and was covered by the Former Landfill.

The Fly Ash Holding Area Extension – In or around 1982, SIPC received a permit from IEPA to construct the Fly Ash Holding Area Extension to the west of the Replacement Fly Ash Holding Area and build a berm around a portion of the Former Landfill area that received fly ash and scrubber sludge from Pond 4. *See* 1981 Permit, Ex. 7. The extent to which the Fly Ash Holding Area Extension actually received any fly ash is unknown. By the early 1990s, the Fly Ash Holding Area Extension also did not hold water and was covered in part by the Former Landfill. The remaining area was covered by soil and other material from the plant, including debris cleaned from the pond system.

All three Former Fly Ash Holding Units are in the area of the Former Landfill. *See* Site Map, Ex. 3. These units were included in the landfill area and thus, were of part of the Former Landfill operation for decades before the landfill ceased operating in 2015. At least most of the area that at one time encompassed these units when operating was covered by 1991, and the entire area was covered before October 2015 by landfill material, which included dry CCR, soil, and sediments. As discussed above, use of the Former Landfill is believed to have started around 1978 for scrubber sludge and fly ash disposal. SIPC estimates that the maximum volume of scrubber sludge and ash deposited in the Former Landfill was approximately 1.5 million cubic yards.

In September of 1992, SIPC submitted to IEPA an Initial Facility Report (“IFR”) for the Former Landfill. *See* IEPA Initial Facility Report – for On-Site Facilities (Sept. 18, 1992), Ex. 15. In 1993, SIPC installed groundwater monitoring wells around the Former Landfill in accordance

with Illinois landfill regulations. After that time, SIPC submitted annual groundwater monitoring reports to IEPA pursuant to the landfill regulations. Because the Former Landfill did not receive CCR after the effective date of 40 C.F.R. Part 257, the landfill is not subject to the requirements of Part 257. *See* 40 C.F.R. § 257.50(d).

As discussed below, in March 2020, IEPA issued a Violation Notice (“VN”) for the Former Landfill, alleging violations of Section 21 of the Illinois Environmental Protection Act (“the Act”), the Illinois landfill regulations, and groundwater quality standards, and listing several remedial actions SIPC could take to resolve the alleged violations. *See* IEPA Violation Notice L-2020-00035 (Mar. 20, 2020) (“2020 Landfill VN”), Ex. 16. In December 2020, and in response to IEPA’s request, SIPC submitted a landfill closure plan to IEPA consistent with the Illinois landfill regulations for closure cited by IEPA in the landfill VN (2020 Landfill VN, Ex. 16), and since that time, SIPC has negotiated some elements of that plan with IEPA. SIPC is ready to proceed with that landfill closure plan as soon as it receives IEPA’s approval.

As set forth in the proposed landfill closure plan, SIPC intends to close the Former Landfill in accordance with the requirements of 35 Ill. Admin. Code § 811.314. At a minimum, the final proposed cover system for the Former Landfill will consist of a conventional soil cap with a minimum thickness of 6 feet (3-foot low-permeability layer overlain by a 3-foot final protective layer) or an alternate geosynthetic cap with a minimum thickness of 4 feet consisting from the bottom up of the following: 1-foot thick low-permeability layer, 40-mil linear low-density polyethylene (LLDPE) geomembrane, a double-sided geocomposite drainage layer and a 3-foot final protective layer. The proposed Former Landfill cover includes the area that once contained the Former Fly Ash Holding Units. *See* Former Landfill Closure Plan, Ex. 10, Figure B-05.

Despite issuing a VN to SIPC for alleged violations of landfill regulations, IEPA now appears to argue—apparently based on its proximity to the Former Fly Ash Holding Units—that the Former Landfill (which has been treated by SIPC and regulators as a landfill for more than thirty years) meets the definition of a CCR surface impoundment, “a natural topographic depression, man-made excavation, or diked area, which is designed to hold an accumulation of CCR and liquids, and the surface impoundment treats, stores, or disposes of CCR,” under a rule that became effective as of April 21, 2021 (and which explicitly exempts CCR landfills from coverage). As discussed *infra* at Part III.B, IEPA’s position is incorrect. In addition, this development has delayed finalization and execution of SIPC’s proposed landfill closure plan.

**D. The Federal CCR Rule and the WIIN Act.**

CCR disposal is regulated at the federal level pursuant to Part 257, which was promulgated on April 17, 2015. *See* Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities, 80 Fed. Reg. 21,302 (April 17, 2015) (“Final Rule”), attached in relevant part as Updated Ex. 17. Part 257 was promulgated pursuant to the federal Resource Conservation and Recovery Act, Subtitle D and includes comprehensive technical requirements for regulated CCR landfills and CCR surface impoundments. Part 257 defines a “CCR surface impoundment” as “a natural topographic depression, man-made excavation, or diked area, which is designed to hold an accumulation of CCR and liquids, and the unit treats, stores, or disposes of CCR.” 40 C.F.R. § 257.53.

In December 2016, the President signed the Water Infrastructure Improvements for the Nation Act (the “WIIN Act”), Pub. L. No 114-322 (2016). The WIIN Act authorized states to adopt permit programs that, upon approval by the U.S. Environmental Protection Agency (U.S. EPA), may operate in lieu of Part 257. 42 U.S.C. § 6945(d)(1)(B). State programs must be as

protective as Part 257. *Id.* § 6945(d)(1)(B)(ii). The WIIN Act further allows U.S. EPA to enforce violations of the Part 257 and requires U.S. EPA to develop a federal permitting program for CCR surface impoundments that would apply in states that elect not to seek approval of a state CCR permitting program. 42 U.S.C. § 6945(d)(2)(B).

**E. The Illinois CCR Act and Part 845.**

On July 30, 2019, the Illinois Legislature adopted the Illinois Coal Ash Pollution Prevention Act (“Illinois CCR Act”). 415 Ill. Comp. Stat. 5/22.59. In the findings section of that Illinois CCR Act, the Legislature stated that “CCR generated by the electric generating industry has caused groundwater contamination and other forms of pollution at active and inactive plants throughout this State,” and “environmental laws should be supplemented to ensure consistent, responsible regulation of all existing CCR surface impoundments[.]”<sup>11</sup> 415 Ill. Comp. Stat. 5/22.59(a)(3), (4).

The Illinois CCR Act copied Part 257’s definition of a CCR surface impoundment: “a natural topographic depression, man-made excavation, or diked area, which is designed to hold an accumulation of CCR and liquids, and the unit treats, stores, or disposes of CCR.” 415 Ill. Comp. Stat. 5/3.143. A pond that does not satisfy this definition is not subject to Part 257 or the Illinois CCR Act.

The Illinois CCR Act prohibits any person from allowing the discharge of contaminants from a CCR surface impoundment to the environment so as to cause a violation of the Illinois CCR Act; requires owner and operators of CCR surface impoundments to obtain construction permits

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<sup>11</sup> Prior to passage of the Illinois CCR Act, most CCR surface impoundments in Illinois were regulated as waste water treatment units. *See* R 2020-019, *In the Matter of Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments: Proposed new 35 Ill. Adm. Code 845*, IEPA’s Statement of Reasons (Mar. 30, 2020) (“IEPA Statement of Reasons”), Ex. 18 at 4.

from IEPA; requires IEPA approval prior to closing any CCR surface impoundment; and requires post-closure financial assurance for closed CCR surface impoundments.<sup>12</sup> 415 Ill. Comp. Stat. 5/22.59(b), (d), (f).

The Illinois CCR Act also set forth a fee regime, pursuant to which covered CCR surface impoundment owners and operators must pay initial and annual fees to IEPA for certain closed CCR surface impoundments, as well as those that have not completed closure. 415 Ill. Comp. Stat. 5/22.59(j). The Illinois CCR Act also required the Board to adopt rules governing CCR surface impoundments that must be at least as protective and comprehensive as Part 257. *See* 415 Ill. Comp. Stat. 5/22.59(g).

**F. The Part 845 Rulemaking.**

On March 30, 2020, IEPA proposed regulations titled “Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments” to be included as Part 845 of Illinois Administrative Code’s Title 35. According to the Statement of Reasons issued with the proposed regulations,

The foremost purpose and effect of this regulatory proposal is to fulfill Illinois EPA’s statutory obligation to propose CCR rules consistent with the requirements in Section 22.59(g). The second purpose and effect of this regulatory proposal is to protect the groundwater within the state of Illinois. . . . Groundwater has an essential and pervasive role in the social and economic well-being of Illinois, and is important to the vitality, health, safety, and welfare of its citizens. This rule has been developed based on the goals above and the principle that groundwater resources should be utilized for beneficial and legitimate purposes. *See* 415 ILCS 55/1 *et seq.* ***Its purpose is to prevent waste and degradation of Illinois’ groundwater.*** The proposed rule establishes a framework to manage the underground water resource to allow for maximum benefit of the State.

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<sup>12</sup> The Illinois CCR Act’s financial assurance requirements do not apply to SIPC because it is a not-for-profit electric cooperative. 415 Ill. Comp. Stat. 5/22.59(f).

IEPA Statement of Reasons, Ex. 18 at 10 (emphasis added)<sup>13</sup>. IEPA's Statement of Reasons attached a list of "power generating facilities with CCR surface impoundments [that] may be affected by Illinois EPA's proposed rule." *Id.* at 36–37. IEPA indicated, incorrectly, on that list that Marion Station includes nine CCR surface impoundments. *Id.* at 37.

The Board held two sets of hearings and received 138 written public comments on the proposed rules. SIPC submitted public comments to the Board on September 25, 2020. In those comments, SIPC stated that only one of the units at Marion Station of the nine ponds then identified by IEPA—former Emery Pond (which is not at issue in this Petition)—is actually a CCR surface impoundment as defined in the then-proposed regulations, the Illinois CCR Act, and Part 257. *See* R 2020-019, *In the Matter of Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments: Proposed new 35 Ill. Adm. Code 845*, SIPC Comments to Illinois Pollution Control Board (Sept. 25, 2020), Ex. 19.

**G. The Board's Opinion and the Final Rule.**

The Board issued its Second Notice Opinion and Order ("Second Notice Opinion") on February 4, 2021. The Second Notice Opinion largely adopted IEPA's proposed rules, including its definition of "CCR surface impoundment" as a "natural topographic depression, man-made excavation, or diked area, which is designed to hold an accumulation of CCR and liquids, and the surface impoundment treats, stores, or disposes of CCR." R 2020-019, *In the Matter of Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments: Proposed new 35 Ill. Adm. Code 845*, Illinois Pollution Control Board's Second Notice Opinion and Order at 11 (Feb.

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<sup>13</sup> For all citations to R 2020-019 rulemaking materials—except Board orders and the final Part 845—we provided excerpted documents including only the relevant and cited page numbers, which were attached to SIPC's May 11, 2021 Petition. The page number cited here, and for all R 2020-019 materials, is the page number of the document, not the page number of the exhibit.

4, 2021) (“Second Notice Opinion and Order”); *see also* 35 Ill. Admin. Code § 845.120. Thus the Board, like the legislature in the Illinois CCR Act, adopted Part 257’s definition of “CCR surface impoundment.”

The final Part 845 also adopted the following definitions that are relevant to the instant petition:

“Existing CCR surface impoundment” means a CCR surface impoundment in which CCR is placed both before and after October 19, 2015, or for which construction started before commenced prior to October 19, 2015 and in which CCR is placed on or after October 19, 2015. A CCR surface impoundment has started commenced construction if the owner or operator has obtained the federal, State, and local approvals or permits necessary to begin physical construction and a continuous on-site, physical construction program had begun before prior to October 19, 2015.

...

“Inactive CCR surface impoundment” means a CCR surface impoundment in which CCR was placed before but not after October 19, 2015 and still contains CCR on or after October 19, 2015. Inactive CCR surface impoundments may be located at an active facility or inactive facility.

35 Ill. Admin. Code § 845.120. The Board declined industry’s request to adopt a new definition of *de minimis* units in Part 845, at least in part because it did not want to “create” new language that was not in Part 257, which could create inconsistency. Second Notice Opinion and Order at 14–15. In so doing, the Board appeared to recognize that such units may not be subject to Part 845, just as such units are not subject to Part 257, because they are not “CCR surface impoundments.” The Second Notice Opinion suggested that there is authority to determine such units are not covered CCR surface impoundments subject to Part 845, and that operators of *de minimis* units could—if necessary—petition for a variance or an adjusted standard from Part 845 if it disagrees with how the IEPA characterized a unit:

Regulatory relief mechanisms are available to owners and operators when they disagree with an IEPA determination concerning whether a unit is a CCR surface impoundment. In those instances, an owner or operator may seek an adjusted standard or a variance from the Board

*Id.* at 14.

Following approval by the Joint Committee on Administrative Rules (“JCAR”), the Board adopted Part 845 as final on April 15, 2021, with an effective date of April 21, 2021. *See* R 2020-019, *In the Matter of Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments: Proposed new 35 Ill. Adm. Code 845*, Illinois Pollution Control Board’s Final Order Adopted Rule (Apr. 15, 2021) (“Final Order”).

#### **H. The Violation Notices**

SIPC has received, over the course of the past three years, three VNs from IEPA that are relevant to this Petition.<sup>14</sup>

##### 1. The Pond VNs.

On July 28, 2020, IEPA issued VN No. W-2020-00046 (the “Initial Fee VN”) to SIPC alleging that SIPC failed to pay initial fees for current and former ponds at Marion Station that IEPA alleged were CCR surface impoundments that had not completed closure by the effective date of the Illinois CCR Act. *See* IEPA Violation Notice W-2020-00046 (July 28, 2020), Ex. 20. Specifically, the VN alleged that SIPC had not paid initial fees for Ponds 1, 2, 3, 4, 6, A-1, B-3, and South Fly Ash Pond. Relevant to this Petition, SIPC explained in response to IEPA’s VN that Ponds 3, 4, 6, B-3, and South Fly Ash Pond do not meet the definition of a “CCR surface

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<sup>14</sup> By a letter dated July 3, 2018, IEPA also issued a VN to SIPC pursuant to Section 31(a)(1) of the Act (Violation Notice No. W-2018-00041), alleging violations of groundwater quality standards for various constituents based on groundwater sampling at monitoring wells surrounding or near former Emery Pond. As discussed *supra*, SIPC closed former Emery Pond by removal pursuant to an IEPA-approved closure compliant with Part 257, and it is not included in this Petition.

impoundment” under the Illinois CCR Act, including because they are *de minimis* ponds. SIPC proposed, but IEPA rejected, terms for a compliance commitment agreement to resolve the alleged violations. For the three ponds, all no longer in operation and at issue in the VN but not this Petition—Ponds 1, 2, and A-1, SIPC denies they are regulated CCR surface impoundments<sup>15</sup> but is still discussing them with IEPA.

On December 16, 2020, IEPA issued another VN, No. W-2020-00087 (the “Annual Fee VN”), this time alleging that SIPC failed to pay annual fees as required by the Act for the same current and former ponds at issue in VN No. W-2020-00046. *See* IEPA Violation Notice W-2020-00087 (Dec. 16, 2020), Ex. 21. Again, SIPC responded, denying the allegations but proposing terms for a compliance commitment agreement to resolve the alleged violations. IEPA again rejected SIPC’s proposal. SIPC remains in active negotiations with IEPA regarding the allegations in the Annual Fee VN.

As discussed *infra* at Part III.A, SIPC believes the history of the De Minimis Units, alone, makes clear that they are not CCR surface impoundments and should not be subject to the requirements of Part 845. In addition, IEPA requested, and SIPC agreed, that SIPC complete a pond investigation pursuant to an agreed protocol designed to yield information related to whether the five De Minimis Units at issue in this Petition qualify as excluded *de minimis* units. The investigation was intended to gather information related to the extent and composition of the sediments in the De Minimis Units.

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<sup>15</sup> SIPC has explained to IEPA in response to the VN why the other three ponds are not regulated CCR surface impoundments: former Ponds 1 and 2 temporarily contained, when in operation, beneficially used CCR, as discussed above, and water, and CCR was removed from Pond A-1 before October 2015.

The pond investigation involved (1) completion of a bathymetric survey to determine the amount of sediments below water in the De Minimis Units (with the exception of former Pond B-3, which no longer holds water); and (2) analysis of pond sediments to determine whether and to what extent they contain CCR. At the request of IEPA, soil borings were also taken from the berms associated with Ponds 3 (including 3A), B-3, and 4.<sup>16</sup> Field work and data collection was completed by Hanson Engineering, Inc. Haley & Aldridge analyzed the results and authored the report. SIPC provided an initial version of that report to IEPA on August 6, 2021. H&A subsequently updated the report following a call with IEPA, including to address questions raised by IEPA, and that updated version is the version attached as Ex. 29.

As discussed *supra* at Part C.1., the results of the pond investigation confirm that the De Minimis Units are not CCR surface impoundments under Part 845 (or under Part 257). As discussed *infra*, the results of that investigation also confirm that the De Minimis Units do not have a material adverse effect on groundwater at Marion Station. In short, the Pond Investigation Report confirms that (1) only a fraction of the relatively thin sediment layer present in the De Minimis Units is CCR material; (2) the De Minimis Units are the type of “de minimis units” the U.S. EPA explicitly excluded from regulation under Part 257 (*see infra* at Part A.I.); and (3) regulating the De Minimis Units under Part 845 is not necessary for the protection of human health or the environment.

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<sup>16</sup> IEPA also requested that borings be taken from former Pond A-1 (which is not part of this Petition) and former Pond B-3. As discussed *supra* at 13, SIPC was unable to collect either of those borings because bedrock was encountered at the surface of former Pond A-1 (confirming no CCR present) and the designated boring area of Pond B-3 was inaccessible. *See* Pond Investigation Rep., Ex. 29 at 6.

2. The Landfill VN.

As discussed *supra* at Part II.C.2, by letter dated March 20, 2020, IEPA issued a VN to SIPC pursuant to Section 31(a)(1) of the Act, No. L-2020-00035 (the “Landfill VN”), alleging SIPC’s failure to comply with various requirements of Illinois landfill regulations in its operation and management of the Former Landfill. *See* 2020 Landfill VN, Ex. 16. Specifically, IEPA alleged violations of Part 811’s intermediate and final cover requirements, Parts 815 and 812’s requirements for filing an IFR, Part 811’s requirements related to final slope and stabilization, and Part 811 groundwater monitoring requirements. Nowhere in that VN did IEPA allege violations of—or even reference—Part 257, the Illinois CCR Act, or Part 845.

SIPC denied the allegations in the VN but provided certain requested information to IEPA and, in December 2020, submitted a proposed plan to close the Former Landfill in compliance with Parts 811 and 815. In March 2021, nearly three months after receiving SIPC’s proposed landfill closure plan, an IEPA representative for the first time informed SIPC of a new position that the Former Landfill was regulated by and required to close pursuant to Part 845, rather than pursuant to the Illinois landfill regulations under which the Former Landfill had been operating for decades (and under which IEPA had issued the VN). Subsequently, IEPA withdrew the Landfill VN via a letter dated May 6, 2021. As set forth herein, SIPC disagrees with IEPA’s new position.

**I. Requested Relief**

Through this petition, SIPC requests a finding of inapplicability from the Part 845 requirements for the De Minimis Units and the Former Fly Ash Holding Units or, in the alternative, an adjusted standard exempting the De Minimis Units and the Former Fly Ash Holding Units from the requirements of Part 845.

**III. REQUEST FOR FINDING OF INAPPLICABILITY.**

The Board has recognized that a Petition for an adjusted standard can, in the alternative, seek a finding of inapplicability from the regulation at issue. *See* AS 2009-003, *In the Matter of Petition of Westwood Lands, Inc. for an Adjusted Standard from Portions of 35 Ill. Adm. Code 807.14 and 35 Ill. Adm. Code 807.104 and 35 Ill. Adm. Code 810.103* or, in the Alternative, a *Finding of Inapplicability*, Opinion and Order of the Board (Oct. 7, 2010) (granting request for a finding of inapplicability from solid waste regulations); AS 2004-002, *In the Matter of Petition of Jo'Lyn Corporation and Falcon Waste and Recycling Inc. for an Adjusted Standard from 35 Ill. Adm. Code 807.103 and 35 Ill. Adm. Code 810.103*, or in the Alternative, a *Finding of Inapplicability*, Opinion and Order of the Board (Apr. 7, 2004) (granting a request for a finding of inapplicability from solid waste regulations). Such relief is appropriate here on the basis that none of the units at issue are CCR surface impoundments subject to Part 845, as set forth further below.

**A. The De Minimis Units Are Not Subject to Part 845.**

Part 845 is clear that it only regulates “CCR surface impoundments.” The regulation’s “Scope and Purpose” section specifies that Part 845 applies to “owners and operators of new and existing CCR surface impoundments,” 35 Ill. Admin. Code § 845.100(a), and “inactive CCR surface impoundments at active and inactive electric utilities or independent power producers.” *Id.* § 845.100(b). As discussed below, none of the units at issue are CCR surface impoundments, new or existing CCR surface impoundments, or inactive CCR surface impoundments, and therefore, none of the current and former ponds at issue are covered by Part 845.

1. The De Minimis Units Are Not “CCR Surface Impoundments.”

As discussed below, the De Minimis Units are not “CCR surface impoundments” as defined in Part 257 or Part 845. Both Part 257 and Part 845 define a CCR surface impoundment as “a natural topographic depression, man-made excavation, or diked area, which *is* designed to

hold an accumulation of CCR and liquids, **and** the unit<sup>17</sup> treats, stores, or disposes of CCR.” 40 C.F.R. § 257.53 (emphasis added); *see also* 35 Ill. Admin. Code § 845.120. None of the De Minimis Ponds meet this two-part definition, which focuses on the **present** function of an impoundment as of the effective date of Part 257.<sup>18</sup>

As discussed above, the De Minimis Units are not presently designed to—and do not—hold a necessary accumulation of CCR and liquids. To the extent they ever did, they have not done so since long before October 19, 2015. Accordingly, the De Minimis Units do not fall within the first part of the definition of CCR surface impoundment. And none of the De Minimis Units currently treat, store, or dispose of CCR, and (to the extent they ever did) have not done so since October 19, 2015, as required by the second part of the definition of CCR surface impoundment. The De Minimis Units therefore fall outside the plain language of the definition of “CCR surface impoundment” and, consequently, Part 845.

The fact that certain of the De Minimis Units *may* have received historic, largely indirect, discharges of CCR does not bring them within the definition of a “CCR surface impoundment.” To the contrary, both the history and the current condition of the De Minimis Units make clear that

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<sup>17</sup> Part 845 substitutes “surface impoundment” for “unit,” but this works no substantive change. 35 Ill. Admin. Code § 845.120

<sup>18</sup> Part 257, upon promulgation, did not impose any requirements on any CCR surface impoundments that no longer existed or had closed before the rule’s effective date—i.e., those that no longer contained water and could no longer impound liquid. Final Rule, Ex. 17 at 21,343. Whether a unit met the definition of CCR surface impoundment depended on what waste was managed in the unit **as of October 19, 2015**. The court’s decision in *Util. Solid Waste Activities Grp. v. Env’tl. Prot. Agency*, 901 F.3d 414 (D.C. Cir. 2018) (“*USWAG*”) reversed and remanded the federal rules to the U.S. EPA to regulate any ash pond that was a “legacy pond,” which is an inactive CCR surface impoundment at a closed or no longer operating facility. The *USWAG* decision described the risks posed by legacy ponds as risks associated with open, wet ponds that were not closed. *See USWAG*, 901 F.2d at 432–33. The *USWAG* decision’s remand did **not** speak to ponds at active facilities that contained *de minimis* CCR or could no longer contain water and impound liquid as of the effective date of the rule. Accordingly, the *USWAG* decision did not order U.S. EPA to regulate units like the De Minimis Units or the Former Fly Ash Holding Units.

they are precisely the type of *de minimis* units that the U.S. EPA intended to exclude from the definition of CCR surface impoundment in Part 257 and which, accordingly, should also be excluded from Part 845 under the same definition.

In its preamble to the Final Rule, U.S. EPA stated that

The Agency received many comments on the proposed definition of CCR surface impoundment. The majority of commenters argued that the definition was overly broad and would inappropriately capture surface impoundments that are not designed to hold an accumulation of CCR. Commenters were concerned that the proposed definition could be interpreted to include downstream secondary and tertiary surface impoundments, such as polishing, cooling, wastewater and holding ponds that receive only *de minimis* amounts of CCR.

Final Rule, Updated Ex. 17 at 21,357.

In response to those concerns, U.S. EPA reviewed the risk assessment on which Part 257 was based “to determine the characteristics of the surface impoundments that are the source of the risks the rule seeks to address.” *Id.*

Specifically, these are units that contain a large amount of CCR managed with water, under a hydraulic head that promotes the rapid leaching of contaminants. . . . EPA agrees with commenters that ***units containing only truly “de minimis” levels of CCR are unlikely to present the significant risks this rule is intended to address.***

*Id.* (emphasis added).

Accordingly, U.S. EPA amended the definition of CCR surface impoundment in the Final Rule “to clarify the types of units that are covered by the rule”: “a natural topographic depression, man-made excavation, or diked area, which *is* designed to hold an accumulation of CCR and liquids, ***and the unit treats, stores, or disposes of CCR.***” *Id.* (emphasis added). The intent of the amendment was to implement U.S. EPA’s determination, as described in Part 257’s preamble, that *de minimis* units would be **excluded** from Part 257 requirements. U.S. EPA’s amended definition is, as noted above, the same definition used in Part 845. *See* 35 Ill. Admin. Code § 845.120.

In making the change, U.S. EPA noted that it “agrees with commenters that relying solely on the criterion from the proposed rule that the unit be designed to accumulate CCR could inadvertently capture units that present significantly lower risks, such as process water or cooling water ponds, because, although they will accumulate any trace amounts of CCR that are present, they will not contain the significant quantities that give rise to the risks modeled in EPA’s assessment. By contrast, units that are designed to hold an accumulation of CCR and in which treatment, storage, or disposal occurs will contain substantial amounts of CCR and consequently are a potentially significant source of contaminants.” Final Rule, Updated Ex. 17 at 21,357.

The Illinois CCR Act and Part 845 both incorporate Part 257’s definition of “CCR surface impoundment,” with the amended language that implemented EPA’s determination that *de minimis* units would not be considered regulated surface impoundments. Thus, Part 845 and the Illinois CCR Act do not apply to *de minimis* units.

The Board declined to “create” a new definition of “*de minimis*,” as it is not expressly defined in Part 257, but that decision did not mean that *de minimis* units would be covered under Part 845. Second Notice Opinion and Order at 14–15. Indeed, that decision was based at least in part on concerns about assuring conformity with U.S. EPA’s rule. *Id.* at 15. And Part 257 does not apply to *de minimis* units as such units are described by U.S. EPA, including in the Preamble to its final CCR rule. *See* Final Rule, Updated Ex. 17 at 21,357. Consistently, the Board also implicitly recognized in its discussion of defining *de minimis* units that IEPA might make decisions about whether a unit qualifies as an excluded *de minimis* unit, and, if a company disagreed, it could chose to seek relief from the Board, including, for example, an adjusted standard. Second Notice Opinion and Order at 14. IEPA, and the Board, may determine that a unit is *de minimis* and thus not regulated because the regulations do not apply to such units under the identical “CCR surface

impoundment” definitions in Part 257 and Part 845. Here, for the reasons set forth below, SIPC asks the Board in the first instance<sup>19</sup> to determine that the De Minimis Units are not regulated CCR surface impoundments.

Both the Pond Investigation Report and the history of the De Minimis Units outlined above shows that they do not “contain a large amount of CCR managed with water, under a hydraulic head that promotes the rapid leaching of contaminants.” Final Rule, Updated Ex. 17 at 21,357; Pond Investigation Rep., Ex. 29. To the extent any of the De Minimis Units ever received discharges of CCR, the discharges were mostly indirect, either from pond overflow or process waste water. The only De Minimis Unit that is known to have received direct wastewater discharges of CCR—Pond B-3<sup>20</sup>—likely only did so for short periods of time, has not received any CCR for decades, and is no longer able to contain water. *See supra* at Part II.C.1. Accordingly, none of the ponds at issue ever contained “significant quantities” or “substantial amounts” of CCR. Further, all of the De Minimis Units have been cleaned of debris since Marion Station switched to fully dry handling of fly ash, and those cleanings would have removed any CCR that would have accumulated in them as a result of historic operations. As a result, the De Minimis Units simply do not present the “significant risks” Part 257, and Part 845, are intended to address.

This conclusion is bolstered by the results and analysis set forth in the Pond Investigation Report. As summarized in that report, Haley & Aldridge reviewed extensive information relating to the De Minimis Units, including bathymetric survey results, results of analyses of pond sediments, and results of a polarized light microscopy (“PLM”) analyses, which characterize the

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<sup>19</sup> As set forth below, if the Board denies this request, SIPC asks the Board for an adjusted standard with respect to the De Minimis Units.

<sup>20</sup> While the South Fly Ash Pond was *designed* to receive direct discharges of CCR, it never did receive direct discharges of CCR. *See supra* at 8–9.

fraction of CCR in sediment samples. Based on that information, Haley & Aldridge determined that the De Minimis Units contain on average less than 2 feet of total sediments. Of that less than two feet, Haley & Aldridge determined that the average fraction of CCR materials in the De Minimis Units was approximately 40 percent. Pond Investigation Rep., Ex. 29 at 13. In other words, the De Minimis Units contain only a small amount of sediment, and only a fraction of those sediments appear to contain CCR materials. Haley and Aldridge accordingly concluded that “these results are consistent with what we understand to be the function of [the De Minimis Units], which generally did not receive direct discharges of CCR materials, were not designed to hold an accumulation of CCR and water, and have not been used for the treatment, storage and disposal of CCR.” Pond Investigation Rep., Ex. 29 at 7.

Haley & Aldridge also contrasted the volume and type of pond sediments in the De Minimis Units with the characteristics of a “typical” CCR surface impoundment that is used to treat, store, or dispose of CCR. As discussed in the Pond Investigation Report, the volume of sediments in such CCR surface impoundments generally is greater than 50 percent of pond volume. In contrast, the volume of sediments in the De Minimis Units ranged from 8.2 percent (Pond 6) to 13.3 percent (Pond 3A). Similarly, the total volume of sediments in the De Minimis Units is far smaller than one would expect to see in a CCR surface impoundment used for the treatment storage or disposal of CCR. *See* Pond Investigation Rep., Ex. 29 at 7. These results further bolster the conclusion that the De Minimis Units are not CCR surface impoundments as defined in Part 257 (or Part 845).

Further, and as discussed *infra* at 44, Haley & Aldridge reviewed multiple years of groundwater monitoring data collected by SIPC and determined that any CCR that is in the De Minimis Units has not had any appreciable impact on groundwater at SIPC. *See* Pond Investigation

Rep., Ex. 29 at 26; *see also* Updated Bradley Op., Updated Ex. 28 at 21. Dr. Bradley concurs with this conclusion and determines that the De Minimis Units do not pose appreciable risk—and are therefore not the type of units intended by regulated by Part 257 or Part 845—based on her review of the Pond Investigation Report and her own review of Site groundwater monitoring data and pond histories. Updated Bradley Op., Updated Ex. 28 at 21–22. As discussed by Dr. Bradley in her updated report, the De Minimis Units are precisely the types of *de minimis* units that EPA sought to exclude from regulation under Part 257 because they do not “***present the significant risks [Part 257] is intended to address.***” Final Rule, Updated Ex. 17 at 21,357. They should likewise be excluded under Part 845, as discussed below.

Given that the De Minimis Units are not CCR surface impoundments under Part 257, the Board should find that they also are not covered by Part 845. As noted above, the definition of “CCR surface impoundment” is identical in both Part 257 and Part 845, and plainly excludes the De Minimis Units. As a practical matter, it would be anomalous to say the least that the same words mean something different in Part 845 and that a unit is subject to Part 845 but excluded by Part 257 under the same rule language. Part 257 clearly excludes units such as the De Minimis Units. Further, the administrative record is clear that the legislature, IEPA, and the Board in adopting the same definition of “CCR surface impoundments” as Part 257, all intended for Part 845 to regulate the same universe of “CCR surface impoundments” as Part 257. *See, e.g.,* R 2020-019, *In the Matter of Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments: Proposed new 35 Ill. Adm. Code 845*, IEPA Responses to Pre-Filed Questions (Aug. 3, 2020) (“IEPA Responses”), attached in relevant part as Updated Ex. 22 at 7–8 (“It is the Agency’s position that the same universe of CCR surface impoundments [that is regulated by Part 257] is intended to be regulated by Part 845.”); *id.* at 17 (“CCR surface impoundments not subject

to Part 257, are not subject to the requirements of Part 845. (Agency Response)"); R 2020-019, *In the Matter of Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments: Proposed new 35 Ill. Adm. Code 845*, Hearing Transcript (Aug. 11, 2020), Ex. 23 at 43–44 (Q: “[M]y question was is Part 845 intended to apply to the same ponds that are subject to requirements under Part 257 given that they both define CCR surface impoundments in an identical fashion?” A: “In the Agency’s opinion, they will be the same ones.”); Final Order at 8 (noting that “many of the technical elements required of owners and operators of CCR surface impoundments are already required under federal law.”).

Indeed, to the extent IEPA *had* desired to deviate from Part 257 for the scope of units of covered by Part 845, it admitted that it did not conduct its own risk assessment or otherwise gather evidence that would support doing so. *See, e.g.*, IEPA Responses, Updated Ex. 22 at 55 (Q: “Are you familiar with the Risk Assessment performed by U.S. EPA when it finalized the 2015 Federal CCR Rule?” A: “No.”); R 2020-019, *In the Matter of Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments: Proposed new 35 Ill. Adm. Code 845*, First Supplement to IEPA Pre-Filed Responses (Aug. 5, 2020), Ex. 24 at 37–38 (admitting that IEPA did not perform its own risk assessment and IEPA relied upon U.S. EPA’s risk assessment “to the extent that USEPA’s risk assessment was used by USEPA to develop the requirements of Part 257”). There is no question, then, that the De Minimis Units are excluded from regulation under both Part 257 **and** Part 845.

2. The De Minimis Units Are Not Existing or Inactive CCR Surface Impoundments.

The De Minimis Units also do not fall within the definition of “existing CCR surface impoundment” or “inactive CCR surface impoundment” under either Part 845 or Part 257. As an

initial matter, under either regulatory scheme, a unit cannot be an “existing CCR surface impoundment” or an “inactive CCR surface impoundment” unless it is first a “CCR surface impoundment” which, as discussed above, the De Minimis Units are not. *See, e.g.*, Second Notice Opinion and Order at 15 (“The Board notes that for an impoundment to be an inactive surface impoundment, first it must be a *CCR surface impoundment*, which is defined in Section 845.120 as being designed to ‘hold CCR and liquid.’” (emphasis in original)). Furthermore, it is undisputed that none of the De Minimis Units “received” CCR or had CCR “placed” in them—other than any small amounts that may have been incidentally deposited through indirect discharges, runoff, or air—on or after October 2015. The De Minimis Units thus are clearly not “existing CCR surface impoundments” under Part 257 or Part 845.

The De Minimis Units are likewise not “inactive CCR surface impoundments.” Part 257 defines an “inactive surface impoundment” as a “CCR surface impoundment that no longer receives CCR on or after October 19, 2015 and still contains both CCR and liquids on or after October 19, 2015” 40 C.F.R. § 257.53. Part 845 similarly defines “inactive CCR surface impoundment” as a “CCR surface impoundment in which CCR was placed before but not after October 19, 2015 and still contains CCR on or after October 19, 2015.” 35 Ill. Admin. Code § 845.120. There is no dispute that CCR was never “placed” in the South Fly Ash Pond or Pond 6, either before or after October 19, 2015. Those ponds plainly are not inactive CCR surface impoundments. To the extent any CCR was ever “placed” in the Ponds 3, 4, or B-3 decades ago, the historical record is clear that any historic receipt of CCR by those ponds was temporary and intermittent in nature and of *de minimis* amounts of CCR not intended to be covered under Part 257 or Part 845. Accordingly, the De Minimis Units do not *presently* contain more than *de minimis* amounts of CCR, which is not sufficient to meet the requirements for regulation as an inactive

CCR surface impoundment under either Part 257 or Part 845. Accordingly, the De Minimis Units should not be regulated as inactive CCR surface impoundments under Part 257 or Part 845.

**B. The Former Fly Ash Holding Units Are Not Subject to Part 845.**

1. The Former Fly Ash Holding Units Are Not CCR Surface Impoundments, Existing CCR Surface Impoundments, or Inactive CCR Surface Impoundments.

The Former Fly Ash Holding Units are likewise not “CCR surface impoundments” subject to Part 257 or Part 845. The Former Fly Ash Holding Units are—and have been since at least the early 1990s—dry and operated in conjunction with the on-site Former Landfill, which, in turn, has been operated and regulated as an on-site, permit-exempt landfill pursuant to 35 Ill. Admin. Code Part 815 for decades. The Former Fly Ash Holding Units are not currently, and were not as of October 19, 2015, “designed to hold an accumulation of CCR and liquids” and accordingly, fall outside of the plain definition of “CCR surface impoundment.” *See supra* at Part III.A.1; *see also* U.S. EPA, Comment Summary and Response Document: Hazardous and Solid Waste Management System; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals from Electric Utilities; Proposed Rule, Vol. 3 (Dec. 2014), Ex. 25 at 73 (“CCR surface impoundments that have been dewatered and are no longer able to hold free liquids” prior to October 19, 2015 “are not subject to [Part 257].”).

Because the Former Fly Ash Holding Units are not CCR surface impoundments, they do not fall within the definition of “existing” or “inactive CCR surface impoundments.” *See supra* at Part III.A.2 (relating to the De Minimis Units and emphasizing that in order to be regulated as an existing or inactive CCR surface impoundment, the unit at issue must first be a “CCR surface impoundment” within the meaning of Parts 845 and 257). The Former Fly Ash Holding Units also

do not satisfy other key elements of the “existing” and “inactive” CCR surface impoundment definitions.

The Former Fly Ash Holding Units cannot be “existing CCR surface impoundments” because they did not receive CCR after October 19, 2015. The Former Fly Ash Holding Units cannot be “inactive CCR surface impoundments” because, to the extent the units contained CCR after October 19, 2015, the units did not contain water after October 19, 2015. The Former Fly Ash Holding Units are thus plainly excluded from the Part 257 definition of “inactive CCR surface impoundment,” which requires that an inactive unit contain CCR *and water* after October 19, 2015. *See* 40 C.F.R. § 257.53. In promulgating its definition of an inactive CCR surface impoundment, U.S. EPA noted that Part 257 “was designed to address units that pose the highest level of risk: “units that contain a large amount of CCR *managed with water*, under a hydraulic head that promotes the rapid leaching of contaminants.” Final Rule, Updated Ex. 17 at 21,357 (emphasis added). As a result, U.S. EPA decided not to “impose any requirements on any CCR surface impoundments that have in fact ‘closed’ before the rule’s effective date [October 19, 2015]—i.e., those [like the Former Fly Ash Holding Area Units] that no longer contain water and can no longer impound liquid.” *Id.* at 21,343. As discussed above, the record is clear that the legislature, IEPA, and the Board all intended for Part 845 to encompass the same universe of CCR surface impoundments as Part 257. *See supra* at Part III.A.1. Accordingly, because the Former Fly Ash Holding Units are not regulated as inactive CCR surface impoundments under Part 257, they also should not be regulated as inactive CCR surface impoundments under Part 845.

2. The Former Fly Ash Holding Units Have Been Managed for Decades as a Landfill, which Is Excluded from Regulation under Part 845.

The Former Fly Ash Holding Units are not subject to Part 845 for the separate reason that they function (and have functioned for decades) as part of the Former Landfill, and both Part 257 and Part 845 make clear that CCR landfills are not surface impoundments. Part 257 specifically defines a CCR landfill as **not** being a CCR surface impoundment: “CCR landfill or landfill means an area of land or an excavation that receives CCR **and which is not a surface impoundment**, an underground injection well, a salt dome formation, a salt bed formation, an underground or surface coal mine, or a cave.” 40 C.F.R. § 257.53 (emphasis added). Part 257 likewise contains separate and distinct requirements for CCR landfills and CCR surface impoundments. *Compare, e.g.,* 40 C.F.R. § 257.70 *with* 40 C.F.R. § 257.71 and 40 C.F.R. § 257.84 *with* 40 C.F.R. § 257.83. There is simply no question that the U.S. EPA intended to regulate CCR landfills separately from CCR surface impoundments in Part 257.<sup>21</sup>

Part 845 is likewise clear that it does not regulate CCR landfills; the “Scope and Purpose” section states “this Part **does not apply** to landfills that receive CCR.” 35 Ill. Admin. Code § 845.100(h) (emphasis added); *see also* IEPA Responses, Updated Ex. 22 at 6 (“A man-made excavation where CCR is disposed could be a CCR surface impoundment or a landfill, **but a landfill that receives CCR is not a CCR surface impoundment.**”) (emphasis added). The Board explicitly declined to extend Part 845’s reach to landfills and other unconsolidated piles of CCR during the rulemaking, stating “that regulation of these unconsolidated coal ash fills and piles is beyond the scope of [the Illinois CCR Act].” Second Notice Opinion and Order at 12. Instead, the Board

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<sup>21</sup> As noted *supra*, the Former Landfill at Marion Station is not regulated pursuant to Part 257 because it stopped receiving waste prior to October 2015. 40 C.F.R. § 257.53.

opted to open a separate sub-docket to explore regulating CCR in landfills and unconsolidated coal ash fills and piles. *Id.* IEPA agreed with the Board, taking the position that “limiting Part 845 to CCR surface impoundments is necessary and appropriate.” R 2020-019, *In the Matter of Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments: Proposed new 35 Ill. Adm. Code 845*, IEPA Post-Hearing Comments (Oct. 30, 2020), Ex. 26 at 10. There is no question that the Former Landfill—including the Former Fly Ash Holding Area Units—at Marion Station operated as a landfill and has been regulated as a landfill for decades. *See supra* at Part II.C.2. Indeed, as recently as March 2020, IEPA issued a VN to SIPC for alleged violations of the Illinois landfill regulations at the Former Landfill. As part of the Former Landfill, the Former Fly Ash Holding Units cannot be subject to Part 845. Illinois landfill regulations, consistent with Part 257 and Part 845, clearly state that a landfill is not a surface impoundment.<sup>22</sup>

3. The Board Should Reject IEPA’s Apparent Position that the Historic Presence of a CCR Surface Impoundment Converts a Landfill into a CCR Surface Impoundment.

Finally, the Board should reject IEPA’s apparent new and convoluted argument that, notwithstanding its regulation of the Former Landfill as a landfill for decades—including its recent issuance of a VN asserting alleged violations of Illinois landfill regulations, the landfill regulations do not apply, and the entire Former Landfill area, including the Former Fly Ash Holding Units, is actually a CCR surface impoundment subject to Part 845.

IEPA’s argument appears to be this: the Former Fly Ash Holding Units were once, decades ago, used to store CCR and water. They no longer contain water and no longer receive CCR, but

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<sup>22</sup> 35 Ill. Admin. Code § 810.103 (“‘Landfill’ means a unit or part of a facility in or on which waste is placed and accumulated over time for disposal, and that is not a land application unit, a surface impoundment or an underground injection well.”); *see also* 35 Ill. Admin. Code § 810.104 (“For the purposes of this Part and 35 Ill. Adm. Code 811 through 815, a surface impoundment is not a landfill.”).

the fact that they once did and appear on a map in the vicinity of the Former Landfill somehow converts the (now closed) Former Landfill, which both SIPC and IEPA have recognized for decades as landfill, into a CCR surface impoundment. This is an illogical and absurd result, and one that runs directly contrary to the definition of “CCR surface impoundment” in Part 257, Part 845, and Illinois landfill regulations.

As discussed *supra*, both Part 845 and the Illinois CCR Act incorporated Part 257’s present tense language in their definitions of CCR surface impoundment. *See supra* at Part III.A.1. Those definitions must be construed to exclude units that have for decades operated as part of a landfill. In its preamble to Part 257, U.S. EPA made clear its intention to avoid exactly this type of result:

*EPA did not propose to require “closed” surface impoundments to “reclose.” Nor did EPA intend, as the same commenters claim, that “literally hundreds of previously closed . . . surface impoundments—many of which were properly closed decades ago under state solid waste programs, have changed owners, and now have structures built on top of them—would be considered active CCR units.”* Accordingly, the final rule does not impose any requirements on any CCR surface impoundments that have in fact “closed” before the rule’s effective date—*i.e., those that no longer contain water and can no longer impound liquid.*

Final Rule, Updated Ex. 17 at 21,343 (emphasis added).

Treating the Former Fly Ash Holding Units, and indeed the entire Former Landfill, as CCR surface impoundments after years of regulating the area as a landfill thus flies in the face of U.S. EPA’s stated intent not to regulate units that “now have structures built on top of them” and that “no longer contain water and can no longer impound liquid.” *Id.* It also contravenes the stated intent of the legislature, IEPA, and the Board for Part 845 to apply to the same universe of “CCR surface impoundments” as Part 257. As a practical matter, it also upends years of settled expectations about the requirements for operation and closure, raising significant retroactivity and fairness concerns for this not-for-profit cooperative and its owners. The Board should reject

IEPA's last-minute overreach and find that Part 845 does not apply to the Former Landfill, including the Former Fly Ash Holding Units.<sup>23</sup>

**IV. PETITION FOR AN ADJUSTED STANDARD.**

If the Board declines to issue a finding of inapplicability and determines that the current and former ponds at issue in this Petition are "CCR surface impoundments," SIPC requests in the alternative that the Board grant an adjusted standard from 35 Illinois Administrative Code Part 845 for the De Minimis Units and the Former Fly Ash Holding Units. When petitioned, the Board may grant an adjusted standard from a rule of general applicability for persons who can justify such an adjustment under the applicable statutory factors. 415 Ill. Comp. Stat. 5/28.1(a). As set forth below, the requested adjusted standard is warranted here based on the factors set forth in Section 28.1, including consistency with Section 27(a). Accordingly, SIPC's request for an adjusted standard for the De Minimis Units and the Former Fly Ash Holding Units should be granted.

**A. Regulatory Standard.**

Section 28.1 of the Act describes the factors the Board must consider in granting an adjusted standard:

(c) If a regulation of general applicability does not specify a level of justification required of a petitioner to qualify for an adjusted standard<sup>[24]</sup>, the Board may grant individual adjusted standards whenever the Board determines, upon adequate proof by petitioner, that:

(1) factors relating to that petitioner are substantially and significantly different from the factors relied upon by the Board in adopting the general regulation applicable to that petitioner;

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<sup>23</sup> The Indiana Office of Environmental Adjudication recently rejected similar attempts by environmental groups to argue that a portion of a former Duke Energy ash pond—which had been closed for decades—was subject to Part 257, stating that “an impoundment’s regulatory status over three decades ago is not relevant to determining whether it is currently subject to the Federal CCR Rule.” *In the Matter of Objection to the Issuance of Partial Approval of Closure/Post Closure Plan Duke Gallagher Generating Station Ash Pond System*, No. 20-S-J-5096 (OEA May 4, 2021), Ex. 27 at 14.

<sup>24</sup> Part 845 does not specify a level of justification required to qualify for an adjusted standard.

- (2) the existence of those factors justifies an adjusted standard;
- (3) the requested standard will not result in environmental or health effects substantially and significantly more adverse than the effects considered by the Board in adopting the rule of general applicability; and
- (4) the adjusted standard is consistent with any applicable federal law.

415 Ill. Comp. Stat. 5/28.1(c)(1)–(4).

Any adjusted standard must also be “consistent” with subsection (a) of section 27 of the Act, which provides that “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<sup>25</sup>], and the technical feasibility and economic reasonableness of measuring or reducing the particular type of pollution.” 415 Ill. Comp. Stat. 5/27(a).<sup>26</sup>

As discussed below, granting the requested adjusted standard for the De Minimis Units and the Former Fly Ash Holding Units is justified by the factors set forth in Section 28.1 and consistent with the factors set forth in Section 27.

**B. The De Minimis Units.**

- 1. SIPC Requests an Adjusted Standard Exempting the De Minimis Units from all Provisions of Part 845.

To the extent the Board determines that the De Minimis Units are “CCR Surface

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<sup>25</sup> The physical conditions at Marion Station and character of the area involved, including the character of surrounding land uses, zoning classifications, and the nature of the receiving body of water are discussed *supra* at Part II.A.

<sup>26</sup> The Illinois Court of Appeals has held that the Board’s review is limited to the factors set forth in Sections 27(a) and 28.1: “The Act sets forth the factors the Board is to consider when determining whether to grant an adjusted standard. The Board lacks the authority to add to or rewrite the statutory factors.” *Emerald Performance Materials, LLC v. Ill. Pollution Control Bd.*, 2016 IL App (3d) 150526, ¶ 27.

Impoundments” under Part 845, the Board should grant an adjusted standard from section 845.100 exempting the De Minimis Units from the requirements of Part 845. SIPC’s proposed language is set forth *infra* in Part IV.D.

2. The Factors Relating to the De Minimis Ponds Are Substantially and Significantly Different from the Factors and Circumstances on which the Board Relied in Adopting Part 845.

In determining whether to grant an adjusted standard, the Board first considers whether the factors relating to the Petitioner are significantly different from the factors considered in adopting the regulation at issue (Part 845). *See* 415 Ill. Comp. Stat. 5/28.1(c)(1). As discussed below, here they are.

Like the Part 257 rules relating to surface impoundments, Part 845 was intended to address the risks posed by CCR surface impoundments that have resulted or are likely to result in groundwater contamination:

The second purpose and effect of this regulatory proposal is to protect the groundwater within the state of Illinois. The proposed rule contains a program for groundwater monitoring and the remediation of contaminated groundwater resulting from leaking CCR surface impoundments. Groundwater has an essential and pervasive role in the social and economic well-being of Illinois, and is important to the vitality, health, safety, and welfare of its citizens. This rule has been developed based on the goals above and the principle that groundwater resources should be utilized for beneficial and legitimate purposes . . . Its purpose is to prevent waste and degradation of Illinois’ groundwater. The proposed rule establishes a framework to manage the underground water resource to allow for maximum benefit of the State.

IEPA Statement of Reasons, Ex. 18 at 10; *see also id.* at 3–4 (“The presence of [certain contaminants that can be found in CCR] threatens groundwater as these contaminants are soluble and mobile. When the CCR surface impoundments are not lined with impermeable material, these

contaminants may leach into the *groundwater*, affecting the potential use of the *groundwater*.” (emphasis added)).

In its Second Notice Opinion, the Board likewise emphasized that “[a]mong the program’s primary goals is protecting groundwater from contamination by CCR pollutants leaking from surface impoundments.” Second Notice Opinion and Order at 1; *see also id.* at 3 (“In Illinois, CCR has caused groundwater contamination and other forms of pollution that are harmful to human health and the environment.”); *id.* at 41 (“[T]he installation and operation of a leachate collection system in a new CCR surface impoundments serves the same purpose as in a landfill to reduce the head on the liner to reduce the threat of groundwater contamination.”); *id.* at 48 (“The Board finds that the proposed leachate collection system provides additional groundwater protection against the potential threats of contamination from new CCR surface impoundments, while allowing the operation of the impoundments in compliance with Part 845.”).<sup>27</sup>

In determining which types of CCR surface impoundments pose the risks that Part 845 seeks to address, Part 257 is instructive; both because of its identical definition of “CCR surface impoundment” and the fact that IEPA did not perform any risk assessment of its own to support its Part 845 proposal and, instead, modeled its proposal on Part 257, which was based upon U.S. EPA’s risk assessment. In other words, because the IEPA-proposed and Board-adopted Part 845 rules were based upon Part 257, and IEPA never conducted a risk assessment, Part 845 too must be based upon U.S. EPA’s risk assessment. U.S. EPA was clear that it was targeting for regulation

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<sup>27</sup> The Illinois legislature also made clear that the Illinois CCR Act is intended to address and prevent groundwater contamination caused by CCR surface impoundments. *See* 415 Ill. Comp. Stat. 5/22.59(a)(3) (“The General Assembly finds that . . . CCR generated by the electric generating industry has caused *groundwater* contamination . . .” (emphasis added)).

those “units that contain a large amount of CCR managed with water, under a hydraulic head that promotes the rapid leaching of contaminants.” Final Rule, Updated Ex. 17 at 21,357.

The factors relating to the De Minimis Units are substantially and significantly different than those that motivated U.S. EPA in Part 257, and also the state legislature, IEPA, and the Board in regulating CCR surface impoundments in Illinois with the aim of protecting Illinois groundwater. As discussed above, the De Minimis Units do not contain large amounts of CCR under a hydraulic head that promotes rapid leaching of contaminants to groundwater. With the exception of Pond B-3 (which no longer contains water or any CCR but, as discussed above, at one time received very limited CCR during a handful of short periods), the De Minimis Units are not known to have ever received direct wastewater discharges of CCR. To the extent the De Minimis Units received historic, indirect discharges of CCR, the amounts of CCR were *de minimis* in nature. Further, with the closure of Unit 4 and the former Emery Pond, all CCR generated at the Station will be handled dry and none of the De Minimis Units will receive any future direct discharges of CCR.

As Dr. Bradley explains in her updated report, the U.S. EPA determined *de minimis* units—like those at issue in this Petition—do not pose the risk to groundwater, human health, or the environment that Part 257 (or Part 845) seeks to prevent. *See* Updated Bradley Op., Updated Ex. 28 at 21.

These forgoing facts, alone, are sufficient to establish that the De Minimis Units do not pose a similar threat to groundwater as the CCR surface impoundments that motivated Part 257 and Part 845. This conclusion is bolstered by the Pond Investigation Report. As described in the report, Haley & Aldridge reviewed the results of shake tests taken of pond sediment samples, as well as the results of Site groundwater monitoring wells, and determined that any potential

presence of CCR in the De Minimis Unit sediments should not be expected to cause and has not had a material adverse impact on groundwater at the Site. *See* Pond Investigation Rep., Ex. 29 at 26; *see also* Updated Bradley Op., Updated Ex. 28 at 21–22. Thus, the requested adjusted standard may be granted based upon this Amended Petition.

Another important difference between the De Minimis Units and the CCR surface impoundments that drove Part 845 is the burden of compliance. During the rulemaking, IEPA argued, and the Board agreed, that certain Part 845 requirements, including expedited timeframes for compliance, were feasible and reasonable because units subject to Part 845 were also subject to Part 257, and therefore, owners had years to develop and implement compliance plans. *See* Final Order at 8–9. However, as discussed above, the De Minimis Units are not subject to Part 257, and thus, there has been no need to undertake compliance actions under Part 257, such as groundwater and location restriction assessments. Accordingly, the feasibility and cost of Part 845 compliance for these De Minimis Units differs substantially from the units the Board anticipated would be covered by Part 845, which were units subject to Part 257 and that already had years of Part 257 compliance activity that could be used to comply with Part 845.

3. The Factors Relating to the De Minimis Units—which Differ from those Relied upon by the Board in Passing Part 845—Justify an Adjusted Standard.

The factors unique to the De Minimis Units—namely that they are not subject to Part 257 and do not contain a large quantity of CCR managed under a hydraulic head—justify the requested adjusted standard. As discussed above, the De Minimis Units simply do not present the risks that Part 845 was intended to address. And, as discussed below, regulation under Part 845 will be extremely costly and burdensome—for no meaningful environmental benefit. Accordingly, SIPC’s adjusted standard is justified.

4. The Requested Adjusted Standard Will Not Result in Adverse Environmental or Health Effects.

As discussed above, the history of receipt of minimal, if any, direct CCR discharges makes clear that the De Minimis Units have minimal amounts of CCR and, therefore, do not present the types of risk to human health and the environment that Part 845 (and Part 257) seek to address. Moreover, one of the De Minimis Units—Pond B-3—does not contain water, has not contained water since 2017, and has previously been cleaned up, removing any CCR that remained in it. As a result, none of the De Minimis Units have the characteristics of the CCR surface impoundments that drove the risks identified by EPA’s risk assessment that warranted pond regulation under Part 257—a substantial amount of CCR managed under a hydraulic head. The Pond Investigation Report confirms this conclusion. *See* Pond Investigation Rep., Ex. 29. Accordingly, as discussed above, Dr. Bradley has determined that the De Minimis Units are not expected to have a substantial or significant adverse threat to human health or the environment warranting regulation under Part 845. Updated Bradley Op., Updated Ex. 28, at 21–22. As a result, Petitioner’s requested adjusted standard “will not result in environmental or health effects substantially and significantly more adverse than the effects considered by the Board in adopting” Part 845. 415 Ill. Comp. Stat. 5/28.1(c)(3).

Finally, granting the adjusted standard will not leave the De Minimis Units unregulated. To the contrary, the De Minimis Units that still contain water and are now acting as storm water ponds (Ponds 3 (including 3A), 4, 6, and the South Fly Ash Pond) have been and will continue to be covered by Marion Station’s NPDES permit as part of the flow to permitted Outfall 002. *See* 2012 NPDES Permit, Ex. 13. Any groundwater impact from those storm water ponds, as well as former Pond B-3, also remains subject to Part 620 groundwater standards. Furthermore, as

discussed below, Pond 6 will be monitored and regulated as part of the Former Landfill area after the landfill undergoes closure pursuant to Part 811.

5. The Requested Adjusted Standard Is Consistent with Federal Law.

As discussed above, the De Minimis Units are not regulated as existing CCR surface impoundments or inactive CCR surface impoundments under Part 257. Accordingly, exempting them from regulation under Part 845 is consistent with federal law. *See* 35 Ill. Adm. Code 104.406(i).

6. The Efforts Necessary for the De Minimis Units to Comply with Part 845 Are Not Economically Reasonable.

In evaluating a petition for an adjusted standard, the Board must take into account the technical feasibility and economic reasonableness of reducing a particular type of pollution. 415 Ill. Comp. Stat. 5/27(a). Extremely high costs of controlling a particular pollutant have been determined to be economically unreasonable.<sup>28</sup> A treatment or control technology is not economically reasonable if it would not significantly improve environmental conditions or increase the aesthetic or recreational value of the receiving water body, especially given high associated implementation costs.<sup>29</sup> As discussed below, compliance with Part 845 is not reasonable for the De Minimis Units, which pose little to no risk to the environment and which

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<sup>28</sup> *EPA v. Pollution Control Bd.*, 308 Ill. App. 3d 741, 752 (2d Dist. 1999) (upholding Board's finding that compliance would be economically unreasonable where "[a]ccording to the uncontested figures Swenson presented, the cost of installing a powder coating system would be more than 15 times the average control cost the Board historically has used to measure reasonableness"); *see also Granite City Div. of Nat. Steel Co. v. Ill. Pollution Control Bd.*, 155 Ill. 2d 149, 183 (1993) ("The Act specifically provides for variance and adjusted standard procedures by which the Board may relieve a discharger from compliance with its environmental control standards upon a showing of unreasonable economic or individual hardship.").

<sup>29</sup> *See, e.g., R 1981-024, In the Matter of Proposed Water Quality Standard for Wood River (Olin, East Alton)*, Proposed Rule First Notice Order and Opinion of the Board, at 6 (Nov. 12, 1982); PCB 2009-038, *Ameren Energy Generating Co. v. IEPA*, Order and Opinion of the Board, at 42 (Mar. 18, 2010).

will continue to be monitored and regulated pursuant to Marion Station's NPDES Permit and Part 620 groundwater regulations.

Requiring SIPC to comply with Part 845 for the De Minimis Units, including for operation and closure, would require SIPC to incur substantial costs to mitigate risks that do not exist,<sup>30</sup> including costs to do the following:

- Perform location restriction demonstrations including certification for each De Minimis Unit (35 Ill. Admin. Code §§ 845.300–340);
- Perform a hydrogeological site investigation for each De Minimis Unit (35 Ill. Admin. Code § 845.620);
- Install a groundwater monitoring system for each De Minimis Unit and collect groundwater monitoring data on at least a quarterly basis for at least 5 years with the potential to reduce the frequency to semiannually thereafter (35 Ill. Admin. Code § 845.650);
- Prepare a hazard potential classification assessment and certification (35 Ill. Admin. Code § 845.400(a)(2));
- Prepare a structural stability assessment and certification (35 Ill. Admin. Code § 845.450(c));
- Prepare a safety factor assessment and certification with the operating permit application and subsequent annual inspections (35 Ill. Admin. Code § 845.460(b));
- Prepare a fugitive dust control plan and certification with the operating permit application and subsequent annual inspections (35 Ill. Admin. Code § 845.500(b)(7));
- Close the units in place or by removal (35 Ill. Admin. Code § 845.710); and
- Perform numerous other assessments and analyses (*see, e.g.*, 35 Ill. Admin. Code §§ 845.510(c)(3), .530, .540).<sup>31</sup>

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<sup>30</sup> As mentioned above, because the De Minimis Units are not subject to Part 257, none of these actions have been undertaken to date and all compliance costs would be attributed to Part 845.

<sup>31</sup> Due to the prescriptive nature of Part 845, technically feasible compliance alternatives to meet the requirements of Part 845 are very limited.

Many of these requirements make no practical sense as applied to the De Minimis Units, one of which (Pond B-3) was cleaned and closed years ago, another of which (Pond 6) will be addressed as part of the landfill closure under the Part 811 landfill requirements, and all of which received and contain little, if any, CCR. Such units simply do not cause a hazard, risk of structural instability, or contain material that could contribute fugitive dust, for example.

Compliance with Part 845 would also require that SIPC either retrofit or close the De Minimis Units. *See* 35 Ill. Admin Code. §§ 845.700–.770. However, SIPC plans to continue using Ponds 3, 6, 4, and the South Fly Ash Pond into the foreseeable future for storm water management at Marion Station. Accordingly, SIPC must either close those ponds by removal *and then rebuild them* as storm water basins, or retrofit them by cleaning them and installing a liner. Due to the additional exorbitant costs of dredging and installing liners in Ponds 3, 4, 6, and the Fly Ash Pond, closure by removal is the least costly, technically feasible alternative. As discussed below, that “least costly” alternative would still cost SIPC nearly \$15 million in capital costs (with little to no environmental benefit). *See* Supp. Liss Dec., Ex. 30 at ¶ 6. This does not include the cost of constructing new storm water basins as needed to replace the De Minimis Units. *Id.*

The costs inherent in Part 845 compliance are exacerbated by the fact that the De Minimis Units are not and have not been subject to Part 257. Accordingly, compliance with Part 845 deadlines would, in some cases, be infeasible and, in many cases, more costly on the aggressive timeline adopted in Part 845, which assumed prior Part 257 compliance activity.

Andrews Engineering has performed a preliminary analysis of the costs of compliance associated with major components of Part 845 and conservatively estimates that closing the De Minimis Units pursuant to Part 845 would cost SIPC at least \$14.85 million in capital and other upfront costs and nearly \$100,000 per year in annual O&M costs (not including inflation) for a

minimum of three years.<sup>32</sup> Liss Dec., Ex. 9 at ¶ 18. In contrast, SIPC calculated the operating and maintenance costs of compliance with Marion Station NPDES permit requirements and Part 620 for the De Minimis units to be approximately \$286,750 per year for three years.<sup>33</sup> This annual cost covers electrical and mechanical maintenance, power to operate the on-site pump system, pond maintenance, and sampling both the outfalls and groundwater monitoring wells.

This significant cost differential is not reasonable on its face, considering the minimal (if any) benefit conferred by compliance with Part 845. Moreover, should SIPC be required to comply with Part 845 for the De Minimis Units, significant adverse consequences could occur for those who already live in low-income rural Illinois communities. SIPC is a not-for-profit electric cooperative owned directly by its members, serving customers and businesses in more than twenty southernmost counties of Illinois. SIPC is defined as a “Small Business” by the U.S. Small Business Administration, but it is the largest taxpayer in Williamson County.

SIPC is currently ineligible to borrow subsidized funds to pay the costs required to comply with Part 845. When the costs of running its business suddenly increase, for example, to comply with Part 845, SIPC’s already stretched working capital (short-term commercial paper at National Rural Utility Cooperative Financing Corporation) must be stretched even further to cover the costs. If the new costs are greater than the available working capital, SIPC will be forced to borrow on a

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<sup>32</sup> This does not include the cost of constructing new storm water basins as needed to replace the De Minimis Units. This also does not include the costs of expediting work to meet Part 845’s stringent deadlines, or alternative Board-ordered deadline, whichever may apply. The De Minimis Units are not subject to Part 257 and, thus, no Part 257 compliance activities have been performed although Part 257 coverage and related compliance activities were assumed by the Board in setting the Part 845 compliance deadlines for covered units. This also does not include additional costs that may be incurred due to potential ambiguities in the rules and does not include all plant personnel time.

<sup>33</sup> SIPC will have to continue paying these operational costs even if the De Minimis Units are closed under Part 845 and then replaced with storm water basins. Accordingly, the Part 845-related O&M costs that would apply if SIPC were required to close the units under Part 845 would be on top of SIPC’s routine operational O&M costs for storm water management.

short-term line-of-credit and possibly from an unsecured borrowing source at higher rates until such time as it can retire the borrowings from future member rates. SIPC will be forced to pass along all costs of meeting these new requirements to its member-owners. SIPC's member-owners have "full requirement" wholesale power requirements contracts, which means they must buy 100% of their energy needs from SIPC. They cannot go to an alternative supplier for lower cost energy. To leave SIPC, member-owners would have to pay prohibitively significant exit costs. For decades, SIPC's reliable, affordable electricity has been one of the key drivers of economic growth and prosperity in these communities. Increased costs of electric energy, particularly in rural areas served by cooperatives, will have negative impacts on rural economic development and jobs. In cases where small businesses like SIPC are affected, Section 27(a) requires the Board to consider and apply economically reasonable ways to minimize pollution and also mitigate impacts to facilities that can least afford them. 415 Ill. Comp. Stat. 5/27(a).

Not only are the capital and operating costs associated with Part 845 compliance significant, compliance with Part 845 would not provide any meaningful benefit to human health or the environment because, as discussed above, the *de minimis* units do not present the magnitude of risk that warranted regulation under Part 257 and Part 845. This is especially true given that the units would remain subject to applicable NPDES permit and Part 620 standard requirements. Accordingly, any minimal benefit from layering on another set of onerous requirements under Part 845 would be dwarfed by the extreme costs of compliance for SIPC and its members.

Finally, there is nothing in the Part 845 rulemaking record to combat the conclusion that Part 845 is not economically reasonable as applied to current and former ponds at issue in this petition. IEPA did not perform its own economic reasonableness analysis of the Part 845 rulemaking but instead relied on U.S. EPA's technical feasibility and economic reasonableness

determination in Part 257. IEPA simply concluded because “owners and operators of CCR surface impoundments are already subject to 40 CFR 257, many of the technical and economic requirements applicable to owners and operators in the proposed Part 845 are already required under federal law.” IEPA Statement of Reasons, Ex. 18 at 33–34. Part 257, however, only applies to CCR surface impoundments that contained a significant (not *de minimis*) amount of CCR and liquids as of October 19, 2015. U.S. EPA did not consider units such as the De Minimis Units in promulgating Part 257, and therefore, neither did IEPA’s proposal or the Board in promulgating Part 845.<sup>34</sup> Moreover, because they are not subject to Part 257, the De Minimis Units are **not** already subject to “many of the technical and economic requirements applicable to owners and operators in the proposed Part 845.” IEPA Statement of Reasons, Ex. 18 at 33–34. In other words, neither IEPA nor the Board determined that Part 845 was economically reasonable as applied to the De Minimis Units (or, as discussed below, the Former Fly Ash Holding Units).

In short, the costs of Part 845 compliance are significant, and any additional benefits to human health and the environment are minimal, if any. Compliance with the requested relief, alternatively, would allow SIPC to continue to manage plant discharges and storm water in the De Minimis Units without causing adverse impacts to human health or the environment and without incurring additional O&M or capital cost that will have to be passed along to SIPC’s members. Compliance with Part 845 is economically unreasonable, and SIPC’s request for an adjusted standard should be granted.

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<sup>34</sup> The Board requested an analysis from the Department of Commerce and Economic Opportunity, but none was performed. Second Notice Opinion and Order at 8.

**C. The Former Fly Ash Holding Units and Pond 6**

1. SIPC Requests an Adjusted Standard Exempting the Former Fly Ash Holding Units and Pond 6 from all Provisions of Part 845.

To the extent the Board determines that the Former Fly Ash Holding Units and Pond 6 are “CCR Surface Impoundments” under Part 845, the Board should grant an adjusted standard from Section 845.100 exempting the Former Fly Ash Holding Units and Pond 6<sup>35</sup> from the requirements of Part 845. The Initial Fly Ash Holding Area, the Replacement Fly Ash Holding Area, and the Fly Ash Holding Area Extension are within the footprint of the Former Landfill at Marion Station and thus, are required to be covered pursuant to the Part 811 closure plan SIPC has already submitted to IEPA for the Former Landfill. As discussed above, that landfill closure plan was submitted to IEPA at IEPA’s request in connection with IEPA’s claims that the Former Landfill failed to have the permanent cover required by Part 811. Pond 6 was built as, and under the closure plan will continue to operate as, a storm water pond to manage landfill runoff and will be operated and maintained as part of SIPC’s Part 811 landfill closure and post-closure obligations. The Initial Fly Ash Holding Area, the Replacement Fly Ash Holding, the Fly Ash Holding Area Extension, and Pond 6 will continue also to be subject to all other applicable environmental laws and regulations, including the groundwater quality regulations set forth in 35 Ill. Admin. Code Part 620.

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<sup>35</sup> An adjusted standard exempting Pond 6 from coverage under Part 845 is warranted both on the grounds that it is a *de minimis* unit and because it can and should be managed as part of the landfill closure pursuant to Part 811.

2. The Factors Relating to the Former Fly Ash Holding Units and Pond 6 Are Substantially and Significantly Different from the Factors and Circumstances the Board Relied on in Adopting Part 845.

The factors relating to the Former Fly Ash Holding Units and Pond 6 differ significantly from the factors that were considered and motivated the Board in adopting Part 845. As noted *supra* at Part IV.B.2, the legislature, IEPA, and the Board were all motivated to address the same risk that U.S. EPA sought to address in Part 257 for surface impoundments<sup>36</sup>—the risk posed by CCR surface impoundments that contain large amounts of CCR managed with water under a hydraulic head. The Former Fly Ash Holding Units and the Former Landfill’s storm water pond, Pond 6, are different, in several important respects.

First, the Former Fly Ash Holding Units do not contain water and have not contained water for at least thirty years. Accordingly, any CCR remaining in the Fly Ash Holding Units is not under a hydraulic head and presents far less risk to groundwater than the units the Board sought to regulate in Part 845 (which the Board acknowledged when it declined to extend the Part 845 rulemaking to CCR landfills). *See* Updated Bradley Op., Updated Ex. 28 at 21–22. As discussed above, Pond 6 contains *de minimis* amounts of CCR, and thus likewise does not present the risk targeted by Part 845.

Second, the Former Fly Ash Holding Units are now covered by the Former Landfill, which operated and was regulated as a permit-exempt, on-site landfill for decades under Part 815, and which SIPC intends to close consistent with the Part 811 landfill regulations. As discussed below, current Illinois landfill regulations require that SIPC install a cover that is equally as protective as

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<sup>36</sup> As mentioned above, the Former Landfill ceased receiving CCR prior to October 2015, and thus, it is not subject to Part 257’s landfill requirements. Consistent with that assertion, in its Landfill VN, IEPA asserted that Illinois’s landfill regulations, Part 811 *et seq.*, were applicable, not Part 257.

the cover that would be required by Part 845. *See* Updated Bradley Op., Updated Ex. 28 at 21; *see also* 35 Ill. Adm. Code §§ 314(a), (b), (c). The regulations also require post-closure care, maintenance, and monitoring for the entire landfill area which, in this case, includes Pond 6. *See* 35 Ill. Adm. Code § 811.302 (post-closure care), § 811.319 (groundwater monitoring), § 811.322 (final slope and stabilization). However, the Board clearly did not intend to regulate CCR landfills under the adopted Part 845 surface impoundment rules, and in fact, it opened a subdocket to address possible, future CCR landfill regulations. Second Notice Opinion and Order at 12; IPCB Dkt. No. R2020-19(A). One would expect there to be many different requirements and considerations for landfills, which were never even addressed in the Part 845 rulemaking. *See, e.g.*, 40 C.F.R. §§ 257.70, .81, .84.

Third, there are significant legal, compliance, and fairness concerns inherent in suddenly and unexpectedly characterizing and regulating the Former Fly Ash Holding Units and Pond 6, and indeed the entire landfill area, as a CCR surface impoundment, when today and at the time Part 257 and Part 845 were adopted, the area was a landfill and had been managed and treated as a regulated landfill for decades. Indeed, as discussed above, under the same, key present tense definition language in both Part 257 and Part 845, the decision about whether a unit is a landfill or surface impoundment must be made at the time Part 257, or Part 845, respectively, was adopted. U.S. EPA had to address in Part 257 how to determine whether a unit should be considered a landfill or surface impoundment because Part 257 contains different requirements for landfills and surface impoundments. It did so based upon the status of the unit *at the time Part 257 was adopted*. *See supra* at Part III.A.1. This made sense for multiple reasons, including for clarity of applicability and because the correct regulatory requirements should apply based upon the characteristics of the unit, and the related risks presented, at the time the rule went into effect. It

makes no sense to apply landfill requirements wholesale to ponds to address landfill risks, or to apply pond requirements to landfills to address pond risks. But that is exactly what IEPA seems to be claiming here.

Worse, IEPA seems to be claiming that Part 845 surface impoundment requirements apply to the whole Former Landfill after having treated the landfill as a landfill for years, including by issuing the Landfill VN to SIPC in 2020. 2020 Landfill VN. Ex. 16. SIPC operated the Former Landfill as a landfill, submitted landfill reports to IEPA, and ceased using the Former Landfill at a time that made Part 257 landfill requirements inapplicable. Having expected Part 257 to be inapplicable given the plain applicability language, reinforced by IEPA's prior view that the Former Landfill was subject to Illinois landfill requirements under Part 811, SIPC has not planned for Part 257 applicability, and it has not taken any Part 257 compliance actions. Indeed, if anyone had thought at the time it was adopted that Part 257 applied at all, it would have been anomalous, to say the least, for SIPC to have taken compliance action for its Former Landfill consistent with Part 257 surface impoundment requirements, but IEPA appears now to claim that Part 845's requirements, which are based on Part 257's surface impoundment requirements, apply to the Former Landfill.

This quixotic result, of course, was never contemplated by the Board in the Part 845 rulemaking. In fact, in adopting Part 845, the Board included some very aggressive deadlines because, in its view, companies were already complying with Part 257 and they could use those actions to comply with Part 845. *See supra* Section IV.B.2. That is simply not true for the Former Landfill, including the Former Fly Ash Holding Units within the landfill footprint and related storm water runoff Pond 6. No one could reasonably have expected that Part 257's (and later Part 845's) surface impoundment requirements would apply to the Former Landfill, especially when

IEPA asserted as late as 2020 that the Former Landfill was a landfill and regulated under Illinois landfill regulations. The Board did not consider or assess in its Part 845 rulemaking the application of Part 845's surface impoundment requirements to landfills, including the costs, feasibility, and necessity of compliance or the risks to be addressed. Applying Part 845 surface impoundment requirements to the Former Landfill also would cause unfair surprise and retroactive change of regulatory status concerns.

3. The Factors Relating to the Former Fly Ash Holding Units—which Differ from those Relied upon by the Board in Passing Part 845—Justify an Adjusted Standard.

The factors discussed above all justify granting the adjusted standard here, particularly where, as discussed below, the Former Fly Ash Holding Units will continue to be regulated and monitored as part of the Former Landfill closure and post-closure activities under Illinois landfill regulations and any exceedances of groundwater standards can be addressed pursuant to the landfill regulations and Part 620.

4. The Requested Adjusted Standard Will Not Result in Adverse Environmental or Health Effects.

As an initial matter, the Former Fly Ash Holding Units do not contain water and therefore do not pose the same risks to the environment as CCR surface impoundments that contain large quantities of CCR under a hydraulic head. *See* Updated Bradley Op., Updated Ex. 28 at 21–22. Instead, they function as a landfill, which U.S. EPA, IEPA, and the Board have all recognized pose less of a threat to the environment than the units that the Board sought to regulate under Part 845. Updated Bradley Op., Updated Ex. 28 at 20; Final Rule, Updated Ex. 17 at 21342 (“As noted, EPA’s risk assessment shows that the highest risks are associated with CCR surface impoundments due to the hydraulic head imposed by impounded water.”). Further, Pond 6 is a landfill runoff, *de*

*minimis* pond, and as discussed above, it too does not present a risk that warrants regulation under Part 845.

Moreover, SIPC intends to close and cover the Former Landfill consistent with the requirements of Part 811. SIPC's currently proposed landfill closure plan is consistent with Part 845 requirements for closure in place with a cover system. SIPC's plan, which has been submitted to IEPA, includes the following:

- Installation of a final cover system consisting of a 3.0 foot low permeability layer overlain by a 3.0 foot final protective layer or an alternate geosynthetic cap with a minimum thickness of 4.0 feet consisting from the bottom up: 1.0 foot thick low permeability layer, 40-mil linear low-density polyethylene (LLDPE) geomembrane, a double-sided geocomposite drainage layer and a 3.0 foot final protective layer.<sup>37</sup> (*Compare* 35 Ill. Admin. Code § 811.314 *with id.* § 845.750.)
- Slopes that will be constructed to minimize wind and water erosion.
- Establishment of vegetation upon completion of the final cover placement and storm water and drainage features.
- Installation of additional monitoring wells, if needed, to meet the requirements of Part 811,<sup>38</sup> which requires, in part that “a network of monitoring points shall be established “at sufficient locations” downgradient with respect to groundwater flow and not excluding the downward direction, to detect any discharge of contaminants from any part of a potential source of discharge. 35 Ill. Admin. Code § 811.318(b)(1).
- Post-closure monitoring and care consistent with SIPC's obligations under Part 811.

*See* Former Landfill Closure Plan, Ex. 10 at 3–8.

Compliance with these provisions will ensure that the Former Landfill (including the

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<sup>37</sup> Part 811 allows for such an “alternate” cover system design where “the performance of the low permeability layer is equal to or superior to the performance” to the default requirements set forth in Part 811.314 (b)(3)(A)(i) and (b)(3)(A)(ii). *See* 35 Ill. Adm. Code § 811.314 (b)(3)(A)(iii).

<sup>38</sup> SIPC has previously installed groundwater monitoring wells around the landfill and performed groundwater sampling and reported the results to IEPA.

Former Fly Ash Holding Units) remains insulated from any water that could lead CCR to leach into nearby groundwater or runoff to Pond 6. In addition, ongoing groundwater monitoring under the landfill closure plan will ensure that any exceedances of groundwater standards attributable to the Former Landfill (of which the Former Fly Ash Holding Units are a part) or Pond 6 will be identified and corrected as necessary. As a result, there is no risk that the proposed adjusted standard will result in any harm to the environment, and Petitioner's requested adjusted standard "will not result in environmental or health effects substantially and significantly more adverse than the effects considered by the Board in adopting" Part 845. 415 Ill. Comp. Stat. 5/28.1(c)(3); *see also* Updated Bradley Op., Updated Ex. 28 at 21–22.

5. The Requested Adjusted Standard is Consistent with Federal Law.

As discussed *supra*, the Former Fly Ash Holding Units and Pond 6 are not existing or inactive CCR surface impoundments under Part 257. Accordingly, excluding them from Part 845 is not inconsistent with federal law. *See* 35 Ill. Admin. Code 104.406(i).

6. The Efforts Necessary to Require the Former Fly Ash Holding Units to Comply with Part 845 Are Not Economically Reasonable.

As is the case with the De Minimis Units, the costs of compliance with Part 845 are not reasonable when considered in conjunction with the minimal (if any) benefits to the environment. Andrews Engineering conservatively<sup>39</sup> estimates that the costs of closing and managing the Former Landfill, including the Former Fly Ash Holding Units, pursuant to Part 845 is nearly \$5.5

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<sup>39</sup> Mr. Liss's estimate is conservative, in part, because it assumes that IEPA will allow the landfill area to close as one impoundment, rather than requiring separate closure of each of the three Former Fly Ash Holding Units. It also assumes that IEPA will approve closure in place using a final cover system, rather than require SIPC to excavate the landfill and the Former Fly Ash Holding Units and dispose of the material offsite and in accordance with the comprehensive Part 845 transportation requirements. Supp. Liss Dec., Ex. 30 at ¶ 5.

million in capital and other upfront costs, which includes the costs of permitting and documentation to support the necessary Part 845 permit applications. Supp. Liss Dec., Ex. 30 at ¶ 5. The O&M costs associated with managing the Former Landfill area, including the Former Fly Ash Holding Units, as a Part 845 surface impoundment would be at least \$67,536 per year (without an inflation factor) for the first ten years of post-closure care, and \$33,752 (without an inflation factor) for the remainder of the 30-year post closure care period required by Part 845.<sup>40</sup> *Id.* at ¶ 4. In contrast, the costs of closing and managing the Former Landfill pursuant to the Illinois landfill regulations is approximately \$3.5 to \$5.2 million in immediate capital costs with approximately \$42,000 per year in O&M costs for a period of 5 years after the completion of closure activities, and \$12,400 per year in annual O&M costs for the following 10-year period, assuming a 15-year post-closure care and monitoring period. *Id.* at ¶ 4. The Part 845 costs include costs to comply with requirements that were never intended to apply to landfills and were not enacted to address any risks actually presented by landfills.

As noted above, the Former Fly Ash Holding Units are not covered by Part 257. Therefore, neither U.S. EPA in promulgating Part 257 nor IEPA nor the Board in promulgating Part 845 found that it is economically reasonable to require former ponds like the Former Fly Ash Holding Units to comply with the requirements of Part 845. *See supra* Section IV.B.6. Further, as a not-for-profit cooperative, SIPC and its customers are uniquely sensitive to sudden, unexpected increases in capital and operating costs (and this cost is particularly unexpected given that, until earlier this year, SIPC and IEPA had been treating the Former Landfill as a landfill that was about to undergo

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<sup>40</sup> This does not include the costs of expediting work to meet Part 845's stringent deadline, or alternate Board-approved compliance deadlines. This also does not include additional costs that may be incurred due to potential ambiguities in the rules, and does not include all plant personnel time.

closure under Part 811). Given that there will be no environmental benefit to managing the Former Fly Ash Holding Units pursuant to Part 845 rather than Part 811, the additional cost is not reasonable and the Petition should be granted.

**D. Proposed Language of Adjusted Standard.**

SIPC proposes the following adjusted standard language (35 Ill. Admin. Code 104.406(a)):

1. Pursuant to Section 28.1 of the Environmental Protection Act, the Board grants Southern Illinois Power Cooperative (“SIPC”) an adjusted standard from 35 Ill. Admin. Code § 845.100 for Ponds 3, including 3A, 4, 6, South Fly Ash Pond, Pond B-3, the Initial Fly Ash Holding Area, the Replacement Fly Ash Holding area, and the Fly Ash Holding Area Extension. 415 Ill. Comp. Stat. 5/28.1.
2. The adjusted standard applies to SIPC’s Marion Station.
3. The Part 845 regulations do not apply to Ponds 3, including 3A, 4, 6, South Fly Ash Pond, Pond B-3, the Initial Fly Ash Holding Area, the Replacement Fly Ash Holding area, or the Fly Ash Holding Area Extension.
4. The adjusted standard is effective as of the date of this order.

**E. Part 845 Was Promulgated to Implement Section 22.59 of the Act and the Automatic Stay Applies.**

Because SIPC filed its original petition for an individual adjusted standard within 20 days after the effective date of Part 845 (April 21, 2021), the operation and application of Part 845 is automatically stayed as to the De Minimis Units and Former Fly Ash Holding Units pending the disposition of this petition. 415 Ill. Comp. Stat. 5/28.1(e).

The only exception to this automatic stay is for regulations “adopted by the Board to implement, in whole or in part, the requirements of the federal Clean Air Act, Safe Drinking Water Act or Comprehensive Environmental Response, Compensation and Liability Act, or the State RCRA, UIC or NPDES programs.” 415 Ill. Comp. Stat. 5/28.1(e). Part 845 was promulgated to implement Section 22.59 of the Act and the federal Resources Conservation and Recovery Act,

Section 4005. It was not promulgated to implement, in whole or in part, the requirements of the federal Clean Air Act, Safe Drinking Water Act or Comprehensive Environmental Response, Compensation and Liability Act, or the State RCRA, UIC or NPDES programs. *See* 35 Ill. Adm. Code 104.406(b).

**F. Hearing Request.**

SIPC requests a hearing for this adjusted standard pursuant to 35 Ill. Admin. Code 104.406(j).

**G. Supporting Documentation.**

Documents and legal authorities supporting the Petition are cited herein (and, where applicable, on the attached Index of Exhibits) when they are used as a basis for the Petitioner's proof. Relevant portions of updated or new documents and legal authorities, other than Board's final Order State regulations, statutes, and reported cases, are attached to this amended petition. *See* 35 Ill. Admin. Code § 104.406(k).

**V. CONCLUSION.**

SIPC respectfully requests that the Board grant its request for inapplicability or, in the alternative, an adjusted standard as set forth herein.

Respectfully Submitted,

Southern Illinois Power Cooperative

By:     /s/ Katherine S. Walton      
One of its attorneys

Dated: September 2, 2021

SCHIFF HARDIN LLP

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**INDEX OF EXHIBITS**

- Updated Exhibit 17** Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities, 80 Fed. Reg. 21,302 (April 17, 2015) (excerpted) (“Final Rule”)
- Updated Exhibit 22** R 2020-019, *In the Matter of Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments: Proposed new 35 Ill. Adm. Code 845*, IEPA Responses to Pre-Filed Questions (Aug. 3, 2020) (excerpted) (“IEPA Responses”)
- Updated Exhibit 28** Updated Opinion of Lisa JN Bradley, Ph.D. (Sept. 1, 2021) (“Updated Bradley Op.”)
- Exhibit 29** Haley & Aldridge, Inc., Pond Investigation Report of Certain Ponds at Southern Illinois Power Company’s Marion Station (Sept. 1, 2021) (“Pond Investigation Rep.”)
- Exhibit 30** Supplemental Declaration of Kenneth W. Liss (“Supp. Liss Dec.”)
- Exhibit 31** Redline Comparison Document, showing changes made since SIPC’s Initial Petition filed with the Board on May 11, 2021

**UPDATED  
EXHIBIT 17**



# FEDERAL REGISTER

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Part II

## Environmental Protection Agency

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40 CFR Parts 257 and 261

Hazardous and Solid Waste Management System; Disposal of Coal  
Combustion Residuals From Electric Utilities; Final Rule

**ENVIRONMENTAL PROTECTION AGENCY****40 CFR Parts 257 and 261**

[EPA-HQ-RCRA-2009-0640; FRL-9919-44-OSWER]

RIN-2050-AE81

**Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities****AGENCY:** Environmental Protection Agency (EPA).**ACTION:** Final rule.

**SUMMARY:** The Environmental Protection Agency (EPA or the Agency) is publishing a final rule to regulate the disposal of coal combustion residuals (CCR) as solid waste under subtitle D of the Resource Conservation and Recovery Act (RCRA). The available information demonstrates that the risks posed to human health and the environment by certain CCR management units warrant regulatory controls. EPA is finalizing national minimum criteria for existing and new CCR landfills and existing and new CCR surface impoundments and all lateral expansions consisting of location restrictions, design and operating criteria, groundwater monitoring and corrective action, closure requirements and post closure care, and recordkeeping, notification, and internet posting requirements. The rule requires any existing unlined CCR surface impoundment that is contaminating groundwater above a regulated constituent's groundwater protection standard to stop receiving CCR and either retrofit or close, except in limited circumstances. It also requires the closure of any CCR landfill or CCR surface impoundment that cannot meet the applicable performance criteria for location restrictions or structural integrity. Finally, those CCR surface impoundments that do not receive CCR after the effective date of the rule, but still contain water and CCR will be subject to all applicable regulatory requirements, unless the owner or operator of the facility dewater and installs a final cover system on these inactive units no later than three years from publication of the rule. EPA is deferring its final decision on the Bevill Regulatory Determination because of regulatory and technical uncertainties that cannot be resolved at this time.

**DATES:** This final rule is effective on October 14, 2015.**ADDRESSES:** EPA has established three dockets for this regulatory action under

Docket ID No. EPA-HQ-RCRA-2009-0640, Docket ID No. EPA-HQ-RCRA-2011-0392, and Docket ID No. EPA-HQ-RCRA-2012-0028. All documents in these dockets are available at <http://www.regulations.gov>. Although listed in the index, some information is not publicly available, e.g., Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically in <http://www.regulations.gov> or in hard copy at the OSWER Docket, EPA/DC, WJC West Building, Room 3334, 1301 Constitution Ave. NW., Washington, DC 20460. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the OSWER Docket is 202-566-0276.

**FOR FURTHER INFORMATION CONTACT:** For questions on technical issues: Alexander Livnat, Office of Resource Conservation and Recovery, Environmental Protection Agency, 5304P; telephone number: (703) 308-7251; fax number: (703) 605-0595; email address: [livnat.alexander@epa.gov](mailto:livnat.alexander@epa.gov), or Steve Souders, Office of Resource Conservation and Recovery, Environmental Protection Agency, 5304P; telephone number: (703) 308-8431; fax number: (703) 605-0595; email address: [souders.steve@epa.gov](mailto:souders.steve@epa.gov). For questions on the regulatory impact analysis: Richard Benware, Office of Resource Conservation and Recovery, Environmental Protection Agency, 5305P; telephone number: (703) 308-0436; fax number: (703) 308-7904; email address: [benware.richard@epa.gov](mailto:benware.richard@epa.gov). For questions on the risk assessment: Jason Mills, Office of Resource Conservation and Recovery, Environmental Protection Agency, 5305P; telephone number: (703) 305-9091; fax number: (703) 308-7904; email address: [mills.jason@epa.gov](mailto:mills.jason@epa.gov).

For more information on this rulemaking please visit <http://www.epa.gov/epawaste/nonhaz/industrial/special/fossil/index.htm>.

**SUPPLEMENTARY INFORMATION:****A. Does this action apply to me?**

This rule applies to all coal combustion residuals (CCR) generated by electric utilities and independent power producers that fall within the North American Industry Classification

System (NAICS) code 221112 and may affect the following entities: Electric utility facilities and independent power producers that fall under the NAICS code 221112. The industry sector(s) identified above may not be exhaustive; other types of entities not listed could also be affected. The Agency's aim is to provide a guide for readers regarding those entities that potentially could be affected by this action. To determine whether your facility, company, business, organization, etc., is affected by this action, you should refer to the applicability criteria discussed in Unit VI.A. of this document. If you have any questions regarding the applicability of this action to a particular entity, consult the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

**B. What actions are not addressed in this rule?**

This rule does not address the placement of CCR in coal mines. The U.S. Department of Interior (DOI) and, as necessary, EPA will address the management of CCR in minefills in separate regulatory action(s), consistent with the approach recommended by the National Academy of Sciences, recognizing the expertise of DOI's Office of Surface Mining Reclamation and Enforcement in this area. See Unit VI of this document for further details. This rule does not regulate practices that meet the definition of a beneficial use of CCR. Beneficial uses that occur after the effective date of the rule need to determine if they comply with the criteria contained in the definition of "beneficial use of CCRs." This rule does not affect past beneficial uses (i.e., uses completed before the effective date of the rule.) See Unit VI of this document for further details on proposed clarifications of beneficial use. Furthermore, CCR from non-utility boilers burning coal are also not addressed in this final rule. EPA will decide on an appropriate action for these wastes through a separate rulemaking effort. See Unit IV of this document for further details. Finally, this rule does not apply to municipal solid waste landfills (MSWLFs) that receive CCR for disposal or use as daily cover.

**C. The Contents of This Preamble Are Listed in the Following Outline**

- I. Executive Summary
- II. Statutory Authority
- III. Background
- IV. Bevill Regulatory Determination Relating to CCR From Electric Utilities and Independent Power Producers
- V. Development of the Final Rule—RCRA Subtitle D Regulatory Approach

from the MSWLF unit to the groundwater (*i.e.*, as would be the case if CCR was disposed in the MSWLF unit). In determining alternative parameters, the Director shall consider, among other things: (1) The types, quantities, and concentrations in wastes managed at the MSWLF unit; (2) the mobility, stability, and persistence of waste constituents or their reaction products in the unsaturated zone beneath the MSWLF unit; and (3) the detectability of indicator parameters, waste constituents, and reaction products in the groundwater. In situations where the MSWLF unit is receiving CCR for disposal and/or daily cover, EPA expects the controlled management of CCR in these units. Specifically, EPA expects State Directors to utilize the provisions in § 258.54(a)(2) to revise the detection monitoring constituents to include those constituents being promulgated in this rule under § 257.90. These detection monitoring constituents or inorganic indicator parameters are: boron, calcium, chloride, fluoride, pH, sulfate and total dissolved solids (TDS). These inorganic indicator parameters are known to be leading indicators of releases of contaminants associated with CCR and the Agency strongly recommends that State Directors add these constituents to the list of indicator parameters to be monitored during detection monitoring of groundwater if and when a MSWLF decides to accept CCR.

The Agency has concluded that CCR can readily be handled in permitted MSWLFs provided that they are evaluated for waste compatibility and placement as required under the part 258 requirements. Furthermore, consistent with the recordkeeping requirements in § 258.29, the Agency further expects State Directors to encourage MSWLF units receiving CCR after the effective date of this rule to do so pursuant to a “CCR acceptance plan” that is maintained in the facility operating record. This plan would assure that the MSWLF facility is aware of the physical and chemical characteristics of the waste received (*i.e.*, CCR) and handles it with the additional precautions necessary to avoid dust, maintain structural integrity, and avoid compromising the gas and leachate collection systems of the landfill so that human health and the environment are protected. While the Agency sees no need to impose duplicative requirements for MSWLFs that receive CCR for disposal or daily cover; development of these acceptance plans as well as a revised list of

groundwater detection monitoring constituents will help ensure that CCR is being managed in the most protective manner consistent with the Part 258 requirements.

##### 5. Inactive CCR Surface Impoundments

The final rule also applies to “inactive” CCR surface impoundments at any active electric utilities or independent power producers, regardless of the fuel currently being used to produce electricity; *i.e.*, surface impoundments at any active electric utility or independent power producer that have ceased receiving CCR or otherwise actively managing CCR. While it is true that EPA exempted inactive units from the part 258 requirements in 1990, the original subtitle D regulations at 40 CFR part 257 (which are currently applicable to CCR wastes) applied to “all solid waste disposal facilities and practices” except for eleven specifically enumerated exemptions (none of which are relevant). 40 CFR 257.1(c). See also, 40 CFR 257.1(a)(1)–(2). And as discussed in greater detail below, subtitle D of RCRA does not limit EPA’s authority to active units—that is, units that receive or otherwise manage wastes after the effective date of the regulations. EPA has documented several damage cases that have occurred due to inactive CCR surface impoundments, including the release of CCR and wastewater from an inactive CCR surface impoundment into the Dan River which occurred since publication of the CCR proposed rule. As discussed in the proposal, the risks associated with inactive CCR surface impoundments do not differ significantly from the risks associated with active CCR surface impoundments; much of the risk from these units is driven by the hydraulic head imposed by impounded units. These conditions remain present in both active and inactive units, which continue to impound liquid along with CCR. For all these reasons, the Agency has concluded that inactive CCR surface impoundments require regulatory oversight.

The sole exception is for “inactive” CCR surface impoundments that have completed dewatering and capping operations (in accordance with the capping requirements finalized in this rule) within three years of the publication of this rule. EPA considers these units to be analogous to inactive CCR landfills, which are not subject to the final rule. As noted, EPA’s risk assessment shows that the highest risks are associated with CCR surface impoundments due to the hydraulic head imposed by impounded water.

Dewatered CCR surface impoundments will no longer be subjected to hydraulic head so the risk of releases, including the risk that the unit will leach into the groundwater, would be no greater than those from CCR landfills. Similarly, the requirements of this rule do not apply to inactive CCR landfills—which are CCR landfills that do not accept waste after the effective date of the regulations. The Agency is not aware of any damage cases associated with inactive CCR landfills, and as noted, the risks of release from such units are significantly lower than CCR surface impoundments or active CCR landfills. In the absence of this type of evidence, and consistent with the proposal, the Agency has decided not to cover these units in this final rule.

Under both the subtitle C and subtitle D options, EPA proposed to regulate “inactive” CCR surface impoundments that had not completed closure prior to the effective date of the rule. EPA proposed that if any inactive CCR surface impoundment had not met the interim status closure requirements (*i.e.*, dewatered and capped) by the effective date of the rule, the unit would be subject to all of the requirements applicable to CCR surface impoundments. Under the subtitle C option, those requirements would have included compliance with the interim status and permitting regulations. Under subtitle D, such units would have been required to comply with all of the criteria applicable to CCR surface impoundments that continued to receive wastes, including groundwater monitoring, corrective action, and closure.

EPA acknowledged that this represented a departure from the Agency’s long-standing implementation of the regulatory program under subtitle C. While the statutory definition of “disposal” has been broadly interpreted to include passive leaking, historically EPA has construed the definition of “disposal” more narrowly for the purposes of implementing the subtitle C regulatory requirements. For examples see 43 FR 58984 (Dec. 18, 1978); and 45 FR 33074 (May 1980). Although in some situations, post-placement management has been considered to be disposal triggering RCRA subtitle C regulatory requirements, *e.g.*, dredging of impoundments or management of leachate, EPA has generally interpreted the statute to require a permit only if a facility treats, stores, or actively disposes of the waste after the effective date of its designation as a hazardous waste. EPA explained that relying on a broader interpretation was appropriate in this instance given that the

substantial risks associated with currently operating CCR surface impoundments, *i.e.*, the potential for leachate and other releases to contaminate groundwater and the potential for catastrophic releases from structural failures, were not measurably different than the risks associated with “inactive” CCR surface impoundments that continued to impound liquid, even though the facility had ceased to place additional wastes in the unit. EPA noted as well that the risks are primarily driven by the older existing units, which are generally unlined.

In the section of the preamble discussing the subtitle D option, EPA did not expressly highlight the application of the rule to inactive CCR surface impoundments, but generally explained that EPA’s approach to developing the proposed subtitle D requirements for surface impoundments (which are not addressed by the part 258 regulations that served as the model for the proposed landfill requirements) was to seek to be consistent with the technical requirements developed under the subtitle C option. (See 75 FR 35193.) (“In addition, EPA considered that many of the technical requirements that EPA developed to specifically address the risks from the disposal of CCR as part of the subtitle C alternative would be equally justified under a RCRA subtitle D regime . . . The factual record—*i.e.*, the risk analysis and the damage cases—supporting such requirements is the same, irrespective of the statutory authority under which the Agency is operating . . . Thus several of the provisions EPA is proposing under RCRA subtitle D either correspond to the provisions EPA is proposing to establish for RCRA subtitle C requirement. These provisions include the following regulatory provisions specific to CCR that EPA is proposing to establish: *Scope and applicability (i.e., who will be subject to the rule criteria/requirements)* . . .”) (emphasis added).

EPA received numerous comments on this aspect of the proposal. On the whole, the comments were focused on EPA’s legal authority under subtitle C to regulate inactive and closed units, as well as inactive and closed facilities. One group of commenters, however, specifically criticized the proposed subtitle D regulation on the grounds that it failed to address the risks from inactive CCR surface impoundments. The majority of commenters, however, argued that RCRA does not authorize EPA to regulate inactive or closed surface impoundments. These commenters focused on two primary arguments: first, that RCRA’s definition of “disposal” cannot be interpreted to

include “passive migration” based on the plain language of the statute, and second, that such an interpretation conflicted with court decisions in several circuits, holding that under CERCLA “disposal” does not include passive leaking or the migration of contaminants.

In support of their first argument, commenters argued that the plain language of RCRA demonstrates that the requirements are “prospective in nature” and thus cannot be interpreted to apply to past activities, *i.e.*, the past disposals in inactive CCR units. They also argued that the absence of the word “leaching” from the definition of “disposal” clearly indicates that Congress did not intend to cover passive leaking or migration from CCR units. The commenters also selectively quoted portions of past EPA statements, claiming that these demonstrated that EPA had conclusively interpreted RCRA to preclude jurisdiction over inactive units and facilities. In particular, they pointed to EPA’s decision in 1980 not to require permits for closed or inactive facilities.

Commenters cited several cases to support their second claim. These include *Carson Harbor Vill. v. Unocal Corp.*, 270 F.3d 863 (9th Cir. 2001); *United States v. 150 Acres of Land*, 204 F.3d 698, 706 (2000); *ABB Industrial Systems v. Prime Technology*, 120 F.3d 351, 358 (2d Cir. 1997); *United States v. CMDG Realty Co.*, 96 F.3d 706, 711 (3rd Cir. 1996); *Joslyn Mfg. Co. v. Koppers Co.*, 40 F.3d 750, 762 (5th Cir. 1994); *Delaney v. Town of Carmel*, 55 F. Supp. 2d 237, 256 (S.D.N.Y. 1999); *see also Interfaith Cmty. Org. v. Honey-Well Intl Inc.*, 263 F. Supp. 2d 796, 846 n.10 (D.N.J. 2003). The commenters acknowledged that these cases were all decided under CERCLA, but claim that the cases are all equally dispositive with respect to RCRA’s definition of disposal because CERCLA specifically incorporates by reference RCRA’s statutory definition of disposal.

As an initial matter, it is important to correct certain misunderstandings contained throughout a number of the comments. First, EPA did propose to include inactive units under the subtitle D alternative. EPA clearly signaled its intent to cover the same universe of units and facilities covered under the subtitle C proposal. EPA did not include a corresponding discussion in its explanation of the subtitle D alternative because application of the criteria to inactive units did not represent such a significant departure from EPA’s past practice or interpretation. As discussed in more detail below, the original subtitle D regulations applied to all

existing disposal units. See 40 CFR 257.1(a)(1)–(2), (c) and 43 FR 4942–4943, 4944.

Second, several commenters criticized EPA’s purported proposal to cover both “closed” and “inactive” surface impoundments, using the terms interchangeably. These same commenters also refer to both “inactive facilities” and “inactive units.” These are all different concepts, and EPA clearly distinguished between them.

EPA proposed to regulate only “inactive” surface impoundments that had not completed closure of the surface impoundment before the effective date. “Inactive” surface impoundments are those that contain both CCR and water, but no longer receive additional wastes. By contrast, a “closed” surface impoundment would no longer contain water, although it may continue to contain CCR (or other wastes), and would be capped or otherwise maintained. There is little difference between the potential risks of an active and inactive surface impoundment; both can leak into groundwater, and both are subject to structural failures that release the wastes into the environment, including catastrophic failures leading to massive releases that threaten both human health and the environment. This is clearly demonstrated by the recent spill in the Dan River in North Carolina, which occurred as the result of a structural failure at an inactive surface impoundment. Similarly, as demonstrated by the discovery of additional damage cases upon the recent installation of groundwater monitoring systems at existing CCR surface impoundments in Michigan and Illinois, many existing CCR surface impoundments are currently leaking, albeit currently undetected. These are the risks the disposal rule specifically seeks to address, and there is no logical basis for distinguishing between units that present the same risks.

EPA did not propose to require “closed” surface impoundments to “reclose.” Nor did EPA intend, as the same commenters claim, that “literally hundreds of previously closed . . . surface impoundments—many of which were properly closed decades ago under state solid waste programs, have changed owners, and now have structures built on top of them—would be considered active CCR units.” Accordingly, the final rule does not impose any requirements on any CCR surface impoundments that have in fact “closed” before the rule’s effective date—*i.e.*, those that no longer contain water and can no longer impound liquid.

## 2. Definition of CCR Surface Impoundment

EPA proposed to define a CCR surface impoundment to mean 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 CCR 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 CCR 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.

The Agency received many comments on the proposed definition of CCR surface impoundment. The majority of commenters argued that the definition was overly broad and would inappropriately capture surface impoundments that are not designed to hold an accumulation of CCR. Commenters were concerned that the proposed definition could be interpreted to include downstream secondary and tertiary surface impoundments, such as polishing, cooling, wastewater and holding ponds that receive only de minimis amounts of CCR. Commenters reasoned that these types of units in no practical or technical sense could be described as units "used to receive CCR that has been sluiced."

Other commenters raised concern that the definition did not differentiate between temporary and permanent surface impoundments. Commenters stated that many facilities rely on short-term processing and storage before moving CCR off-site for beneficial use or permanent disposal and that these units should not be required to comply with all of the technical criteria required for more permanent disposal impoundments.

Upon further evaluation of the comments, the Agency has amended the definition of CCR surface impoundment to clarify the types of units that are covered by the rule. After reviewing the comments, EPA reviewed the risk assessment and the damage cases to determine the characteristics of the surface impoundments that are the source of the risks the rule seeks to address. Specifically, these are units that contain a large amount of CCR managed with water, under a hydraulic head that promotes the rapid leaching of contaminants. These risks do not differ

materially according to the management activity (*i.e.*, whether it was "treatment," "storage" or "disposal") that occurred in the unit, or whether the facility someday intended to divert the CCR to beneficial use. However, EPA agrees with commenters that units containing only truly "de minimis" levels of CCR are unlikely to present the significant risks this rule is intended to address.

EPA has therefore revised the definition to provide that a CCR surface impoundment as defined in this rule must meet three criteria: (1) The unit is a natural topographic depression, man-made excavation or diked area; (2) the unit is designed to hold an accumulation of CCR and liquid; and (3) the unit treats, stores or disposes of CCR. These criteria correspond to the units that are the source of the significant risks covered by this rule, and are consistent with the proposed rule. EPA agrees with commenters that relying solely on the criterion from the proposed rule that the unit be designed to accumulate CCR could inadvertently capture units that present significantly lower risks, such as process water or cooling water ponds, because, although they will accumulate any trace amounts of CCR that are present, they will not contain the significant quantities that give rise to the risks modeled in EPA's assessment. By contrast, units that are designed to hold an accumulation of CCR and in which treatment, storage, or disposal occurs will contain substantial amounts of CCR and consequently are a potentially significant source of contaminants. However, EPA disagrees that impoundments used for "short-term processing and storage" should not be required to comply with all of the technical criteria applicable to CCR surface impoundments. By "short-term," the commenters mean that some portion of the CCR is removed from the unit; however, in EPA's experience these units are never completely dredged free of CCR. But however much is present at any given time, over the lifetime of these "temporary" units, large quantities of CCR impounded with water under a hydraulic head will be managed for extended periods of time. This gives rise to the conditions that both promote the leaching of contaminants from the CCR and are responsible for the static and dynamic loadings that create the potential for structural instability. These units therefore pose the same risks of releases due to structural instability and of leachate contaminating ground or surface water as the units in which CCR are "permanently" disposed.

The final definition makes extremely clear the impoundments that are covered by the rule, so an owner or operator will be able to easily discern whether a particular unit is a CCR surface impoundment. CCR surface impoundments do not include units generally referred to as cooling water ponds, process water ponds, wastewater treatment ponds, storm water holding ponds, or aeration ponds. These units are not designed to hold an accumulation of CCR, and in fact, do not generally contain significant amounts of CCR. Treatment, storage, or disposal of accumulated CCR also does not occur in these units. Conversely, a constructed primary settling pond that receives sluiced CCR directly from the electric utility would meet the definition of a CCR surface impoundment because it meets all three criteria of the definition: It is a man-made excavation and it is designed to hold an accumulation of CCR (*i.e.*, directly sluiced CCR). It also engages in the treatment of CCR through its settling operation. The CCR may be subsequently dredged for disposal or beneficial use elsewhere, or it may be permanently disposed within the unit. Similarly, secondary or tertiary impoundments that receive wet CCR or liquid with significant amounts of CCR from a preceding impoundment (*i.e.*, from a primary impoundment in the case of a secondary impoundment, or from a secondary impoundment in the case of a tertiary impoundment), even if they are ultimately dredged for land disposal elsewhere are also considered CCR surface impoundments and are covered by the rule. To illustrate further, consider a diked area in which wet CCR is accumulated for future transport to a CCR landfill or beneficial use. The unit is accumulating CCR, while allowing for the evaporation or removal of liquid (no free liquids) to facilitate transport to a CCR landfill or for beneficial use. In this instance, the unit again meets all three definition criteria, it is a diked area (*i.e.*, there is an embankment), it is accumulating CCR for ultimate disposal or beneficial use; and it is removing any free liquids, (*i.e.*, treatment). As such, this unit would meet the definition of CCR surface impoundment. In all of these examples significant quantities of CCR are impounded with water under a hydraulic head that will be managed for extended periods of time. This gives rise to the conditions that both promote the leaching of contaminants from the CCR and are responsible for the static and dynamic loadings that create the potential for structural instability. These units therefore all pose the same risks of

**UPDATED  
EXHIBIT 22**

**BEFORE THE ILLINOIS POLLUTION CONTROL BOARD**

IN THE MATTER OF: )  
 )  
STANDARDS FOR THE DISPOSAL ) R 2020-019  
OF COAL COMBUSTION RESIDUALS ) (Rulemaking - Water)  
IN SURFACE IMPOUNDMENTS: )  
PROPOSED NEW 35 ILL. ADM. )  
CODE 845 )

**ILLINOIS EPA’S PRE-FILED ANSWERS**

NOW COMES the Illinois Environmental Protection Agency (Illinois EPA or Agency), by and through one of its attorneys, and submits the following information with respect to its pre-filed answers.

1. On March 30, 2020, the Illinois EPA filed a rulemaking, proposing new rules at 35 Ill. Adm. Code 845 concerning coal combustion residual surface impoundments at power generating facilities in the State.

2. Public Act 101-171, effective July 30, 2019, amended the Illinois Environmental Protection Act, by among other things, adding a new Section 22.59 (415 ILCS 5/22.59). Public Act 101-171 includes a rulemaking mandate in Section 22.59(g) which directs the Board to adopt rules “establishing construction permit requirements, operating permit requirements, design standards, reporting, financial assurance, and closure and post-closure care requirements for CCR surface impoundments.” 415 ICLS 5/22.59(g). The Board is required is adopt new rules for 35 Ill. Adm. Code part 845 by March 30, 2021.

3. The Agency timely filed pre-filed testimony for eight witnesses.

4. Based on the pre-filed testimony, Illinois EPA received over 1000 questions counting subparts.

5. On June 30, 2020, the Agency asked that it be granted until August 3, 2020 to respond to the pre-filed questions.

**LVEJO**

**Questions for Lynn E. Dunaway**

1. Both the Coal Ash Pollution Prevention Act, 415 ILCS 5/3.143, and proposed Section 845.120, use the term "natural topographical depression" within the definition of a surface impoundment.

- a. What is the definition of a natural topographical depression?

Response: A natural topographic depression is an area of the land surface that is lower than the land surface adjacent to it, as a result of various geologic processes.

- b. Why isn't the term " natural topographical depression" defined in Illinois EPA's proposed regulations?

Response: The term was not defined because the meaning of each word in the phrase can easily be found in a Webster's or on-line dictionary and do not have different meanings in the proposed rule.

2. Both the Coal Ash Pollution Prevention Act, 415 ILCS 5/3.143, and proposed Section 845.120, use the term "man-made excavation" within the definition of a surface impoundment.

- a. What is the definition of a man-made excavation?

Response: A man-made excavation is an area of the earth from which human beings have removed the material located there.

- b. Why isn't the term " man-made excavation" defined in Illinois EPA' s proposed regulations?

Response: The term was not defined because the meaning of each word in the phrase can easily be found in a Webster's or on-line dictionary and do not have different meanings in the proposed rule.

3. What is the difference between a landfill that contains CCR and a man-made excavation where CCR was disposed? See: 415 ILCS 5/3.143 and proposed Section 845. 100(h).

Response: A man-made excavation where CCR is disposed could be a CCR surface impoundment or a landfill, but a landfill that receives CCR is not a CCR surface impoundment.

4. What is the difference between a landfill that contains CCR and a natural topographical depression where CCR was disposed? See: 415 ILCS 5/3.143 and proposed Section 845.100(h).

Response: A natural topographic depression where CCR is disposed could be a CCR surface impoundment or a landfill, but a landfill that receives CCR is not a CCR surface impoundment.

5. **How does Illinois EPA distinguish between "inactive CCR surface impoundments at active and inactive electric utilities or independent power producers" and landfills that contain CCR at these same facilities? See: Proposed Sections 845.100(c) and 845. 100(h).**

Response: CCR surface impoundments, by definition, are designed to hold liquids and CCR, landfills are not.

6. **Does the Coal Ash Pollution Prevention Act include the same exclusion for " landfills that receive CCR" that is in Illinois EPA's proposed Section 845.100(h)? If not, what is Illinois EPA's legal authority for this exclusion?**

Response: Section 22.59 of the Act is titled "CCR surface impoundments", contains requirements to which CCR surface impoundments are subject and makes no mention of landfills that receive CCR. Section 845.100(h) is a clarification that the Board rules mandated by Section 22.59 of the Act also pertain only to CCR surface impoundments.

7. **Do Illinois EPA's Proposed Regulations apply to all natural topographical depressions and man-made excavations where coal combustion residual has been disposed at power generating facilities?**

Response: No, Part 845 applies to CCR surface impoundments at electric utilities and independent power producers.

8. **Is Illinois EPA aware of any CCR surface impoundments not located at the 23 power generating facilities identified on pages 37 and 38 of its Statement of Reasons? If so, where are these off-site surface impoundments?**

Response: There are 10 CCR surface impoundments of which the Agency is aware that are off-site from the power generating facility they serve. These CCR surface impoundments are off-site from the Joliet 9 Station, south of Joliet, City Water Light and Power in Springfield and Southern Illinois Power Cooperative, south of Marion, by Lake of Egypt.

9. **If a CCR surface impoundment is outside of the property boundaries of a power generating facility (for example, on an adjacent or nearby property), will Illinois EPA's Proposed Regulations apply to this off-site surface impoundment?**

Response: If the hypothetical CCR surface impoundment is owned or operated by an electric utility or an independent power producer, Part 845 would be applicable.

- a. **If not, how is this exclusion consistent with the statutory mandate that "environmental laws should be supplemented to ensure consistent, responsible regulation of all existing CCR surface impoundments (415 ILCS 5/22.59(a)(4), emphasis added)?**

Response: Not applicable. Please see Response 9.

- b. **What steps has Illinois EPA taken to identify CCR surface impoundments that are not located at the 23 power generating facilities identified on pages 37 and 38 of its Statement of Reasons?**

Response: The Agency has not taken steps to identify CCR surface impoundments at facilities which are not utilities or independent power producers. According to USEPA in its Federal Registry entry for Part 257, located at 80 Fed. Reg. 21340, (Apr. 17, 2015), industries using coal to generate electricity and heat for their own use, consumed less than one percent of the coal burned. Hence, these industries would produce less than one percent of the CCR generated.

Section 22.59(a)(3) of the Act states, as a finding of the General Assembly, that the electrical generating industry has caused groundwater contamination at active and inactive plants throughout Illinois. Further, Section 22.59(g)(1) of the Act requires that the rules adopted pursuant to Section 22.59(g), be as protective and comprehensive as Subpart D of 40 CFR 257 governing CCR surface impoundments. It is the Agency's position that the same universe of CCR surface impoundments is intended to be regulated by Part 845. Based on this information, as drafted, Part 845 would regulate approximately 99% of the CCR generated and is consistent with the General Assembly's findings.

**10. How will Illinois EPA identify the CCR surface impoundments with the highest risk to public health and the environment, as required by 415 ILCS 5/22.59(g)(9)? Is this process set forth in the Proposed Regulations?**

Response: The required closure or retrofit of CCR surface impoundments is generally addressed in Section 845.700, with the specific prioritization in Section 845.700(g).

**11. Why are decisions about implementing interim measures delegated to owners and operators? Proposed Section 845.680(a)(3). Why isn't this an Illinois EPA authority and responsibility?**

Response: The Agency is responsible for reviewing and approving an overall corrective action plan. The interim measures being described here are actions expected of owners and operators to mitigate a situation prior to the completion of the formal approval process. For example: if an active CCR surface impoundment received damage to a liner system. The owner or operator could begin dewatering the impoundment prior to approval of the corrective action plan and permitting process to reduce the amount of leachate that could potentially impact groundwater.

**12. 415 ILCS 5/22.59(b)(1) prohibits the discharge of any contaminants from CCR surface impoundments into the environment"... so as to cause, directly or indirectly, a violation of this Section or any regulations or standards adopted by the Board under this Section, either alone or in combination with contaminants from other sources." Dust control is specifically mandated by 415 ILCS 5/22.59(g)(10).**

**a. Under Illinois EPA's Proposed Regulations, does this provision apply to dust that originates from CCR surface impoundments in combination with other on-site and off- site sources that are also discharging dust?**

Response: No. CCR surface impoundments are separate from the other particles released to the air by surrounding facilities or other sources where the CCR surface impoundment

**a. Does the Agency consider existing groundwater quality standards under 35 Ill. Adm. Code pt. 620 to be “applicable state...water quality standard[s]?”**

Response: Yes

**b. Does the Agency consider existing groundwater protection standards under 40 C.F.R. Part 257 to be “applicable. . . federal water quality standard[s]?”**

Response: Yes

**c. Could you please identify all standards that the Agency considers to be “applicable state or federal water quality standard[s]?”**

Response: The Owner/Operator must comply with Sections 307 and 404 of the Clean Water Act, the Interagency Wetlands Policy Act of 1989, and the Rivers, Lakes, and Streams Act, 35 IAC Part 302 and 303, Part 620 and 40 CFR Part 257, as applicable. (Agency Response)

**d. Will the Agency take into account existing groundwater monitoring data from CCR surface impoundments covered by the Federal CCR Rule in determining whether “the construction and operation” of the impoundment “will not cause or contribute to any violation of any applicable state or federal water quality standard?”**

Response: Existing groundwater quality data would be taken into account for determining if a CCR surface impoundment already at that location meets the requirements of Section 845.310. For the construction of a new CCR surface impoundment, which is compliant with the proposed requirements of Part 845, Subpart D, existing groundwater water quality may not be relevant, because the design of the new CCR surface impoundment may be significantly different than a CCR surface impoundment not designed pursuant to Part 845, Subpart D. (Agency Response)

**i. If so, what monitoring results would lead the Agency to determine that operation of the impoundment “will not cause or contribute to any violation of any applicable state or federal water quality standard?”**

Response: Monitoring results of water quality will determine whether operation will not cause or contribute to any violation to an applicable standard. (Agency Response)

**e. Will the Agency take into account existing groundwater monitoring data from CCR surface impoundments not covered by the Federal CCR Rule in determining whether “the construction and operation” of the impoundment “will not cause or contribute to any violation of any applicable state or federal water quality standard?”**

Response: CCR surface impoundments not subject to Part 257, are not subject to the requirements of Part 845. (Agency Response)

**i. If so, what monitoring results would lead the Agency to determine that operation of the impoundment “will not cause or contribute to any violation of any applicable state or federal water quality standard?”**

Fourth, an intermediate term remedy may be a low permeability cap, that will significantly reduce recharge through the coal ash and will further reduce J -mg/L/day but make take longer to predict.

Fifth, examples of longer-term remedies would be hydrodynamic dispersion after closure in place or closure by removal.

**d. Are you aware of how long constituents can continue to leach out of CCR?**

Response: Yes. That is determined on a site-by-site basis taking into account the hydrogeology of a site and the aquifer property data in the mass flux equation provided in Response to 10(a). As described above, the question can be quantitatively modeled and then evaluated against real world observations.

**i. If so, for how long and what is the basis for that statement?**

Response: It's a case-by-case determination as described above.

**e. Are you familiar with the Risk Assessment performed by U.S. EPA when it finalized the 2015 Federal CCR Rule?**

Response: No.

**i. If so, have you reviewed that document's conclusions with regard to how long constituents can continue to leach out of CCR?**

**ii. If so, what are those conclusions?**

**f. Given how long constituents can continue to leach out of CCR, how long must water be kept out of contact with CCR in order for the closure method to continue to be effective and protective? Please explain.**

Response: See above. It's a case-by-case evaluation that takes into account all of the factors described above. Transient groundwater modeling will also need to be conducted to determine the effect of a seasonally intersecting water table on J -mg/L/day to evaluate the reduction or elimination, to the maximum extent feasible, further releases of constituents to protect public health and the environment.

**g. Given how long constituents can continue to leach out of CCR, how long must a cover be maintained in order for the closure method to continue to be effective and protective? Please explain.**

**UPDATED  
EXHIBIT 28**



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AMENDED OPINION OF LISA JN BRADLEY, PH.D., DABT  
IN THE MATTER OF:  
PETITION OF SOUTHERN ILLINOIS  
POWER COOPERATIVE FOR  
AN ADJUSTED STANDARD FROM  
35 ILL. ADMIN. CODE PART 845 OR, IN  
THE ALTERNATIVE, A FINDING OF  
INAPPLICABILITY

by  
Lisa JN Bradley, Ph.D., DABT  
Chicago, Illinois

for  
Schiff Hardin, LLC  
Chicago, Illinois

File No. 201138-000  
September 1, 2021

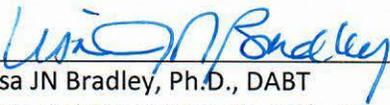


**SIGNATURE PAGE FOR**

AMENDED OPINION OF LISA JN BRADLEY, PH.D., DABT  
IN THE MATTER OF:  
PETITION OF SOUTHERN ILLINOIS  
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**PREPARED FOR**  
SCHIFF HARDIN, LLC  
CHICAGO, ILLINOIS

PREPARED BY:

  
\_\_\_\_\_  
Lisa JN Bradley, Ph.D., DABT  
Principal Consultant, Toxicologist  
Haley & Aldrich, Inc.

September 1, 2021

## 1. Introduction

I have been retained as a toxicologist with Haley & Aldrich, Inc. (Haley & Aldrich) on behalf of the Southern Illinois Power Co-operative (SIPC) to provide an updated opinion supporting the Petition for an Adjusted Standard or, in the Alternative, a Finding of Inapplicability (Amended Petition) for several current and former storm or wastewater ponds at the Marion Generating Station, located approximately seven miles south of the City of Marion in Williamson County, Illinois.

I originally provided an opinion in this matter in May 2021. That opinion was attached to SIPC's May 11, 2021 Petition for Adjusted Standard as Ex. 28. Since May, I have reviewed additional information about the Ponds at issue in SIPC's Petition, including information included in the Pond Investigation Report of Certain Ponds at SIPC's Marion Station (Haley & Aldrich, 2021) ("Pond Investigation Report"), which I understand has been attached as Ex. 29 to SIPC's Amended Petition. This Updated Opinion supersedes my May 2021 opinion in this matter.

I understand that the Illinois Environmental Protection Agency (IEPA) has classified several current and former ponds at the Marion Generating Station as coal combustion residual (CCR, or coal ash) surface impoundments under Part 845 Rules, Illinois Administrative Code (Title 35, Subtitle G, Chapter I, Subchapter j).

Part 845 is patterned on regulations from the U.S. Environmental Protection Agency (USEPA) titled "Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities; Final Rule," and promulgated on April 17, 2015,<sup>1</sup> referred to herein as the federal CCR Rule, or Part 257.

The purpose of this opinion is to discuss the risks that the USEPA sought to address in its Part 257 with respect to surface impoundments, and to explain that those risks are not presented by the Ponds that are the subject of this petition. Five of the current and former ponds at issue in the petition have acted exclusively or primarily as secondary ponds, rather than ponds designed to directly receive CCR, and they in fact have not received significant amounts of CCR stored in water; these are referred to collectively as the Ponds. Given their historic operation, and the results of additional investigation since my initial declaration, they are the types of ponds that would be characterized as de minimis ponds and that would not be expected to pose an appreciable threat to human health or the environment warranting regulation under Part 845. These Ponds are:

- South Fly Ash Pond
- Pond 3 (including Pond 3A)
- Pond S-6
- Pond 4

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<sup>1</sup> <https://www.federalregister.gov/documents/2015/04/17/2015-00257/hazardous-and-solid-waste-management-system-disposal-of-coal-combustion-residuals-from-electric> – EPA-HQ-RCRA-2009-0640-11970 – Federal CCR Rule.

- Former Pond B-3

In addition, the Petition also requests a determination of non-applicability for, or alternatively an adjusted standard be granted exempting, three former fly ash holding units that are believed to have previously received fly ash discharges, but that have been drained of water for more than 30 years, are covered by a former on-site landfill, and have been at least partially covered by the former landfill going back to at least the early 1990s. Those former ponds are referred to as the Former Fly Ash Holding Units:<sup>2</sup>

- Initial Fly Ash Holding Area
- Replacement Fly Ash Holding Area
- Fly Ash Holding Area Extension

Neither those former units nor the landfill on the top of them presents the risks sought to be mitigated by Part 257 and Part 845 regulations for CCR surface impoundments. The former on-site permit exempt landfill was operated by SIPC as a landfill and has been regulated by IEPA as a landfill for decades.

### 1.1 OPINION

I have reviewed SIPC's Petition and Amended Petition and the descriptions and historical background of the eight units at issue therein. I understand based on that information – as well as documents I have reviewed and discussions with plant personnel – that none of the eight current or former units at issue are expected to contain a large amount of CCR managed with water under a hydraulic head. Based upon the pond history set forth in the petition, those units at issue either have the characteristics of de minimis ponds as described by USEPA or are former ponds that have not contained CCR stored in water for decades. In either case, they would not pose the type and magnitude of risk that USEPA determined warranted regulation as a CCR surface impoundment under Part 257.

My original opinion in this matter has been supplemented by my review of the results from additional investigations conducted at the facility on the volume of CCR in the Ponds, which confirms that the CCR content of these Ponds is de minimis and does not warrant regulation. The ability of Pond sediments to release constituents into water was evaluated and the results demonstrate that the Pond sediments do not serve as a material source of constituents that could migrate to groundwater. Moreover, and consistently, relevant groundwater data indicate limited impact, confirming that the Ponds do not serve as a material source of constituents to groundwater.

Accordingly, none of the de minimis Ponds represent the risk that drove USEPA's Part 257 regulations, and they are not expected to present a reasonable probability of adverse effects on human health and the environment which would warrant regulation under Part 845.

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<sup>2</sup> The Initial Fly Ash Holding Area, the Replacement Fly Ash Holding Area and the Fly Ash Holding Area Extension are defined and described in SIPC's Amended Petition.

The Former Fly Ash Holding Units were located within the footprint of the on-site permit exempt former landfill. The units have not contained water for more than 30 years and are covered by the former landfill—they are essentially a component of the former landfill. Significantly for this petition, the contents of these former units do not hold CCR in water under a hydraulic head. Relevant groundwater data confirm that the units do not serve as a material source of constituents to groundwater. Thus, the Former Fly Ash Holding Units do not pose a reasonable probability of adverse effects on human health or the environment warranting regulation under Part 845.

This updated opinion is based upon the information presently available to me and I retain the right to revise or supplement this opinion based upon further information and analysis.

## 2. Scope and Objectives

Part 845 provides the following definition:

““CCR surface impoundment” or “impoundment” means a natural topographic depression, man-made excavation, or diked area, which is designed to hold an accumulation of CCR and liquids, and the surface impoundment treats, stores, or disposes of CCR. [415 ILCS 5/3.143]”

This is essentially the same as the definition provided in the federal Part 257:

“CCR surface impoundment or impoundment means a natural topographic depression, man-made excavation, or diked area, which is designed to hold an accumulation of CCR and liquids, and the unit treats, stores, or disposes of CCR.” [257.53]

The important descriptor in each of these definitions is “designed to hold an accumulation of CCR and liquids,” and the unit “treats, stores and disposes of CCR.” USEPA was clear in the preamble to the federal CCR Rule that the Agency specifically did not include units such as wastewater and holding ponds that “receive only de minimis amounts of CCR,”<sup>3</sup> as regulated units under its federal CCR Rule because those units “are unlikely to present the significant risks” Part 257 was intended to address. A former pond with no water, or a current pond with a small amount of CCR, should pose even less risk.

Five of the ponds (South Fly Ash Pond, former Pond B-3, Pond 4, Pond 3 (including Pond 3A), and Pond S-6—the Ponds) that are the subject of this petition have received only de minimis amounts of CCR. The other three are Former Fly Ash Holding Units that have been drained of water, and been covered, and are within the boundary of the on-site permit exempt landfill, which was operated by SIPC as a landfill, has been regulated by IEPA as a landfill for decades, and which SIPC has proposed to close as a landfill in compliance with Illinois landfill regulations.

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<sup>3</sup> CCR Rule. EPA-HQ-RCRA-2009-0640-11970; p21357.

The next section discusses the “USEPA Evaluation of CCR Surface Impoundments,” specifically the risk assessment USEPA performed to support the Part 257 rulemaking, and USEPA’s clarification of what constitutes a CCR surface impoundment and its determination that impoundments that contain only de minimis amounts of CCR are not regulated under Part 257.

Section 4 discusses the results of the field investigations conducted at SIPC’s facility to evaluate the sediment volume, CCR content, and potential impact on groundwater quality of the Ponds at issue in the petition. Those investigations are discussed in the Pond Investigation Report, Section 5 addresses the former CCR landfill and the Former Fly Ash Holding Units at the facility, and Section 6 provides my opinion.

### **3. The USEPA Evaluation of CCR Surface Impoundments**

This section provides the information needed to understand USEPA’s approach to regulating CCR disposal in CCR surface impoundments. A brief summary of what is coal ash is provided, followed by salient features of the federal CCR Rule, and the risk assessment upon which USEPA based its decisions. Using this information, a discussion of USEPA’s definition of a CCR surface impoundment is provided, and USEPA’s discussion and clarification of what is a CCR surface impoundment and the concept of de minimis amounts of CCR is summarized.

#### **3.1 COAL ASH**

Coal ash is the unburned/unburnable material remaining after the combustion of coal. Coal is a type of sedimentary rock that is a natural component of the earth’s crust, and the inorganic minerals and elements it contains are also naturally occurring. Coal was formed over millions of years from the compaction of decayed plant matter with soils and sediments. The soils and sediments contained minerals, and these minerals were taken up into the plants as they grew. It is the organic component of coal that is burned to produce energy, and the inorganic minerals and elements that remain after combustion make up what we know as coal ash. These same minerals are present in the soils in the U.S. today, and throughout the world.

The two major types of coal ash are fly ash and bottom ash. Fly ash is coal ash that exits from a combustion chamber in the flue gas and is captured by air pollution control equipment, and generally consists of very small particles with high surface area and a higher proportion of metals on the surface. Bottom ash consists of agglomerated ash particles that are too large to be carried in the flue gases and instead adhere to the boiler walls or fall through open grates to an ash hopper at the bottom of the boiler, and generally consist of larger chunks of relatively inert material. Both of these materials have chemical and physical properties that make them useful products in a variety of applications including the use of fly ash to replace portland cement in concrete, and the use of bottom ash in roofing materials and as a replacement for aggregate material in lightweight concrete applications.

In 2003, SIPC converted the old boilers from former Units 1, 2 and 3 to a Circulating Fluidized Bed (CFB) boiler, now referred to as Unit 123. The bottom ash in a CFB is referred to as bed ash. Air vacuum pumps installed with the CFB allowed SIPC to convert to a 100% dry ash management system. The bed ash was handled dry and taken off-site for beneficial use. Limestone is used in a CFB system to capture sulfur dioxide, and due to this, the bed ash when wetted will harden, setting up like concrete, and can be used in structural applications such as road base or berm construction.

### 3.2 THE FEDERAL CCR RULE

As noted above, Part 845 is patterned on the federal CCR Rule. USEPA provides as the basis for its statutory authority to issue such regulation the Solid Waste Disposal Act (SWDA) of 1970, as amended by the Resource Conservation and Recovery Act (RCRA) 1976 (and other further amendments). As noted in the preamble to the CCR Rule [p21310], USEPA is charged under section 4004(a) of RCRA with “issuing regulations to address all ‘reasonable probabilities of adverse effects’ (i.e., all reasonably anticipated risks) to health and the environment from the disposal of solid waste.”

USEPA conducted a risk assessment of CCR disposal practices to identify which of those practices warranted regulation under the SWDA. A summary of the risk assessment is provided below, with special emphasis on the evaluation of CCR surface impoundments.

### 3.3 THE CCR RISK ASSESSMENT

The USEPA published the “Human and Ecological Risk Assessment of Coal Combustion Residuals”,<sup>4</sup> herein referred to as the CCR Risk Assessment, as a technical support document for the CCR Rule. The CCR Risk Assessment is a “national” risk assessment to determine the “reasonable probabilities of adverse effects” from CCR management practices.

The CCR Risk Assessment was based on a characterization of the “current” state of CCR disposal practices across the county, identification of potential releases from the CCR disposal units, and an evaluation of potential risks posed to human and ecological receptors. USEPA used mathematical models to determine the rate at which constituents may be released from different CCR units, to predict the fate and transport of these constituents through the environment, and to estimate the resulting risks to human and ecological receptors. USEPA then designed the CCR Rule to manage those risks, and other potential risks, to satisfy the RCRA requirement<sup>5</sup> that there will be “no reasonable probability of adverse effects on health or the environment from disposal.”

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<sup>4</sup> Human and Ecological Risk Assessment of Coal Combustion Residuals. Final. December 2014. U.S. Environmental Protection Agency. Regulation Identifier Number: 2050-AE81. EPA-HQ-RCRA-2009-0640-11993. Available at: <https://www.regulations.gov/>

<sup>5</sup> <https://www.govinfo.gov/content/pkg/STATUTE-90/pdf/STATUTE-90-Pg2795.pdf> – RCRA Section 4004(a), and cited in the CCR Rule, p21310.

The CCR Risk Assessment evaluated the following CCR management areas:

- CCR surface impoundments
- CCR landfills

The USEPA conducted the risk assessment in two stages – a screening level risk assessment followed by a detailed risk assessment.

### 3.3.1 Screening Level Risk Assessment

The following potential exposure scenarios were addressed in the screening level risk assessment:

- Release of CCR via wind and overland run-off, and potential human exposure via:
  - Soil
  - Sediment
  - Produce
  - Livestock
- Release of CCR via transport of leachate through groundwater, and potential human exposure via:
  - Groundwater
  - Surface water (for both human and ecological receptors)
  - Fish consumption

Based on the results of the screening risk assessment, EPA found that the pathways associated with wind and overland run-off did not pose risks above risk benchmarks (see below), and only the pathways associated with groundwater were carried forward to the detailed risk assessment.

### 3.3.2 Detailed Risk Assessment

The CCR Risk Assessment is not based on any one location – it was designed to capture a broad range of CCR management scenarios. It was conducted as a probabilistic risk assessment to capture the wide range of data for many parameters and conditions, and produced a range of risk results. USEPA used the 90<sup>th</sup> percentile (i.e., upper-bound) of that range as the basis for comparison to the RCRA cancer benchmark of  $1 \times 10^{-5}$  as point-of-departure for the rulemaking<sup>6</sup>, and a benchmark noncancer risk of 1.

The specific scenarios evaluated in the detailed risk assessment for both CCR landfills and CCR surface impoundments for the groundwater pathway were:

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<sup>6</sup> Note that this point of departure is conservative as USEPA guidance for the Superfund and other programs uses a risk range from  $1 \times 10^{-6}$  to  $10 \times 10^{-4}$ .

- Human Health
  - Ingestion of groundwater as drinking water
  - Ingestion of fish from surface water
- Ecological
  - Exposure to sediment
  - Exposure to surface water

The specific risk assessment results above the RCRA risk benchmarks are germane to this petition.

Table 1. USEPA National CCR 90 <sup>th</sup> Percentile Probabilistic Risk Assessment Results Above the RCRA Risk Benchmarks	
Ingestion of Groundwater	
Surface Impoundments	
Constituent	Excess Cancer Risks
Arsenic III	2 x 10 <sup>-4</sup>
Arsenic V	1 x 10 <sup>-5</sup>
Noncancer Risks	
Arsenic III	5
Lithium	2
Molybdenum	2

Thus, from the full detailed probabilistic risk assessment, the only scenario with risks above the RCRA risk benchmarks is the human health scenario of ingestion of groundwater as drinking water for surface impoundments, but only at the 90<sup>th</sup> percentile of the risk range. As shown in Table 2, below, none of the other disposal scenarios posed a risk to human health or the environment above the RCRA point of departure for regulatory rulemaking; specifically, the 50<sup>th</sup> percentile results for surface impoundments are below the RCRA point of departure for regulatory rulemaking.

Table 2. USEPA CCR National Risk Assessment Results Summary – Results Above the RCRA Risk Benchmarks					
Human Health Risks			Ecological Risks		
	Surface Impoundment	Landfill		Surface Impoundment	Landfill
<b>Groundwater as Drinking Water</b>			<b>Ecological Exposure to Sediment</b>		
<b>90<sup>th</sup> Percentile</b>	See <b>Table 1</b> Above	None	<b>90<sup>th</sup> Percentile</b>	None	None
<b>50<sup>th</sup> Percentile</b>	None	None	<b>50<sup>th</sup> Percentile</b>	None	None
<b>Fish Ingestion</b>			<b>Ecological Exposure to Surface Water</b>		
<b>90<sup>th</sup> Percentile</b>	None	None	<b>90<sup>th</sup> Percentile</b>	None	None
<b>50<sup>th</sup> Percentile</b>	None	None	<b>50<sup>th</sup> Percentile</b>	None	None

The 50<sup>th</sup> percentile results are important to consider here. These results mean that the average CCR surface impoundment is not expected to pose an adverse risk to health or the environment – there is no reasonable probability of adverse effects posed by these units. While we do not have the information to be able to describe the specific CCR surface impoundment configurations associated with the upper-bound or the average risk results,<sup>7</sup> we do know that USEPA used the definition of a CCR surface impoundment as “a natural topographic depression, man-made excavation, or diked area, which is designed to hold an accumulation of CCR and liquids, and the unit treats, stores, or disposes of CCR.” Thus, even an average-sized CCR surface impoundment that holds an accumulation of CCR and water does not pose a risk to human health or the environment above RCRA risk benchmarks.

In essence, the CCR Rule is regulating CCR disposal not to mitigate the risks from an average case or the most common case, but to mitigate the risks from a worst-case scenario. USEPA’s rationale for this broad reach in regulation is that the Agency did not have the direct authority to enforce the CCR Rule when it was promulgated and did not envision that it would be granted that authority. Therefore, USEPA decided that the requirements in the Rule had to be protective of the most sensitive CCR disposal scenario.

Thus, to achieve this, the requirements in the CCR Rule are very conservative. As noted in the preamble to the CCR Rule:

“...the regulatory structure under which this rule is issued effectively limits the Agency’s ability to develop the type of requirements that can be individually tailored to accommodate particular site conditions. Under sections 1008(a) and 4004(a), EPA must establish national criteria that will

<sup>7</sup> USEPA does not provide in the docket for the rulemaking (EPA-HQ-RCRA-2009-0640-11970) the detailed distribution inputs or outputs from the CCR Risk Assessment.

operate effectively in the absence of any guaranteed regulatory oversight (i.e., a permitting program), to achieve the statutory standard of ‘no reasonable probability of adverse effects on health or the environment’ at all sites subject to the standards. EPA was unable to develop a performance standard that would allow for alternatives to closure, but would also be sufficiently objective and precise to minimize the potential for abuse.”<sup>8</sup>

### 3.4 THE USEPA DEFINITION OF SURFACE IMPOUNDMENT AND “DE MINIMIS”

USEPA clearly articulated its definition of a “CCR surface impoundment” that was subject to the CCR Rule in the preamble.<sup>9</sup> It did so in response to comments, to “clarify the types of units that are covered by the rule.”

The USEPA presented the definition as follows:<sup>10</sup>

“EPA has therefore revised the definition to provide that a CCR surface impoundment as defined in this rule must meet three criteria: (1) The unit is a natural topographic depression, manmade excavation or diked area; (2) the unit is designed to hold an accumulation of CCR and liquid; and (3) the unit treats, stores or disposes of CCR. These criteria correspond to the units that are the source of the significant risks covered by this rule, and are consistent with the proposed rule.”

USEPA specifically did not include units such as wastewater and holding ponds that “receive only de minimis amounts of CCR,”<sup>11</sup> as regulated units under its federal CCR Rule. USEPA supported that conclusion, including by noting that:

“EPA reviewed the risk assessment and the damage cases to determine the characteristics of the surface impoundments that are the source of the risks the rule seeks to address. Specifically, these are units that contain a large amount of CCR managed with water, under a hydraulic head that promotes the rapid leaching of contaminants...” and “that units containing only truly “de minimis” levels of CCR are unlikely to present the significant risks this rule is intended to address.”

USEPA then elaborated as follows:

“...units that present significantly lower risks, such as process water or cooling water ponds,... although they will accumulate any trace amounts of CCR that are present, they will not contain the significant quantities that give rise to the risks modeled in EPA’s assessment.”

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<sup>8</sup> CCR Rule. EPA-HQ-RCRA-2009-0640-11970; p21371.

<sup>9</sup> CCR Rule. EPA-HQ-RCRA-2009-0640-11970; p21357.

<sup>10</sup> CCR Rule. EPA-HQ-RCRA-2009-0640-11970; p21357.

<sup>11</sup> CCR Rule. EPA-HQ-RCRA-2009-0640-11970; p21357.

As noted above, the CCR Risk Assessment did not find the “average” CCR surface impoundment to pose an adverse risk to health or the environment – there is no reasonable probability of adverse effects posed by these units. While the CCR Rule does apply to “CCR surface impoundments” whether or not they share the characteristics of the 90<sup>th</sup> percentile of the population, it does not apply to ponds or impoundments that contain only a de minimis amount of CCR. The CCR Risk Assessment provides the USEPA with the technical basis to make this conclusion and structure the CCR Rule accordingly.

In short, therefore, USEPA did not define “CCR surface impoundment” to include units containing de minimis amounts of CCR and, therefore, did not regulate those units under Part 257. It follows that those same units should not be regulated under Part 845, which adopted USEPA’s definition of “CCR surface impoundment.”

### 3.5 USEPA CCR LANDFILL

Also of importance is the distinction between CCR surface impoundments and CCR landfills. The detailed risk assessment results for landfills determined that the 90<sup>th</sup> percentile cancer and noncancer risks were all below human health and environmental benchmarks.

USEPA notes, “High-end risks for surface impoundments are consistently higher than those for landfills. These results are attributed primarily to the higher infiltration rates through surface impoundments, which is controlled by the hydraulic head of ponded water.” While US EPA did promulgate regulations for CCR landfills in Part 257, those regulations are different from the regulations governing CCR surface impoundments. They also do not apply to CCR landfills that ceased receiving waste prior to October 19, 2015. [40 CFR 257.50(e)]

## 4. Evaluation of the SIPC Ponds Subject to The Petition

Following my initial declaration, SIPC completed an evaluation of the sediment volume, CCR contents, and potential effects on groundwater for five of the Ponds included in the Amended Petition. The results of that evaluation are discussed in the Pond Investigation Report (Haley & Aldrich, 2021) and below.

### 4.1 POND CONTENTS

The contents of the Ponds were evaluated based on:

- Results of a bathymetric survey that characterized the volumes and sediment thicknesses of the Ponds that still contain water: South Fly Ash Pond, Pond 3 (including Pond 3A), Pond S-6, and Pond 4;
- Results of carbon analysis for Pond sediments;
- Results of major cation and anion concentrations for Pond sediments;

- Pond usage and design information;
- Results of polarized light microscopy (PLM) that characterizes the fraction of CCR materials in Pond sediments; and
- Results from historic borings in the area of former Pond B-3.

The bathymetric survey was used to identify the top of the sediment layer and the bottom of the Pond at each measurement location.

- The results were summarized and used to develop topographic maps of the sediment thickness in each Pond. The average sediment thickness in the Ponds ranged from 0.84 feet (Pond S-6) to 1.67 feet (Pond 4), or approximately 10 to 20 inches.
- The data were also used to calculate the volume of sediment in each Pond related to the total Pond volume based on Pond water elevations; the sediments represent between 8.2% (Pond S-6) to 13.3% (Pond 3A) of total Pond volumes.<sup>12</sup>
- Pond sediment samples were collected and analyzed by PLM, which can characterize the fraction of coal and of CCR materials in the samples.
- The estimate of the percent of sediments in the Pond sediment samples that are morphologically consistent with CCR (fly ash, bottom ash, and boiler slag) ranged between 10% to 68%, i.e., not all of the sediments in the Ponds consist of CCR.
- Thus, conservatively assuming that the sediments in each Pond could have as much as 68% CCR material in the sediments (rather than 100%), the volume of CCR in the Ponds would range from 5.6% to 9% of the total Pond volumes (application of the 68% CCR to the sediment volume range above of 8.2% to 13.3%).

It should be noted that the PLM analysis did not distinguish/identify FGD materials (scrubber sludge) in the samples. Accordingly, if those materials were present in the samples, they would have been classified as "Other." Based on the pond history described in SIPC's petition, I would expect the amount of scrubber sludge that was disposed of or otherwise ended up in the pond system would have been minimal, if any. While all of the "Other" material is unlikely to be scrubber sludge, even if one were to conservatively assume, for the sake of argument, that all of the sediment in each pond is comprised of CCR, as noted in the report, the sediment thicknesses (approximately 10 to 20 inches) and the sediment volume estimates (8.2% to 13.3%) would still be much lower than for typical CCR impoundments that were designed to hold an accumulation of CCR and liquids, and to treat, store, or dispose of CCR, i.e., the type of units that USEPA sought to regulate under the CCR Rule. In other words, the results of the

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<sup>12</sup> As described in the Pond Investigation Report, the water elevations in the South Fly Ash Pond were lowered prior to the bathymetric survey for operational reasons. Accordingly, the Pond Investigation Report presented a calculation of sediments as a percentage of pond volume for the South Fly Ash Pond using both the 2021 pond elevation (21.8%) and the 2007 pond elevation (11%). I understand the 2007 pond elevation level to be consistent with historical operations and have relied on that for purposes of my report. However, even if the 21.8% value were used it, it would not change my opinion that the South Fly Ash pond is a de minimis unit that does not pose a reasonable probability of adverse effects on human health and the environment warranting regulation under Part 845.

bathymetric survey confirm that the South Fly Ash Pond, Pond 3 (including 3A), Pond S-6, and Pond 4 are the types of units that the USEPA excluded from regulation under Part 257 because they contained de minimis amounts of CCR and do not result in a reasonable probability of adverse effect on human health and the environment.

Former Pond B-3 does not contain water and, therefore, was not included in the bathymetric survey. I understand that Former Pond B-3 was not used for the treatment, storage or disposal of CCR, and that any CCR that may have been present in the sediments was removed in 2017. Because any CCR in the pond would have been minimal, it does not now contain sediments, and is essentially dry, Former Pond B-3 does not contain a large amount of CCR managed with water under a hydraulic head, therefore, does not pose the risks that the USEPA sought to address in its Part 257 with respect to surface impoundments, and does not warrant regulation as a surface impoundment under Part 845.

At the request of IEPA, samples were collected from borings located in the berms of the following Ponds:

- South Fly Ash Pond
- Pond 3 (including Pond 3A)
- Pond S-6
- Pond 4
- Former Pond B-3

Berm samples were analyzed by PLM. The fly ash content of the berm samples ranged from 7% to 15% for Pond 4, 23% for Pond 3, and 90% to 91% for Pond 3A (the smallest of the Ponds). The berms are discussed further in the following section.

#### **4.2 EVALUATION OF THE POTENTIAL EFFECT OF PONDS ON GROUNDWATER**

The assessment of potential impacts of the minimal sediments in the Ponds on groundwater quality was based on:

- Results of shake extraction tests with water (shake tests) of Pond sediments;
- Results of shake tests of coal and known coal combustion by-products, including a scrubber sludge sample obtained in 2018, and a fly ash sample from the now-retired Unit 4 boiler, (collected from SIPC's operations but not from the Ponds); these samples are used as control samples to provide a baseline for comparative evaluation of the results of Pond sediments; and
- Results of groundwater quality monitoring.

Pond sediment samples and control samples (including fly ash, scrubber sludge, and coal) were used to evaluate the leachability of the materials using shake tests, following the ASTM D3987 Method, which uses water as the eluant. The purpose of this evaluation was to determine if the Pond sediments serve as a material source of CCR constituents to groundwater. The results are a conservative estimate of

environmental behavior because the constituents in the water from the test would be expected to undergo dilution and attenuation when transiting from water from the Ponds to groundwater and then within the groundwater.

#### 4.2.1 Shake Test Results for Pond Sediment Samples

The shake test results were compared to Illinois Part 620 Groundwater Quality Class I Potable Resource standards and Class II General Resource standards. The shake test results and comparison to standards are provided in Appendix C of the Pond Investigation Report.

All coal control sample shake test results are below the groundwater standards. Sulfate, thallium, and total dissolved solids (TDS) concentrations from the shake tests are above the groundwater standards for both the scrubber sludge control sample and the fly ash control sample. Additionally, antimony, boron, chloride, fluoride, and selenium concentrations from the shake tests are above the groundwater standards for the fly ash control sample. Accordingly, if there were a significant amount of CCR in pond sediments, one would expect to see some combination of sulfate, thallium, TDS (from scrubber sludge and fly ash), and/or antimony, boron, chloride, fluoride, and selenium (from fly ash) in the Pond sediment shake test results. As discussed below, this was not observed.

Shake tests were conducted on fourteen (14) Pond sediment samples. The results indicate that all concentrations of constituents are below groundwater standards with only a few exceptions:

- Arsenic in one sample from Pond 3 (arsenic was not detected in the control sample shake tests);
- Selenium in one sample from the South Fly Ash Pond; and
- Sulfate and TDS together in six samples; two from Pond 3, two from Pond S-6, and two from the South Fly Ash Pond.

As discussed above, Former Pond B-3 does not hold water and was earlier closed, however, data are available from previous shake tests conducted on nine sediment samples in 2017. Those were collected after the pond was dewatered and the contents had been removed. Of the nine samples, one sample had an arsenic result above a groundwater standard, and one sample had a pH slightly higher than the groundwater standard.

Because arsenic is present in only two of 23 sediment shake test results above a groundwater standard, and selenium is present in only one of 23 sediment shake test results above a groundwater standard, these constituents are not expected to adversely affect groundwater quality. Moreover, arsenic was not detected in any of the control sample shake test results. Accordingly, it is possible that arsenic may come from a non-CCR source.

Based solely on the shake test results, the pond investigation report also concluded that sulfate could be present in the pond sediments at levels above applicable groundwater standards. As discussed below, however, the pond sediments do not appear to be a significant source of sulfate to groundwater.

Boron and sulfate can be indicators of a potential release from a CCR unit, thus they are both components of USEPA's Appendix III for the CCR Rule Detection Monitoring program.<sup>13</sup> Of the three control samples, only the shake test result for the Unit 4 fly ash sample was above the Class I groundwater standard for boron (16.2 mg/L versus 2 mg/L). It is noteworthy that all of the Pond sediment shake test results for boron are below Class I groundwater standards, indicating that the amount of CCR in the sediments is unlikely to result in groundwater above Class I standards for boron.

#### 4.2.2 Shake Test Results for Berm Samples

Samples were collected from borings in berms at Pond 3, Pond 3A, Pond 4, Pond S-6, Former Pond B-3, and the South Fly Ash Pond.

Of the 11 samples, six results were above the Class I groundwater standard for TDS. However, as noted in the Pond Investigation Report, the TDS results for 5 of these samples are suspect due to their low conductivity measurements, and low major cation and anion concentrations. Sulfate was above the Class I groundwater standard only in one sample, from Pond 3. Antimony and arsenic were above the groundwater standards in only one sample, from Pond 3-A.

Together, these results indicate that the amount of CCR present in these samples (discussed in Section 4.1) is unlikely to result in groundwater above the groundwater standards for any of these parameters.

#### 4.2.3 Groundwater Data Evaluation

The Pond Investigation Report analyzed groundwater data from 2016 to the present that SIPC has collected from nine wells. [Note, data are available from 2010, but the more recent 5-6 years of data are more representative of current conditions.] The well locations are shown in Figure 1 of the Pond Investigation Report. There are two background wells; C3 which is located southwest of the South Fly Ash Pond, and S1 which is located northeast of the facility. Two wells (C1 and C2) are located to the east of the South Fly Ash Pond and the coal pile. Well S6 is located near Pond 4, wells S2 and S3 are located near Pond S-6, and well S4 is located nearest Pond 3A below the Lake of Egypt dam.

Analytical data from these wells demonstrate that of 20 rounds of sampling of seven site wells, in each round (140 samples) only three sulfate results are above the Class I groundwater standard: S4 and S6 in June 2016, and C1 in December 2020. Note that one background well, S1 in March 2018, also had one sulfate result above a groundwater standard during this time period. Thus, although the shake test results suggested that the Pond sediments may have an effect on sulfate concentrations in groundwater, the Pond Investigation Report shows that the data do not reflect an adverse impact.

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<sup>13</sup> CCR Rule. EPA-HQ-RCRA-2009-0640-11970; p21500.

#### 4.2.4 Groundwater Evaluation by Constituent

Between 2016 and 2019, the groundwater samples from these wells were analyzed for boron, cadmium, and iron, in addition to sulfate. The groundwater data are presented in Table 3. Chloride and dissolved solids were added to two rounds in 2020, and in March 2020 a full list of inorganics was analyzed.

USEPA considers boron, sulfate, and chloride to be indicators of a release from a CCR unit (thus, they are included in Appendix III of the CCR Rule for groundwater detection monitoring<sup>14</sup>). Cadmium is included on USEPA's Appendix IV for CCR units for assessment monitoring,<sup>15</sup> however, cadmium was not a risk driver in the USEPA risk assessment.<sup>16</sup> Iron was included in the USEPA risk assessment, but was not identified as a risk driver, and was not included on Appendix III or Appendix IV.

I performed additional analysis of groundwater data collected from the monitoring wells at Marion Station to complete my review of the data. The discussion of the sulfate results are in the previous section.

**Boron:** Of 20 rounds of sampling of seven site wells each round (140 samples), boron has been detected above the groundwater standard only in well S2, and in nine of the 20 samples from S2. The results range from approximately 1 mg/L to 2.9 mg/L (where the groundwater standard is 2 mg/L), and there is no discernable pattern to the results (i.e., they are not consistently increasing or decreasing). Well S2 is immediately adjacent to Pond S-6. None of the Ponds' shake test results for boron are above the groundwater standard including Pond S-6, thus it is unlikely that the Pond S-6 sediments contribute to the groundwater results for boron at this location.

**Iron:** Iron has been detected above the groundwater standard at least once in all of the wells, with the exception of background well C3. Iron has been detected above the groundwater standard in all but two samples in background well S1. Iron is not considered to be a CCR-related constituent; it was evaluated in the USEPA CCR Risk Assessment but was not identified as a risk-driver and was not included in Appendix III or Appendix IV for groundwater monitoring. It is possible that the iron is associated with the groundwater conditions in the wetland/reducing areas of the site, i.e., locations along Little Saline Creek. It is unlikely that the iron in wells S2, S3, and S4 are related to Pond S-6 due to the small amount of ash potentially present.

**Cadmium:** Cadmium has been sporadically detected above groundwater standards in background wells C3 (2 of 20 samples) and S1 (4 of 20 samples). Cadmium has been detected above groundwater

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<sup>14</sup> CCR Rule. EPA-HQ-RCRA-2009-0640-11970; p21500.

<sup>15</sup> CCR Rule. EPA-HQ-RCRA-2009-0640-11970; p21500.

<sup>16</sup> Human and Ecological Risk Assessment of Coal Combustion Residuals. Final. December 2014. U.S. Environmental Protection Agency. Regulation Identifier Number: 2050-AE81. EPA-HQ-RCRA-2009-0640-11993. Available at: <https://www.regulations.gov/>

standards inconsistently in well S2 (7 of 20 samples) and once in each of wells S3, S4 and S5. All of the concentrations above screening levels are similar between the background wells and the site wells, indicating that the cadmium may be naturally occurring. Cadmium was not detected in the scrubber sludge or coal shake test results, and the cadmium concentration in the Unit 4 fly ash shake test result was below the groundwater standard. Thus, based on the control results, it is unlikely that the few instances of cadmium detection in site groundwater is related to CCR in Pond sediments; moreover, it is unlikely that the cadmium in wells S2, S3, and S4 are related to Pond S-6 due to the small amount of ash that may potentially be present.

#### 4.2.5 Groundwater Evaluation by Well Location

To complete my evaluation of the data presented in the Pond Investigation Report, I also considered the groundwater data by well and location to see if I could discern site-related patterns in the data.

Background wells C3 and S1: The constituent concentrations in the background wells are very different, and their settings are also different. C3 appears to be in an upland area, while S1 is close to Little Saline Creek. The settings could affect their groundwater chemistry.

Wells C1 and C2: These wells are just east of the South Fly Ash Pond. Boron was rarely detected in these wells and all results are below groundwater standards. Sulfate concentrations are all below groundwater standards. Cadmium was not detected in these wells. The anomaly is the concentration of iron in well C2, which is consistently above the screening level. As discussed above, the iron is unlikely to be related to CCR, but its source is not known at this time. The location of these wells, the groundwater results, and the results of the sediment shake tests indicate that the South Fly Ash Pond is likely not a source of constituents to groundwater.

Well S2: Well S2 is adjacent to Pond S-6. This well is the only one where boron results are above the groundwater standard, in nine of the 20 samples from S2. The results range from approximately 1 mg/L to 2.9 mg/L (where the groundwater standard is 2 mg/L), and there is no discernable pattern to the results (i.e., they are not consistently increasing or decreasing). Sulfate is not above groundwater standards in this well, but of the S series of wells, it has the highest sulfate concentrations. However, based on the small amount of ash potentially present in Pond S-6 and the sediment shake test results from Pond S-6 sediments, Pond S-6 is not likely to be the source of boron and sulfate in groundwater. This reasoning also applies to cadmium and iron in this well.

Well S3: Well S3 is similarly situated adjacent to Pond S-6 as is well S2. Boron was only detected twice in this well, at low concentrations. Sulfate concentrations are low and similar to background. Cadmium has been detected in only 4 of 20 samples, and only one result is above the groundwater standard. Iron concentrations are consistently above the groundwater standard, but the concentrations are similar to those in background well S1. Based on these results, the small amount of ash potentially present, and sediment shake test results, Pond S-6 is not likely to be a source of CCR constituents to groundwater.

Well S6: This well is adjacent to Pond 4 and former Pond B-3. Boron was not detected in this well with the exception of one sample. Sulfate concentrations are consistently low, with the exception of one anomaly in 2016. Cadmium has not been detected in this well. Iron is the only constituent that is commonly above the groundwater standard. However, based on these results and the sediment shake test results from the preceding discussions, Pond 4 and former Pond B-3 are not likely to be sources of CCR constituents to groundwater.

Wells S4 and S5: These wells are not close enough to the Ponds that are the subject of the petition to provide any meaningful information about the Ponds. Their analytical results were included in the discussion in the previous section.

### 4.3 SUMMARY

The following are conclusions based on the preceding discussions in Section 4:

- Based on the bathymetric survey, the Ponds contain a minimal amount of sediment; the sediments represent between 8.2% (Pond S-6) to 13.3% (Pond 3A) of total Pond volumes.
- The estimate of the percent of sediments in the Pond sediment samples that are morphologically consistent with CCR (fly ash, bottom ash, and boiler slag) ranged between 10% to 68%, i.e., not all of the sediments in the Ponds consist of CCR.
- Thus, conservatively assuming that the sediments in each Pond could have as much as 68% CCR material in the sediments, the volume of CCR in the Ponds would range from 5.6% to 9% of the total Pond volumes (application of the 68% CCR to the sediment volume range above of 8.2% to 13.3%).
- Even if it was assumed that all of the sediment volume was CCR, the Ponds still contain a de minimis amount of CCR, as described by USEPA in the Part 257 rulemaking. Thus, the Ponds are not regulated under Part 257 and do not warrant regulation under Part 845.
- The shake test results of the Pond sediments demonstrate that the sediments are not likely to serve as a material source of CCR constituents to groundwater.
- The available groundwater data demonstrate that the Ponds are not serving as a source of constituents to groundwater.
- Based on these results, as well as the history and use of the Ponds, it is my opinion that Pond 3 (including 3A), Pond 4, Pond S-6, the South Fly Ash Pond, and former Pond B-3 are, at most, de minimis units as described by USEPA in Part 257. This conclusion is further supported by the analyses of the sediment and relevant groundwater at the site, which show no appreciable risk.
- Thus, these Ponds do not pose a reasonable opportunity of adverse effects on human health or the environment warranting regulation under Part 845.

## 5. Former Landfill

The former landfill covers three Former Fly Ash Holding Units:<sup>17</sup>

- Initial Fly Ash Holding Area
- Replacement Fly Ash Holding Area
- Fly Ash Holding Area Extension

These units are believed to have previously received fly ash discharges, but I understand that they have been drained of water for more than 30 years, and were at least partially covered by the former on-site CCR landfill going back to at least the early 1990s.

Neither those former units nor the landfill on the top of them presents the risks sought to be mitigated by Part 257 and Part 845 regulations for CCR surface impoundments, neither of which define CCR surface impoundments to include current or former CCR landfills. These units do not currently consist of "...CCR managed with water, under a hydraulic head that promotes the rapid leaching of contaminants...";<sup>18</sup> thus, they do not pose a substantial or significant adverse threat to human health or the environment warranting regulation as CCR surface impoundments under Part 845.

The former on-site permit exempt landfill was operated by SIPC as a landfill and has been regulated by IEPA as a landfill for decades. The USEPA CCR risk assessment results presented in Table 2, above, demonstrate that none of the landfill scenarios evaluated by USEPA warranted regulation, however, USEPA chose to include CCR landfills in the CCR Rule (though it chose not to regulate former CCR landfills that ceased receiving waste prior to October 2015, which is the case with the former CCR landfill at Marion Station). Continued regulation of the former landfill including these units under IEPA landfill regulations is appropriate and protective.

I understand that a significant part of SIPC's proposed closure of the former landfill is the installation of a cap and cover system compliant with IEPA's landfill regulations.<sup>19</sup> As discussed below, I understand the requirements for closure of a CCR surface impoundment by a final cover system were based on those same landfill regulations. [See IEPA's Statement of Reasons, PCB No. R 20-19, at p. 29; Illinois Pollution Control Board, Second Notice Opinion and Order, PCB No. R-20-19, at p. 97 ("As noted by IEPA, the proposed 3-foot minimum thickness for both the compacted earth low permeability layer and the

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<sup>17</sup> As defined in the Amended Adjusted Standard Petition.

<sup>18</sup> CCR Rule. EPA-HQ-RCRA-2009-0640-11970; p21357

<sup>19</sup> Closure Plan, Illinois EPA Site Number: 199055505, for Southern Illinois Power Cooperative, by Andrews Engineering

final protective layer [in Part 845] are based on Illinois' landfill standards under 35 Ill. Adm. Code 811.314, which have been implemented for over 25 years.”]

The purpose of the final cover system under both sets of regulations is to prevent infiltration of water into the landfill contents. Presumably IEPA based its Part 845 final cover system regulations on the landfill regulations because, in its experience, the Part 811 landfill cover requirements were protective against infiltration and, thus, protective of human health and the environment. [See IEPA's Statement of Reasons, PCB No. R 20-19, at p. 29 (“The performance standard [in Part 845] will help prevent contamination release through design, optimize drainage, stabilization, minimize infiltration and erosion, and support vegetation.”)] Accordingly, I expect that the Part 811-compliant final cover system proposed to be installed by SIPC in its Landfill Closure Plan would be as protective as a final cover system installed pursuant to Part 845.

I further understand that the Landfill Closure Plan and the Part 811 landfill regulations include provisions for groundwater monitoring. [See Landfill Closure Plan at p. 2-7; 35 Ill. Adm. Code 811.319(a).] In addition, the Landfill Closure Plan provides for post-closure care, including regular inspections. [See Landfill Closure Plan at p. 7.] These requirements will ensure that the cover system remains protective over time, and also will ensure that impacts to groundwater (if any) are monitored and can be addressed under Illinois law. In my opinion, closure of the former landfill area (including the Former Fly Ash Holding Units) consistent with the Landfill Closure Plan is protective of human health and the environment.

## 6. Opinion

I have reviewed SIPC's Amended Petition for an Adjusted Standard and the descriptions and historical background of the eight units at issue therein. I understand based on that information – as well documents I have reviewed and discussions with plant personnel – that none of the units at issue are expected to contain a large amount of CCR managed with water under a hydraulic head. Based upon the pond history set forth in the petition, the eight units at issue either have the characteristics of de minimis ponds as described by USEPA (the Ponds: the South Fly Ash Pond, Pond 3 (including Pond 3A), Pond S-6, Pond 4 or former Pond B-3) or are former ponds that have not contained CCR stored in water for decades (the Former Fly Ash Holding Units). In either case, they do not pose the type and magnitude of risk that USEPA determined warranted regulation as a CCR surface impoundment under Part 257.

My opinion is supported by my review of additional investigation conducted at the facility on the volume of CCR in the Ponds, which confirms that the CCR content of the Ponds is de minimis and does not warrant regulation. The ability of Pond sediments to release constituents into water was evaluated and the results show that the Pond sediments would not be expected to serve as a significant source of constituents that could migrate to groundwater. Moreover, groundwater data confirm that the Ponds do not serve as a significant source of constituents to groundwater. Together these data indicate that

the Ponds are not expected to present a reasonable probably of adverse effects on human health or the environment warranting regulation under Part 257, nor under Part 845.

I have also reviewed information regarding the Former Fly Ash Holding Units and SIPC's proposed closure of the landfill area, including the Former Fly Ash Holding Units, and have determined that the continued regulation of the former landfill under IEPA landfill regulations is protective of human health and the environment, and that the Former Fly Ash Holding Units are also not expected to present a reasonable probability of adverse effects on human health or the environment warranting regulation under Part 257 or Part 845, rather than the landfill regulations.

As discussed above, none of those units represents the type or magnitude of risk that drove USEPA's Part 257 regulations. These Ponds do not currently consist of "...CCR managed with water, under a hydraulic head that promotes the rapid leaching of contaminants...";<sup>20</sup> thus, they do not pose a substantial or material adverse threat to human health or the environment warranting regulation under USEPA's Part 257 regulations, nor under Part 845.

This opinion is based upon the information presently available to me and I retain the right to revise or supplement this opinion based upon further information and analysis.

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<sup>20</sup> CCR Rule. EPA-HQ-RCRA-2009-0640-11970; p21357

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**TABLE 3**  
**MARION STATION GROUNDWATER MONITORING WELL ANALYSIS 2016-2020**

Date	Parameter	Units	Part 620 – Groundwater Quality Class I Potable Resource Groundwater (a) (mg/L)	Part 620 – Groundwater Quality Class II General Resource Groundwater (b) (mg/L)	Coal Yard		Background Wells		Landfill Wells					
					C1	C2	C3	S1	S2	S3	S4	S5	S6	
					2016-03-30	Boron	mg/L	2	2	<0.50	<0.50	<0.50	<0.50	2
	Cadmium	mg/L	0.005	0.05	<0.002	<0.002	<0.002	0.0023	0.013	<0.002	<0.002	<0.002	0.0039	0.0039
	Iron	mg/L	5	5	0.66	7.9	1.8	25	170	51	13	2.1	54	54
	Sulfate	mg/L	400	400	250	250	80	26	100	0.92	45	180	68	68
2016-06-10	Boron	mg/L	2	2	<0.50	<0.50	<0.50	<0.50	1.5	<0.50	<0.50	<0.50	<0.50	<0.50
	Cadmium	mg/L	0.005	0.05	0.0027	0.0029	0.003	0.0038	0.0098	0.0053	0.0078	0.0025	0.0026	0.0026
	Iron	mg/L	5	5	9.2	19	0.6	17	150	58	100	2.6	19	19
	Sulfate	mg/L	400	400	300	230	<0.50	62	<0.50	<0.50	2300	66	570	570
2016-09-23	Boron	mg/L	2	2	<0.50	<0.50	<0.50	<0.50	1.6	<0.50	<0.50	<0.50	<0.50	<0.50
	Cadmium	mg/L	0.005	0.05	<0.002	<0.002	<0.002	<0.002	0.0073	0.0025	0.0034	0.0028	0.0039	0.0039
	Iron	mg/L	5	5	0.83	25	0.15	5.9	160	63	82	14	86	86
	Sulfate	mg/L	400	400	240	130	83	19	92	<2.5	30	190	47	47
2016-12-16	Boron	mg/L	2	2	<0.50	<0.50	<0.50	<0.50	2.3	<0.50	<0.50	<0.50	<0.50	<0.50
	Cadmium	mg/L	0.005	0.05	<0.002	<0.002	<0.002	0.0028	0.0023	<0.002	0.0021	<0.002	<0.002	<0.002
	Iron	mg/L	5	5	11	14	3.5	160	52	120	6.6	34	50	50
	Sulfate	mg/L	400	400	240	150	74	130	7.3	28	170	44	21	21
2017-03-24	Boron	mg/L	2	2	<0.50	<0.50	<0.50	<0.50	2.4	<0.50	<0.50	<0.50	<0.50	<0.50
	Cadmium	mg/L	0.005	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	Iron	mg/L	5	5	15	16	0.74	19	170	64	6.6	0.43	2.7	2.7
	Sulfate	mg/L	400	400	230	300	170	19	140	<2.5	40	220	54	54
2017-06-22	Boron	mg/L	2	2	<0.50	<0.50	<0.50	<0.50	1.4	<0.50	<0.50	<0.50	<0.50	<0.50
	Cadmium	mg/L	0.005	0.05	<0.002	<0.002	0.0021	0.0055	0.0041	0.0029	<0.002	<0.002	<0.002	<0.002
	Iron	mg/L	5	5	0.44	12	1	41	160	82	28	3.5	10	10
	Sulfate	mg/L	400	400	220	180	160	18	63	<2.5	36	200	51	51
2017-09-28	Boron	mg/L	2	2	<0.50	<0.50	<0.50	<0.50	2	<0.50	<0.50	<0.50	<0.50	<0.50
	Cadmium	mg/L	0.005	0.05	<0.002	<0.002	<0.002	<0.002	0.005	<0.002	<0.002	0.0059	<0.002	<0.002
	Iron	mg/L	5	5	3.6	12	0.76	22	180	71	38	9.2	10	10
	Sulfate	mg/L	400	400	210	89	120	19	100	<2.5	40	160	54	54
2017-12-11	Boron	mg/L	2	2	<0.50	<0.50	<0.50	<0.50	2.9	<0.50	<0.50	<0.50	<0.50	<0.50
	Cadmium	mg/L	0.005	0.05	<0.002	<0.002	<0.002	<0.002	0.0044	<0.002	<0.002	<0.002	<0.002	<0.002
	Iron	mg/L	5	5	0.56	14	2	21	200	56	1.8	0.17	28	28
	Sulfate	mg/L	400	400	170	130	76	21	140	11	38	160	48	48
2018-03-22	Boron	mg/L	2	2	<0.50	<0.50	<0.50	<0.50	2	<0.50	<0.50	<0.50	<0.50	<0.50
	Cadmium	mg/L	0.005	0.05	<0.002	<0.002	<0.002	<0.002	0.0071	<0.002	<0.002	<0.002	<0.002	<0.002
	Iron	mg/L	5	5	0.89	18	2.3	15	180	27	0.66	2.7	15	15
	Sulfate	mg/L	400	400	240	240	56	554	76	13	38	190	54	54
2018-06-28	Boron	mg/L	2	2	<0.50	<0.50	<0.50	<0.50	1.3	<0.50	<0.50	<0.50	<0.50	<0.50
	Cadmium	mg/L	0.005	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	Iron	mg/L	5	5	4.2	15	2.8	20	180	67	230	3.8	6.1	6.1
	Sulfate	mg/L	400	400	240	170	60	18	54	8.7	35	200	55	55
2018-08-27	Boron	mg/L	2	2	<0.50	<0.50	<0.50	<0.50	0.75	<0.50	<0.50	<0.50	<0.50	<0.50
	Cadmium	mg/L	0.005	0.05	<0.002	<0.002	0.013	<0.002	0.0068	0.0026	<0.002	<0.002	<0.002	<0.002
	Iron	mg/L	5	5	5.7	21	0.75	33	180	59	18	2.6	12	12
	Sulfate	mg/L	400	400	260	160	50	24	56	23	37	200	55	55
2018-11-29	Boron	mg/L	2	2	<0.50	<0.50	<0.50	<0.50	2.8	<0.50	<0.50	<0.50	<0.50	<0.50
	Cadmium	mg/L	0.005	0.05	<0.002	<0.002	<0.002	0.055	0.0034	<0.002	<0.002	<0.002	<0.002	<0.002
	Iron	mg/L	5	5	2.3	12	0.45	12	200	65	1.5	1.8	0.35	0.35
	Sulfate	mg/L	400	400	270	240	49	20	130	8.7	40	200	56	56
2019-03-08	Boron	mg/L	2	2	<0.50	<0.50	<0.50	<0.50	1.9	<0.50	<0.50	<0.50	<0.50	<0.50
	Cadmium	mg/L	0.005	0.05	<0.002	<0.002	<0.002	<0.002	0.0059	<0.002	<0.002	<0.002	<0.0037	<0.0037
	Iron	mg/L	5	5	8.2	15	1.1	14	200	49	6.2	2.2	1	1
	Sulfate	mg/L	400	400	300	270	72	21	110	7	41	230	61	61
2019-06-13	Boron	mg/L	2	2	0.46	<0.19	<0.19	<0.19	2.2	<0.19	<0.19	<0.19	<0.19	<0.19
	Cadmium	mg/L	0.005	0.05	<0.000018	<0.000018	<0.000018	<0.000018	<0.000018	<0.000018	<0.000018	<0.000018	<0.000018	<0.000018
	Iron	mg/L	5	5	0.87	7.5	2.3	7.7	140	57	10	0.56	0.5	0.5
	Sulfate	mg/L	400	400	320	270	110	24	130	4.7	47	230	67	67
2019-09-12	Boron	mg/L	2	2	<0.5	<0.5	<0.5	<0.5	0.94	<0.5	<0.5	<0.5	<0.5	<0.5
	Cadmium	mg/L	0.005	0.05	<0.002	<0.002	0.0028	<0.002	0.0045	<0.002	<0.002	<0.002	<0.002	<0.002
	Iron	mg/L	5	5	0.86	12	1.3	33	200	64	19	3	9.1	9.1
	Sulfate	mg/L	400	400	300	120	82	21	88	17	43	230	65	65
2019-12-14	Boron	mg/L	2	2	<0.50	<0.50	<0.5	<0.50	2.2	<0.50	<0.50	<0.50	<0.50	<0.50
	Cadmium	mg/L	0.005	0.05	<0.002	<0.002	<0.002	0.0089	0.0078	<0.002	<0.002	<0.002	<0.002	<0.002
	Iron	mg/L	5	5	0.38	17	0.6	16	210	36	2.2	0.69	9.2	9.2
	Sulfate	mg/L	400	400	300	220	66	26	150	18	45	230	64	64

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**TABLE 3**  
 MARION STATION GROUNDWATER MONITORING WELL ANALYSIS 2016-2020

Date	Parameter	Units	Part 620 – Groundwater Quality Class I Potable Resource Groundwater (a) (mg/L)	Part 620 – Groundwater Quality Class II General Resource Groundwater (b) (mg/L)	Coal Yard		Background Wells			Landfill Wells				
					C1	C2	C3	S1	S2	S3	S4	S5	S6	
					2020-03-26	Antimony	mg/L	0.006	0.024	<0.0010	<0.0010	<0.0010	<0.0050	<0.0010
	Arsenic	mg/L	0.01	0.2	<0.050	<0.050	<0.050	0.12	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Barium	mg/L	2	2	0.012	0.024	0.18	1.5	0.94	0.28	0.02	0.041	0.33	
	Beryllium	mg/L	0.004	0.5	<0.0050	<0.0050	<0.0050	0.0081	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Boron	mg/L	2	2	0.43	<0.25	<0.25	<0.25	2.1	<0.25	<0.25	<0.25	<0.25	<0.25
	Cadmium	mg/L	0.005	0.05	<0.00060	<0.00060	0.00113	0.00993	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060
	Chloride	mg/L	200	200	350	2.4	500	6.2	400	100	21	34	28	
	Chromium	mg/L	0.1	1	<0.0050	<0.0050	<0.0050	0.069	0.0066	0.0054	<0.0050	<0.0050	0.061	
	Cobalt	mg/L	1	1	<0.010	0.022	<0.010	0.054	<0.010	<0.010	<0.010	<0.010	0.019	
	Copper	mg/L	0.65	0.65	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.03	
	Fluoride	mg/L	4	4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	Iron	mg/L	5	5	0.43	7.6	2	54	350	310	4.7	0.26	44	
	Lead	mg/L	0.0075	0.1	<0.0050	<0.0050	<0.0050	0.08	0.012	0.0068	<0.0050	<0.0050	0.031	
	Manganese	mg/L	0.15	10	0.092	24	0.37	2.3	33	2.9	0.012	0.063	0.98	
	Mercury	mg/L	0.002	0.01	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
	Nickel	mg/L	0.1	2	0.019	<0.010	<0.010	0.067	<0.010	<0.010	<0.010	<0.010	0.039	
	Nitrogen, Nitrate	mg/L	10	100	<0.11	2.9	<0.11	<0.11	<0.11	<0.11	0.19	0.64	2.8	
	Selenium	mg/L	0.05	0.05	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
	Sulfate	mg/L	400	400	300	280	93	27	120	3.7	49	260	75	
	Thallium	mg/L	0.002	0.02	<0.025	0.031	<0.025	<0.025	0.046	<0.025	<0.025	<0.025	<0.025	<0.025
	Zinc	mg/L	5	10	<0.025	<0.025	<0.025	0.31	<0.025	<0.025	<0.025	<0.025	0.078	
2020-06-23	Boron	mg/L	2	2	0.629	<0.100	<0.100	<0.100	1.62	<0.100	<0.100	<0.100	<0.100	<0.100
	Cadmium	mg/L	0.005	0.05	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060
	Chloride	mg/L	200	200	320	24	440	21	350	80	30	37	35	
	Iron	mg/L	5	5	0.71	11.4	3.07	15.1	195	63.7	7.6	3.5	2.41	
	Sulfate	mg/L	400	400	290	160	82	34	94	18	51	220	66	
2020-09-27	Boron	mg/L	2	2	0.52	0.066	0.031	0.018	2.3	0.043	0.0041	0.0057	<0.004	
	Cadmium	mg/L	0.005	0.05	<0.0010	<0.0010	0.0079	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Chloride	mg/L	200	200	330	15	440	21	370	170	31	38	35	
	Dissolved Solids	mg/L	1200	1200	1100	400	1500	190	830	540	360	420	220	
	Iron	mg/L	5	5	<0.060	1.1	<0.060	0.44	16	6.6	<0.060	<0.060	<0.060	<0.060
	Sulfate	mg/L	400	400	290	98	70	33	110	25	50	220	64	
2020-12-23	Boron	mg/L	2	2	0.78	0.038	0.027	0.019	2.5	0.26	<0.005	0.0052	0.0087	
	Cadmium	mg/L	0.005	0.05	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Chloride	mg/L	200	200	440	13	570	7.7	480	330	23	32	30	
	Dissolved Solids	mg/L	1200	1200	1300	470	1700	320	1000	690	4500	480	270	
	Iron	mg/L	5	5	<0.060	8.5	<0.060	4	170	92	<0.060	<0.060	<0.060	<0.060
	Sulfate	mg/L	400	400	440	190	110	27	180	21	55	310	81	

Notes:  
 < - Not detected above the indicated reporting limit.  
 mg/L - Milligrams per liter.

- (a) - Illinois Administrative Code. (July 2013). Title 35: Environmental Protection. Subtitle F: Public Water Supplies. Chapter I: Pollution Control Board. Part 620: Groundwater Quality. Subpart D: Groundwater Quality Standards. Section 620.410 Groundwater Quality Standards for Class I: Potable Resource Groundwater.  
<https://pcb.illinois.gov/documents/dsweb/Get/Document-33425/>
- (b) - Illinois Administrative Code. (July 2013). Title 35: Environmental Protection. Subtitle F: Public Water Supplies. Chapter I: Pollution Control Board. Part 620: Groundwater Quality. Subpart D: Groundwater Quality Standards. Section 620.420 Groundwater Quality Standards for Class II: General Resource Groundwater.  
<https://pcb.illinois.gov/documents/dsweb/Get/Document-33425/>

Greater than the Groundwater Quality Class I Potable Resource Groundwater  
 Greater than both the Groundwater Quality Class I Potable Resource Groundwater and Groundwater Quality Class II General Resource Groundwater

# **EXHIBIT 29**



HALEY & ALDRICH, INC.  
6500 Rockside Road  
Suite 200  
Cleveland, OH 44131  
216.739.0555

**MEMORANDUM**

1 September 2021  
File No. 201285-000

**TO:** Southern Illinois Power Cooperative  
Wendell Watson

**FROM:** Haley & Aldrich, Inc.  
Jacob Chu, Technical Expert  
David Hagen, Principal Consultant

**SUBJECT:** Pond Investigation Report of Certain Ponds at Southern Illinois Power Company's ("SIPC") Marion Station ("Marion")

Haley & Aldrich, Inc. has prepared this memorandum that documents our assessment related to the amount of coal combustion residual (CCR) materials in pond sediments in the South Fly Ash Pond, Pond 3 (including Pond 3A), Pond 4, and Pond S-6 (collectively, the "Ponds", and each a "Pond") within the Southern Illinois Power Cooperative (SIPC) Marion Station property located near Lake of Egypt, Illinois (Site). The general setting of the Site is shown in Figure 1. This memorandum provides information collected pursuant to the agreed protocol between the Illinois Environmental Protection Agency (IEPA) and SIPC related to investigation of certain ponds at the Site in connection with prior violation notices (VNs) issued by IEPA.

The purpose of this investigation was two-fold: to evaluate the nature and extent of CCR in the Ponds, and to evaluate the potential impact that the contents of the Ponds may have on groundwater.

This assessment of the Ponds' content was based on:

- Results of a bathymetric survey that characterizes the volumes and sediment thicknesses of the Ponds;
- Results of carbon analysis for Pond sediments;
- Results of major cation and anion concentrations for Pond sediments;
- Pond usage and design information; and
- Results of polarized light microscopy (PLM) that characterizes the fraction of CCR materials in Pond sediments.

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In addition, Pond berm samples were collected at IEPA's request and were evaluated to determine the presence of CCR materials. Sediment samples were collected for assessment from the berm associated with the former Pond B-3, which has been drained of water and is not an active pond. In addition, per the investigation protocol between IEPA and SIPC, sampling was attempted within the area of the former Pond A-1, but no materials could be collected given the presence of bedrock near the surface, confirming the absence of any significant amount of CCR material in former Pond A-1.

The assessment of potential impacts of sediments in the Ponds on groundwater quality was based on:

- Results of shake extraction tests with water (shake tests) of Pond sediments;
- Results of shake tests of coal and known coal combustion by-products, including a scrubber sludge sample obtained in 2018 and a coal ash sample of the now retired Unit 4 boiler, collected from SIPC's operations but not from the Ponds; these samples are used as control samples to provide a baseline for comparative evaluation of the results of Pond sediments; and
- Results of groundwater quality monitoring.

Each of these assessments is provided in the sections below.

## **Determination of CCR Materials in Pond Bottom Sediments and Berms: Approach and Results**

### **APPROACH**

The evaluation of the amount of CCR materials in South Fly Ash Pond, Pond 3 (including Pond 3A), Pond 4, and Pond S-6 was conducted based on the data obtained using the following approach:

- A bathymetric survey of the Ponds was done to characterize the top and bottom elevations of sediments in each Pond and estimate the thickness of Pond sediments for each Pond.

The bathymetric survey was conducted by Prairie Engineers, P. C., on March 9, 10, 11, 24, and 25, 2021. The surveys were performed using an Odom CV-200 dual frequency single-beam echosounder mounted on a small boat. The elevation and locations of the low and high frequency bathymetric survey points were referenced to three control points located at the Site. The data obtained through the high frequency survey was used to characterize the top of the sediment layer within each Pond. The data obtained through the low frequency survey was used to characterize the bottom of each Pond. Hanson Professional Services Inc. (Hanson) processed the survey data and generated maps to determine the top and bottom elevations, as well as the thicknesses of the sediments in each Pond. [Those maps are attached as Attachment A.] Note that both Pond 4 and the South Fly Ash Pond water levels were lowered for operational reasons just before the surveys were performed. The lower water levels prevented the survey boat from reaching what would normally be the edge of those Ponds. Approximately 60% of the Pond 4 area and 73% of the South Fly Ash Pond area were surveyed.



**Figure 1: Pond locations and general Site settings. The light blue dashed lines show the water transfer process at the facility through the following sequence: (1) Storm Water Basin, (2) South Fly Ash Pond, (3) Pond 3A/3, (4) Pond S-6, (5) Pond 4, and (6) Outfall 002. Yellow color is used to denote the names of the Ponds included in the petition.**

The estimated sediment volumes for Pond 4 and the South Fly Ash Pond include the areas outside the survey grids. Extrapolation was performed by the Surfer software directly for the areas outside the survey grid to ensure total sediment volumes are conservatively estimated for these two ponds (see Attachment A for more detail). Pond 3, Pond 3A, and Pond S-6, as shown in Attachment A, were constrained to the areas where there were both low and high frequency data. This is discussed in more detail in Attachment A.

- Carbon content analysis was used to help identify whether CCR or coal fines are present in the Pond sediments.

The sediment sampling locations for the Ponds are shown in Figure 2. The analytical method used for this analysis is ASTM D5372, which determines the content of carbon, hydrogen, and nitrogen in a sample using an elemental analyzer. [The results for this assessment are provided in Attachment B.]

- Characterization of major cation and anion concentrations using the shake test method (ASTM D-3987-12(2020)) was used to assess the soluble components of potential CCR materials in Pond sediments and berm samples.

The Pond sediment sampling locations are shown in Figure 2 and the berm sampling locations are shown in Figure 3. Among all cations and anions, calcium, chloride, fluoride, and sulfate are included in the Appendix III list of constituents for CCR detection monitoring (which are considered to be potential indicators for CCR).<sup>1</sup> [The laboratory results for major cations and anions for Pond sediments, berm samples, and control samples are provided in Attachment C, which also includes results for Appendix IV constituents.<sup>2</sup> Berm boring logs are also provided in Attachment C.]

- Polarized light microscopy (PLM) analyses of Pond sediments and berm samples was used to assess the relative percentage of identifiable CCR content in each sample.

The bathymetric survey results provide sediment thickness, but do not identify the contents of the sediments. The PLM technique was used to estimate the fractions of fly ash, bottom (or bed) ash, slag, and coal in the sediment samples collected from the Ponds. Each sample was homogenized before analysis. The PLM analyses were performed by the RJ Lee Group. Note that the PLM analysis was not included in the investigation protocol. However, since this analysis method is capable of directly quantifying several known CCR materials (e.g., fly ash, bed ash, bottom ash, and slag), the use of the PLM analysis provides an additional line of evidence for this evaluation and was added to this assessment.

To provide a basis of comparison, the PLM analysis was conducted on control samples of known Site CCR materials and coal, including fly ash obtained from the Unit 4 boiler (a conventional coal combustion boiler; now retired), scrubber sludge collected in 2018, and coal from the on-site coal pile. Note that the fly ash sample from Unit 4 was collected from fly ash piles that were stored in a closed building for a period of approximately nine months after being collected from the Unit 4 boiler. The fly ash generated at that time was likely during the last few days of Unit 4's operation, and thus may not contain only fly ash. Fly ash produced by the Unit 4 boiler (now retired) was mainly managed dry, mixed with the scrubber sludge, and transported to the former CCR Landfill Area; therefore, there had been no direct discharge of any significant amount of Unit 4 fly ash into the Ponds at issue. [Results of the PLM analysis are provided as Attachment D.] Note that the PLM analysis is considered a more precise technique to assess the

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<sup>1</sup> <https://www.federalregister.gov/documents/2015/04/17/2015-00257/hazardous-and-solid-waste-management-system-disposal-of-coal-combustion-residuals-from-electric> – EPA-HQ-RCRA-2009-0640-11970 – Federal CCR Rule.

<sup>2</sup> Ibid.

presence of CCR materials and approximate the fraction of CCR materials in a sample in comparison with typical grain size analysis, since the PLM method identifies CCR materials through visually recognizable particle characteristics that are different from natural sediments. In addition, natural variations of fine-grained content in sediments can make it difficult to positively identify the presence of CCR materials through grain-size analysis alone.

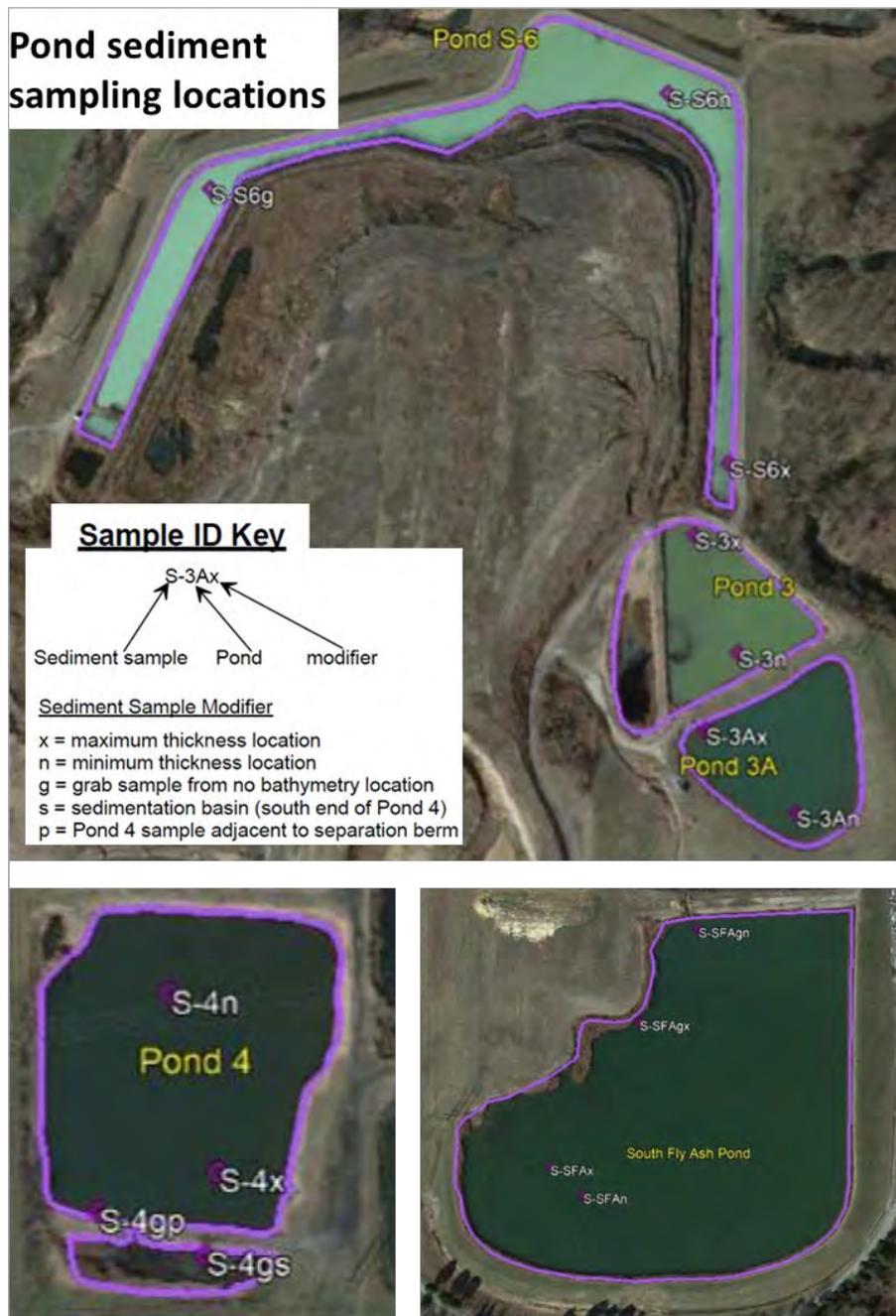


Figure 2: Pond sediment sampling locations. (Source: Hanson Professional Services Inc.)

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Figure 3: Proposed berm boring locations for the Ponds and Ponds B-3 and A-1. Note that five of the proposed borings were not drilled, either because they were inaccessible, or the proposed boring location was bedrock. Specifically, the bottom of former Pond A-1 is bedrock, and no significant thickness of soil was observed. Boring B-B3c was inaccessible due to steep side-slopes and ponded water, and Borings B-S6a and B-S6c were also inaccessible (B-S6a due to steep landfill slopes and B-S6c due to wet soil conditions). (Source: Hanson Professional Services Inc.)

**RESULTS****Bathymetric survey results**

The surveyed top and bottom elevations of Pond sediments in each Pond are provided in Attachment A. The estimated sediment volume, Pond volume, mean sediment thickness, and the ratio of the sediment volume to Pond volume for each Pond are summarized in Table 1 below.

**Table 1: Estimated sediment and Pond volumes, mean sediment thickness, and volume ratio.<sup>(1)</sup>**

Pond	Sediment Volume (ft. <sup>3</sup> )	Pond Volume (ft. <sup>3</sup> )	Mean Sed. Thickness (ft.)	Sed. as % Pond Volume
Pond 3	83,987.99	936,162.11	1.38	9.0%
Pond 3A	95,666.48	717,739.28	1.45	13.3%
Pond 4 <sup>(2)</sup>	91,076.96	1,370,058.58	1.67	10.9%
Pond S-6	103,452.90	1,264,398.31	0.84	8.2%
South Fly Ash Pond <sup>(3)</sup>	563,054.99	2,944,552.50	1.57	21.8% <b>[11%]</b> <sup>(4)</sup>

Notes: (1) Table from Hanson (Attachment A).

(2) Additional sensitivity analysis was conducted to assess the degree of uncertainty in the pond sediment volume estimate for Pond 4. The sensitivity analysis incorporated the observed sediment thickness (generally less than 3 feet) in the southern area outside the surveyed area. It was found that incorporation of this field observation resulted in a slightly lower estimate of the mean sediment thickness (1.52 ft) and sediment as % Pond volume (9.9%), indicating that the uncertainty associated with sediment thickness outside the survey grid has little impact on the estimate of sediment as % Pond volume.

(3) Additional sensitivity analysis was also conducted to assess the degree of uncertainty in estimated sediment thickness for the South Fly Ash Pond. Excluding the approximate area where the bathymetry survey could not be conducted (i.e., only considering the surveyed area), the estimated mean sediment thickness is 1.57 feet, the same as the value estimated through extrapolation in Table 1. Extrapolation has little impact on the estimated mean sediment thickness, and thus the approximate thickness outside the survey grid through extrapolation is consistent with the thickness measured in the surveyed area. During the bathymetry survey, Hanson Professional Services Inc. observed that the exposed land area outside the survey grid was covered by a thin layer (less than an inch) of sediments overlying the bedrock. A thin sediment layer in the exposed land area were also observed during the pond bottom cleaning by the SIPC. Therefore, the sediment thickness obtained through extrapolation is conservatively larger than the actual thickness. In addition, the sediments in the exposed area appear to resemble the native soil material at the site and do not show the color and texture of CCR-impacted soil.

(4) Estimation of the Pond volumes is based on the Pond water elevations shown on Google Earth; as-built drawings were not available to estimate volume. The Pond water elevation indicated by Google Earth for the South Fly Ash Pond (535 ft) is considerably lower than the water elevation measured in 2007 (541.5 ft)<sup>3</sup> because of operational changes. Therefore, the Pond volume estimates are considered conservative. Using the 2007 water level, the volume of the South Fly Ash Pond is conservatively estimated to be approximately 5,276,000 ft<sup>3</sup> and the sediment fraction as percentage of Pond volume is 11%.

Based on United States Environmental Protection Agency (USEPA) information, CCR disposal typically occurs at more than 735 active on-site CCR surface impoundments, which average more than 50 acres in size and have an estimated average depth of 20 feet of ash (Figure 4(a)).<sup>4</sup> In contrast, the results above indicate that the mean thicknesses of Pond sediments of the Ponds investigated here are less than 2 feet.

<sup>3</sup> SIPC, 2007. Marion Power Plant / Disposal Ponds & Holding Ponds Site Plan and Ground Water Monitoring / Discharge and Control Point Data, Sheet E-187. August 25.

<sup>4</sup> USEPA, 2020. Frequent Questions about the 2015 Coal Ash Disposal Rule. Last updated on September 4, 2020. <https://www.epa.gov/coalash/frequent-questions-about-2015-coal-ash-disposal-rule>

In Haley & Aldrich's experience, for typical CCR impoundments, the volume of CCR materials is often a major portion (>50%) of the overall impoundment volume (see examples in Figure 4(b) and 4(c)). In contrast, the amount of the Pond sediment in Ponds 3, 3A, 4, S-6, and the South Fly Ash Pond is only a minor fraction of total Pond volume. The results are consistent with what we understand to be the function of these Ponds, which generally did not receive direct discharges of CCR materials, were not designed to hold an accumulation of CCR and water, and have not been used for the treatment, storage and disposal of CCR.

#### Results of carbon, hydrogen, and nitrogen content analysis

The carbon contents of the Pond sediment samples are summarized in Table 2 below; the data reports are provided in Attachment B. The typical unburned carbon content in fly ash before 1990 ranges from 2% to 12%.<sup>5</sup> After the introduction of the 1990 Clean Air Act Amendments to control the emission of nitrogen oxides (NO<sub>x</sub>), the unburned carbon content in fly ash significantly increased, up to 20% in some cases.<sup>6</sup> Note that, between 2012 and 2015, eight fly ash samples were collected from Unit 4 and analyzed for the unburned carbon content using the loss on ignition (LOI) method. The laboratory reports associated with these LOI analyses are also provided in Attachment B. The range of these eight LOI values was between 1.31% and 5.25% and the average LOI value was 2.79%. However, no historical LOI data were provided for the older boilers (Units 1, 2, 3). Therefore, the 20% literature reported value was used as a conservative reference level for the evaluation of unburned carbon content in fly ash below.

The carbon content in the sediment samples collected from Ponds 3A and 4, as well as one sample collected from the South Fly Ash Pond, are higher than this reference level, indicating that an organic matter source other than CCR materials is likely present in these samples. A correlation assessment was conducted to examine whether the Pond samples with a higher carbon content (>20%) have a similar carbon-hydrogen-nitrogen composition, which also would suggest a common organic matter source. Figure 5(a) shows a very linear correlation between the carbon and hydrogen contents and Figure 5(b) shows a very linear correlation between the hydrogen and nitrogen contents. Because the highest carbon content sample of the Pond sediment (S-3Ax) has a very similar carbon/hydrogen/nitrogen composition to that of the coal used at the Site, coal is identified as the likely common contributor to the organic content in the Pond sediment samples with a high carbon content. The finding is consistent with the fact that Pond 3 (including Pond 3A) and Pond 4 have historically received some coal pile runoff. When the carbon content is less than 20%, as it is in samples collected from Ponds 3 and S-6 and some samples from the South Fly Ash Pond, it is not possible to differentiate the relative abundance of coal vs. CCR materials by the carbon content analysis alone. Accordingly, we have looked to other lines of evidence.

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<sup>5</sup> Ahmaruzzaman, M., 2010. A review on the utilization of fly ash. *Progress in energy and combustion science*, 36(3), pp.327-363.

<sup>6</sup> Ibid.

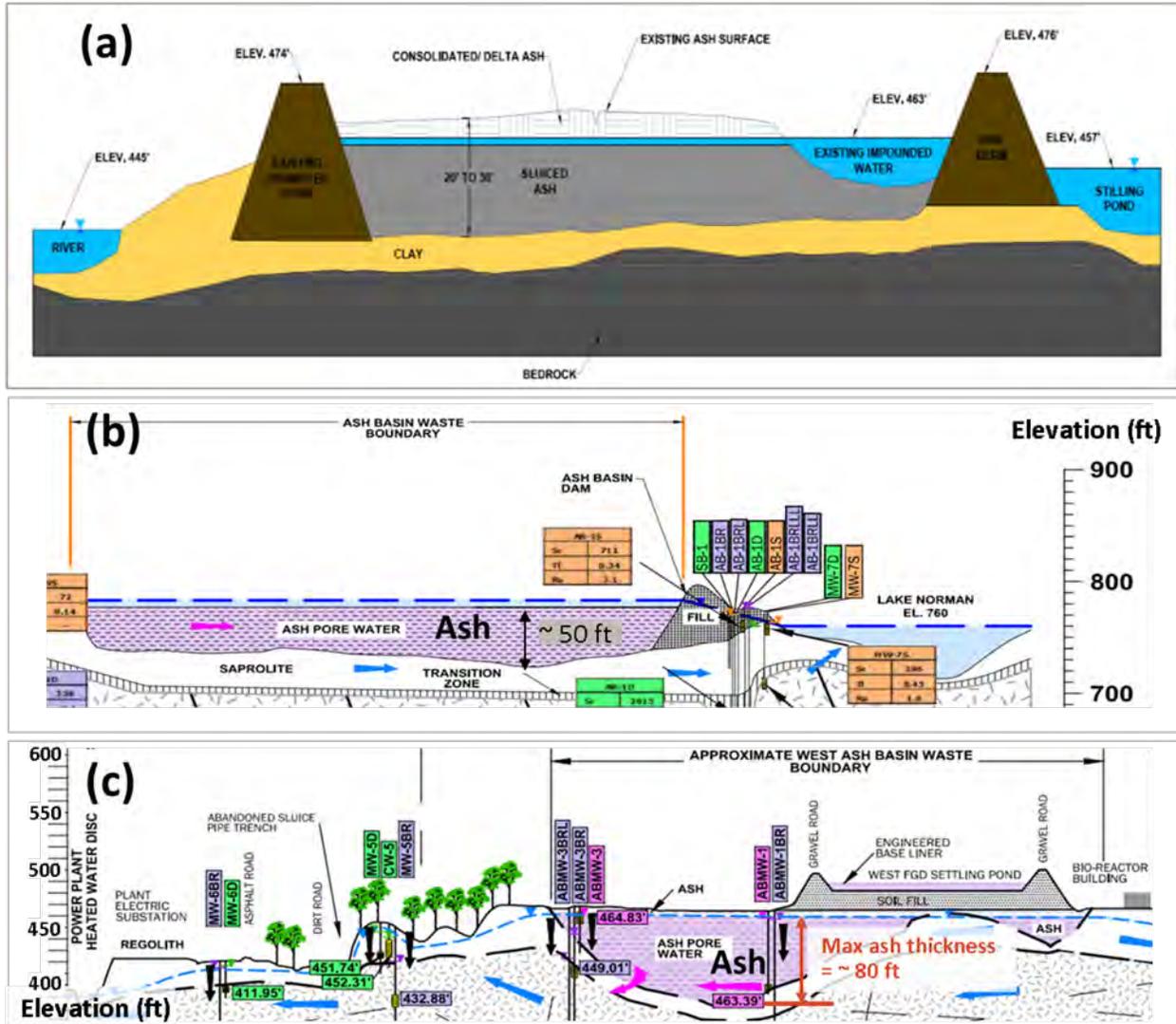


Figure 4: Typical CCR impoundment settings and CCR material thicknesses in impoundments. Panel (a) shows the vertical cross section view of a typical CCR surface impoundment configuration<sup>7</sup>, Panel (b) is a vertical cross-section for the CCR impoundment at the Marshall Steam Station Site in North Carolina<sup>8</sup>, and Panel (c) is a vertical cross-section for the Roxboro Steam Electric Plant in North Carolina<sup>9</sup>.

<sup>7</sup> Heyman et al., 2017. CCR Pond Dewatering – Critical Planning and Characterization Tasks. 2017 World of Coal Ash (WOCA) Conference in Lexington, KY. (<http://www.flyash.info/2017/214-Heyman-14-woca2017p.pdf>)

<sup>8</sup> Adapted from synTerra. Corrective Action Plan Update, Marshall Steam Station. ([https://files.nc.gov/ncdeq/Coal%20Ash/2019-caps/01\\_Marshall\\_CAPUpdate\\_FullReport\\_20191231.pdf](https://files.nc.gov/ncdeq/Coal%20Ash/2019-caps/01_Marshall_CAPUpdate_FullReport_20191231.pdf))

<sup>9</sup> Adapted from SynTerra, Corrective Action Plan Update, Roxboro Steam Electric Plant. ([https://files.nc.gov/ncdeq/Coal Ash/2019-caps/01\\_Roxboro\\_CAPUpdate\\_FullReport\\_20191231.pdf](https://files.nc.gov/ncdeq/Coal Ash/2019-caps/01_Roxboro_CAPUpdate_FullReport_20191231.pdf))

Table 2: Carbon, hydrogen, and nitrogen contents for Pond sediment and coal samples.

Pond	Sample	Dry weight %			Pond	Sample	Dry weight %		
		Carbon	Hydrogen	Nitrogen			Carbon	Hydrogen	Nitrogen
Pond 3A	S-3Ax	64.08	4.32	1.35	Pond 3	S-3n	11.17	0.9	0.27
	S-3An	27.05	1.99	0.53		S-3x	15.11	0.97	0.26
Pond 4	S-4gs	47.62	3.03	0.94	Pond 6	S-S6x	7.35	0.51	0.1
	S-4gp	36.44	2.39	0.72		S-S6n	4.19	0.6	0.1
	S-4x	28.92	1.98	0.62	South Fly Ash Pond	S-SFAn	23.99	1.66	0.49
	S-4n	34.14	2.22	0.69		S-SFAx	16.52	1.27	0.27
Coal (average)	64.1	4.4	1.3	S-SFAgx		8.49	0.93	0.31	
					S-SFAgn	6.19	0.7	0.22	

Note: Average carbon, hydrogen, nitrogen contents in coal samples are provided by the SIPC.

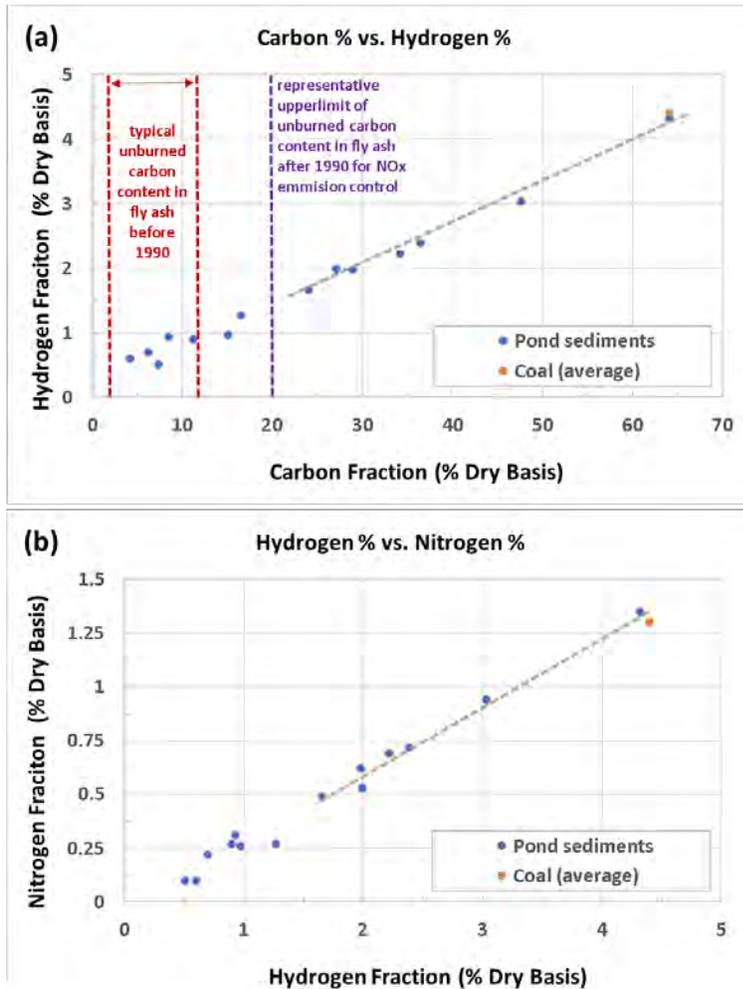


Figure 5: Correlation between (a) the carbon and hydrogen contents and (b) hydrogen and nitrogen contents in Pond sediment samples and coal (average) collected from the Site.

### Results of major cation and anion concentrations using the shake test method

The results of major cation and anion concentrations for control samples, Pond sediments, and berm samples are summarized in Tables 3, 4, and 5, respectively. The analytical data are provided in Attachment C. For the control samples, all CCR materials (including scrubber sludge and fly ash from the retired Unit 4 conventional cyclone boiler) show a sulfate concentration greater than the Part 620 Groundwater Quality Class I standard, and calcium as the most abundant cation. For the Pond sediment and berm sample shake test results, the only constituent that has a concentration higher than the Part 620 Groundwater Quality Class I standard is sulfate (Tables 4 and 5). It was found that the Pond samples that have a higher sulfate concentration also show a higher calcium concentration (> 200 mg/L), suggesting that calcium sulfate related minerals may be present in these samples and that some of the Pond sediment and berm samples may contain some CCR materials. Note that the sediment samples obtained from Pond 3A and Pond 4 show low sulfate and calcium concentrations, suggesting little CCR in these two Ponds. This is consistent with the conclusion above that the high carbon contents found in the Pond sediments of Pond 3A and Pond 4 are likely related to coal and not related to CCR materials.

**Table 3: Summary of major cation and anion concentrations for control samples obtained using the shake test results.**

Parameter	Units	Groundwater Quality Class I Potable Resource Groundwater (a)	Groundwater Quality Class II General Resource Groundwater (b)	Control Sample Shake Test Results		
				Scrubber Sludge 05/25/2021	Unit 4 Fly Ash 07/08/2021	Coal 05/25/2021
Alkalinity, Bicarbonate (as CaCO <sub>3</sub> )	mg/L	NA	NA	15	56	9
Alkalinity, Carbonate (as CaCO <sub>3</sub> )	mg/L	NA	NA	0	27	12
Calcium	mg/L	NA	NA	618	750	24.7
Chloride	mg/L	200	200	< 4	623	17
Fluoride	mg/L	4	4	1.37	7.33	0.11
Magnesium	mg/L	NA	NA	0.265	25.7	0.59
Potassium	mg/L	NA	NA	< 0.100	140	0.445
Sodium	mg/L	NA	NA	< 0.0500	136.00	10.20
Sulfate	mg/L	400	400	1400	1400	100

Note: Concentrations greater than both the Part 620 Groundwater Quality Class I Potable Resource Groundwater and Groundwater Quality Class II General Resource Groundwater standards are highlighted in yellow.

Based on the results in Tables 4 and 5, the Pond sediment and berm samples collected from Pond 3, Pond S-6 and the South Fly Ash Pond may contain some CCR materials that could potentially result in concentrations higher than the Class I groundwater standard for sulfate.<sup>10</sup> However, as will be discussed below, the long-term Site groundwater monitoring data show that the sulfate concentration levels at the Site are generally below the Class I groundwater standard, indicating that the influence of any CCR

<sup>10</sup> Illinois Administrative Code. (July 2013). Title 35: Environmental Protection. Subtitle F: Public Water Supplies. Chapter I: Pollution Control Board. Part 620: Groundwater Quality. Subpart D: Groundwater Quality Standards. Section 620.410 Groundwater Quality Standards for Class I: Potable Resource Groundwater.

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materials in the Pond sediments and berms on the overall groundwater quality is limited, and confirming that the amount of CCR in the Pond system, if any, is minimal.

**Table 4: Summary of major cation and anion concentrations for Pond sediments obtained using the shake test.**

		Pond Sediment Shake Test Results													
Parameter	Units	S-3Ax 04/27/2021	S-3An 04/27/2021	S-3n 04/27/2021	S-3x 04/27/2021	S-56x 04/27/2021	S-56n 04/27/2021	S-4gs 04/27/2021	S-4gp 04/27/2021	S-4x 04/27/2021	S-4n 04/27/2021	S-SFAn 04/27/2021	S-SFAx 04/27/2021	S-SFAgx 04/27/2021	S-SFAgn 04/27/2021
Alkalinity, Bicarbonate (as CaCO <sub>3</sub> )	mg/L	53	54	12	28	20	10	66	70	58	56	16	13	12	22
Alkalinity, Carbonate (as CaCO <sub>3</sub> )	mg/L	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Calcium	mg/L	37.3	44.4	315	612	629	617	28.7	30.6	45.1	46.2	470	654	34.5	43.9
Chloride	mg/L	13	19	14	9	6	10	2	6	25	11	42	81	22	30
Fluoride	mg/L	0.84	3.44	1.63	1.56	1.48	1.24	1.1	0.68	0.9	1.1	2.61	1.21	3.59	3.67
Magnesium	mg/L	2.85	8.01	8.2	3.09	2.9	4.37	1.66	2.34	3.71	3.15	10.2	2.55	4.03	4.56
Potassium	mg/L	1.19	1.74	2.21	2.61	2.94	5.06	0.992	1.55	1.56	1.69	1.36	1.64	1.51	1.23
Sodium	mg/L	1.99	2.65	2.93	1.84	1.55	2.44	1.07	3.98	3.07	1.74	3.14	1.32	1.47	1.58
Sulfate	mg/L	42	50	861	1360	1370	1350	31	11	49	22	1160	1340	59	69

Note: Concentrations greater than both the Part 620 Groundwater Quality Class I Potable Resource Groundwater and Groundwater Quality Class II General Resource Groundwater standards (see Table 3) are highlighted in yellow. Sample locations are shown on Figure 2.

**Table 5: Summary of major cation and anion concentrations for berm samples obtained using shake the test.**

		Ponds 3, 3A, 4, and S-6, and South Fly Ash Pond Berm Results										Former Pond B-3 Berm Results	
Parameter	Units	B-3a 4-6 ft 03/22/2021	B-3b 4-6ft 3/22/2021	B-3Aa 2-4 ft 03/22/2021	B-3Aa 8-10 ft 03/22/2021	B-4a 0-2 ft 03/22/2021	B-4a 2-4 ft 03/22/2021	B-6b 4-6ft 3/22/2021	B-SFAb 4-6ft 3/22/2021	B-SFAa 2-4ft 3/22/2021	B-B3a 4-6ft 3/22/2021	B-B3b 4-6ft 3/22/2021	
Alkalinity, Bicarbonate (as CaCO <sub>3</sub> )	mg/L	0	16	20	34	23	26	14	6	34	22	26	
Alkalinity, Carbonate (as CaCO <sub>3</sub> )	mg/L	29	0	0	0	0	0	0	0	0	0	0	
Calcium	mg/L	209	13.1	5.26	17.1	257	5.35	0.878	0.145	20.9	0.699	<0.100	
Chloride	mg/L	4	<1	<1	<1	1	2	5	8	7	<1	7	
Fluoride	mg/L	0.15	0.32	0.80	1.12	0.59	0.62	0.18	0.29	0.46	0.57	0.37	
Magnesium	mg/L	0.257	3.10	1.20	0.308	4.84	1.890	0.277	0.140	3.49	0.397	<0.0500	
Potassium	mg/L	13.0	0.326	3.71	1.97	2.54	0.651	0.361	0.818	1.64	<0.100	<0.100	
Sodium	mg/L	3.42	0.430	0.465	0.648	3.54	3.60	1.06	3.33	6.47	2.44	4.56	
Sulfate	mg/L	1330	19	<10	25	374	15	<10	<10	41	<10	15	

Note: Concentrations greater than both the Part 620 Groundwater Quality Class I Potable Resource Groundwater and Groundwater Quality Class II General Resource Groundwater standards (see Table 3) are highlighted in yellow. Sample locations are shown on Figure 3.

For former Pond B-3, the berm samples (B-B3a and B-B3b) taken in 2021 all show low sulfate and calcium concentrations (Table 5). These results are consistent with the results of shake tests SIPC conducted in 2017 using nine sediment samples collected from former Pond B-3 (Attachment E), in which sulfate and calcium concentrations were also low. Out of the nine sediment samples taken from the former Pond B-3 in 2017, only one had an arsenic concentration slightly higher than the Class I groundwater standard, and one had a pH value slightly higher than 9. These are considered anomalies among the samples. Based on the results obtained from 2017 and this investigation, it is concluded that the Pond sediments and berm samples from former Pond B-3 have little, if any, CCR material.

**PLM results**

PLM is an optical microscopy method that uses polarized light to classify materials based on particle shape and opacity, and known variations in optical indices. PLM can be used to distinguish particles of coal ash from other dust particles, and has the added advantage of being able to estimate the abundance of CCR materials in a sample.

The PLM results for the control samples are summarized in Table 6. The PLM results for the Pond sediment and berm samples are summarized in Tables 7 and 8, respectively. The sampling locations are shown in Figures 2 and 3 and the PLM laboratory reports are provided in Attachment D.

The PLM results for the control samples (including fly ash from the now retired Unit 4 boiler, scrubber sludge, and coal) show a fly ash content of 36% for the fly ash sample generated by the Unit 4 (Table 6). However, because the fly ash content in this sample is only 36% and the rest in the sample is comprised of primarily of quartz and clay particles (see laboratory report in Attachment D), this sample may not contain pure Unit 4 fly ash. As described in the bottom paragraph of Page 4, the sample was obtained during the last few days of operation of Unit 4. At this time, the combustion efficiency of the boiler might not have been at its best.

The scrubber sludge sample has no identifiable fly ash, bed ash, bottom ash, and slag components; all particles are classified in the 'Other' category. Therefore, for Pond sediment and berm samples, the "Other" category could potentially include some scrubber sludge. However, we understand that scrubber sludge at the Site was not generally stored, treated or disposed of in the Pond system but was initially sent to the on-site former CCR landfill or, more recently, shipped off site for beneficial reuse. Accordingly, we would not expect to see significant amounts of sludge in the Pond sediments. Particles in the coal sample are all identified in the 'Coal' category.

**Table 6: Summary of CCR materials and coal fractions in control samples. <sup>(1)</sup>**

Control Sample Name	Fly Ash	Bottom Ash	Bed Ash	Slag	Fly Ash + Bottom Ash + Bed Ash + Slag	Coal	Other	Total
SIPC Fly Ash <sup>(2,3)</sup>	36%	2%	0%	0%	38%	0%	62%	100%
SIPC Sludge	0%	0%	0%	0%	0%	0%	100%	100%
SIPC Coal	0%	0%	0%	0%	0%	100%	0%	100%

- Notes: (1) Table adapted from RJ Lee Group (Attachment D).  
 (2) Fly ash sample reported in this table was collected from Unit 4 before the unit was retired.  
 (3) Fly ash and bed ash were also collected from Unit 123 (a fluidized bed boiler). The data are provided in Attachment D, but not shown in this table because fly ash and bed ash generated by the Unit 123 have been handled dry by SIPC, and they have not been discharged to the Pond system. Note that bed ash often hardens to a cementitious material and is therefore a useful construction material for beneficial use.

The average fraction of CCR materials (including 'Fly Ash,' 'Bottom Ash,' and 'Slag') for all Pond sediment samples is approximately 40%, indicating that the Pond sediment samples are not primarily composed of CCR materials (Table 7). The average fly ash content in the Pond sediment samples is only 12%, which is substantially lower than the fly ash content (36%) in the Unit 4 fly ash sample (note the fly ash content

in the Unit 4 sample is considered biasedly low potentially due to its lack of purity). This provides another line of evidence to show that CCR materials are a minor component of the Pond sediments.

**Table 7: Summary of CCR material and coal fractions in Pond sediment samples.**

Pond Name	Sample Name	Fly Ash	Bottom Ash	Slag	Slag + Fly Ash + Bottom Ash	Coal	Other	Total
Pond 3A	S-3An	1%	8%	11%	20%	13%	67%	100%
	S-3Ax	1%	6%	27%	34%	48%	18%	100%
Pond 3	S-3n	17%	5%	1%	23%	7%	70%	100%
	S-3x	22%	7%	5%	34%	4%	62%	100%
Pond S-6	S-S6n	27%	3%	0%	30%	2%	68%	100%
	S-S6x	32%	10%	11%	53%	0%	47%	100%
Pond 4	S-4n	1%	1%	23%	25%	23%	52%	100%
	S-4x	13%	19%	32%	64%	0%	36%	100%
	S-4gp	8%	22%	38%	68%	0%	32%	100%
	S-4gs	10%	16%	32%	58%	1%	41%	100%
South Fly Ash Pond	S-SFAn	18%	26%	20%	64%	2%	34%	100%
	S-SFAX	11%	4%	13%	28%	5%	67%	100%
	S-SFagn	2%	6%	2%	10%	6%	84%	100%
	S-SFagx	9%	32%	17%	58%	1%	41%	100%

Note: Table adapted from RJ Lee Group (Attachment D).

While two berm samples collected from Pond 3A show a fly ash content of greater than 90%, the corresponding shake test results for these two samples do not show higher calcium and sulfate concentrations than those for other Pond sediment and berm samples (Table 5). This confirms that a high content of CCR materials does not necessarily significantly impact groundwater quality. This may be because there may be only a negligible amount of soluble constituents present in aged CCR materials. Since the shake test results for both the Pond sediments and berm samples for Pond 3A do not show a significantly higher concentration of major ions (Tables 4 and 5), negligible water quality impact is expected from the CCR materials detected by the PLM in these samples. For other berm samples, the maximum fly ash content is 23% (B-3a), indicating minimal CCR materials in the berms.

**Table 8: Summary of CCR material fractions in berm samples.**

Pond Name	Berm Sample Name	Fly Ash
Pond 3	B-3a 4'-6'	23%
Pond 3A	B-3Aa 2'-4'	90%
Pond 3A	B-3Aa 8'-10'	91%
Pond 4	B-4a 0'-2'	11%
Pond 4	QC_B-4a 0'-2'	15%
Pond 4	B-4a 2'-4'	7%

Note: QC\_B-4a 0'-2' is a quality control sample.

## SUMMARY

The bathymetric survey results show that the thicknesses of Pond sediments are very small in comparison with typical CCR surface impoundments that are designed to hold an accumulation of CCR and water and are used for CCR storage, treatment, or disposal. The amount of sediments in the Ponds is also small in relation to the Pond volumes, which is also different from what is seen in a typical CCR surface impoundment. Further, the PLM results confirm that the minor quantity of CCR materials present in the majority of the Pond sediment samples are not the primary component in Pond sediments. This, again, is different from solid/sediment samples expected from typical CCR surface impoundments, where CCR materials typically make up the majority of the sediments. Therefore, the amounts of CCR material in each of these Ponds are very small in comparison with typical CCR surface impoundments. In other words, the Ponds contain a relatively small amount of sediment, and only a relatively small amount of the sediment is CCR material. In addition, the PLM results were found to be consistent with the historical usage of the Ponds – i.e., not for the treatment, storage, and disposal of CCR.

This conclusion is bolstered by other lines of evidence. Specifically, the carbon content results coupled with the PLM results indicate that the samples with a high carbon content are not due to a higher content of CCR materials and are more likely influenced by the presence of coal particles. The results of major cation and anion concentrations obtained from the shake tests for the Pond sediments and berm samples from Pond 3A and Pond 4 indicate the CCR materials detected by the PLM do not result in higher concentrations of calcium and sulfate, which are indicators for CCR impacted water. The potential impacts of the soluble CCR components in Pond sediments and berm samples on overall groundwater quality at the Site are further evaluated below.

## Groundwater Quality Impacts Due to CCR Materials in Pond Sediments and Berm Samples

To better understand what, if any, impact the presence of Pond sediments may have on groundwater quality, the leachability of CCR constituents from Pond sediment samples was evaluated. Results from the berm samples are also included in this evaluation. The leachability of SIPC-generated scrubber sludge, Unit 4 fly ash, and coal used on-site was also evaluated. In addition, an evaluation of Pond sediments on local groundwater quality was conducted.

### SHAKE TEST APPROACH

Pond sediment, berm samples, and control samples (including fly ash, bottom (bed) ash, scrubber sludge, and coal) were used to evaluate the leachability of the samples using shake tests, following the ASTM D3987 Method. For Pond sediment samples, the total solid concentrations of CCR constituents were also analyzed. The laboratory shake test reports for control samples and Pond/berm samples along with a summary table of the results are provided in Attachment C. The total concentrations of various constituents in Pond sediment samples are also provided in Attachment C. The shake test results of several Pond sediment and control samples showed higher sulfate and total dissolved solids (TDS) concentrations. Note that in any given sample, TDS principally consists of calcium, magnesium, potassium, sodium, bicarbonates, chlorides, and sulfates. TDS concentrations generally correlate with the sum of these constituent concentrations in a given sample.

### SHAKE TEST RESULTS

#### Shake test results for Pond sediment samples

The full data summary table of the shake test results for Pond sediment samples are provided in Attachment C. The Attachment C table compares the results to Part 620 Groundwater Class I and Class II standards. A simplified summary that only shows the constituents/parameters that have a concentration/value higher than the relevant standard for Class I Potable Resource Groundwater, along with some additional constituents (boron and calcium) which can be CCR indicators, is provided in Table 9. The discussion of the constituents detected above the Class I Groundwater Standards is provided below.

**Antimony, Boron, Chloride, and Fluoride:** All concentrations for these constituents in Pond sediment samples are below Class I standards (Table 9). Among the control samples, only the Unit 4 fly ash sample showed a concentration of these constituents higher than the Class I standard. The results indicate that CCR materials and coal in Pond sediments do not result in elevated antimony, boron, chloride, and fluoride concentrations in water that is in contact with the sediments. Note that fly ash produced by the Unit 4 boiler (now retired) was mainly managed dry, mixed with the scrubber sludge, and transported to the former CCR Landfill Area; therefore, there has been no direct discharge of any significant amount of Unit 4 fly ash into the Ponds at issue.

**Arsenic:** Only one arsenic concentration above the Class I standard was found among Pond sediment samples (S-3n); all other arsenic concentrations were below the Class I standard, including the control

samples (Table 9). The results indicate that CCR materials and coal in Pond sediments are not a source that can consistently result in elevated arsenic concentrations in water that is in contact with the sediments. The elevated arsenic concentration at S-3n is considered a local anomaly because arsenic concentrations in control samples and other Pond sediment samples are all below the Class I standard.

**Table 9: Simplified summary of the shake test results for Pond sediments and control samples.**

Parameter	Units	Part 620 – Groundwater Quality Class I Potable Resource Groundwater (a)	Part 620 – Groundwater Quality Class II General Resource Groundwater (b)	Control Sample Shake Test Results (c)				Sediment Shake Test Results (c)					
				Scrubber Sludge 05/25/2021	Unit 4 Fly Ash 07/08/2021	Coal 05/25/2021	S-3Ax 04/27/2021	S-3An 04/27/2021	S-3n 04/27/2021	S-3x 04/27/2021	S-S6x 04/27/2021	S-S6n 04/27/2021	
Antimony	mg/L	0.006	0.024	< 0.0010 B	0.0216	< 0.0010 B	< 0.0010	< 0.0010	0.0011	0.002	0.0028	0.0044	
Arsenic	mg/L	0.010	0.2	< 0.0100	< 0.0100	< 0.0100	0.0017	< 0.0010	0.0214	0.0037	0.0028	0.0048	
Boron	mg/L	2	2	< 0.0200	16.2 S	0.044	0.851	1.13	0.977	0.594	0.497	0.739	
Chloride	mg/L	200	200	< 4	623	17	13 H	19 H	14 H	9 H	6 H	10 H	
Fluoride	mg/L	4	4	1.37	7.33	0.11	0.84 H	3.44 H	1.63 H	1.56 H	1.48 H	1.24 H	
Selenium	mg/L	0.05	0.05	< 0.0400	1.45	< 0.0400	0.0067	0.0059	0.0013	0.0084	0.0048	0.004	
Sulfate	mg/L	400	400	1400	1400	100	42 H	50 H	861 H	1360 H	1370 H	1350 H	
Thallium	mg/L	0.002	0.02	0.0024 X	0.0495	< 0.0020	< 0.0020	< 0.0020	< 0.0020 B	< 0.0020	< 0.0020	< 0.0020 B	
Total Dissolved Solids	mg/L	1200	1200	1950 H	3730 H	166 H	162 H	184 H	1310 H	2110 H	2090 H	2100 H	

Parameter	Units	Part 620 – Groundwater Quality Class I Potable Resource Groundwater (a)	Part 620 – Groundwater Quality Class II General Resource Groundwater (b)	Sediment Shake Test Results (c)							
				S-4gs 04/27/2021	S-4gp 04/27/2021	S-4x 04/27/2021	S-4n 04/27/2021	S-SFAn 04/27/2021	S-SFAx 04/27/2021	S-SFAGx 04/27/2021	S-SFAGn 04/27/2021
Antimony	mg/L	0.006	0.024	< 0.0010	0.0017	< 0.0010	< 0.0010	0.0014	0.0022	0.0022	0.0021
Arsenic	mg/L	0.010	0.2	0.001	0.0045	0.0059	0.0056	0.0014	0.0019	0.005	0.0013
Boron	mg/L	2	2	0.197	0.426	0.546	0.639	1.41	1.14	1.08	1.1
Chloride	mg/L	200	200	2 H	6 H	25 H	11 H	42 SH	81 H	22 H	30 H
Fluoride	mg/L	4	4	1.1 H	0.68 H	0.9 H	1.1 H	2.61 H	1.21 H	3.59 H	3.67 H
Selenium	mg/L	0.05	0.05	0.0028	0.0039	< 0.0010	< 0.0010	0.0044	0.127	0.0487	0.0262
Sulfate	mg/L	400	400	31 H	11 H	49 H	22 H	1160 H	1340 H	59 H	69 H
Thallium	mg/L	0.002	0.02	< 0.0020 B	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020
Total Dissolved Solids	mg/L	1200	1200	132 H	100 H	178 H	118 H	1920 H	2200 H	168 H	216 H

Notes:  
 < - Not detected above the indicated reporting limit.      B - Analyte detected in associated Method Blank.      mg/L - Milligrams per liter.  
 - Not sampled.      H - Holding times exceeded.      S - Spike Recovery outside recovery limits.

(a) - Illinois Administrative Code. (July 2013). Title 35: Environmental Protection. Subtitle F: Public Water Supplies. Chapter I: Pollution Control Board.  
 Part 620: Groundwater Quality. Subpart D: Groundwater Quality Standards. Section 620.410 Groundwater Quality Standards for Class I: Potable Resource Groundwater.  
<https://pcb.illinois.gov/documents/dsweb/Get/Document-33425/>

(b) - Illinois Administrative Code. (July 2013). Title 35: Environmental Protection. Subtitle F: Public Water Supplies. Chapter I: Pollution Control Board.  
 Part 620: Groundwater Quality. Subpart D: Groundwater Quality Standards. Section 620.420 Groundwater Quality Standards for Class II: General Resource Groundwater.  
<https://pcb.illinois.gov/documents/dsweb/Get/Document-33425/>

(c) - Data from Teklab, Inc. Environmental Laboratory. June 7, 2021. Analysis by ASTM D3987, SW-846 3005A, 6010B, 6020A, Metals in Shake Extract by ICPMS, and ASTM D3987, SW-846 7470A in Shake Extract.

Greater than the Groundwater Quality Class I Potable Resource Groundwater  
 Greater than both the Groundwater Quality Class I Potable Resource Groundwater and Groundwater Quality Class II General Resource Groundwater

**Selenium:** Only one selenium concentration above the Class I standard was found among Pond sediment samples (S-SFAx). Among the control samples, only the Unit 4 fly ash sample exhibits a selenium concentration above the Class I standard. All other selenium concentrations were below the Class I

standard (Table 9). As noted above, fly ash produced by Unit 4 (now retired) was mainly managed dry, mixed with the scrubber sludge, and transported to the former CCR Landfill Area; therefore, there had been no direct discharge of any significant amount of Unit 4 fly ash into the Ponds at issue. Accordingly, the elevated selenium concentration at S-SFAX is considered a local anomaly. The results indicate that CCR materials and coal in Pond sediments are not a source that consistently result in elevated selenium concentrations in water that is in contact with the sediments.

**Thallium:** All thallium concentrations in Pond sediment samples are below the Class I standard (Table 9). Among the control samples, only the scrubber sludge and Unit 4 fly ash samples showed a thallium concentration slightly higher than the Class I standard. The results indicate that CCR materials and coal in Pond sediments are not a source that can result in elevated thallium concentrations in water that is in contact with the sediments.

**Sulfate and TDS:** Sulfate and TDS concentrations above Class I standards were found in several Pond sediment samples (S-3n, S-3x, S-6n, S-6x, S-SFAn, and S-SFAX). The control samples, with the exception of the coal sample, showed sulfate and TDS concentrations above the Class I standards. The results indicate that Site fly ash, and scrubber sludge can serve as a source of elevated sulfate and TDS concentrations in water that is contact with these CCR materials, as shown in Table 9.

Because Pond 3 and Pond S-6 are adjacent to the former CCR Landfill Area (Figure 1), storm water runoff originating from the former Landfill Area may have carried CCR particles along with runoff and settled inside these Ponds. These CCR particles may have a greater potential to release TDS and sulfate into contact water.

Pond 4 and Pond 3A are not directly adjacent to the former CCR Landfill Area, and thus it is less likely that there would have been any frequent input of CCR particles into these two Ponds. Note that the shake test results of the Pond sediment samples from Pond 4 and Pond 3A show low sulfate and TDS concentrations and fully comply with the Class I groundwater standards, indicating that CCR materials in the sediments of these two Ponds would not have significant impacts on groundwater quality.

#### Shake test results for berm samples

The full data summary table for the berm sample shake tests are provided in Attachment C. The Attachment C table compares the results to Part 620 Groundwater Class I and Class II standards. A simplified summary table is provided in Table 10 below. For the sample B-3A (8-10 ft), the shake test concentrations for antimony and arsenic are higher than the Class II standards. These elevated concentrations are considered local anomalies since none of the other samples have a shake test concentration for antimony higher than the Class I standard; there is only one other Pond sediment sample that exhibits a shake test concentration for arsenic higher than the Class II standard (Table 9). The elevated pH value above 9 for the sample B-3a (4-6 ft) is also considered an anomaly since no other samples have an elevated pH above the Class I standard. The elevated sulfate and TDS concentrations for the sample B-3a (4-6 ft) are likely influenced by the CCR materials in the sample, which also has a high calcium and boron concentration (Table 5). For the samples for B-4a (0-2 ft), B-SFAB (4-6 ft), B-6b (4-6 ft), B-B3a (4-6 ft) and B-B3b (4-6 ft), the elevated TDS concentrations are potentially laboratory errors because the major cation and anion concentrations, as well as the conductivity values, for these

samples are low, indicating that the correct TDS concentrations should have been substantially lower than the concentrations reported. Note that only one sample out of 11 berm samples shows the influence of CCR based on the magnitude of calcium and sulfate concentrations. It is thus concluded that CCR materials in the berm samples do not likely result in significant impacts on groundwater quality.

**Table 10: Simplified summary of the shake test results for berm samples.**

Parameter	Units	Part 620 – Groundwater Quality Class I Potable Resource Groundwater (a)	Part 620 – Groundwater Quality Class II General Resource Groundwater (b)	Ponds 3, 3A, 4, and S-6 and South Fly Ash Pond Berm Results										Former Pond B-3 Berm Results	
				B-3a 4-6 ft	B-3b 4-6ft	B-3Aa 2-4 ft	B-3Aa 8-10 ft	B-4a 0-2 ft	B-4a 2-4 ft	B-6b 4-6ft	B-SFAB 4-6ft	B-SFAa 2-4ft	B-B3a 4-6ft	B-B3b 4-6ft	
				03/22/2021	3/22/2021	03/22/2021	03/22/2021	03/22/2021	03/22/2021	3/22/2021	3/22/2021	3/22/2021	3/22/2021	3/22/2021	
Antimony	mg/L	0.006	0.024	< 0.0010	<0.0010	0.0018	0.0081	< 0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Arsenic	mg/L	0.010	0.2	0.0027	<0.0010	0.0025	0.0254	0.0015	< 0.0010	0.0030	<0.0010	0.0011	<0.0010	<0.0010	<0.0010
Boron	mg/L	2	2	0.517	0.0939	0.165	0.196	0.124	0.0847	0.0459	<0.0200	0.0282	<0.0200	<0.0200	<0.0200
Chloride	mg/L	200	200	4	<1	< 1	< 1	1	2	5	8	7	<1	7	
Fluoride	mg/L	4	4	0.15	0.32	0.80	1.12	0.59	0.62	0.18	0.29	0.46	0.57	0.37	
Selenium	mg/L	0.05	0.05	0.002	<0.0010	0.0107	0.0035	0.0035	< 0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Sulfate	mg/L	400	400	1330	19	< 10	25	374	15	<10	<10	41	<10	15	
Thallium	mg/L	0.002	0.02	< 0.0020	<0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
Total Dissolved Solids	mg/L	1200	1200	2200	55	52	88	604	2080	1540	4770	466	5370	5030	

- Notes: (1) Definitions of blue and yellow colors are the same as those used in Table 9.  
 (2) Total dissolved concentrations for B-4a (0-2 ft), B-SFAB (4-6 ft), B-6b (4-6 ft), B-B3a (4-6 ft) and B-B3b (4-6 ft) are considered not reliable because low conductivity values and low major cation and anion concentrations were also observed in these samples (Table 5).

**Shake test results for former Pond B-3 sediments**

Former Pond B-3 is not included in this overall evaluation because it does not hold water and was earlier closed; however, samples were collected from the area of this former pond in 2017 and are included here. The full data summary table for the berm sample shake tests for this former pond are provided in Attachment E. The Attachment E table compares the results to Part 620 Groundwater Class I and Class II standards. A simplified summary table is provided in Table 11 below. For Sample 1 in Table 11, the shake test concentration for arsenic is higher than the Class II standard. This elevated concentration is considered a local anomaly since none of the other 2017 samples have a shake test concentration for arsenic higher than the Class I standard. For Sample 3, the shake test pH value was found to be slightly higher than 9. This is also considered an anomaly since there is only one other sample (B-3a (4-6 ft)) that exhibits a shake test pH value higher than the Class I standard (Table 10). The results indicates that any sediments in the former Pond B-3 area are not likely to result in unacceptable CCR impacts on groundwater quality.

**Table 11: Simplified summary of the shake test results for former Pond B-3 sediments samples.**

Parameter	Units	Groundwater Quality Class I Potable Resource Groundwater (a)	Groundwater Quality Class II General Resource Groundwater (b)	Pond B-3 – Group 1					Pond B-3 – Group 2			
				West Bank	East Bank	South End	Middle	Sample 1	Sample 4	Sample 3	Sample 4	Sample 5
				09/18/2017	09/18/2017	09/18/2017	09/18/2017	07/28/2017	07/28/2017	03/08/2017	03/08/2017	03/08/2017
Arsenic	mg/L	0.010	0.2	< 0.0010	0.0088	0.0031	< 0.0010	0.0244	< 0.0010	0.0062	0.0010	< 0.0010
pH	S.U.	6.5-9	6.5-9	--	--	--	--	--	--	9.09	7.58	7.64

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### Summary of the shake test results

The concentrations obtained from the shake tests using the Pond sediment samples from Pond 3A and Pond 4 are all below the Class I groundwater standards. Based on the results, CCR materials in the Pond sediments/berm samples of these two Ponds are not expected to result in groundwater impacts above the Part 620 Class I groundwater standards.

Based on the shake test results for the Pond sediments and control samples for Pond 3, Pond S-6, and the South Fly Ash Pond, the only constituents that have potential to affect groundwater quality beneath these Ponds are sulfate and TDS.

In addition, the shake test results for the sediment samples from former Pond B-3 in 2017 indicate that residual CCR materials in former Pond B-3 sediments are not expected to result in groundwater impacts above the Part 620 Class I groundwater standards.

### BIVARIATE ANALYSIS

To evaluate whether the sulfate concentrations above Part 620 Class I standards observed in the shake tests results originated from the Pond sediment solids, the relationship between the total solid concentrations (see Attachment C) and shake test concentrations for sulfate was assessed using a bivariate plot. Note that the total solid concentration analytical method uses a wet chemistry analytical method similar to the shake test method. The bivariate plot shows that the sulfate concentrations in the shake tests correlate well with the sulfate total concentration in solids (Figure 6A), indicating that the high sulfate concentrations in Pond sediments found through the shake tests are consistent with the analysis of the total sulfate concentrations in sediment solids.

As shown in Tables 4 and 9, the major cations and anions for the Pond sediment samples (from Pond 3, Pond S-6, and South Fly Ash Pond) exhibiting high sulfate and TDS concentrations are calcium and sulfate. The bivariate plot of the TDS concentrations and the sums of the calcium and sulfate concentrations at these locations shows that the TDS concentration data fall along the 1:1 diagonal line (Figure 6B), indicating that the high TDS concentrations primarily result from the calcium and sulfate concentrations in these Pond sediment samples.

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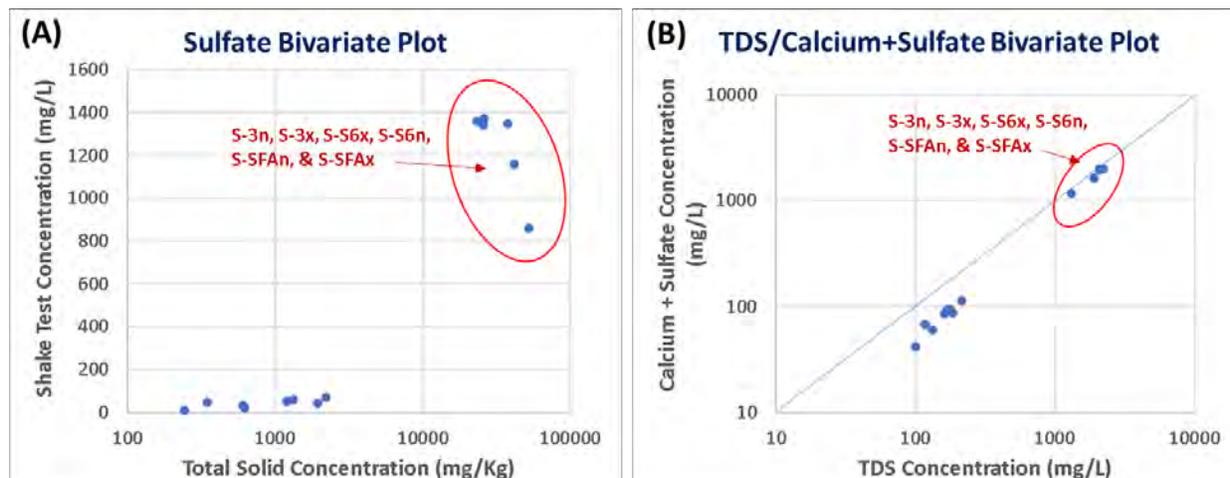


Figure 6: Bivariate plots for (A) total solid concentrations and shake test concentrations of sulfate and (B) TDS shake test concentrations and the sums of sulfate and calcium shake test concentrations.

### CONSISTENCY WITH GROUNDWATER MONITORING DATA

The results presented above indicate that sediments in Ponds 3A and 4 would not be expected to adversely impact groundwater. Further, any potential effects of the sediments in Pond 3, Pond S-6, and the South Fly Ash Pond on groundwater quality should be limited to elevated sulfate and TDS concentrations. Water in Pond sediments that contain sulfate and TDS is expected to mix with or be diluted by Pond water when it travels outside the Pond and by ambient groundwater. Therefore, the sulfate concentrations measured in the Site monitoring wells are expected to be considerably lower than the sulfate concentrations observed through the shake tests. This hypothesis was tested by comparing the Pond sediment shake test data to data from Site groundwater monitoring wells.

The shake test results of Pond 3, Pond S-6, and the South Fly Ash Pond sediment samples show sulfate and TDS levels higher than the standards for Class I Potable Resource Groundwater. Water impacted by the Pond sediments that contain high sulfate and TDS concentrations are expected to mix with or be diluted by Pond water when it travels outside a Pond and by ambient groundwater. Therefore, Site groundwater monitoring data were assessed to further evaluate the potential impacts of these Pond sediments on groundwater quality. Sulfate has been monitored by Site monitoring wells C1, C2, C3, S1, S2, S3, S4, S5, and S6 for more than 10 years. The historical sulfate concentration data and boring logs of these wells are provided in Attachment F. The locations of these wells are shown in Figure 1.

The boxplot method was used to characterize the variations of sulfate concentrations in groundwater observed at these monitoring wells. The comparison of the concentration magnitude among different monitoring wells for sulfate concentration data were made using the box plots produced by the ProUCL software.<sup>11</sup> Figure 7 provides an example boxplot to show definitions of various components of a box

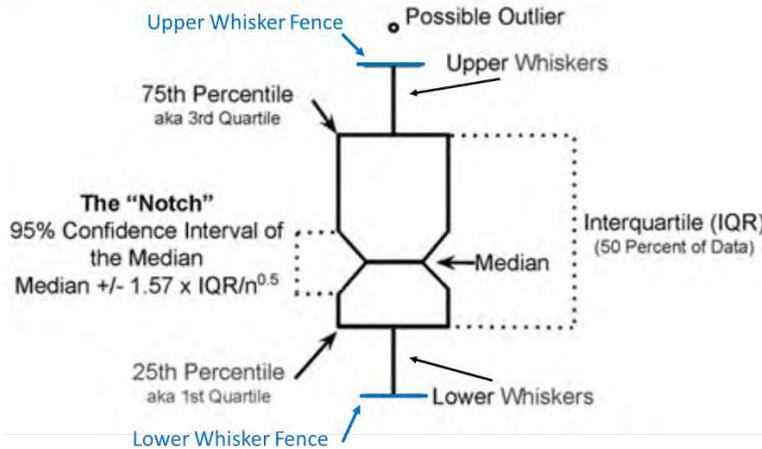
<sup>11</sup> USEPA. 2013. Statistical Software ProUCL 5.0.00 for Environmental Applications for Data Sets with and without Nondetect Observations. U.S. Environmental Protection Agency. Software: <http://www2.epa.gov/land-research/proucl-software>, and User's Guide:

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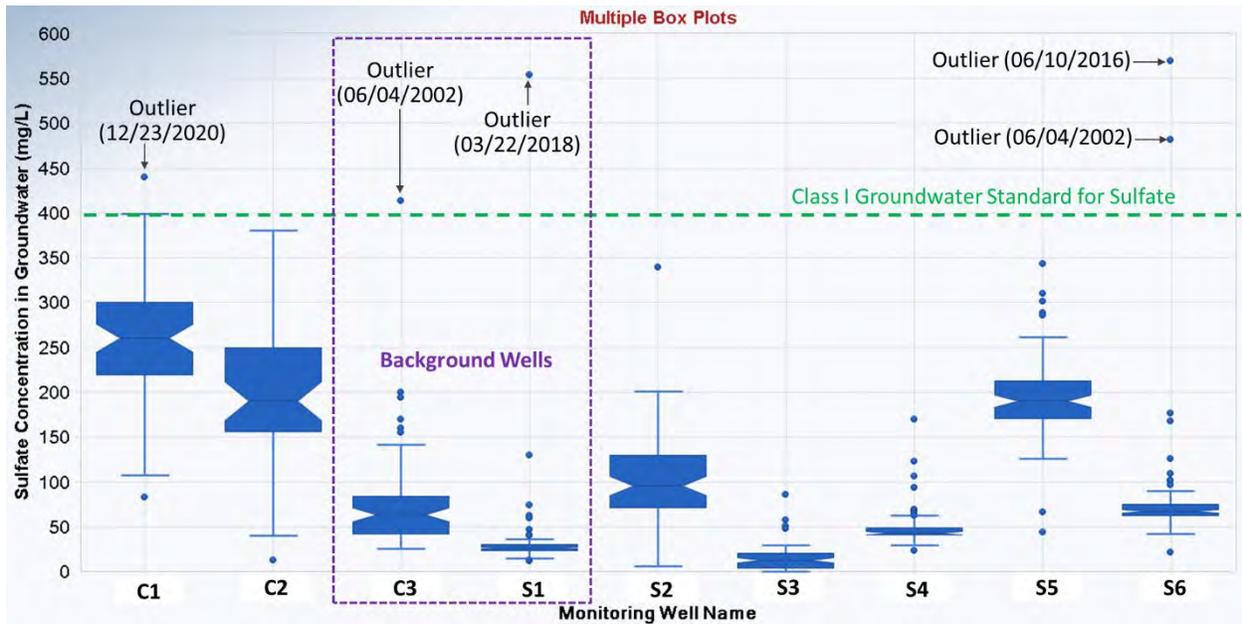
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plot. The location of the upper whisker fence line is the lesser of 1.5 times the interquartile range (IQR) above the 75 percentile or the maximum value; the location of the lower whisker fence line is the greater of 1.5 times the IQR below the 25 percentile or the minimum value.



**Figure 7: Definitions of various components of a box plot.**

The historical sulfate concentrations observed at the Site monitoring wells are shown in Figure 8 below. Note that the boxplot for each well has at least 45 data points and covers the timeframe between March 2001 and December 2020. All data points are below the Part 620 Class I groundwater standard for sulfate except for five data points; these five data points are also identified as outliers for their respective wells, indicating that these data points are likely anomalies in each data set. As shown on Figure 8, the dates of the outlier data also support their identification as outliers, and do not represent a trend in the data.



**Figure 8: Sulfate concentrations in groundwater observed at Site monitoring wells from March 2001 to December 2020.**

The Site groundwater data are consistent with the expectation that water in Pond sediments will be diluted by Pond water and ambient groundwater, thereby resulting in a sulfate concentration significantly lower than the sulfate concentrations (ranging approximately from 860 mg/L to 1370 mg/L) observed in the shake tests. Note that the median concentrations of sulfate in groundwater for the monitoring wells are well below the Class I groundwater standard for sulfate; the range of the sulfate concentrations observed in groundwater monitoring wells, without including the outliers, are between 0.5 mg/L and 398 mg/L.

The sulfate concentrations obtained from the shake test results for a specific Pond can be compared with the sulfate concentrations observed at monitoring wells either within the vicinity or potentially downgradient of that Pond. This comparison is summarized in Table 12 below. The results of the comparison show that, for Pond S-6 and the South Fly Ash Pond, the high-end concentration values observed in the shake tests are approximately 3.5 to 4 times higher than the high-end sulfate concentrations in groundwater. The results support the hypothesis that water in Pond sediments that contain sulfate and TDS is expected to mix with or be diluted by Pond water when it travels outside the Pond and mixes with ambient groundwater. Note that the Pond 4 sediment shake test concentrations of all constituents are below Class I groundwater standards (Tables 4 and 9), which is consistent with the low concentrations of sulfate in the near-by well S6 (Figure 9).

**Table 12: Differences in sulfate concentrations obtained from the shake tests and groundwater monitoring.**

<b>Pond</b>	<b>Shake Test Sulfate Concentrations (mg/L)</b>	<b>Groundwater Monitoring Well</b>	<b>Sulfate Concentrations in Groundwater (mg/L)</b>
Pond 4	11 – 49	S6	21 – 177
Pond 3A	42 – 50	S3 or S4	0.5 – 86 or 23 – 170
Pond 3	861 – 1360		
Pond S-6	1350 – 1370	S2 or S3	7.3 – 340 or 0.5 – 86
South Fly Ash Pond	59 – 1340	C1 and C2	83 – 398
<b>Background Groundwater</b>	<b>NA</b>	<b>C3 and S1</b>	<b>12 - 200</b>

Note: The range of sulfate concentrations in groundwater excludes outliers.

The former Emery Pond is being regulated as a CCR impoundment under the federal CCR Rule and under Illinois regulations. Currently a new structure, designated as the Storm Water Basin (Figure 1), is located within the footprint of the former Emery Pond, from which CCR was recently removed as part of its closure. It should be noted that the groundwater monitoring data collected near the former Emery Pond frequently have shown observed sulfate and TDS concentrations higher than the Part 620 Class I groundwater standards.<sup>12, 13</sup> The frequent high sulfate and TDS concentrations observed in groundwater in the vicinity of the former Emery Pond likely results from the historical usage of the pond to intermittently manage precipitator, air heater, boiler, and scrubber CCR material. If the Ponds evaluated in this memorandum (South Fly Ash Pond, Pond 3 (including Pond 3A), Pond 4, and Pond S-6) were also used to manage Site CCR materials, the impacts on groundwater quality near these Ponds would be expected to be similar to the groundwater quality observed near the former Emery Pond. Because they are not, specifically, the sulfate concentrations in the monitoring wells in the vicinity of these Ponds are well below the Part 620 Class I standards, this is further evidence that these Ponds did not generally receive direct discharges of any significant quantity of CCR and have not been used to treat, store and/or dispose of CCR materials.

In summary, the groundwater monitoring results indicate that the sulfate concentrations observed in the shake test results for Pond 3, Pond S-6, and the South Fly Ash Pond do not translate to concentrations of sulfate and TDS in groundwater above Part 620 Class I standards.

<sup>12</sup> Hanson Professional Services, Inc., 2019. Marion Power Plant – Emery Pond, 2019 Annual Groundwater Monitoring and Corrective Action Report.

<sup>13</sup> Hanson Professional Services, Inc., 2020. Marion Power Plant – Emery Pond, 2020 Annual Groundwater Monitoring and Corrective Action Report.

## Conclusions

The evaluation results are summarized in the table below.

<b>Pond Name</b>	<b>Amount of CCR Materials Determination</b>	<b>Impacts of Pond sediments on sediment water</b>	<b>Sulfate impacts on groundwater quality at nearby or potentially downgradient well</b>
Pond 4	<ul style="list-style-type: none"> <li>• Shallow Pond sediment thicknesses based on bathymetric survey</li> <li>• The PLM results show a high fraction of non-CCR materials</li> </ul>	Meet all Part 620 Class I groundwater standards	Sulfate concentrations at Well S6 meet the Part 620 Class I groundwater standard except two outliers
Pond 3A			Sulfate concentrations at Wells S3 and S4 meet the Part 620 Class I groundwater standard
Pond 3		Sulfate and TDS shake test concentrations higher than the Class I groundwater standards for all Pond 3 and Pond S-6 samples and 50% of the South Fly Ash Pond samples; however, meet all other groundwater standards with only two anomalous exceptions	Sulfate concentrations at Wells S2 and S3 meet the part 620 Class I groundwater standard
Pond S-6			Sulfate concentrations at Wells C1 and C2 meet the Part 620 Class I groundwater standards except one outlier
South Fly Ash Pond			Sulfate concentrations at Well S6 meet the Part 620 Class I groundwater standard except two outliers
B-3	Not applicable	Meets all Class I groundwater standards except two anomalous exceptions	Sulfate concentrations at Well S6 meet the Part 620 Class I groundwater standard except two outliers

The results of the bathymetric survey and PLM analyses indicate that the amounts of CCR materials in Pond 3 (including Pond 3A), Pond 4, Pond S-6, and the South Fly Ash Pond are much smaller than what would be expected from a CCR surface impoundment that is designed to hold an accumulation of CCR and water and that is used to treat, store and/or dispose of CCR materials. Pond sediments in Pond 3A, Pond 4 (and in the area of former Pond B-3) have little potential for various CCR constituents in sediment solids to impact ambient groundwater and, thus, any CCR materials in these two Ponds are not expected to affect groundwater quality. Several Pond sediment samples from Pond 3, Pond S-6, and the South Fly Ash Pond show a potential to release sulfate and TDS when in contact with water. Although the potential influence of CCR particles from these Pond sediments could affect water in contact with

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these sediments, the long-term groundwater monitoring data show that historical sulfate concentrations in groundwater have been consistently below the Part 620 Class I groundwater standard. Therefore, the potential presence of CCR in the Pond sediments has not had an adverse impact on groundwater, which is consistent with the relatively small amounts of CCR detected in the Ponds.

Attachments:

Attachment A – Bathymetry Survey Results

Attachment B – Laboratory Reports for Carbon/Hydrogen/Nitrogen Analysis

Attachment C – Analytical Results for Pond Sediment Samples, Berm Samples, and Control Samples, Berm Boring Logs, and Photographs associated with Berm Investigation

Attachment D – Laboratory Results of Polarized Light Microscopy

Attachment E – Analytical Results for Pond B-3 Sediments Collected in 2017

Attachment F – Long-Term Sulfate Concentration Data for Site Monitoring Wells, Boring Logs of Site Monitoring Wells, and Analytical Reports for Site Monitoring Wells for the Period between 2010 and 2020

CH2:25125063.1

# **EXHIBIT 30**

**SUPPLEMENTAL DECLARATION OF KENNETH W. LISS**

I, Kenneth W. Liss, first being duly sworn on oath, depose and state as follows:

1. On May 11, 2021, I executed the Declaration of Kenneth J. Liss, which was attached as Ex. 9 to Southern Illinois Power Company's ("SIPC") Petition for Adjusted Standard, PCB No. AS 2021-006. I understand that SIPC has filed an Amended Petition for Adjusted Standard ("Amended Petition") and this Supplemental Declaration is being submitted as Ex. 30 thereto.

2. In my May 11 declaration, I provided estimates for the costs of compliance with Part 845, assuming Part 845 applied, for two sets of current and former ponds at SIPC's Marion Station: the Former Fly Ash Holding Units and the De Minimis Units, as those units are defined in my May 11 Declaration.

3. Since the date of my original declaration, I have had the opportunity to refine my estimates to incorporate the results of the pond investigation described in the September 1, 2021 Pond Investigation Report of Certain Ponds at SIPC's Marion Station by Haley & Aldridge (Ex. 29 to the Amended Petition). I also have conducted further research and analysis of the likely costs of compliance with certain aspects of Part 845, including the costs of construction and operating permits, public notice requirements and groundwater monitoring and characterization. Accordingly, I have updated my testimony, as set forth below.

4. I revise the cost estimates contained in Paragraph 8 of my May 11 declaration to be:

I estimate the costs to complete the landfill closure described in the proposed landfill closure plan to be approximately \$3.5-4.5 million in immediate capital and other upfront costs, with approximately \$42,000 per year in O&M costs for a period of 5 years after the completion of closure activities, and \$12,400 per year in annual O&M costs for the following 10 year period, assuming a 15-year post-closure care and monitoring period. This time period is an estimate, based in part on my conversations with IEPA personnel, and assuming the landfill will be released from post-closure care before the 30 year post-closure care period stipulated in the Part 811 regulations.

5. I revise the cost estimates contained in Paragraph 15 of my May 11 Declaration as follows:

I have prepared a high-level estimate of the potential costs to close the landfill area in place in compliance with Part 845 to be approximately \$5.4 million in capital costs and other upfront costs, including the costs of the permits, assessments and certifications required by Part 845. I further estimate the annual O&M costs associated with managing the landfill area as a Part 845 regulated

surface impoundment would be at least \$67,536 per year (without an inflation factor) for the first ten years of post-closure care, and \$33,752 (without an inflation factor) for the remainder of the 30-year post closure care period required by Part 845. This does not include the costs of expediting work to meet Part 845's stringent deadlines, or alternative Board-ordered compliance deadlines, whichever may apply. This also does not include additional costs that may be incurred due to potential ambiguities in the rules, and does not include any plant personnel time. This also assumes that SIPC is permitted to close the landfill area as a single CCR surface impoundment.

6. I also revise Paragraph 18 of my May 11 Declaration as follows:

I estimate the costs for Part 845 compliance for the De Minimis Units, including closure by removal, to be at least \$14.85 million in capital costs and other upfront costs, with at least \$98,100 in annual O&M costs (without an inflation factor) for a minimum of three years. This does not include the cost of constructing new storm water basins as needed to replace the De Minimis Units and maintain necessary operating conditions. This also does not include the costs of expediting work to meet Part 845's stringent deadlines, or alternative Board-ordered compliance deadlines, whichever may apply. This also does not include additional costs that may be incurred due to potential ambiguities in the rules, and does not include any plant personnel time. This does not include the cost of constructing new storm water basins to replace the De Minimis Units.

7. I also revise Paragraph 5 of my May 11 Declaration to read:

In December, 2020, I submitted to IEPA on behalf of SIPC a proposed closure plan for the former on-site CCR landfill. That proposed closure plan is attached as Ex. 10 to SIPC's Petition for Adjusted Standard.

8. The cost estimates set forth herein are based upon the information currently available to me and are subject to revision and supplementation based upon new information.

9. All other portions of my May 11 Declaration remain unchanged.

FURTHER, Declarant sayeth not.



Kenneth W. Liss

# **EXHIBIT 31**

**BEFORE THE  
ILLINOIS POLLUTION CONTROL BOARD**

IN THE MATTER OF:

PETITION OF SOUTHERN ILLINOIS  
POWER COOPERATIVE FOR  
AN ADJUSTED STANDARD FROM  
35 ILL. ADMIN. CODE PART 845 OR, IN  
THE ALTERNATIVE, A FINDING OF  
INAPPLICABILITY

AS ~~21-006~~ 2021-006

(Adjusted Standard)

**AMENDED PETITION FOR AN ADJUSTED STANDARD  
FROM 35 ILL. ADMIN. CODE PART 845 OR, IN THE ALTERNATIVE,  
A FINDING OF INAPPLICABILITY**

Submitted on behalf of  
Southern Illinois Power Cooperative

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**I. INTRODUCTION**

This Amended Petition for an Adjusted Standard (“Petition”) concerns eight existing and former ponds located at Southern Illinois Power Cooperative’s (“SIPC”) Marion Generating Station (“Marion Station”) in Williamson County, Illinois. ~~Those~~ These ponds are as follows: Pond 3 (including Pond 3A), Pond 4, former Pond B-3, South Fly Ash Pond, and Pond 6 (collectively, the “De Minimis Units”), and the ~~Former~~ former Fly Ash Holding Area, the former Replacement Fly Ash Holding Area, and the former Fly Ash Holding Area Extension (collectively, the “Former Fly Ash Holding Units”)<sup>1</sup>. [This Amended Petition amends the Petition for Adjusted Standard filed by SIPC on May 11, 2021, including to reflect the results of a Pond Investigation Report for Certain Ponds at Southern Illinois Power Company’s Marion Station \(“Pond Investigation Rep.”\), attached as Ex. 29<sup>2</sup>, as well as the Updated Opinion of Lisa Bradley, which is attached as Updated Ex. 28 \(“Updated Bradley Op.”\), and the Supplemental Declaration of Kenneth W. Liss, which attached as Ex. 30 \(“Supp. Liss Dec.”\).<sup>3</sup> A redline comparison showing changes made since the initial Petition is attached as Ex. 31.](#)

As discussed herein, neither the De Minimis Units nor the Former Fly Ash Holding Units are regulated “CCR surface impoundments” for purposes of Illinois’s newly enacted Standards for the Disposal of Coal Combustion Residuals (“Part 845”). Nor are they CCR surface impoundments regulated by the federal CCR regulations upon which Part 845 was based. ~~Further,~~

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<sup>1</sup> The De Minimis Units and the Former Fly Ash Holding Units are depicted on the Site Map ~~prepared by~~ Andrews Engineering, Site Map prepared for SIPC (May 2021) (“Site Map”), ~~attached as~~ Ex. 3.

<sup>2</sup> For Exhibit 29, the Pond Investigation Report, SIPC has attached to the electronically filed version of this Petition only the Report itself and not the appendices, as they are several hundred pages long. Those appendices are being transmitted separately to the Board and to IEPA. See Pond Investigation Rep., Ex. 29.

<sup>3</sup> SIPC has attached only new or updated (labeled “Updated Ex. \_\_\_\_\_”) exhibits to this Petition. All other exhibits referred to within are attached to SIPC’s original petition.

~~none~~ None of these former or current ponds poses the types of risks to the environment and human health that federal and state CCR regulations aim to address. Indeed, some of the ponds at issue closed decades ago and have not contained water since then, while another had any water and CCR removed years ago. Nevertheless, while discussions continue, the Illinois Environmental Protection Agency (“IEPA”) has so far taken the incorrect position that all eight current and former ponds are covered by Part 845.

Compliance with Part 845 is plainly not required for the ponds and former ponds at issue, which do not fall under the definition of “CCR surface impoundment” and therefore are not covered by Part 845. And, to the extent the Board finds that any of the units at issue are ~~covered~~ regulated CCR surface impoundments (they are not), an adjusted standard is warranted because they differ from the surface impoundments the Board targeted for regulation under Part 845 and the exorbitant costs of compliance with Part 845 are not warranted in light of the fact that the units at issue pose minimal—if any—risk to human health and the environment.

Accordingly, for the reasons set forth herein, SIPC respectfully requests that the Board issue a finding of inapplicability with respect to the current and former ponds at issue or, in the alternative, an adjusted standard exempting the units at issue from Part 845 requirements.

## **II. FACTUAL AND PROCEDURAL BACKGROUND.**<sup>24</sup>

### **A. Nature of Petitioner’s Activity and General Plant Description**

Marion Station is a gas and coal-fired power plant located approximately seven miles south of the City of Marion in Williamson County, Illinois. *See* Site Map, Ex. 3. Marion Station

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<sup>24</sup> The Declarations of Wendell Watson and Todd Gallenbach, ~~attached as~~ Exs. 1 and 2 ~~to this Petition~~, are provided in support of facts stated herein regarding Marion Station and the current and former ponds at issue. SIPC’s investigation into the facts set forth herein is ongoing, and SIPC reserves the right to further supplement or amend its Amended Petition to reflect receipt of new or additional information.

currently consists of one operating coal-fired unit (Unit 123), with a nominal capacity of 1402 mmBtu/hour, and two additional gas-fired combined-cycle units (Units 5 and 6).

Unit 123 was constructed in the early 2000s, repowering the existing steam turbine that had been powered by retired Units 1, 2, and 3. Units 1, 2, and 3 were 33 MW coal-fired cyclone generating units constructed in the 1960s. An additional 173 MW coal-fired unit (Unit 4) came online in 1978. Unit 4 shut down permanently in October 2020. A 109 MW circulating fluidized bed boiler provides steam to generating Unit 123. The two gas-fired simple-cycle units (Units 5 and 6) are nominally rated at 969 mmBtu/hr each (dependent upon ambient air temperature). Marion Station uses Illinois basin bituminous coal for Unit 123. Since 1978, SIPC also has burned more than ~~10~~ten million tons of mine waste, helping to clean up many abandoned mines.

SIPC owns 4,674 acres around Marion Station and employs seventy-eight people. Nearby Lake of Egypt (the “Lake”) was constructed in 1963 to provide cooling water for the station’s coal-fired generating units. The Lake provides some local public water supply and is also used for recreational purposes, such as boating and fishing. The local water authority periodically tests the Lake water for public use. *See, e.g.*, Lake Egypt Water District IL 1995200, Annual Drinking Water Quality Report (Jan. 1–Dec. 30, 2019), ~~attached as~~ Ex. 4. SIPC owns several parcels bordering the plant property. Other nearby land uses include agricultural and recreational use, including a golf course and a country club. Shawnee National Forest is located approximately fifteen miles to the south of Marion Station. The closest identified potential groundwater well is at the Lake of Egypt Country Club, located more than 2,000 feet away ~~of~~from any pond at issue in this proceeding. That well is up gradient from the Station’s pond system.

**B. CCR Management at Marion Station.**

Coal combustion residuals (“CCR”) ~~is~~are a byproduct of the coal-fired power generation process. Currently, only Unit 123 generates CCR (in the form of ash) at the Station. One hundred percent of the CCR generated from Unit 123 is handled dry and used for mine reclamation beneficial use off-site. Unit 123 controls SO<sub>2</sub> through its combustion process, and thus, no scrubber is needed.

There is no wet handling of CCR generated from current operations at Marion Station. While in operation, prior Units 1, 2, and 3 generated CCR in the form of fly ash and bottom ash. Former Unit 4 generated CCR in the form of fly ash and bottom ash, as well as scrubber sludge from an SO<sub>2</sub> scrubber installed around 1978. This was the first wet SO<sub>2</sub> scrubber installed in Illinois—and one of the first in the nation—and reflects SIPC’s early environmental commitment, which continues to this day. The historic handling, storage, and disposal of CCR at Marion Station is described below.

1. Fly Ash.

SIPC began collecting fly ash from former Units 1, 2, and 3 after installing electrostatic precipitators (“ESPs”)<sup>35</sup> at each unit in 1975 in accordance with the Clean Air Act.<sup>46</sup> Because Units 1, 2, and 3 were cyclone units, they generated relatively small amounts of fly ash as compared to other types of coal-fired boilers. Cyclone boilers produce less than twenty-five percent of the fly ash pulverized coal units produce.

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<sup>35</sup> ESPs are control devices that ~~captures~~capture particulate matter in the exhaust gas, including fly ash.

<sup>46</sup> Prior to installation of the ESPs, most of the fly ash from Units 1, 2, and 3 would have been expected to exit the stack with exhaust gases, and only minimal amounts of fly ash may have been collected from the cyclone ~~units~~Units 1, 2, and 3. On information and belief, any minimal amounts of fly ash collected would likely have been conveyed to Pond 1, Pond 2, or the Initial Fly Ash Holding Area, which had an outlet to Pond 3.

Between 1975 and 1978, on information and belief, fly ash was collected wet using a hydroveyer system and conveyed to an area labeled on historic documents as a “fly ash holding area” (the “Initial Fly Ash Holding Area”) located just to the west of Pond 3. *See* Site Map, Ex. 3. In 1977, SIPC received a permit from IEPA to abandon and cover the Initial Fly Ash Holding Area and to construct an additional holding area for fly ash (the “Replacement Fly Ash Holding Area”). *See* IEPA Water Pollution Control Permit, No. 1977-EN-5732 (Nov. 14, 1977) (“1977 Permit”), ~~attached as~~ Ex. 5.

In 1978, Unit 4 was constructed. Around the same time the hydroveyer system was modified to allow for dry collection of fly ash. From 1978 until 2003, most of the fly ash collected from Unit 4 was collected dry using the hydroveyer system, ~~which was modified to allow for dry collection of fly ash.~~ Most of that fly ash was disposed of at a former on-site, permit-exempt, landfill (“Former Landfill”), often mixed with scrubber sludge as discussed further below.

Also around 1978, documents indicate that SIPC constructed the Replacement Fly Ash Holding Area to the North of Pond 2. *See* 1977 Permit, Ex. 5. The Replacement Fly Ash Holding Area likely received spent water from the hydroveyer system, which is believed to have contained only *de minimis* amounts of fly ash. *See* Letter from SIPC to IEPA (July 27, 1982), ~~attached as~~ Ex. 6. On information and belief, the Replacement Fly Ash Holding Area also was designated to receive sluiced fly ash from Unit 4 during intermittent emergencies in which the fly ash was unable to be conveyed to the Former Landfill. *Id.*

In or around 1981, SIPC received a permit from IEPA to build a fly ash holding area extension (the “Fly Ash Holding Area Extension”), to the west of the Replacement Fly Ash Holding Area, and a berm around a portion of the Former Landfill area that received fly ash and scrubber sludge from Unit 4. *See* IEPA Water Pollution Control Permit, No. 1981-EN-2776-1

(Oct. 13, 1981) (“1981 Permit”), Ex. 7. That bermed area collected storm water runoff from the landfill, and that collected water eventually became what is now denominated as Pond 6 (discussed *infra*).

On information and belief, between 1978 and 1985, limited fly ash from Units 1, 2, and 3<sup>57</sup> may have been sluiced to the Replacement Fly Ash Holding Area. In 1985, former Pond A-1 was constructed. After ~~that period~~1985, water from the hydroveyer system and, on information and belief, any fly ash from Units 1, 2, and 3 were conveyed to Pond A-1 or, in limited cases of Pond A-1 outages between 1985 and 2003 (*see infra* at ~~p. 11-12~~12-13), Pond B-3. *See, e.g.*, Letter from SIPC to IEPA (Sept. 16, 1993) (“1993 Letter”), ~~attached as~~-Ex. 8.

On information and belief, the Replacement Fly Ash Holding Area and the Fly Ash Holding Area Extension stopped receiving wastes after former Pond A-1 was built. Subsequently, those two units were drained of water—other than occasional storm water runoff—and, by the early 1990s, were covered at least in part by the Former Landfill. Currently, the area that previously contained those units is within the landfill cover area that SIPC has proposed to IEPA, as described further below. Declaration of Kenn Liss (“Liss Dec.”), ~~attached as~~-Ex. 9; *see also* Andrews Engineering, SIPC’s Proposed Closure Plan for IEPA Site No. 199055505 (Dec. 16, 2020) (“Former Landfill Closure Plan”), ~~attached as~~-Ex. 10.

In 2003, SIPC repowered the old boilers 1, 2, and 3 with a Circulating Fluidized Bed (“CFB”), now referred to as Unit 123. The CFB allowed SIPC to convert its fly ash system to one hundred percent dry ash handling and disposal and ended even the minimal wet fly ash discharge that had previously occurred at Marion Station.

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<sup>57</sup> Units 1, 2 and 3 were run infrequently after the installation of Unit 4.

2. Scrubber Sludge.

Unit 4 came online in 1978 and produced scrubber sludge, which was predominately calcium sulfite. The scrubber sludge was mixed with fly ash, and moved via a conveyer to the Former Landfill, which ceased accepting waste prior to October 2015 and for which SIPC has submitted a landfill closure plan to IEPA at IEPA's request (*see infra* at ~~p. 14-15~~ [15-16](#)). Former Landfill Closure Plan, Ex. 10. In 2009, the scrubber was modified to a forced oxidation system, which produced calcium sulfate, better known as gypsum. One hundred percent of the gypsum generated at Marion Station was sold as an agricultural modifier or an ingredient for cement. With the closure of Unit 4, Marion Station no longer generates scrubber sludge or gypsum.

3. Bottom Ash.

Historically, bottom ash from now-retired Units 1, 2, 3, and 4 was sluiced to Ponds 1 and 2. On information and belief, SIPC sold one hundred percent of its bottom ash to shingle manufactures, grit blasting companies, and local highway departments for more than forty years. For almost the entire lives of the ponds, the water in Ponds 1 and 2, from which bottom ash was removed, discharged to Pond 4 and, from there, through permitted Wastewater Discharge Outfall 002. Beneficial use Ponds 1 and 2 are no longer in use with the closure of Unit 4 and are undergoing closure. Ash from Unit 123's fluidized bed boiler is handled dry and beneficially used offsite.

4. Other Non-CCR Waste Streams.

Minor other non-CCR waste streams from the Marion Station, including air heater wash water and flue gas desulfurization decant excess water, were historically discharged to the former Emery Pond. Former Emery Pond was built in the late 1980s as a storm water storage structure for drainage from the adjacent plant area, including the more recent Gypsum Loadout Area. *See*

Hanson, Emery Pond Corrective Action and Selected Remedy Plan, Including GMZ Petition (Mar. 29, 2019), ~~attached as~~ Ex. 11. Process waste water discharges to former Emery Pond have ceased and any water or CCR in the former Emery Pond has been removed pursuant to closure and related plans overseen by IEPA. Former Emery Pond's closure has been conducted consistent with Part 257 ~~and Part 845~~, and although the field work was completed before adoption of Part 845, the closure was generally consistent with Part 845 as well. A new storm basin is located in the area of former Emery Pond.

**C. The Ponds Subject to This Petition.**

This Petition concerns the De Minimis Units: five current or former ponds at SIPC's Marion Generating Station—the South Fly Ash Pond, Pond 3 (including Pond 3A), Pond 6, Pond 4 and Pond B-3, which have contained only *de minimis*, if any, amounts of CCR. These current and former ponds are described in Section C.1. This Petition also addresses the Former Fly Ash Holding Units: three former fly ash ponds that closed and were dewatered decades ago and are now part of the Former Landfill, which are described below Section C.2.

1. The De Minimis Units.

A map showing the location of the De Minimis Units is attached to SIPC's May 11, 2021 Petition. Site Map, Ex. 3. As discussed below, none of the De Minimis Units receive or received meaningful direct discharges of CCR and, to the extent they contain CCR as a result of limited historic or incidental discharges, such CCR should be *de minimis* in light of historic practices. ~~As~~ In addition, as discussed ~~below~~ infra at 30–32, ~~SIPC is conducting~~ Haley & Aldrich, Inc., on behalf of SIPC, has completed an investigation of ~~these current or former ponds~~ the De Minimis Units pursuant to an investigation protocol negotiated with IEPA, ~~and SIPC expects that the results of the pond investigation will confirm that they~~ which confirmed that the De Minimis Units contain

only *de minimis* amounts of CCR ~~that~~ and thus are not the types of units that were intended to be regulated under Part 257 or Part 845, and do not pose an appreciable threat to human health or the environment warranting regulation under Part 845. See infra at 30–32; see also Pond Investigation Rep., Ex. 29.

South Fly Ash Pond – The South Fly Ash Pond was built around 1989 as a potential replacement for Pond A-1, in case one was needed. *See* IEPA Water Pollution Control Permit, No. 1989-EN-3064 (May 17, 1989), ~~attached as~~ Ex. 12. Ultimately, Pond A-1 did not need replacement and operated until 2003, as described above. The South Fly Ash Pond has historically received decant water from former Emery Pond, which has ceased since former Emery Pond stopped receiving process waste water discharges in the Fall of 2020. No fly ash, bottom ash, or scrubber sludge was ever directly sent to or placed into the South Fly Ash Pond. If the pond received any CCR throughout its life, it was *de minimis*, consisting only of any residual CCR in pond overflow or storm water.

The Pond Investigation Report confirms that the South Fly Ash Pond contains minimal sediments, with a mean sediment thickness of approximately 1.57 feet, representing approximately 11 percent of historic pond volume<sup>8</sup>. See Pond Investigation Rep., Ex. 29 at 7. That is far less than the amount of sediment present in a typical CCR surface impoundment which is used for the storage, treatment or disposal of CCR. *Id.* at 7–8 (“In Haley & Aldrich’s experience, for typical CCR impoundments, the volume of CCR materials is often a major portion (>50%) of the overall

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<sup>8</sup> As explained in the Pond Investigation report, the South Fly Ash Pond’s water level was lowered for operational reasons during the time the bathymetric survey. See Ex. 29 at 7. As a point of comparison, Haley & Aldridge also estimated sediment volume as a percentage of pond volume using the 2007 pond elevation for the South Fly Ash Pond and Pond 4, which was determined to be more representative of historical conditions. See *id.*

impoundment volume.”). Further, of that small amount of sediment, only a fraction (ranging from 10 percent to 64 percent in the sediment samples that were taken from the South Fly Ash Pond) is estimated to include CCR material. *Id.* at 14.

Pond 3 (including 3A) – Water from the South Fly Ash Pond is permitted to flow to Pond 3, then Ponds 46 and 64, before discharging through Outfall 002.<sup>69</sup> See IEPA Reissued National Pollutant Discharge Elimination System Permit, No. IL0004316 (~~Feb. 29~~February 1, 2012) (“2012 2007) (“2007 NPDES Permit”), ~~attached as~~-Ex. 13. On information and belief, Pond 3 may have received some overflow from the Initial Fly Ash Holding Area and later the Fly Ash Holding Area Extension. See IEPA Water Pollution Control Permit, No. 1973-ED-1343-OP (June 1973), ~~attached as~~-Ex. 14. Pond 3 also received storm water runoff, coal pile runoff, and water from the plant’s floor drains. Later, by 1982, a berm was built within Pond 3 to separate Pond 3 from the pond now known as Pond 3A, ~~which may have received some overflow from the Former Fly Ash Holding Units.~~

Pond 3 has been cleaned to remove pond sediment and debris, including vegetation, twice—once in 2006 and again in 2011. Pond 3A was drained of water and cleaned of debris and sediment in 2014. Those cleanings would also have removed any CCR that may have collected in the pond from historic operations. Starting around 2007, SIPC built a berm around Pond 3 to prevent landfill runoff from reaching that pond. Since the ~~ponds~~pond’s last cleanings, any CCR that has entered Pond 3 or Pond 3A is *de minimis*, such as through storm water, potential overflow from South Fly Ash Pond, or air ~~disposition~~deposition; no ash has been placed in the pond for treatment, storage, or disposal.

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<sup>69</sup> SIPC timely applied for NPDES permit renewal and is currently working with IEPA ~~to update the application prior to~~ on permit reissuance.

The Pond Investigation Report confirms that Pond 3 (including 3A) contains minimal sediments, with a mean sediment thickness of approximately 1.38 feet in Pond 3 and 1.45 feet in Pond 3A, representing approximately 9 percent and 13.3 percent of pond volume, respectively. See Pond Investigation Rep., Ex. 29 at 7. That is far less than the amount of sediment present in a typical CCR surface impoundment which is used for the storage, treatment or disposal of CCR. *Id.* at 7–8 (“In Haley & Aldrich’s experience, for typical CCR impoundments, the volume of CCR materials is often a major portion (>50%) of the overall impoundment volume.”). Further, of that small amount of sediment, only a fraction (ranging from 20 percent to 34 percent in the samples that were taken from Pond 3/3A) is estimated to include CCR material. *Id.* at 14.

Pond 6 – Pond 6 was developed to manage storm water associated with the Former Landfill at the facility and grew within a berm built for runoff capture that was addressed in a 1982 construction permit. Originally, Pond 6 discharged through Outfall 001. In or around 1993, in accordance with another IEPA-issued permit, SIPC extended Pond 6 and installed pumps to pump water from Pond 6 to Pond 4, where it then discharged through Outfall 002 to Little Saline Creek. See 1993 Letter, Ex. 8. Outfall 001 was subsequently eliminated. Any CCR discharges Pond 6 received throughout its life were *de minimis*, consisting of incidental amounts of CCR inflow from other ponds and storm water runoff. Pond 6 was not designed to accumulate CCR and liquids or to treat, store, or dispose of CCR.

The Pond Investigation Report confirms that Pond 6 contains minimal sediments, with a mean sediment thickness of approximately 0.84 feet, representing approximately 8.2 percent of pond volume. See Pond Investigation Rep., Ex. 29 at 7. That is far less than the amount of sediment present in a typical CCR surface impoundment which is used for the storage, treatment or disposal of CCR. *Id.* at 7–8 (“In Haley & Aldrich’s experience, for typical CCR impoundments,

the volume of CCR materials is often a major portion (>50%) of the overall impoundment volume.”). Further, of that small amount of sediment, only a fraction (ranging from 30 percent to 53 percent in the samples that were taken from Pond 6) is estimated to include CCR material. *Id.* at 14.

Moving forward, Pond 6 is expected to receive non-CCR runoff from the Former Landfill, and SIPC plans to manage Pond 6 in conjunction with the closure and post-closure management requirements of Part 811 with IEPA oversight.

Pond 4 – Pond 4 has primarily served two purposes at the facility: to receive decant water from Ponds 1 and 2, when they were in operation before Unit 4’s shutdown, and to receive coal pile runoff. Pond 4 currently receives overflow from Pond 6 and discharges through Outfall 002 into the Little Saline Creek.

During an outage in 2012, Pond 4 was cleaned down to the clay, removing plant debris and any ash and coal fines that may be collected in the pond. Since its cleaning in 2012, any CCR that has entered Pond 4 is *de minimis*, such as through storm water, overflow from Pond 6, or air deposition.

The Pond Investigation Report confirms that Pond 4 contains minimal sediments, with a mean sediment thickness of approximately 1.67 feet, representing approximately 10.9 percent of pond volume. See Pond Investigation Rep., Ex. 29 at 7. That is far less than the amount of sediment present in a typical CCR surface impoundment which is used for the storage, treatment or disposal of CCR. *Id.* at 7–8 (“In Haley & Aldrich’s experience, for typical CCR impoundments, the volume of CCR materials is often a major portion (>50%) of the overall impoundment volume.”). Further, of that small amount of sediment, only a fraction (ranging from 25 percent to 68 percent in the samples that were taken from Pond 4) is estimated to include CCR material. *Id.* at 14.

Pond B-3 – Pond B-3 was built by 1985 and was used primarily as a secondary pond to Pond A-1. Pond A-1 received some fly ash (as described above) and coal pile runoff until 2003, at which time all fly ash was handled dry and the runoff was directed to Pond 4. During periodic, intermittent outages of Pond A-1, Pond B-3 may have received some discharges of fly ash from Units 1, 2, and 3 prior to their shut down in 2003. On information and belief, Pond A-1 was taken offline at most ~~3-4~~ three to four times between 1985 and 2003, and each of those outages lasted approximately ~~2~~ two weeks. Most (or all) of those outages would have occurred during boiler shutdowns, when Marion Station was operating at less than full capacity and generating less ash. Accordingly, any fly ash sluiced to Pond B-3 during these intermittent outages would have been minimal.

In 2017, Pond B-3 was cleaned out down to the clay and has not held water since that time. A BTU analysis showed the material removed had a heat content comparable to coal—not CCR—and at least a portion of the material was consumed for energy production. ~~Analysis of the remaining sediment in the Pond B-3 met Class I groundwater standards.~~

Because former Pond B-3 no longer holds any significant amount of water, except in a small area of the former pond where storm water may collect after storms before drainage and evaporation, it was not able to be included as part of the bathymetric survey conducted in conjunction with the pond investigation. However, Haley & Aldridge performed an analysis of two samples taken of a berm associated with former Pond B-3 in conjunction with the pond

[investigation report, as well as nine samples taken in 2017, and concluded that those samples contained little, if any, CCR material.<sup>10</sup> See Pond Investigation Rep., Ex. 29 at 12.](#)

2. The Former Fly Ash Holding Units.

As discussed below, the Former Fly Ash Holding Units no longer contain water and are covered by the Former Landfill (or, in the case of the Fly Ash Holding Area Extension, a combination of dry CCR disposed in the landfill area, as well as sediments and other materials cleaned out from the pond system). The Former Fly Ash Holding Units were located within the green area on the [site map](#) attached ~~site map~~ [to SIPC's May 11, 2021 original Petition](#). Site Map, Ex. 3.

The Initial Fly Ash Holding Area – On information and belief, the Initial Fly Ash Holding Area received wet fly ash that was collected from Units 1, 2, and 3 until approximately 1977. In October 1977, IEPA issued a permit to SIPC for the Replacement Fly Ash Holding Area with a condition that required the Initial Fly Ash Holding Area to be abandoned and covered. *See* 1977 Permit, Ex. 5. In the early 1990s, plant personnel observed that while storm water might on ~~occasions~~ [occasion](#) collect for short periods after precipitation, the Initial Fly Ash Holding Area contained no pond or other area that continuously held water. Further, as of that time, the area was covered by a combination of the Former Landfill and a soil/vegetation cover. Based upon these area observations and in light of the “abandon and cover” permit condition, SIPC believes that the area was covered before the 1990s pursuant to the permit condition.

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<sup>10</sup> [Hanson Engineering, which performed the bathymetric survey and collected the data analyzed in the Pond Investigation Report, attempted to take a soil boring from the area of former Pond B-3 but was unable to access the agreed-upon IEPA sampling location. See Pond Investigation Rep. Ex. 29 at 6.](#)

The Replacement Fly Ash Holding Area – In October 1977, IEPA issued a permit to SIPC to construct the Replacement Fly Ash Holding Area to the north of Pond 2. *See* 1977 Permit, Ex. 5. On information and belief, the Replacement Fly Ash Holding Area likely received spent water from the hydroveyer system, which likely contained *de minimis* amounts of fly ash. The Replacement Fly Ash Holding Area also may have received discharges of fly ash from Units 1, 2, and 3 prior to the construction of Pond A-1 in 1985. On information and belief, the Replacement Fly Ash Holding Area may have also been designated to receive sluiced fly ash from Unit 4 during intermittent emergencies in which the fly ash was unable to be conveyed to the Former Landfill. It is unknown whether the Replacement Fly Ash Holding Area ever received sluiced fly ash from Unit 4 during emergencies. By the early 1990s, the Replacement Fly Ash Holding Area had been drained of water and was covered by the Former Landfill.

The Fly Ash Holding Area Extension – In or around 1982, SIPC received a permit from IEPA to construct the Fly Ash Holding Area Extension to the west of the Replacement Fly Ash Holding Area and build a berm around a portion of the Former Landfill area that received fly ash and scrubber sludge from Pond 4. *See* 1981 Permit, Ex. 7. The extent to which the Fly Ash Holding Area Extension actually received any fly ash is unknown. By the early 1990s, the Fly Ash Holding Area Extension also did not hold water and was covered in part by the Former Landfill. The remaining area was covered by soil and other material from the plant, including debris cleaned from the pond system.

All three Former Fly Ash Holding Units are in the area of the Former Landfill. *See* Site Map, Ex. 3. These units were included in the landfill area and thus, were of part of the Former Landfill operation for decades before the landfill ceased operating in 2015. At least most of the area that at one time encompassed these units when operating was covered by 1991, and the entire

area was covered before October 2015 by landfill material, which included dry CCR, soil, and sediments. As discussed above, use of the Former Landfill is believed to have started around 1978 for scrubber sludge and fly ash disposal. SIPC estimates that the maximum volume of scrubber sludge and ash deposited in the Former Landfill was approximately 1.5 million cubic yards.

In September of 1992, SIPC submitted to IEPA an Initial Facility Report (“IFR”) for the Former Landfill. *See* IEPA Initial Facility Report – for On-Site Facilities (Sept. 18, 1992), ~~attached as~~ Ex. 15. In 1993, SIPC installed groundwater monitoring wells around the Former Landfill in accordance with Illinois landfill regulations. After that time, SIPC submitted annual groundwater monitoring reports to IEPA pursuant to the landfill regulations. Because the Former Landfill did not receive CCR after the effective date of 40 C.F.R. Part 257, the landfill is not subject to the requirements of Part 257. *See* 40 C.F.R. § 257.50(d).

As discussed below, in March 2020, IEPA issued a Violation Notice (“VN”) for the Former Landfill, alleging violations of Section 21 of the Illinois Environmental Protection Act (“the Act”), the Illinois landfill regulations, and groundwater quality standards, and listing several remedial actions SIPC could take to resolve the alleged violations. *See* IEPA Violation Notice L-2020-00035 (Mar. 20, 2020) (“2020 Landfill VN”), ~~attached as~~ Ex. 16. In December 2020, and in response to IEPA’s request, SIPC submitted a landfill closure plan to IEPA consistent with the Illinois landfill regulations for closure cited by IEPA in the landfill VN (2020 Landfill VN, Ex. 16), and since that time, SIPC has negotiated some elements of that plan with IEPA. SIPC is ready to proceed with that landfill closure plan as soon as it receives IEPA’s approval.

As set forth in the proposed landfill closure plan, SIPC intends to close the Former Landfill in accordance with the requirements of 35 Ill. Admin. Code § 811.314. At a minimum, the final proposed cover system for the Former Landfill will consist of a conventional soil cap with a

minimum thickness of 6 feet (3-foot low-permeability layer overlain by a 3-foot final protective layer) or an alternate geosynthetic cap with a minimum thickness of 4 feet consisting from the bottom up of the following: 1-foot thick low-permeability layer, 40-mil linear low-density polyethylene (LLDPE) geomembrane, a double-sided geocomposite drainage layer and a 3-foot final protective layer. The proposed Former Landfill cover includes the area that once contained the Former Fly Ash Holding Units. *See* Former Landfill Closure Plan, Ex. 10, Figure B-05.

Despite issuing a VN to SIPC for alleged violations of landfill regulations, IEPA now appears to argue—apparently based on its proximity to the Former Fly Ash Holding Units—that the Former Landfill ~~is subject to Part 845 (even though Part 845~~ which has been treated by SIPC and regulators as a landfill for more than thirty years) meets the definition of a CCR surface impoundment, “a natural topographic depression, man-made excavation, or diked area, which is designed to hold an accumulation of CCR and liquids, and the surface impoundment treats, stores, or disposes of CCR,” under a rule that became effective as of April 21, 2021 (and which explicitly exempts CCR landfills from coverage). As discussed *infra* at Part III.B, IEPA’s position is incorrect. In addition, this development has delayed finalization and execution of SIPC’s proposed landfill closure plan.

**D. The Federal CCR Rule and the WIIN Act.**

CCR disposal is regulated at the federal level pursuant to Part 257, which was promulgated on April 17, 2015. *See* Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities, 80 Fed. Reg. 21,302 (April 17, 2015) (“Final Rule”), attached in relevant part as Updated Ex. 17. Part 257 was promulgated pursuant to the federal Resource Conservation and Recovery Act, Subtitle D and includes comprehensive technical requirements for regulated CCR landfills and CCR surface impoundments. Part 257 defines a

“CCR surface impoundment” as “a natural topographic depression, man-made excavation, or diked area, which is designed to hold an accumulation of CCR and liquids, and the unit treats, stores, or disposes of CCR.” 40 C.F.R. § 257.53.

In December 2016, the President signed the Water Infrastructure Improvements for the Nation Act (the “WIIN Act”), Pub. L. No 114-322 (2016). The WIIN Act authorized states to adopt permit programs that, upon approval by the U.S. Environmental Protection Agency (U.S. EPA), may operate in lieu of Part 257. 42 U.S.C. § 6945(d)(1)(B). State programs must be as protective as Part 257. *Id.* § 6945(d)(1)(B)(ii). The WIIN Act further allows U.S. EPA to enforce violations of the Part 257 and requires U.S. EPA to develop a federal permitting program for CCR surface impoundments that would apply in states that elect not to seek approval of a state CCR permitting program. 42 U.S.C. § 6945(d)(2)(B).

**E. The Illinois CCR Act and Part 845.**

On July 30, 2019, the Illinois Legislature adopted the Illinois Coal Ash Pollution Prevention Act (“Illinois CCR Act”). 415 Ill. Comp. Stat. 5/22.59. In the findings section of that Illinois CCR Act, the Legislature stated that “CCR generated by the electric generating industry has caused groundwater contamination and other forms of pollution at active and inactive plants throughout this State,” and “environmental laws should be supplemented to ensure consistent, responsible regulation of all existing CCR surface impoundments[.]”<sup>71</sup> 415 Ill. Comp. Stat 5/22.59(a)(3), (4).

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<sup>71</sup> Prior to passage of the Illinois CCR Act, most CCR surface impoundments in Illinois were regulated as waste water treatment units. See R 2020-019, *In the Matter of Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments: Proposed new 35 Ill. Adm. Code 845*, IEPA’s Statement of Reasons (Mar. 30, 2020) (“IEPA Statement of Reasons”), ~~attached as~~-Ex. 18 at 4.

The Illinois CCR Act copied Part 257's definition of a CCR surface impoundment: "a natural topographic depression, man-made excavation, or diked area, which is designed to hold an accumulation of CCR and liquids, and the unit treats, stores, or disposes of CCR." 415 Ill. Comp. Stat. 5/3.143. A pond that does not satisfy this definition is not subject to Part 257 or the Illinois CCR Act.

The Illinois CCR Act prohibits any person from allowing the discharge of contaminants from a CCR surface impoundment to the environment so as to cause a violation of the Illinois CCR Act; requires owner and operators of CCR surface impoundments to obtain construction permits from IEPA; requires IEPA approval prior to closing any CCR surface impoundment; and requires post-closure financial assurance for closed CCR surface impoundments.<sup>812</sup> 415 Ill. Comp. Stat. 5/22.59(b), (d), (f).

The Illinois CCR Act also set forth a fee regime, pursuant to which covered CCR surface impoundment owners and operators must pay initial and annual fees to IEPA for certain closed CCR surface impoundments, as well as those that have not completed closure. 415 Ill. Comp. Stat. 5/22.59(j). The Illinois CCR Act also required the Board to adopt rules governing CCR surface impoundments that must be at least as protective and comprehensive as Part 257. *See* 415 Ill. Comp. Stat. 5/22.59(g).

**F. The Part 845 Rulemaking.**

On March 30, 2020, IEPA proposed regulations titled "Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments" to be included as Part 845 of Illinois

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<sup>812</sup> The Illinois CCR Act's financial assurance requirements do not apply to SIPC because it is a not-for-profit electric cooperative. 415 Ill. Comp. Stat. 5/22.59(f).

Administrative Code's Title 35. According to the Statement of Reasons issued with the proposed regulations,

The foremost purpose and effect of this regulatory proposal is to fulfill Illinois EPA's statutory obligation to propose CCR rules consistent with the requirements in Section 22.59(g). The second purpose and effect of this regulatory proposal is to protect the groundwater within the state of Illinois. . . . Groundwater has an essential and pervasive role in the social and economic well-being of Illinois, and is important to the vitality, health, safety, and welfare of its citizens. This rule has been developed based on the goals above and the principle that groundwater resources should be utilized for beneficial and legitimate purposes. *See* 415 ILCS 55/1 *et seq.* ***Its purpose is to prevent waste and degradation of Illinois' groundwater.*** The proposed rule establishes a framework to manage the underground water resource to allow for maximum benefit of the State.

IEPA Statement of Reasons, Ex. 18 at 10 (emphasis added)<sup>913</sup>. IEPA's Statement of Reasons attached a list of "power generating facilities with CCR surface impoundments [that] may be affected by Illinois EPA's proposed rule." *Id.* at 36–37. IEPA indicated, incorrectly, on that list that Marion Station includes nine CCR surface impoundments. *Id.* at 37.

The Board held two sets of hearings and received 138 written public comments on the proposed rules. SIPC submitted public comments to the Board on September 25, 2020. In those comments, SIPC stated that only one of the units at Marion Station of the nine ponds then identified by IEPA—former Emery Pond (which is not at issue in this Petition)—is actually a CCR surface impoundment as defined in the then-proposed regulations, the Illinois CCR Act, and Part 257. *See* R 2020-019, *In the Matter of Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments: Proposed new 35 Ill. Adm. Code 845*, SIPC Comments to Illinois Pollution Control Board (Sept. 25, 2020), ~~attached as~~ Ex. 19.

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<sup>913</sup> For all citations to R 2020-019 rulemaking materials—except Board orders and the final Part 845—we ~~have~~ provided excerpted documents including only the relevant and cited page numbers, which were attached to SIPC's May 11, 2021 Petition. The page number cited here, and for all R 2020-019 materials, is the page number of the document, not the page number of the exhibit.

**G. The Board's Opinion and the Final Rule.**

The Board issued its Second Notice Opinion and Order (“Second Notice Opinion”) on February 4, 2021. The Second Notice Opinion largely adopted IEPA’s proposed rules, including its definition of “CCR surface impoundment” as a “natural topographic depression, man-made excavation, or diked area, which is designed to hold an accumulation of CCR and liquids, and the surface impoundment treats, stores, or disposes of CCR.” R 2020-019, *In the Matter of Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments: Proposed new 35 Ill. Adm. Code 845*, Illinois Pollution Control Board’s Second Notice Opinion and Order, 7 at 11 (Feb. 4, 2021) (“Second Notice Opinion and Order”); *see also* 35 Ill. Admin. Code § 845.120. Thus the Board, like the legislature in the Illinois CCR Act, adopted Part 257’s definition of “CCR surface impoundment.”

The final Part 845 also adopted the following definitions that are relevant to the instant petition:

“Existing CCR surface impoundment” means a CCR surface impoundment in which CCR is placed both before and after October 19, 2015, or for which construction started before commenced prior to October 19, 2015 and in which CCR is placed on or after October 19, 2015. A CCR surface impoundment has started commenced construction if the owner or operator has obtained the federal, State, and local approvals or permits necessary to begin physical construction and a continuous on-site, physical construction program had begun before prior to October 19, 2015.

...

“Inactive CCR surface impoundment” means a CCR surface impoundment in which CCR was placed before but not after October 19, 2015 and still contains CCR on or after October 19, 2015. Inactive CCR surface impoundments may be located at an active facility or inactive facility.

35 Ill. Admin. Code § 845.120. The Board declined industry’s request to adopt a new definition of *de minimis* units in Part 845, at least in part because it did not want to “create” new

language that was not in Part 257, which could create inconsistency. Second Notice Opinion and Order at 14–15. In so doing, the Board appeared to recognize that such units may not be subject to Part 845, just as such units are not subject to Part 257, because they are not “CCR surface impoundments.” The Second Notice Opinion suggested that there is authority to determine such units are not covered CCR surface impoundments subject to Part 845, and that operators of *de minimis* units could—if necessary—petition for a variance or an adjusted standard from Part 845 if it disagrees with how the IEPA characterized a unit:

Regulatory relief mechanisms are available to owners and operators when they disagree with an IEPA determination concerning whether a unit is a CCR surface impoundment. In those instances, an owner or operator may seek an adjusted standard or a variance from the Board

*Id.* at 14.

Following approval by the Joint Committee on Administrative Rules (“JCAR”), the Board adopted Part 845 as final on April 15, 2021, with an effective date of April 21, 2021. *See* R 2020-019, *In the Matter of Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments: Proposed new 35 Ill. Adm. Code 845*, Illinois Pollution Control Board’s Final Order Adopted Rule (Apr. 15, 2021) (“Final Order”).

#### **H. The Violation Notices**

SIPC has received, over the course of the past three years, three VNs from IEPA that are relevant to this Petition.<sup>+014</sup>

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<sup>+014</sup> By a letter dated July 3, 2018, IEPA also issued a VN to SIPC pursuant to Section 31(a)(1) of the Act (Violation Notice No. W-2018-00041), alleging violations of groundwater quality standards for various constituents based on groundwater sampling at monitoring wells surrounding or near former Emery Pond. As discussed *supra*, SIPC closed former Emery Pond by removal pursuant to an IEPA-approved closure compliant with Part 257 ~~and Part 845~~, and it is not included in this Petition.

1. The Pond VNs.

On July 28, 2020, IEPA issued VN No. W-2020-00046 (the “Initial Fee VN”) to SIPC alleging that SIPC failed to pay initial fees for current and former ponds at Marion Station that IEPA alleged were CCR surface impoundments that had not completed closure by the effective date of the Illinois CCR Act. *See* IEPA Violation Notice W-2020-00046 (July 28, 2020), ~~attached as~~-Ex. 20. Specifically, the VN alleged that SIPC had not paid initial fees for Ponds 1, 2, 3, 4, 6, A-1, B-3, and South Fly Ash Pond. Relevant to this Petition, SIPC explained in response to IEPA’s VN that Ponds 3, 4, 6, B-3, and South Fly Ash Pond do not meet the definition of a “CCR surface impoundment” under the Illinois CCR Act, including because they are *de minimis* ponds. SIPC proposed, but IEPA rejected, terms for a compliance commitment agreement to resolve the alleged violations. For the three ponds, all no longer in operation and at issue in the VN but not this Petition—Ponds 1, 2, and A-1, SIPC denies they are regulated CCR surface impoundments<sup>415</sup> but is still discussing them with IEPA.

On December 16, 2020, IEPA issued another VN, No. W-2020-00087 (the “Annual Fee VN”), this time alleging that SIPC failed to pay annual fees as required by the Act for the same current and former ponds at issue in VN No. W-2020-00046. *See* IEPA Violation Notice W-2020-00087 (Dec. 16, 2020), ~~attached as~~-Ex. 21. Again, SIPC responded, denying the allegations but proposing terms for a compliance commitment agreement to resolve the alleged violations. IEPA again rejected SIPC’s proposal. SIPC remains in active negotiations with IEPA regarding the allegations in the Annual Fee VN.

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<sup>415</sup> SIPC has explained to IEPA in response to the VN why the other three ponds are not regulated CCR surface impoundments: former Ponds 1 and 2 temporarily contained, when in operation, beneficially used CCR, as discussed above, and water, and CCR was removed from Pond A-1 before October 2015.

As discussed *infra* at Part III.A, SIPC believes the history of the De Minimis Units, alone, makes clear that they are not CCR surface impoundments and should not be subject to the requirements of Part 845. In addition, IEPA requested, and SIPC agreed, that SIPC complete a pond investigation pursuant to an agreed protocol designed to yield information related to whether the five De Minimis Units at issue in this Petition qualify as excluded *de minimis* units. The investigation is ~~was~~ intended to gather information related to the extent and composition of the sediments in the De Minimis Units. ~~That pond investigation is ongoing, and SIPC plans to supplement its Petition to include the results of that investigation once it is complete and the related report has been generated and provided to IEPA in connection with the VN proceedings. As discussed *infra* at Part III.A, SIPC believes the history of the De Minimis Units, alone, makes clear that they are not CCR surface impoundments and should not be subject to the requirements of Part 845. SIPC anticipates that the results of the ongoing pond investigation will support that conclusion.~~

The pond investigation involved (1) completion of a bathymetric survey to determine the amount of sediments below water in the De Minimis Units (with the exception of former Pond B-3, which no longer holds water); and (2) analysis of pond sediments to determine whether and to what extent they contain CCR. At the request of IEPA, soil borings were also taken from the berms associated with Ponds 3 (including 3A), B-3, and 4.<sup>16</sup> Field work and data collection was completed by Hanson Engineering, Inc. Haley & Aldridge analyzed the results and authored the report. SIPC provided an initial version of that report to IEPA on August 6, 2021. H&A

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<sup>16</sup> IEPA also requested that borings be taken from former Pond A-1 (which is not part of this Petition) and former Pond B-3. As discussed *supra* at 13, SIPC was unable to collect either of those borings because bedrock was encountered at the surface of former Pond A-1 (confirming no CCR present) and the designated boring area of Pond B-3 was inaccessible. *See* Pond Investigation Rep., Ex. 29 at 6.

subsequently updated the report following a call with IEPA, including to address questions raised by IEPA, and that updated version is the version attached as Ex. 29.

As discussed *supra* at Part C.1., the results of the pond investigation confirm that the De Minimis Units are not CCR surface impoundments under Part 845 (or under Part 257). As discussed *infra*, the results of that investigation also confirm that the De Minimis Units do not have a material adverse effect on groundwater at Marion Station. In short, the Pond Investigation Report confirms that (1) only a fraction of the relatively thin sediment layer present in the De Minimis Units is CCR material; (2) the De Minimis Units are the type of “de minimis units” the U.S. EPA explicitly excluded from regulation under Part 257 (*see infra* at Part A.I.); and (3) regulating the De Minimis Units under Part 845 is not necessary for the protection of human health or the environment.

2. The Landfill VN.

As discussed *supra* at Part II.C.2, by letter dated March 20, 2020, IEPA issued a VN to SIPC pursuant to Section 31(a)(1) of the Act, No. L-2020-00035 (the “Landfill VN”), alleging SIPC’s failure to comply with various requirements of Illinois landfill regulations in its operation and management of the Former Landfill. *See* 2020 Landfill VN, Ex. 16. Specifically, IEPA alleged violations of Part 811’s intermediate and final cover requirements, Parts 815 and 812’s requirements for filing an IFR, Part 811’s requirements related to final slope and stabilization, and Part 811 groundwater monitoring requirements. Nowhere in that VN did IEPA allege violations of—or even reference—Part 257, the Illinois CCR Act, or Part 845.

SIPC denied the allegations in the VN but provided certain requested information to IEPA and, in December 2020, submitted a proposed plan to close the Former Landfill in compliance with Parts 811 and 815. In March 2021, nearly three months after receiving SIPC’s proposed

landfill closure plan, an IEPA representative for the first time informed SIPC of a new position that the Former Landfill was regulated by and required to close pursuant to Part 845, rather than pursuant to the Illinois landfill regulations under which the Former Landfill had been operating for decades (and under which IEPA had issued the VN). [Subsequently, IEPA withdrew the Landfill VN via a letter dated May 6, 2021.](#) As set forth herein, SIPC disagrees with IEPA's new position ~~and remains in negotiations with IEPA regarding a timely and protective landfill closure.~~

**I. Requested Relief**

Through this petition, SIPC requests a finding of inapplicability from the Part 845 requirements for the De Minimis Units and the Former Fly Ash Holding Units or, in the alternative, an adjusted standard exempting the De Minimis Units and the Former Fly Ash Holding Units from the requirements of Part 845.

**III. REQUEST FOR FINDING OF INAPPLICABILITY.**

The Board has recognized that a Petition for an adjusted standard can, in the alternative, seek a finding of inapplicability from the regulation at issue. *See AS 2009-003, In the Matter of Petition of Westwood Lands, Inc. for an Adjusted Standard from Portions of 35 Ill. Adm. Code 807.14 and 35 Ill. Adm. Code 807.104 and 35 Ill. Adm. Code 810.103 or, in the Alternative, a Finding of Inapplicability*, Opinion and Order of the Board (Oct. 7, 2010) (granting request for a finding of inapplicability from solid waste regulations); *AS 2004-002, In the Matter of Petition of Jo'Lyn Corporation and Falcon Waste and Recycling Inc. for an Adjusted Standard from 35 Ill. Adm. Code 807.103 and 35 Ill. Adm. Code 810.103, or in the Alternative, a Finding of Inapplicability*, Opinion and Order of the Board (Apr. 7, 2004) (granting a request for a finding of inapplicability from solid waste regulations). Such relief is appropriate here on the basis that none of the units at issue are CCR surface impoundments subject to Part 845, as set forth further below.

**A. The De Minimis Units Are Not Subject to Part 845.**

Part 845 is clear that it only regulates “CCR surface impoundments.” The regulation’s “Scope and Purpose” section specifies that Part 845 applies to “owners and operators of new and existing CCR surface impoundments,” 35 Ill. Admin. Code § 845.100(a), and “inactive CCR surface impoundments at active and inactive electric utilities or independent power producers.” *Id.* § 845.100(b). As discussed below, none of the units at issue are CCR surface impoundments, new or existing CCR surface impoundments, or inactive CCR surface impoundments, and therefore, none of the current and former ponds at issue are covered by Part 845.

**1. The De Minimis Units Are Not “CCR Surface Impoundments.”**

As discussed below, the De Minimis Units are not “CCR surface impoundments” as defined in Part 257 or Part 845. Both Part 257 and Part 845 define a CCR surface impoundment as “a natural topographic depression, man-made excavation, or diked area, which *is* designed to hold an accumulation of CCR and liquids, *and* the unit<sup>1217</sup> treats, stores, or disposes of CCR.” 40 C.F.R. § 257.53 (emphasis added); see also 35 Ill. Admin. Code § 845.120 ~~(emphasis added)~~. None of the De Minimis Ponds meet this two-part definition, which focuses on the **present** function of an impoundment as of the effective date of Part 257.<sup>1318</sup>

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<sup>1217</sup> Part 845 substitutes “surface impoundment” for “unit,” but this works no substantive change. 35 Ill. Admin. Code § 845.120

<sup>1318</sup> Part 257, upon promulgation, did not impose any requirements on any CCR surface impoundments that no longer existed or had closed before the rule’s effective date—i.e., those that no longer contained water and could no longer impound liquid. Final Rule, Ex. 17 at 21,343. Whether a unit met the definition of CCR surface impoundment depended on what waste was managed in the unit *as of October 19, 2015*. The court’s decision in *Util. Solid Waste Activities Grp. v. Env’tl. Prot. Agency*, 901 F.3d 414 (D.C. Cir. 2018) (“*USWAG*”) reversed and remanded the federal rules to the U.S. EPA to regulate any ash pond that was a “legacy pond,” which is an inactive CCR surface impoundment at a closed or no longer operating facility. The *USWAG* decision described the risks posed by legacy ponds as risks associated with open, wet ponds that were not closed. See *USWAG*, 901 F.2d at 432–33. The *USWAG* decision’s remand did **not** speak to ponds at active facilities that contained *de minimis* CCR or could no longer contain water and impound

As discussed above, the De Minimis Units are not presently designed to—and do not—hold a necessary accumulation of CCR and liquids. To the extent they ever did, they have not done so since long before October 19, 2015. Accordingly, the De Minimis Units do not fall within the first part of the definition of CCR surface impoundment. And none of the De Minimis Units currently treat, store, or dispose of CCR, and (to the extent they ever did) have not done so since October 19, 2015, as required by the second part of the definition of CCR surface impoundment. The De Minimis Units therefore fall outside the plain language of the definition of “CCR surface impoundment” and, consequently, Part 845.

The fact that certain of the De Minimis Units *may* have received historic, largely indirect, discharges of CCR does not bring them within the definition of a “CCR surface impoundment.” To the contrary, both the history and the current condition of the De Minimis Units ~~makes~~ make clear that they are ~~the~~ precisely the type of *de minimis* units that the U.S. EPA intended to exclude from the definition of CCR surface impoundment in Part 257 and which, accordingly, should also be excluded from Part 845 under the same definition.

In its preamble to the Final Rule, U.S. EPA stated that

The Agency received many comments on the proposed definition of CCR surface impoundment. The majority of commenters argued that the definition was overly broad and would inappropriately capture surface impoundments that are not designed to hold an accumulation of CCR. Commenters were concerned that the proposed definition could be interpreted to include downstream secondary and tertiary surface impoundments, such as polishing, cooling, wastewater and holding ponds that receive only *de minimis* amounts of CCR.

Final Rule, Updated Ex. 17 at 21,357.

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liquid as of the effective date of the rule. Accordingly, the *USWAG* decision did not order U.S. EPA to regulate units like the De Minimis Units or the Former Fly Ash Holding Units.

In response to those concerns, U.S. EPA reviewed the risk assessment on which Part 257 was based “to determine the characteristics of the surface impoundments that are the source of the risks the rule seeks to address.” *Id.*

Specifically, these are units that contain a large amount of CCR managed with water, under a hydraulic head that promotes the rapid leaching of contaminants. . . . EPA agrees with commenters that ***units containing only truly “de minimis” levels of CCR are unlikely to present the significant risks this rule is intended to address.***

*Id.* (emphasis added).

Accordingly, U.S. EPA amended the definition of CCR surface impoundment in the Final Rule “to clarify the types of units that are covered by the rule”: “a natural topographic depression, man-made excavation, or diked area, which *is* designed to hold an accumulation of CCR and liquids, ***and the unit treats, stores, or disposes of CCR.***” *Id.* (emphasis added). The intent of the amendment was to implement U.S. EPA’s determination, as described in Part 257’s preamble, that *de minimis* units would be **excluded** from Part 257 requirements. U.S. EPA’s amended definition is, as noted above, the same definition used in Part 845. *See* 35 Ill. Admin. Code § 845.120.

In making the change, U.S. EPA noted that it “agrees with commenters that relying solely on the criterion from the proposed rule that the unit be designed to accumulate CCR could inadvertently capture units that present significantly lower risks, such as process water or cooling water ponds, because, although they will accumulate any trace amounts of CCR that are present, they will not contain the significant quantities that give rise to the risks modeled in EPA’s assessment. By contrast, units that are designed to hold an accumulation of CCR and in which treatment, storage, or disposal occurs will contain substantial amounts of CCR and consequently are a potentially significant source of contaminants.” Final Rule, [Updated](#) Ex. 17 at 21,357.

The Illinois CCR Act and Part 845 both incorporate Part 257's definition of "CCR surface impoundment," with the amended language that implemented EPA's determination that *de minimis* units would not be considered regulated surface impoundments. Thus, Part 845 and the Illinois CCR Act do not apply to *de minimis* units.

The Board declined to "create" a new definition of "*de minimis*," as it is not expressly defined in Part 257, but that decision did not mean that *de minimis* units would be covered under Part 845. Second Notice Opinion and Order at 14–15. Indeed, that decision was based at least in part on concerns about assuring conformity with U.S. EPA's rule. *Id.* at 15. And Part 257 does not apply to *de minimis* units as such units are described by U.S. EPA, including in the Preamble to its final CCR rule. *See* Final Rule, [Updated](#) Ex. 17 at 21,357. Consistently, the Board also implicitly recognized in its discussion of defining *de minimis* units that IEPA might make decisions about whether a unit qualifies as an excluded *de minimis* unit, and, if a company disagreed, it could chose to seek relief from the Board, including, for example, an adjusted standard. Second Notice Opinion and Order at 14. IEPA, and the Board, may determine that a unit is *de minimis* and thus not regulated because the regulations do not apply to such units under the identical "CCR surface impoundment" definitions in Part 257 and Part 845. Here, for the reasons set forth below, SIPC asks the Board in the first instance<sup>1419</sup> to determine that the De Minimis Units are not regulated CCR surface impoundments.

~~The~~ [Both the Pond Investigation Report and the](#) history of the De Minimis Units outlined above shows that they do not "contain a large amount of CCR managed with water, under a hydraulic head that promotes the rapid leaching of contaminants." Final Rule, [Updated](#) Ex. 17 at

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<sup>1419</sup> As set forth below, if the Board denies this request, SIPC asks the Board for an adjusted standard with respect to the De Minimis Units.

21,357; [Pond Investigation Rep., Ex. 29](#). To the extent any of the De Minimis Units ever received discharges of CCR, the discharges were mostly indirect, either from pond overflow or process waste water. The only De Minimis Unit that is known to have received direct wastewater discharges of CCR—Pond B-3<sup>1520</sup>—likely only did so for short periods of time, has not received any CCR for decades, and is no longer able to contain water. *See supra* at Part II.C.1. Accordingly, none of the ponds at issue ever contained “significant quantities” or “substantial amounts” of CCR. Further, all of the De Minimis Units have been cleaned of debris since Marion Station switched to fully dry handling of fly ash, and those cleanings would have removed any CCR that would have accumulated in them as a result of historic operations. As a result, the De Minimis Units simply do not present the “significant risks” Part 257, and Part 845, are intended to address.

[This conclusion is bolstered by the results and analysis set forth in the Pond Investigation Report. As summarized in that report, Haley & Aldridge reviewed extensive information relating to the De Minimis Units, including bathymetric survey results, results of analyses of pond sediments, and results of a polarized light microscopy \(“PLM”\) analyses, which characterize the fraction of CCR in sediment samples. Based on that information, Haley & Aldridge determined that the De Minimis Units contain on average less than 2 feet of total sediments. Of that less than two feet, Haley & Aldridge determined that the average fraction of CCR materials in the De Minimis Units was approximately 40 percent. Pond Investigation Rep., Ex. 29 at 13. In other words, the De Minimis Units contain only a small amount of sediment, and only a fraction of those sediments appear to contain CCR materials. Haley and Aldridge accordingly concluded that “these results are consistent with what we understand to be the function of \[the De Minimis Units\], which](#)

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<sup>1520</sup> While the South Fly Ash Pond was *designed* to receive direct discharges of CCR, it never did receive direct discharges of CCR. *See supra* at [p8-9.9](#).

generally did not receive direct discharges of CCR materials, were not designed to hold an accumulation of CCR and water, and have not been used for the treatment, storage and disposal of CCR.” Pond Investigation Rep., Ex. 29 at 7.

Haley & Aldridge also contrasted the volume and type of pond sediments in the De Minimis Units with the characteristics of a “typical” CCR surface impoundment that is used to treat, store, or dispose of CCR. As discussed in the Pond Investigation Report, the volume of sediments in such CCR surface impoundments generally is greater than 50 percent of pond volume. In contrast, the volume of sediments in the De Minimis Units ranged from 8.2 percent (Pond 6) to 13.3 percent (Pond 3A). Similarly, the total volume of sediments in the De Minimis Units is far smaller than one would expect to see in a CCR surface impoundment used for the treatment storage or disposal of CCR. See Pond Investigation Rep., Ex. 29 at 7. These results further bolster the conclusion that the De Minimis Units are not CCR surface impoundments as defined in Part 257 (or Part 845).

Further, and as discussed *infra* at 44, Haley & Aldridge reviewed multiple years of groundwater monitoring data collected by SIPC and determined that any CCR that is in the De Minimis Units has not had any appreciable impact on groundwater at SIPC. See Pond Investigation Rep., Ex. 29 at 26; see also Updated Bradley Op., Updated Ex. 28 at 21. Dr. Bradley concurs with this conclusion and determines that the De Minimis Units do not pose appreciable risk—and are therefore not the type of units intended by regulated by Part 257 or Part 845—based on her review of the Pond Investigation Report and her own review of Site groundwater monitoring data and pond histories. Updated Bradley Op., Updated Ex. 28 at 21–22. As discussed by Dr. Bradley in her updated report, the De Minimis Units are precisely the types of *de minimis* units that EPA sought to exclude from regulation under Part 257 because they do not “*present the significant*

[risks \[Part 257\] is intended to address.” Final Rule, Updated Ex. 17 at 21,357. They should likewise be excluded under Part 845, as discussed below.](#)

Given that the De Minimis Units are not CCR surface impoundments under Part 257, the Board should find that they also are not covered by Part 845. As noted above, the definition of “CCR surface impoundment” is identical in both Part 257 and Part 845, and plainly excludes the De Minimis Units. As a practical matter, it would be anomalous to say the least that the same words mean something different in Part 845 and that a unit is subject to Part 845 but excluded by Part 257 [under the same rule language](#). Part 257 clearly excludes units such as the De Minimis Units. Further, the administrative record is clear that the legislature, IEPA, and the Board in adopting the same definition of “CCR surface impoundments” as Part 257, all intended for Part 845 to regulate the same universe of “CCR surface impoundments” as Part 257. *See, e.g.*, R 2020-019, *In the Matter of Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments: Proposed new 35 Ill. Adm. Code 845*, IEPA Responses to Pre-Filed Questions (Aug. 3, 2020) (“IEPA Responses”), attached ~~as-~~[in relevant part as Updated Ex. 22 at 7–8](#) (“It is the Agency’s position that the same universe of CCR surface impoundments [that is regulated by Part 257] is intended to be regulated by Part 845.”); *id.* at 17 (“CCR surface impoundments not subject to Part 257, are not subject to the requirements of Part 845. (Agency Response)”); R 2020-019, *In the Matter of Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments: Proposed new 35 Ill. Adm. Code 845*, Hearing Transcript (Aug. 11, 2020), ~~attached as-~~Ex. 23 at 43–44 (Q: “[M]y question was is Part 845 intended to apply to the same ponds that are subject to requirements under Part 257 given that they both define CCR surface impoundments in an identical fashion?” A: “In the Agency’s opinion, they will be the same ones.”); Final Order,

at 8 (noting that “many of the technical elements required of owners and operators of CCR surface impoundments are already required under federal law.”).

Indeed, to the extent IEPA *had* desired to deviate from Part 257 for the scope of units of covered by Part 845, it admitted that it did not conduct its own risk assessment or otherwise gather evidence that would support doing so. *See, e.g.*, IEPA Responses, ~~as-Updated~~ Ex. 22 at 55 (Q: “Are you familiar with the Risk Assessment performed by U.S. EPA when it finalized the 2015 Federal CCR Rule?” A: “No.”); R 2020-019, *In the Matter of Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments: Proposed new 35 Ill. Adm. Code 845*, First Supplement to IEPA Pre-Filed Responses (Aug. 5, 2020), ~~attached-as~~-Ex. 24 at 37–38 (admitting that IEPA did not perform its own risk assessment and IEPA relied upon U.S. EPA’s risk assessment “to the extent that USEPA’s risk assessment was used by USEPA to develop the requirements of Part 257”). There is no question, then, that the De Minimis Units are excluded from regulation under both Part 257 **and** Part 845.

2. The De Minimis Units Are Not Existing or Inactive CCR Surface Impoundments.

The De Minimis Units also do not fall within the definition of “existing CCR surface impoundment” or “inactive CCR surface impoundment” under either Part 845 or Part 257. As an initial matter, under either regulatory scheme, a unit cannot be an “existing CCR surface impoundment” or an “inactive CCR surface impoundment” unless it is first a “CCR surface impoundment” which, as discussed above, the De Minimis Units are not. *See, e.g.*, Second Notice Opinion and Order, ~~–~~ at 15 (“The Board notes that for an impoundment to be an inactive surface impoundment, first it must be a *CCR surface impoundment*, which is defined in Section 845.120 as being designed to ‘hold CCR and liquid.’” (emphasis in original)). Furthermore, it is undisputed

that none of the De Minimis Units “received” CCR or had CCR “placed” in them—other than any small amounts that may have been incidentally deposited through indirect discharges, runoff, or air—on or after October 2015. The De Minimis Units thus are clearly not “existing CCR surface impoundments” under Part 257 or Part 845.

The De Minimis Units are likewise not “inactive CCR surface impoundments.” Part 257 defines an “inactive surface impoundment” as a “CCR surface impoundment that no longer receives CCR on or after October 19, 2015 and still contains both CCR and liquids on or after October 19, 2015” 40 C.F.R. § 257.53. Part 845 similarly defines “inactive CCR surface impoundment” as a “CCR surface impoundment in which CCR was placed before but not after October 19, 2015 and still contains CCR on or after October 19, 2015.” [35 Ill. Admin. Code § 845.120](#). There is no dispute that CCR was never “placed” in the South Fly Ash Pond or Pond 6, either before or after October 19, 2015. Those ponds plainly are not inactive CCR surface impoundments. To the extent any CCR was ever “placed” in the Ponds 3, 4, or B-3 decades ago, the historical record is clear that any historic receipt of CCR by those ponds was temporary and intermittent in nature and of *de minimis* amounts of CCR not intended to be covered under Part 257 or Part 845. Accordingly, the De Minimis Units do not *presently* contain more than *de minimis* amounts of CCR, which is not sufficient to meet the requirements for regulation as an inactive CCR surface impoundment under either Part 257 or Part 845. Accordingly, the De Minimis Units should not be regulated as inactive CCR surface impoundments under Part 257 or Part 845.

**B. The Former Fly Ash Holding Units Are Not Subject to Part 845.**

1. The Former Fly Ash Holding Units Are Not CCR Surface Impoundments, Existing CCR Surface Impoundments, or Inactive CCR Surface Impoundments.

The Former Fly Ash Holding Units are likewise not “CCR surface impoundments” subject to Part 257 or Part 845. The Former Fly Ash Holding Units are—and have been since at least the early 1990s—dry and operated in conjunction with the on-site, ~~Former Landfill~~, which, in turn, has been operated and regulated as an on-site, permit-exempt ~~landfill~~ pursuant to 35 Ill. Admin. Code Part 815 for decades. The Former Fly Ash Holding Units are not currently, and were not as of October 19, 2015, “designed to hold an accumulation of CCR and liquids” and accordingly, fall outside of the plain definition of “CCR surface impoundment.” *See supra* at Part III.A.1; *see also* U.S. EPA, Comment Summary and Response Document: Hazardous and Solid Waste Management System; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals from Electric Utilities; Proposed Rule, Vol. 3 (Dec. 2014), ~~attached as~~-Ex. 25 at 73 (“CCR surface impoundments that have been dewatered and are no longer able to hold free liquids” prior to October 19, 2015 “are not subject to [Part 257].”).

Because the Former Fly Ash Holding Units are not CCR surface impoundments, they do not fall within the definition of “existing” or “inactive CCR surface impoundments.” *See supra* at Part III.A.2 (relating to the De Minimis Units and emphasizing that in order to be regulated as an existing or inactive CCR surface impoundment, the unit at issue must first be a “CCR surface impoundment” within the meaning of Parts 845 and 257). The Former Fly Ash Holding Units also do not satisfy other key elements of the “existing” and “inactive” CCR surface impoundment definitions.

The Former Fly Ash Holding Units cannot be “existing CCR surface impoundments” because they did not receive CCR after October 19, 2015. The Former Fly Ash Holding Units cannot be “inactive CCR surface impoundments” because, to the extent the units contained CCR after October 19, 2015, the units did not contain water after October 19, 2015. The Former Fly Ash Holding Units are thus plainly excluded from the Part 257 definition of “inactive CCR surface impoundment,” which requires that an inactive unit contain CCR *and water* after October 19, 2015. *See* 40 C.F.R. § 257.53. In promulgating its definition of an inactive CCR surface impoundment, U.S. EPA noted that Part 257 “was designed to address units that pose the highest level of risk: “units that contain a large amount of CCR *managed with water*, under a hydraulic head that promotes the rapid leaching of contaminants.” Final Rule, [Updated](#) Ex. 17 at 21,357 (emphasis added). As a result, U.S. EPA decided not to “impose any requirements on any CCR surface impoundments that have in fact ‘closed’ before the rule’s effective date [October 19, 2015]—i.e., those [like the Former Fly Ash Holding Area Units] that no longer contain water and can no longer impound liquid.” *Id.* at 21,343. As discussed above, the record is clear that the legislature, IEPA, and the Board all intended for Part 845 to encompass the same universe of CCR surface impoundments as Part 257. *See supra* at Part III.A.1. Accordingly, because the Former Fly Ash Holding Units are not regulated as inactive CCR surface impoundments under Part 257, they also should not be regulated as inactive CCR surface impoundments under Part 845.

2. The Former Fly Ash Holding Units Have Been Managed for Decades as a Landfill, which Is Excluded from Regulation under Part 845.

The Former Fly Ash Holding Units are not subject to Part 845 for the separate reason that they function (and have functioned for decades) as part of the Former Landfill, and both Part 257 and Part 845 make clear that CCR landfills are not surface impoundments. Part 257 specifically

defines a CCR landfill as **not** being a CCR surface impoundment: “CCR landfill or landfill means an area of land or an excavation that receives CCR *and which is not a surface impoundment*, an underground injection well, a salt dome formation, a salt bed formation, an underground or surface coal mine, or a cave.” 40 C.F.R. § 257.53 (emphasis added). Part 257 likewise contains separate and distinct requirements for CCR landfills and CCR surface impoundments. *Compare, e.g.,* 40 C.F.R. § 257.70 *with* 40 C.F.R. § 257.71 and 40 C.F.R. § 257.84 *with* 40 C.F.R. § 257.83. There is simply no question that the U.S. EPA intended to regulate CCR landfills separately from CCR surface impoundments in Part 257.<sup>4621</sup>

Part 845 is likewise clear that it does not regulate CCR landfills; the “Scope and Purpose” section states “this Part *does not apply* to landfills that receive CCR.” 35 Ill. Admin. Code § 845.100(h) (emphasis added); [see also IEPA Responses, Updated Ex. 22 at 6 \(“A man-made excavation where CCR is disposed could be a CCR surface impoundment or a landfill, but a landfill that receives CCR is not a CCR surface impoundment.”\)](#) (emphasis added). The Board explicitly declined to extend Part 845’s reach to landfills and other unconsolidated piles of CCR during the rulemaking, stating “that regulation of these unconsolidated coal ash fills and piles is beyond the scope of [the Illinois CCR Act].” Second Notice Opinion and Order, [r. 12](#). Instead, the Board opted to open a separate sub-docket to explore regulating CCR in landfills and unconsolidated coal ash fills and piles. *Id.* IEPA agreed with the Board, taking the position that “limiting Part 845 to CCR surface impoundments is necessary and appropriate.” R 2020-019, *In the Matter of Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments: Proposed new 35 Ill. Adm. Code 845*, IEPA Post-Hearing Comments (Oct. 30, 2020), ~~attached as~~ Ex. 26 at

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<sup>4621</sup> As noted *supra*, the Former Landfill at Marion Station is not regulated pursuant to Part 257 because it stopped receiving waste prior to October 2015. 40 C.F.R. § 257.53.

10. There is no question that the Former Landfill—including the Former Fly Ash Holding Area Units—at Marion Station operated as a landfill and has been regulated as a landfill for decades. *See supra* at Part II.C.2. Indeed, as recently as March 2020, IEPA issued a VN to SIPC for alleged violations of the Illinois landfill regulations at the Former Landfill. As part of the Former Landfill, the Former Fly Ash Holding Units cannot be subject to Part 845. Illinois landfill regulations, consistent with Part 257 and Part 845, clearly state that a landfill is not a surface impoundment.<sup>1722</sup>

3. The Board Should Reject IEPA’s Apparent Position that the Historic Presence of a CCR Surface Impoundment Converts a Landfill into a CCR Surface Impoundment.

Finally, the Board should reject IEPA’s apparent new and convoluted argument that, notwithstanding ~~it~~its regulation of the Former Landfill as a landfill for decades—including its recent issuance of a VN asserting alleged violations of Illinois landfill regulations, the landfill regulations do not apply, and the entire Former Landfill area, including the Former Fly Ash Holding Units, is actually a CCR surface impoundment subject to Part 845.

IEPA’s argument appears to be this: the Former Fly Ash Holding Units were once, decades ago, used to store CCR and water. They no longer contain water and no longer receive CCR, but the fact that they once did and appear on a map in the vicinity of the Former Landfill somehow converts the (now closed) Former Landfill, which both SIPC and IEPA have recognized for decades ~~is~~as landfill, into a CCR surface impoundment. This is an illogical and absurd result, and one that runs directly contrary to the definition of “CCR surface impoundment” in Part 257, Part 845, and Illinois landfill regulations.

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<sup>1722</sup> 35 Ill. Admin. Code § 810.103 (“‘Landfill’ means a unit or part of a facility in or on which waste is placed and accumulated over time for disposal, and that is not a land application unit, a surface impoundment or an underground injection well.”); *see also* 35 Ill. Admin. Code § 810.104 (“For the purposes of this Part and 35 Ill. Adm. Code 811 through 815, a surface impoundment is not a landfill.”).

As discussed *supra*, both Part 845 and the Illinois CCR Act incorporated Part 257's present tense language in ~~the definition~~ their definitions of CCR surface impoundment. *See supra* at Part III.A.1. Those definitions must be construed to exclude units that have for decades operated as part of a landfill. In its preamble to Part 257, U.S. EPA made clear its intention to avoid exactly this type of result:

*EPA did not propose to require “closed” surface impoundments to “reclose.” Nor did EPA intend, as the same commenters claim, that “literally hundreds of previously closed . . . surface impoundments—many of which were properly closed decades ago under state solid waste programs, have changed owners, and now have structures built on top of them—would be considered active CCR units.”* Accordingly, the final rule does not impose any requirements on any CCR surface impoundments that have in fact “closed” before the rule’s effective date—*i.e., those that no longer contain water and can no longer impound liquid.*

Final Rule, Updated Ex. 17 at 21,343 (emphasis added).

Treating the Former Fly Ash Holding Units, and indeed the entire Former Landfill, as CCR surface impoundments after years of regulating the area as a landfill thus flies in the face of U.S. EPA’s stated intent not to regulate units that “now have structures built on top of them” and that “no longer contain water and can no longer impound liquid.” *Id.* It also contravenes the stated intent of the legislature, IEPA, and the Board for Part 845 to apply to the same universe of “CCR surface impoundments” as Part 257. As a practical matter, it also upends years of settled expectations about the requirements for operation and closure, raising significant retroactivity and fairness concerns for this not-for-profit cooperative and its owners. The Board should reject IEPA’s last-minute overreach and find that Part 845 does not apply to the Former Landfill, including the Former Fly Ash Holding Units.<sup>1823</sup>

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<sup>1823</sup> The Indiana Office of Environmental Adjudication recently rejected similar attempts by environmental groups to argue that a portion of a former Duke Energy ash pond—which had been closed for decades—was subject to Part 257, stating that “an impoundment’s regulatory status over three decades ago is not

**IV. PETITION FOR AN ADJUSTED STANDARD.**

If the Board declines to issue a finding of inapplicability and determines that the current and former ponds at issue in this Petition are “CCR surface impoundments,” SIPC requests in the alternative that the Board grant an adjusted standard from 35 Illinois Administrative Code Part 845 for the De Minimis Units and the Former Fly Ash Holding Units. When petitioned, the Board may grant an adjusted standard from a rule of general applicability for persons who can justify such an adjustment under the applicable statutory factors. 415 Ill. Comp. Stat. 5/28.1(a). As set forth below, the requested adjusted standard is warranted here based on the factors set forth in Section 28.1, including consistency with Section 27(a). Accordingly, SIPC’s request for an adjusted standard for the De Minimis Units and the Former Fly Ash Holding Units should be granted.

**A. Regulatory Standard.**

Section 28.1 of the Act describes the factors the Board must consider in granting an adjusted standard:

(c) If a regulation of general applicability does not specify a level of justification required of a petitioner to qualify for an adjusted standard<sup>24</sup><sup>19</sup>, the Board may grant individual adjusted standards whenever the Board determines, upon adequate proof by petitioner, that:

- (1) factors relating to that petitioner are substantially and significantly different from the factors relied upon by the Board in adopting the general regulation applicable to that petitioner;
- (2) the existence of those factors justifies an adjusted standard;
- (3) the requested standard will not result in environmental or health effects substantially and significantly more adverse than the effects considered by the Board in adopting the rule of general applicability; and

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relevant to determining whether it is currently subject to the Federal CCR Rule.” *In the Matter of Objection to the Issuance of Partial Approval of Closure/Post Closure Plan Duke Gallagher Generating Station Ash Pond System*, No. 20-S-J-5096 (OEA May 4, 2021), ~~attached as~~-Ex. 27 at 14.

<sup>24</sup> [Part 845 does not specify a level of justification required to qualify for an adjusted standard.](#)

<sup>19</sup> ~~Part 845 does not specify a level of justification required to qualify for an adjusted standard.~~

(4) the adjusted standard is consistent with any applicable federal law.

415 Ill. Comp. Stat. 5/28.1(c)(1)–(4).

Any adjusted standard must also be “consistent” with subsection (a) of section 27 of the Act, which provides that “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<sup>2025</sup>], and the technical feasibility and economic reasonableness of measuring or reducing the particular type of pollution.” 415 Ill. Comp. Stat. 5/27(a).<sup>2126</sup>

As discussed below, granting the requested adjusted standard for the De Minimis Units and the Former Fly Ash Holding Units is justified by the factors set forth in Section 28.1 and consistent with the factors set forth in Section 27.

**B. The De Minimis Units.**

1. SIPC Requests an Adjusted Standard Exempting the De Minimis Units from all Provisions of Part 845.

To the extent the Board determines that the De Minimis Units are “CCR Surface Impoundments” under Part 845, the Board should grant an adjusted standard from section 845.100 exempting the De Minimis Units from the requirements of Part 845. SIPC’s proposed language is set forth *infra* in Part IV.D.

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<sup>2025</sup> The physical conditions at Marion Station and character of the area involved, including the character of surrounding land uses, zoning classifications, and the nature of the receiving body of water are discussed *supra* at Part II.A.

<sup>2126</sup> The Illinois Court of Appeals has held that the Board’s review is limited to the factors set forth in Sections 27(a) and 28.1: “The Act sets forth the factors the Board is to consider when determining whether to grant an adjusted standard. The Board lacks the authority to add to or rewrite the statutory factors.” *Emerald Performance Materials, LLC v. Ill. Pollution Control Bd.*, 2016 IL App (3d) 150526, ¶ 27.

2. The Factors Relating to the De Minimis Ponds Are Substantially and Significantly Different from the Factors and Circumstances on which the Board Relied in Adopting Part 845.

In determining whether to grant an adjusted standard, the Board first considers whether the factors relating to the Petitioner are significantly different from the factors considered in adopting the regulation at issue (Part 845). *See* 415 Ill. Comp. Stat. 5/28.1(c)(1). As discussed below, here they are.

Like the Part 257 rules relating to surface impoundments, Part 845 was intended to address the risks posed by CCR surface impoundments that have resulted or are likely to result in groundwater contamination:

The second purpose and effect of this regulatory proposal is to protect the groundwater within the state of Illinois. The proposed rule contains a program for groundwater monitoring and the remediation of contaminated groundwater resulting from leaking CCR surface impoundments. Groundwater has an essential and pervasive role in the social and economic well-being of Illinois, and is important to the vitality, health, safety, and welfare of its citizens. This rule has been developed based on the goals above and the principle that groundwater resources should be utilized for beneficial and legitimate purposes . . . Its purpose is to prevent waste and degradation of Illinois' groundwater. The proposed rule establishes a framework to manage the underground water resource to allow for maximum benefit of the State.

IEPA Statement of Reasons, Ex. 18 at 10; *see also id.* at 3–4 (“The presence of [certain contaminants that can be found in CCR] threatens groundwater as these contaminants are soluble and mobile. When the CCR surface impoundments are not lined with impermeable material, these contaminants may leach into the *groundwater*, affecting the potential use of the *groundwater*.” (emphasis added)).

In its Second Notice Opinion, the Board likewise emphasized that “[a]mong the program’s primary goals is protecting groundwater from contamination by CCR pollutants leaking from

surface impoundments.” Second Notice Opinion and Order, [7](#) at 1; *see also id.* at 3 (“In Illinois, CCR has caused groundwater contamination and other forms of pollution that are harmful to human health and the environment.”); *id.* at 41 (“[T]he installation and operation of a leachate collection system in a new CCR surface impoundments serves the same purpose as in a landfill to reduce the head on the liner to reduce the threat of groundwater contamination.”); *id.* at 48 (“The Board finds that the proposed leachate collection system provides additional groundwater protection against the potential threats of contamination from new CCR surface impoundments, while allowing the operation of the impoundments in compliance with Part 845.”).<sup>2227</sup>

In determining which types of CCR surface impoundments pose the risks that Part 845 seeks to address, Part 257 is instructive, [7](#); both because of its identical definition of “CCR surface impoundment” and the fact that IEPA did not perform any risk assessment of its own to support its Part 845 proposal and, instead, modeled its proposal on Part 257, which was based upon U.S. EPA’s risk assessment. In other words, because the IEPA-proposed and Board-adopted Part 845 rules were based upon Part 257, and IEPA never conducted a risk assessment, Part 845 too must be based upon U.S. EPA’s risk assessment. U.S. EPA was clear that it was targeting for regulation those “units that contain a large amount of CCR managed with water, under a hydraulic head that promotes the rapid leaching of contaminants.” Final Rule, [Updated](#) Ex. 17 at 21,357.

The factors relating to the De Minimis Units are substantially and significantly different than those that motivated U.S. EPA in Part 257, and also the state legislature, IEPA, and the Board in regulating CCR surface impoundments in Illinois with the aim of protecting Illinois

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<sup>2227</sup> The Illinois legislature also made clear that the Illinois CCR Act is intended to address and prevent groundwater contamination caused by CCR surface impoundments. *See* 415 Ill. Comp. Stat. 5/22.59(a)(3) (“The General Assembly finds that . . . CCR generated by the electric generating industry has caused **groundwater** contamination . . . .” (emphasis added)).

groundwater. As discussed above, the De Minimis Units do not contain large amounts of CCR under a hydraulic head that promotes rapid leaching of contaminants to groundwater. With the exception of Pond B-3 (which no longer contains water or any CCR but, as discussed above, at one time received very limited CCR during a handful of short periods), the De Minimis Units are not known to have ever received direct wastewater discharges of CCR. To the extent the De Minimis Units received historic, indirect discharges of CCR, the amounts of CCR were *de minimis* in nature. Further, with the closure of Unit 4 and the former Emery Pond, all CCR generated at the Station will be handled dry and none of the De Minimis Units will receive any future direct discharges of CCR.

As ~~Toxicologist Lisa Dr.~~ Bradley explains in her [updated](#) report, ~~attached as Ex. 28~~, the U.S. EPA determined *de minimis* units—like those at issue in this Petition—do not pose the risk to groundwater, human health, or the environment that Part 257 (or Part 845) seeks to prevent. *See* ~~Opinion of Lisa JN Bradley, Ph.D. ("Updated Bradley Op.")~~, [Updated Ex. 28 at 21](#).

These forgoing facts, alone, are sufficient to establish that the De Minimis Units do not pose a similar threat to groundwater as the CCR surface impoundments that motivated Part 257 and Part 845. [This conclusion is bolstered by the Pond Investigation Report. As described in the report, Haley & Aldridge reviewed the results of shake tests taken of pond sediment samples, as well as the results of Site groundwater monitoring wells, and determined that any potential presence of CCR in the De Minimis Unit sediments should not be expected to cause and has not had a material adverse impact on groundwater at the Site. See Pond Investigation Rep., Ex. 29 at 26; see also Updated Bradley Op., Updated Ex. 28 at 21–22.](#) Thus, the requested adjusted standard may be granted based upon this ~~Petition. However, SIPC expects that the results of the ongoing pond investigation it is undertaking in conjunction with its VN response, and~~

~~pursuant to an agreed protocol with IEPA, will support its conclusions that the De Minimis Units (1) presently only contain *de minimis* amounts of CCR (if any); and (2) the De Minimis Units do not pose a substantial threat to groundwater, human health, or the environment. SIPC will supplement its Petition to include the results of its pond investigation once the investigation is complete and the results have been submitted to IEPA.~~ [Amended Petition](#).

Another important difference between the De Minimis Units and the CCR surface impoundments that drove Part 845 is the burden of compliance. During the rulemaking, IEPA argued, and the Board agreed, that certain Part 845 requirements, including expedited timeframes for compliance, were feasible and reasonable because units subject to Part 845 were also subject to Part 257, and therefore, owners had years to develop and implement compliance plans. *See* Final Order at 8–9. However, as discussed above, the De Minimis Units are not subject to Part 257, and thus, there has been no need to undertake compliance actions under Part 257, such as groundwater and location restriction assessments. Accordingly, the feasibility and cost of Part 845 compliance for these De Minimis Units differs substantially from the units the Board anticipated would be covered by Part 845, which were units subject to Part 257 and that already had years of Part 257 compliance activity that could be used to comply with Part 845.

3. The Factors Relating to the De Minimis Units—which Differ from those Relied upon by the Board in Passing Part 845—Justify an Adjusted Standard.

The factors unique to the De Minimis Units—namely that they are not subject to Part 257 and do not contain a large quantity of CCR managed under a hydraulic head—justify the requested adjusted standard. As discussed above, the De Minimis Units simply do not present the risks that Part 845 was intended to address. And, as discussed below, regulation under Part 845 will be

extremely costly and burdensome—for no meaningful environmental benefit. Accordingly, SIPC's adjusted standard is justified.

4. The Requested Adjusted Standard Will Not Result in Adverse Environmental or Health Effects.

As discussed above, the history of receipt of minimal, if any, direct CCR discharges makes clear that the De Minimis Units have minimal amounts of CCR and, therefore, do not present the types of risk to human health and the environment that Part 845 (and Part 257) seek to address. Moreover, one of the De Minimis Units—Pond B-3—does not contain water, has not contained water since 2017, and has previously been cleaned up, removing any CCR that remained in it. As a result, none of the De Minimis Units have the characteristics of the CCR surface impoundments that drove the risks identified by EPA's risk assessment that warranted pond regulation under Part 257—a substantial amount of CCR managed under a hydraulic head. [The Pond Investigation Report confirms this conclusion. See Pond Investigation Rep., Ex. 29.](#) Accordingly, as discussed above, Dr. Bradley has determined that the De Minimis Units are not expected to have a substantial or significant adverse threat to human health or the environment warranting regulation under Part 845. [Updated Bradley Op., Updated Ex. 28, at p. 1121-22.](#) As a result, Petitioner's requested adjusted standard “will not result in environmental or health effects substantially and significantly more adverse than the effects considered by the Board in adopting” Part 845. 415 Ill. Comp. Stat. 5/28.1(c)(3).

Finally, granting the adjusted standard will not leave the De Minimis Units unregulated. To the contrary, the De Minimis Units that still contain water and are now acting as storm water ponds (Ponds 3 [\(including 3A\)](#), 4, 6, and the South Fly Ash Pond) have been and will continue to be covered by Marion Station's NPDES permit as part of the flow to permitted Outfall 002. *See*

2012 NPDES Permit, Ex. 13. Any groundwater impact from those storm water ponds, as well as former Pond B-3, also remains subject to Part 620 groundwater standards. Furthermore, as discussed below, Pond 6 will be monitored and regulated as part of the Former Landfill area after the landfill undergoes closure pursuant to Part 811.

5. The Requested Adjusted Standard Is Consistent with Federal Law.

As discussed above, the De Minimis Units are not regulated as existing CCR surface impoundments or inactive CCR surface impoundments under Part 257. Accordingly, exempting them from regulation under Part 845 is consistent with federal law. *See* 35 Ill. Adm. Code 104.406(i).

6. The Efforts Necessary for the De Minimis Units to Comply with Part 845 Are Not Economically Reasonable.

In evaluating a petition for an adjusted standard, the Board must take into account the technical feasibility and economic reasonableness of reducing a particular type of pollution. 415 Ill. Comp. Stat. 5/27(a). Extremely high costs of controlling a particular pollutant have been determined to be economically unreasonable.<sup>2328</sup> A treatment or control technology is not economically reasonable if it would not significantly improve environmental conditions or increase the aesthetic or recreational value of the receiving water body, especially given high

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<sup>2328</sup> *EPA v. Pollution Control Bd.*, 308 Ill. App. 3d 741, 752 (2d Dist. 1999) (upholding Board's finding that compliance would be economically unreasonable where "[a]ccording to the uncontested figures Swenson presented, the cost of installing a powder coating system would be more than 15 times the average control cost the Board historically has used to measure reasonableness"); *see also Granite City Div. of Nat. Steel Co. v. Ill. Pollution Control Bd.*, 155 Ill. 2d 149, 183 (1993) ("The Act specifically provides for variance and adjusted standard procedures by which the Board may relieve a discharger from compliance with its environmental control standards upon a showing of unreasonable economic or individual hardship.").

associated implementation costs.<sup>2429</sup> As discussed below, compliance with Part 845 is not reasonable for the De Minimis Units, which pose little to no risk to the environment and which will continue to be monitored and regulated pursuant to Marion Station's NPDES Permit and Part 620 groundwater regulations.

Requiring SIPC to comply with Part 845 for the De Minimis Units, including for operation and closure, would require SIPC to incur substantial costs to mitigate risks that do not exist,<sup>2530</sup> including costs to do the following:

- Perform location restriction demonstrations including certification for each De Minimis Unit (35 Ill. Admin. Code §§ 845.300–340);
- Perform a hydrogeological site investigation for each De Minimis Unit (35 Ill. Admin. Code § 845.620);
- Install a groundwater monitoring system for each De Minimis Unit and collect groundwater monitoring data on at least a quarterly basis for at least 5 years with the potential to reduce the frequency to semiannually thereafter (35 Ill. Admin. Code § 845.650);
- Prepare a hazard potential classification assessment and certification (35 Ill. Admin. Code § 845.400(a)(2));
- Prepare a structural stability assessment and certification (35 Ill. Admin. Code § 845.450(c));
- Prepare a safety factor assessment and certification with the operating permit application and subsequent annual inspections (35 Ill. Admin. Code § 845.460(b));
- Prepare a fugitive dust control plan and certification with the operating permit application and subsequent annual inspections (35 Ill. Admin. Code § 845.500(b)(7));
- Close the units in place or by removal (35 Ill. Admin. Code § 845.710); and

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<sup>2429</sup> See, e.g., R 1981-024, *In the Matter of Proposed Water Quality Standard for Wood River (Olin, East Alton)*, Proposed Rule First Notice Order and Opinion of the Board, at 6 (Nov. 12, 1982); PCB 2009-038, *Ameren Energy Generating Co. v. IEPA*, Order and Opinion of the Board, at 42 (Mar. 18, 2010).

<sup>2530</sup> As mentioned above, because the De Minimis Units are not subject to Part 257, none of these actions have been undertaken to date and all compliance costs would be attributed to Part 845.

- Perform numerous other assessments and analyses (*see, e.g.*, 35 Ill. Admin. Code §§ 845.510(c)(3), .530, .540).<sup>2631</sup>

Many of these requirements make no practical sense as applied to the De Minimis Units, one of which (Pond B-3) was cleaned and closed years ago, another of which (Pond 6) will be addressed as part of the landfill closure under the Part 811 landfill requirements, and all of which received and contain little, if any, CCR. Such units simply do not cause a hazard, risk of structural instability, or contain material that could contribute fugitive dust, for example.

Compliance with Part 845 would also require that SIPC either retrofit or close the De Minimis Units. *See* 35 Ill. Admin Code. §§ 845.700–.770. However, SIPC plans to continue using Ponds 3, 6, 4, and the South Fly Ash Pond into the foreseeable future for storm water management at Marion Station. Accordingly, SIPC must either close those ponds by removal ***and then rebuild them*** as storm water basins, or retrofit them by cleaning them and installing a liner. Due to the additional exorbitant costs of dredging and installing liners in Ponds 3, 4, 6, and the Fly Ash Pond, closure by removal is the least costly, technically feasible alternative. As discussed below, that “least costly” alternative would still cost SIPC ~~at least nearly \$8 million to \$10.5–15 million~~ in capital costs (with little to no environmental benefit). *See* Supp. Liss Dec., Ex. 9 at ¶1830 at ¶6. This does not include the cost of constructing new storm water basins as needed to replace the De Minimis Units. *Id.* ~~at ¶19.~~

The costs inherent in Part 845 compliance are exacerbated by the fact that the De Minimis Units are not and have not been subject to Part 257. Accordingly, compliance with Part 845

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<sup>2631</sup> Due to the prescriptive nature of Part 845, technically feasible compliance alternatives to meet the requirements of Part 845 are very limited.

deadlines would, in some cases, be infeasible and, in many cases, more costly on the aggressive timeline adopted in Part 845, which assumed prior Part 257 compliance activity.

Andrews Engineering has performed a preliminary analysis of the costs of compliance associated with major components of Part 845 and conservatively estimates that closing the De Minimis Units pursuant to Part 845 would cost SIPC at least ~~\$8M to \$10.5M~~ 14.85 million in capital and other upfront costs ~~costs and at least \$510,000 to \$535,000 dollars in annual costs over at least~~ and nearly \$100,000 per year in annual O&M costs (not including inflation) for a minimum of three years.<sup>2732</sup> Liss Dec., Ex. 9 at ~~¶18~~ ¶18. In contrast, SIPC calculated the operating and maintenance costs of compliance with Marion Station NPDES permit requirements and Part 620 for the De Minimis units to be approximately \$286,750 per year for three years.<sup>33</sup> This annual cost covers electrical and mechanical maintenance, power to operate the on-site pump system, pond maintenance, and sampling both the outfalls and groundwater monitoring wells.

This significant cost differential is not reasonable on its face, considering the minimal (if any) benefit conferred by compliance with Part 845. Moreover, should SIPC be required to comply with Part 845 for the De Minimis Units, significant adverse consequences could occur for those who already live in low-income rural Illinois communities. SIPC is a not-for-profit electric

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<sup>2732</sup> This does not include the cost of constructing new storm water basins as needed to replace the De Minimis Units. This also does not include the costs of expediting work to meet Part 845's stringent deadlines, ~~which or alternative Board-ordered deadline, whichever may not even be possible at this juncture given that the~~ apply. The De Minimis Units are not subject to Part 257 and, thus, no Part 257 compliance activities have been performed although Part 257 coverage and related compliance activities were assumed by the Board in setting the Part 845 compliance deadlines for covered units. This also does not include additional costs that may be incurred due to potential ambiguities in the rules, ~~and~~ and does not include all plant personnel time.

<sup>33</sup> SIPC will have to continue paying these operational costs even if the De Minimis Units are closed under Part 845 and then replaced with storm water basins. Accordingly, the Part 845-related O&M costs that would apply if SIPC were required to close the units under Part 845 would be on top of SIPC's routine operational O&M costs for storm water management.

cooperative owned directly by its members, serving customers and businesses in more than twenty southernmost counties of Illinois. SIPC is defined as a “Small Business” by the U.S. Small Business Administration, but it is the largest taxpayer in Williamson County.

SIPC is currently ineligible to borrow subsidized funds to pay the costs required to comply with Part 845. When the costs of running its business suddenly increase, for example, to comply with Part 845, SIPC’s already stretched working capital (short-term commercial paper at National Rural Utility Cooperative Financing Corporation) must be stretched even further to cover the costs. If the new costs are greater than the available working capital, SIPC will be forced to borrow on a short-term line-of-credit and possibly from an unsecured borrowing source at higher rates until such time as it can retire the borrowings from future member rates. SIPC will be forced to pass along all costs of meeting these new requirements to its member-owners. SIPC’s member-owners have “full requirement” wholesale power requirements contracts, which means they must buy 100% of their energy needs from SIPC. They cannot go to an alternative supplier for lower cost energy. To leave SIPC, member-owners would have to pay prohibitively significant exit costs. For decades, SIPC’s reliable, affordable electricity has been one of the key drivers of economic growth and prosperity in these communities. Increased costs of electric energy, particularly in rural areas served by cooperatives, will have negative impacts on rural economic development and jobs. In cases where small businesses like SIPC are affected, Section 27(a) requires the Board to consider and apply economically reasonable ways to minimize pollution and also mitigate impacts to facilities that can least afford them. 415 Ill. Comp. Stat. 5/27(a).

Not only are the capital and operating costs associated with Part 845 compliance significant, compliance with Part 845 would not provide any meaningful benefit to human health or the environment because, as discussed above, the *de minimis* units do not present the magnitude

of risk that warranted regulation under Part 257 and Part 845. This is especially true given that the units would remain subject to applicable NPDES permit and Part 620 standard requirements. Accordingly, any minimal benefit from layering on another set of onerous requirements under Part 845 would be dwarfed by the extreme costs of compliance for SIPC and its members.

Finally, there is nothing in the Part 845 rulemaking record to combat the conclusion that Part 845 is not economically reasonable as applied to current and former ponds at issue in this petition. IEPA did not perform its own economic reasonableness analysis of the Part 845 rulemaking but instead relied on U.S. EPA's technical feasibility and economic reasonableness determination in Part 257. IEPA simply concluded "~~since~~because "owners and operators of CCR surface impoundments are already subject to 40 CFR 257, many of the technical and economic requirements applicable to owners and operators in the proposed Part 845 are already required under federal law." IEPA Statement of Reasons, Ex. 18 at 33–34. Part 257, however, only applies to CCR surface impoundments that contained a significant (not *de minimis*) amount of CCR and liquids as of October 19, 2015. U.S. EPA did not consider units such as the De Minimis Units in promulgating Part 257, and therefore, neither did IEPA's proposal or the Board in promulgating Part 845.<sup>2834</sup> Moreover, because they are not subject to Part 257, the De Minimis Units are **not** already subject to "many of the technical and economic requirements applicable to owners and operators in the proposed Part 845." [IEPA Statement of Reasons, Ex. 18 at 33–34](#). In other words, neither IEPA nor the Board determined that Part 845 was economically reasonable as applied to the De Minimis Units (or, as discussed below, the Former Fly Ash Holding Units).

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<sup>2834</sup> The Board requested an analysis from the Department of Commerce and Economic Opportunity, but none was performed. Second Notice Opinion and Order,        at 8.

In short, the costs of Part 845 compliance are significant, and any additional benefits to human health and the environment are minimal, if any. Compliance with the requested relief, alternatively, would allow SIPC to continue to manage plant discharges and storm water in the De Minimis Units without causing adverse impacts to human health or the environment and without incurring additional O&M or capital cost that will have to be passed along to SIPC's members. Compliance with Part 845 is economically unreasonable<sup>2935</sup> and SIPC's request for an adjusted standard should be granted.

**C. The Former Fly Ash Holding Units and Pond 6**

1. SIPC Requests an Adjusted Standard Exempting the Former Fly Ash Holding Units and Pond 6 from all Provisions of Part 845.

To the extent the Board determines that the Former Fly Ash Holding Units and Pond 6 are "CCR Surface Impoundments" under Part 845, the Board should grant an adjusted standard from ~~section~~ Section 845.100 exempting the Former Fly Ash Holding Units and Pond 6<sup>2935</sup> from the requirements of Part 845. The Initial Fly Ash Holding Area, the Replacement Fly Ash Holding Area, and the Fly Ash Holding Area Extension are within the footprint of the Former Landfill at Marion Station and thus, are required to be covered pursuant to the Part 811 closure plan SIPC has already submitted to IEPA for the Former Landfill. As discussed above, that landfill closure plan was submitted to IEPA at IEPA's request in connection with IEPA's claims that the Former Landfill failed to have the permanent cover required by Part 811. Pond 6 was built as, and under the closure plan will continue to operate as, a storm water pond to manage landfill runoff and will be operated and maintained as part of SIPC's Part 811 landfill closure and post-closure obligations.

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<sup>2935</sup> An adjusted standard exempting Pond 6 from coverage under Part 845 is warranted both on the grounds that it is a *de minimis* unit and because it can and should be managed as part of the landfill closure pursuant to Part 811.

The Initial Fly Ash Holding Area, the Replacement Fly Ash Holding, the Fly Ash Holding Area Extension, and Pond 6 will continue also to be subject to all other applicable environmental laws and regulations, including the groundwater quality regulations set forth in 35 Ill. Admin. Code Part 620.

2. The Factors Relating to the Former Fly Ash Holding Units and Pond 6 Are Substantially and Significantly Different from the Factors and Circumstances the Board Relied on in Adopting Part 845.

The factors relating to the Former Fly Ash Holding Units and Pond 6 differ significantly from the factors that were considered and motivated the Board in adopting Part 845. As noted *supra* at Part IV.B.2, the legislature, IEPA, and the Board were all motivated to address the same risk that U.S. EPA sought to address in Part 257 for surface impoundments<sup>3036</sup>—the risk posed by CCR surface impoundments that contain large amounts of CCR managed with water under a hydraulic head. The Former Fly Ash Holding Units and the Former Landfill's storm water pond, Pond 6, are different, in several important respects.

First, the Former Fly Ash Holding Units do not contain water and have not contained water for at least ~~30~~<sup>thirty</sup> years. Accordingly, any CCR remaining in the Fly Ash Holding Units is not under a hydraulic head and presents far less risk to groundwater than the units the Board sought to regulate in Part 845 (which the Board acknowledged when it declined to extend the Part 845 rulemaking to CCR landfills). See Updated Bradley ~~Rep~~Op., Updated Ex. 28, ~~at 11~~ at 21–22. As discussed above, Pond 6 contains *de minimis* amounts of CCR, and thus likewise does not present the risk targeted by Part 845.

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<sup>3036</sup> As mentioned above, the Former Landfill ceased receiving CCR prior to October 2015, and thus, it is not subject to Part 257's landfill requirements. Consistent with that assertion, in its Landfill VN, IEPA asserted that Illinois's landfill regulations, Part 811 *et seq.*, were applicable, not Part 257.

Second, the Former Fly Ash Holding Units are now covered by the Former Landfill, which operated and was regulated as a permit-exempt, on-site landfill for decades under Part 815, and which SIPC intends to close consistent with the Part 811 landfill regulations. As discussed below, current Illinois landfill regulations require that SIPC install a cover that is ~~identical to—and therefore~~ equally as protective as the cover that would be required by Part 845. ~~They~~ See Updated Bradley Op., Updated Ex. 28 at 21; see also 35 Ill. Adm. Code §§ 314(a), (b), (c). The regulations also require post-closure care, maintenance, and monitoring for the entire landfill area which, including Pond 6 in this case, includes Pond 6. See 35 Ill. Adm. Code § 811.302 (post-closure care), § 811.319 (groundwater monitoring), § 811.322 (final slope and stabilization). However, the Board clearly did not intend to regulate CCR landfills under the adopted Part 845 surface impoundment rules, and in fact, it opened a subdocket to address possible, future CCR landfill regulations ~~for CCR landfills~~. Second Notice Opinion and Order, at 12; IPCB Dkt. No. R2020-19(A). One would expect there to be many different requirements and considerations for landfills, which were never even addressed in the Part 845 rulemaking. *See, e.g.*, 40 C.F.R. §§ 257.70, .81, .84.

Third, there are significant legal, compliance, and fairness concerns inherent in suddenly and unexpectedly characterizing and regulating the Former Fly Ash Holding Units and Pond 6, and indeed the entire landfill area, as a CCR surface impoundment, when today and at the time Part 257 and Part 845 were adopted, the area was a landfill and had been managed and treated as a regulated landfill for decades. Indeed, as discussed above, under the same, key present tense definition language in both Part 257 and Part 845, the decision about whether a unit is a landfill or surface impoundment must be made at the time Part 257, or Part 845, respectively, was adopted. U.S. EPA had to address in Part 257 how to determine whether a unit should be considered a

landfill or surface impoundment because Part 257 contains different requirements for landfills and surface impoundments. It did so based upon the status of the unit *at the time Part 257 was adopted*. See ~~discussion~~ *supra* at Part III.A.1. This made sense for multiple reasons, including for clarity of applicability and because the correct regulatory requirements should apply based upon the characteristics of the unit, and the related risks presented, at the time the rule went into effect. It makes no sense to apply landfill requirements wholesale to ponds to address landfill risks, or to apply pond requirements to landfills to address pond risks. But that is exactly what IEPA seems to be claiming here.

Worse, IEPA seems to be claiming that Part 845 surface impoundment requirements apply to the whole Former Landfill after having treated the landfill as a landfill for years, including by issuing the Landfill VN to SIPC in 2020. [2020 Landfill VN. Ex. 16](#). SIPC operated the Former Landfill as a landfill, submitted landfill reports to IEPA, and ceased using the Former Landfill at a time that made Part 257 landfill requirements inapplicable. Having expected Part 257 to be inapplicable given the plain applicability language, reinforced by IEPA's prior view that the Former Landfill was subject to Illinois landfill requirements under Part 811, SIPC has not planned for Part 257 applicability, and it has not taken any Part 257 compliance actions. Indeed, if anyone had thought at the time it was adopted that Part 257 applied at all, it would have been anomalous, to say the least, for SIPC to have taken compliance action for its Former Landfill consistent with Part 257 surface impoundment requirements, but IEPA appears now to claim that Part 845's requirements, which are based on Part 257's surface impoundment requirements, apply to the Former Landfill.

This quixotic result, of course, was never contemplated by the Board in the Part 845 rulemaking. In fact, in adopting Part 845, the Board included some very aggressive deadlines

because, in its view, companies were already complying with Part 257 and they could use those actions to comply with Part 845. *See supra* Section IV.B.2. That is simply not true for the Former Landfill, including the Former Fly Ash Holding Units within the landfill footprint and related storm water runoff Pond 6. No one could reasonably have expected that Part 257's (and later Part 845's) surface impoundment requirements would apply to the Former Landfill, especially when IEPA asserted as late as 2020 that the Former Landfill was a landfill and regulated under Illinois landfill regulations. The Board did not consider or assess in its Part 845 rulemaking the application of Part 845's surface impoundment requirements to landfills, including the costs, feasibility, and necessity of compliance or the risks to be addressed. Applying Part 845 surface impoundment requirements to the Former Landfill also would cause unfair surprise and retroactive change of regulatory status concerns.

3. The Factors Relating to the Former Fly Ash Holding Units—which Differ from those Relied upon by the Board in Passing Part 845—Justify an Adjusted Standard.

The factors discussed above all justify granting the adjusted standard here, particularly where, as discussed below, the Former Fly Ash Holding Units will continue to be regulated and monitored as part of the Former Landfill closure and post-closure activities under Illinois landfill regulations and any exceedances of groundwater standards can be addressed pursuant to the landfill regulations and Part 620.

4. The Requested Adjusted Standard Will Not Result in Adverse Environmental or Health Effects.

As an initial matter, the Former Fly Ash Holding Units do not contain water and therefore do not pose the same risks to the environment as CCR surface impoundments that contain large quantities of CCR under a hydraulic head. [See Updated Bradley Op., Updated Ex. 28 at 21–22.](#)

Instead, they function as a landfill, which U.S. EPA, IEPA, and the Board have all recognized pose less of a threat to the environment than the units that the Board sought to regulate under Part 845. [Updated Bradley Op., Updated Ex. 28 at 20; Final Rule, Updated Ex. 17 at 21342](#) (“As noted, [EPA’s risk assessment shows that the highest risks are associated with CCR surface impoundments due to the hydraulic head imposed by impounded water.](#)”). Further, Pond 6 is a landfill runoff, *de minimis* pond, and as discussed above, it too does not present a risk that warrants regulation under Part 845.

Moreover, SIPC intends to close and cover the Former Landfill consistent with the requirements of Part 811. SIPC’s currently proposed landfill closure plan is consistent with Part 845 requirements for closure in place with a cover system. SIPC’s plan, which has been submitted to IEPA, includes the following:

- Installation of a final cover system consisting of a 3.0 foot low permeability layer overlain by a 3.0 foot final protective layer or an alternate geosynthetic cap with a minimum thickness of 4.0 feet consisting from the bottom up: 1.0 foot thick low permeability layer, 40-mil linear low-density polyethylene (LLDPE) geomembrane, a double-sided geocomposite drainage layer and a 3.0 foot final protective layer.<sup>37</sup> (*Compare* 35 Ill. Admin. Code § 811.314 *with id.* § 845.750.)
- Slopes that will be constructed to minimize wind and water erosion.
- Establishment of vegetation upon completion of the final cover placement and storm water and drainage features.
- Installation of additional monitoring wells, if needed, to meet the requirements of Part 811,<sup>34,38</sup> which requires, in part that “a network of monitoring points shall be established “at sufficient locations” downgradient with respect to groundwater flow and not excluding the downward direction, to detect any discharge of contaminants

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<sup>37</sup> [Part 811 allows for such an “alternate” cover system design where “the performance of the low permeability layer is equal to or superior to the performance” to the default requirements set forth in Part 811.314 \(b\)\(3\)\(A\)\(i\) and \(b\)\(3\)\(A\)\(ii\). See 35 Ill. Adm. Code § 811.314 \(b\)\(3\)\(A\)\(iii\).](#)

<sup>34,38</sup> SIPC has previously installed groundwater monitoring wells around the landfill and performed groundwater sampling and reported the results to IEPA.

room from any part of a potential source of discharge. 35 Ill. Admin. Code § 811.318(b)(1).

- Post-closure monitoring and care consistent with SIPC's obligations under Part 811.

*See* Former Landfill Closure Plan, Ex. 10 at 3–8.

Compliance with these provisions will ensure that the Former Landfill (including the Former Fly Ash Holding Units) remains insulated from any water that could lead CCR to leach into nearby groundwater or runoff to Pond 6. In addition, ongoing groundwater monitoring under the landfill closure plan will ensure that any exceedances of groundwater standards attributable to the Former Landfill (of which the Former Fly Ash Holding Units are a part) or Pond 6 will be identified and corrected as necessary. As a result, there is no risk that the proposed adjusted standard will result in any harm to the environment~~-~~ and Petitioner's requested adjusted standard "will not result in environmental or health effects substantially and significantly more adverse than the effects considered by the Board in adopting" Part 845. 415 Ill. Comp. Stat. 5/28.1(c)(3); [\*see also Updated Bradley Op., Updated Ex. 28 at 21–22.\*](#)

5. The Requested Adjusted Standard is Consistent with Federal Law.

As discussed *supra*, the Former Fly Ash Holding Units and Pond 6 are not existing or inactive CCR surface impoundments under Part 257. Accordingly, excluding them from Part 845 is not inconsistent with federal law. *See* 35 Ill. Admin. Code 104.406(i).

6. The Efforts Necessary to Require the Former Fly Ash Holding Units to Comply with Part 845 ~~are~~ Are Not Economically Reasonable.

As is the case with the De Minimis Units, the costs of compliance with Part 845 are not reasonable when considered in conjunction with the minimal (if any) benefits to the environment.

Andrews Engineering conservatively<sup>39</sup> estimates that the costs of closing and managing the Former Landfill, including the Former Fly Ash Holding Units, pursuant to Part 845 is ~~at least nearly~~ \$3.9 to \$5.6 ~~5.5~~ million in capital and other upfront costs, which includes the costs of permitting and documentation to support the necessary Part 845 permit applications. Supp. Liss Dec., Ex. 30 at ¶ 5. The O&M costs associated with managing the Former Landfill area, including the Former Fly Ash Holding Units, as a Part 845 surface impoundment would be at least ~~\$325,000 to~~ 67,536 per year (without an inflation factor) for the first ten years of post-closure care, and \$350,000 in annual costs for a 33,752 (without an inflation factor) for the remainder of the 30-year post closure care period required by Part 845.<sup>40</sup> ~~32~~Liss Dec., Ex. Id. 9, at ¶ 15 at ¶ 4. In contrast, the costs of closing and managing the Former Landfill pursuant to the Illinois landfill regulations (~~as set forth in the proposed landfill closure plan~~) is approximately \$3.5 to \$5.2 million in immediate capital costs with approximately ~~\$212,000 in annual~~ 42,000 per year in O&M costs for a period of 5 years after the completion of closure activities, and ~~\$124,400~~ 12,400 per year in annual O&M costs for the following 10-year period ~~for a total of \$2.304 million~~, assuming a 15-year post-closure care and ~~groundwater~~ monitoring period. *Id.* at ~~¶ 8~~ ¶ 4. The Part 845 costs include costs to comply with

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<sup>39</sup> Mr. Liss's estimate is conservative, in part, because it assumes that IEPA will allow the landfill area to close as one impoundment, rather than requiring separate closure of each of the three Former Fly Ash Holding Units. It also assumes that IEPA will approve closure in place using a final cover system, rather than require SIPC to excavate the landfill and the Former Fly Ash Holding Units and dispose of the material offsite and in accordance with the comprehensive Part 845 transportation requirements. Supp. Liss Dec., Ex. 30 at ¶ 5.

<sup>40</sup> This does not include the costs of expediting work to meet Part 845's stringent deadline, or alternate Board-approved compliance deadlines. This also does not include additional costs that may be incurred due to potential ambiguities in the rules, and does not include all plant personnel time.

~~<sup>32</sup> This does not include the costs of expediting work to meet Part 845's stringent deadlines, which may not even be possible at this juncture given that the former landfill is not regulated by Part 257. This also does not include additional costs that may be incurred due to potential ambiguities in the rules, and does not include all plant personnel time~~

requirements that were never intended to apply to landfills and were not enacted to address any risks actually presented by landfills.

As noted above, the Former Fly Ash Holding Units are not covered by Part 257. Therefore, neither U.S. EPA in promulgating Part 257 nor IEPA nor the Board in promulgating Part 845 found that it is economically reasonable to require former ponds like the Former Fly Ash Holding Units to comply with the requirements of Part 845. *See supra* Section IV.B.6. Further, as a not-for-profit cooperative, SIPC and its customers are uniquely sensitive to sudden, unexpected increases in capital and operating costs (and this cost is particularly unexpected given that, until ~~several weeks ago~~ earlier this year, SIPC and IEPA had been treating the Former Landfill as a landfill that was about to undergo closure under Part 811). Given that there will be no environmental benefit to managing the Former Fly Ash Holding Units pursuant to Part 845 rather than Part 811, the additional cost is not reasonable and the Petition should be granted.

**D. Proposed Language of Adjusted Standard.**

SIPC proposes the following adjusted standard language (35 Ill. Admin. Code 104.406(a)):

1. Pursuant to Section 28.1 of the Environmental Protection Act, the Board grants Southern Illinois Power Cooperative (“SIPC”) an adjusted standard from 35 Ill. Admin. Code § 845.100 for Ponds 3, including 3A, 4, 6, South Fly Ash Pond, Pond B-3, the Initial Fly Ash Holding Area, the Replacement Fly Ash Holding area, and the Fly Ash Holding Area Extension. 415 Ill. Comp. Stat. 5/28.1.
2. The adjusted standard applies to SIPC’s Marion Station.
3. The Part 845 regulations do not apply to Ponds 3, including 3A, 4, 6, South Fly Ash Pond, Pond B-3, the Initial Fly Ash Holding Area, the Replacement Fly Ash Holding area, or the Fly Ash Holding Area Extension.
4. The adjusted standard is effective as of the date of this order.

**E. Part 845 Was Promulgated to Implement Section 22.59 of the Act and the Automatic Stay Applies.**

Because SIPC filed ~~this~~ [its original](#) petition for an individual adjusted standard within 20 days after the effective date of Part 845 (April 21, 2021), the operation and application of Part 845 is automatically stayed as to the De Minimis Units and Former Fly Ash Holding Units pending the disposition of this petition. 415 Ill. Comp. Stat. 5/28.1(e).

The only exception to this automatic stay is for regulations “adopted by the Board to implement, in whole or in part, the requirements of the federal Clean Air Act, Safe Drinking Water Act or Comprehensive Environmental Response, Compensation and Liability Act, or the State RCRA, UIC or NPDES programs.” 415 Ill. Comp. Stat. 5/28.1(e). Part 845 was promulgated to implement Section 22.59 of the Act and the federal Resources Conservation and Recovery Act, Section 4005. It was not promulgated to implement, in whole or in part, the requirements of the federal Clean Air Act, Safe Drinking Water Act or Comprehensive Environmental Response, Compensation and Liability Act, or the State RCRA, UIC or NPDES programs. *See* 35 Ill. Adm. Code 104.406(b).

**F. Hearing Request.**

SIPC requests a hearing for this adjusted standard pursuant to 35 Ill. Admin. Code 104.406(j).

**G. Supporting Documentation.**

Documents and legal authorities supporting the Petition are cited herein (and, where applicable, on the attached Index of Exhibits) when they are used as a basis for the Petitioner's proof. Relevant portions of ~~the~~ [updated or new](#) documents and legal authorities, other than Board's

final ~~order~~, Order State regulations, statutes, and reported cases, are attached to this amended petition. See 35 Ill. Admin. Code § 104.406(k).

**V. CONCLUSION.**

SIPC respectfully requests that the Board grant its request for inapplicability or, in the alternative, an adjusted standard as set forth herein.

Respectfully Submitted,

Southern Illinois Power Cooperative

By: /s/ Katherine S. Walton

By: \_\_\_\_\_  
One of its attorneys

Dated: ~~May 11~~ September 2, 2021

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**INDEX OF EXHIBITS**

<b>Exhibit 1</b>	<del>Affidavit of Wendell Watson on Behalf of SIPC (May 10, 2021) (“Watson Aff.”)</del>
<b>Exhibit 2</b>	<del>Affidavit of Todd Gallenbach on Behalf of SIPC (May 10, 2021) (“Gallenbach Aff.”)</del>
<b>Exhibit 3</b>	<del>Andrews Engineering, Site Map prepared for SIPC (May 2021) (“Site Map”)</del>
<b>Exhibit 4</b>	<del>Lake Egypt Water District II 1995200, Annual Drinking Water Quality Report (Jan. 1–Dec. 30, 2019)</del>
<b>Exhibit 5</b>	<del>IEPA Water Pollution Control Permit, No. 1977-EN-5732 (Nov. 14, 1977) (“1977 Permit”)</del>
<b>Exhibit 6</b>	<del>July 22, 1982 Letter to IEPA</del>
<b>Exhibit 7</b>	<del>IEPA Water Pollution Control Permit, No. 1981-EN-2776-1 (Oct. 13, 1981) (“1981 Permit”)</del>
<b>Exhibit 8</b>	<del>Letter from SIPC to IEPA (Sept. 16, 1993) (“1993 Letter”)</del>
<b>Exhibit 9</b>	<del>Declaration of Kenneth W. Liss (“Liss Dec.”)</del>
<b>Exhibit 10</b>	<del>Andrews Engineering, SIPC’s Proposed Closure Plan for IEPA Site No. 199055505 (Dec. 16, 2020) (“Former Landfill Closure Plan”)</del>
<b>Exhibit 11</b>	<del>Hanson, Emery Pond Corrective Action and Selected Remedy Plan, Including GMZ Petition (Mar. 29, 2019)</del>
<b>Exhibit 12</b>	<del>IEPA Water Pollution Control Permit, No. 1989-EN-3064 (May 17, 1989)</del>
<b>Exhibit 13</b>	<del>IEPA Reissued National Pollutant Discharge Elimination System Permit, No. IL0004316 (Feb. 29, 2012) (“2012 NPDES Permit”)</del>
<b>Exhibit 14</b>	<del>IEPA Water Pollution Control Permit, No. 1973-ED-1343-OP (June 1973)</del>
<b>Exhibit 15</b>	<del>IEPA Initial Facility Report for On-Site Facilities (Sept. 18, 1992) (“1992 Landfill IFR”)</del>

**Exhibit** ~~IEPA Violation Notice L-2020-00035 (Mar. 20, 2020) (“2020 Landfill VN”)~~

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**Updated**  
**Exhibit** Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities, 80 Fed. Reg. 21,302 (April 17, 2015) (excerpted) (“Final Rule”)

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**Exhibit** ~~R-2020-019, *In the Matter of Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments: Proposed new 35 Ill. Adm. Code 845*, IEPA’s Statement of Reasons (Mar. 30, 2020) (excerpted) (“IEPA Statement of Reasons”)~~

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**Exhibit** ~~R-2020-019, *In the Matter of Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments: Proposed new 35 Ill. Adm. Code 845*, SIPC Comments to Illinois Pollution Control Board (Sept. 25, 2020)~~

~~19~~

**Exhibit** ~~IEPA Violation Notice W-2020-00046 (July 28, 2020)~~

~~20~~

**Exhibit** ~~IEPA Violation Notice W-2020-00087 (Dec. 16, 2020)~~

~~21~~

**Updated**  
**Exhibit** R-2020-019, *In the Matter of Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments: Proposed new 35 Ill. Adm. Code 845*, IEPA Responses to Pre-Filed Questions (Aug. 3, 2020) (excerpted) (“IEPA Responses”)

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**Exhibit** ~~R-2020-019, *In the Matter of Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments: Proposed new 35 Ill. Adm. Code 845*, Hearing Transcript (Aug. 11, 2020) (excerpted)~~

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**Exhibit** ~~R-2020-019, *In the Matter of Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments: Proposed new 35 Ill. Adm. Code 845*, First Supplement to IEPA Pre-Filed Responses (Aug. 5, 2020) (excerpted)~~

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**Exhibit** ~~U.S. EPA, Comment Summary and Response Document: Hazardous and Solid Waste Management System; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals from Electric Utilities; Proposed Rule, Vol. 3 (Dec. 2014) (excerpted)~~

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**Exhibit** ~~R-2020-019, In the Matter of Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments: Proposed new 35 Ill. Adm. Code 845, IEPA Post-Hearing Comments (Oct. 30, 2020) (excerpted)~~  
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**Exhibit** ~~In the Matter of Objection to the Issuance of Partial Approval of Closure/Post Closure Plan Duke-Gallagher Generating Station Ash Pond System, No. 20-S-J-5096 (OEA May 4, 2021)~~  
**27**

**Updated** Updated Opinion of Lisa JN Bradley, Ph.D. (Sept. 1, 2021) (“Updated Bradley Op.”)  
**Exhibit**

**28**

**Exhibit** Haley & Aldridge, Inc., Pond Investigation Report of Certain Ponds at Southern Illinois Power Company’s Marion Station (Sept. 1, 2021) (“Pond Investigation Rep.”)  
**29**

**Exhibit** Supplemental Declaration of Kenneth W. Liss (“Supp. Liss Dec.”)

**30**

**Exhibit** Redline Comparison Document, showing changes made since SIPC’s Initial Petition filed with the Board on May 11, 2021

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