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-_____ (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
P.O. Box 19276
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 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, Appearances, and a Certificate of Service, copies of which are herewith served upon you.

/s/ Amy Antoniolli
Amy Antoniolli

Dated: May 11, 2021

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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 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 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 Replacement Fly Ash Holding Area, and the Fly Ash Holding Area Extension (collectively, the "Former Fly Ash Holding Units")[1].

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, 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 any of the units at issue are covered CCR surface impoundments (they are not), an adjusted standard is warranted because they differ from the

[1] The De Minimis Units and the Former Fly Ash Holding Units are depicted on the Site Map. Andrews Engineering, Site Map prepared for SIPC (May 2021) ("Site Map"), attached as Ex. 3.

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.[2]

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 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 million tons of mine waste, helping to clean up many abandoned mines.

[2] 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 supplement or amend its Petition to reflect receipt of new or additional information.

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 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 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 SO2 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 SO2 scrubber installed around 1978. This was the first wet SO2 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")[3] at each unit in 1975 in accordance with the Clean Air Act.[4] 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.

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.

[3] ESPs are control devices that captures particulate matter in the exhaust gas, including fly ash.
[4] 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.

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[5] may have been sluiced to the Replacement Fly Ash Holding Area. In 1985, former Pond A-1 was constructed. After that period, 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 outrages between 1985 and 2003 (*see infra* at p. 11-12), Pond B-3. *See, e.g.*, Letter from SIPC to IEPA (Sept. 16, 1993) ("1993 Letter"), attached as Ex. 8.

[5] Units 1, 2 and 3 were run infrequently after the installation of Unit 4.

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.

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). 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. 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. 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 discussed below, SIPC is conducting an investigation of these current or former ponds pursuant to an investigation protocol negotiated with IEPA, and SIPC expects that the results of the pond investigation will confirm that they contain only *de minimis* amounts of CCR that do not pose an appreciable threat to human health or the environment warranting regulation under Part 845.

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.

Pond 3 (including 3A) – Water from the South Fly Ash Pond is permitted to flow to Pond 3, then Ponds 4 and 6, before discharging through Outfall 002.[6] *See* IEPA Reissued National Pollutant Discharge Elimination System Permit, No. IL0004316 (Feb. 29, 2012) ("2012 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 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; no ash has been placed in the pond for treatment, storage, or disposal.

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

[6] SIPC timely applied for NPDES permit renewal and is currently working with IEPA to update the application prior to reissuance.

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.

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.

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 times between 1985 and 2003, and each of those outages lasted approximately 2 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.

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 attached site map. 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 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), 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 explicitly exempts CCR landfills). 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 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[.]"[7] 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.

[7] 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 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.[8] 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. <u>The Part 845 Rulemaking.</u>

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

[8] 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).

> 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)[9]. 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.

G. <u>The Board's Opinion and the Final Rule.</u>

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*

[9] 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. 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.

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. 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.[10]

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,

[10] 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.

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[11] 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.

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 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

[11] 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.

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.

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). 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 Alterative, 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[12] treat***s***, store***s***, or dispose***s*** of CCR." 40 C.F.R. § 257.53 (emphasis added); 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.[13]

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

[12] Part 845 substitutes "surface impoundment" for "unit," but this works no substantive change. 35 Ill. Admin. Code § 845.120

[13] 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. Envtl. 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.

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 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, 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, 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, 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[14] to determine that the De Minimis Units are not regulated CCR surface impoundments.

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, Ex. 17 at 21,357. 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[15]—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

[14] 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.

[15] 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 p. 9.

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.

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

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.[16]

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). 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 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 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.[17]

[16] 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.

[17] 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.").

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 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 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 the definition 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, 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.[18]

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

[18] 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), attached as Ex. 27 at 14.

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[19], 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
>
> (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[20], and the technical feasibility and economic reasonableness of measuring or reducing the

[19] Part 845 does not specify a level of justification required to qualify for an adjusted standard.
[20] 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.

particular type of pollution." 415 Ill. Comp. Stat. 5/27(a).[21]

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.

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:

[21] 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.

> 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.").[22]

[22] 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)

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 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, 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.

("The General Assembly finds that . . . CCR generated by the electric generating industry has caused ***groundwater*** contamination . . . ." (emphasis added)).

As Toxicologist Lisa Bradley explains in her 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. ("Bradley Op."), Ex. 28.

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. 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 Minims 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.

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. Accordingly, as discussed above, Dr. Bradley has determined that the De Minimis Units are not expected to a have a substantial or significant adverse threat to human health or the environment warranting regulation under Part 845. Bradley Op., Ex. 28, at p. 11. 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, 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.[23] A treatment or control technology is not

[23] *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*

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.[24] 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,[25] 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));

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.").

[24] *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).

[25] 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.

- 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).[26]

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 $8 million to $10.5 million in capital costs (with little to no environmental benefit). *See* Liss Dec., Ex. 9 at ¶18. This does not include the cost of constructing new storm water basins as needed to replace the De Minimis Units. *Id*. at ¶19.

[26] Due to the prescriptive nature of Part 845, technically feasible compliance alternatives to meet the requirements of Part 845 are very limited.

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 estimates that closing the De Minimis Units pursuant to Part 845 would cost SIPC at least $8M to $10.5M in capital and other upfront costs costs and at least $510,000 to $535,000 dollars in annual costs over at least three years.[27] 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. 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

[27] 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 may not even be possible at this juncture given that 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.

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 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.[28] 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." 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,

[28] The Board requested an analysis from the Department of Commerce and Economic Opportunity, but none was performed. Second Notice Opinion and Order, at 8.

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.

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[29] 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

[29] 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.

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[30]—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 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* Bradley Rep., Ex. 28, at 11. 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

[30] 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.

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 protective as—the cover that would be required by Part 845. They also require post-closure care, maintenance, and monitoring for the entire landfill area, including Pond 6. 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 landfill regulations for CCR landfills. Second Notice Opinion and Order, at 12. 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. 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. 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. 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 the 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. (*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,[31] 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 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).

[31] SIPC has previously installed groundwater monitoring wells around the landfill and performed groundwater sampling and reported the results to IEPA.

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 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 $3.9 to $5.6 million in capital and other upfront costs, which includes the costs of permitting and documentation to support the necessary Part 845 permit applications. 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 $350,000 in annual costs for a 30-year post-closure care period.[32] Liss Dec., Ex. 9, at ¶15. 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 O&M costs for a period of 5 years after the completion of closure activities, and $124,400 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. The Part 845

[32] 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

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 several weeks ago, 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 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 documents and legal authorities, other than Board's final order,

State regulations, statutes, and reported cases, are attached to this 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

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

Dated: May 11, 2021

SCHIFF HARDIN LLP

Attorneys for Petitioner Southern Illinois Power Cooperative

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INDEX OF EXHIBITS

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")

Exhibit 18 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")

Exhibit 19 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)

Exhibit 20 IEPA Violation Notice W-2020-00046 (July 28, 2020)

Exhibit 21 IEPA Violation Notice W-2020-00087 (Dec. 16, 2020)

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")

Exhibit 23 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)

Exhibit 24 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)

Exhibit 25 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)

Exhibit 26 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)

Exhibit 27 *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)

Exhibit 28 Opinion of Lisa JN Bradley, Ph.D.

BEFORE THE
ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF: PETITION OF SOURTHERN ILLINOIS POWER COOPERATIVE FOR AN ADJUSTED STANDARD FROM 35 ILL. ADMIN. CODE PART 845 OR, IN THE ALTERNATIVE, A FINDING OF INAPPLICABILITY	AS 21-_____ (Adjusted Standard)

APPEARANCE

I, Amy Antoniolli, hereby file my appearance in this proceeding on behalf of Southern Illinois Power Cooperative.

/s/ Amy Antoniolli

Amy Antoniolli
Schiff Hardin LLP
233 South Wacker Drive
Suite 7100
Chicago, Illinois 60606
312-258-5500
aantoniolli@schiffhardin.com

Dated: May 11, 2021

BEFORE THE
ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF: PETITION OF SOURTHERN ILLINOIS POWER COOPERATIVE FOR AN ADJUSTED STANDARD FROM 35 ILL. ADMIN. CODE PART 845 OR, IN THE ALTERNATIVE, A FINDING OF INAPPLICABILITY	AS 21-_____ (Adjusted Standard)

APPEARANCE

I, Stephen Bonebrake, hereby file my appearance in this proceeding on behalf of Southern Illinois Power Cooperative.

/s/ Stephen Bonebrake

Stephen Bonebrake
Schiff Hardin LLP
233 South Wacker Drive
Suite 7100
Chicago, Illinois 60606
312-258-5500
sbonebrake@schiffhardin.com

Dated: May 11, 2021

BEFORE THE
ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	
PETITION OF SOURTHERN ILLINOIS POWER COOPERATIVE FOR AN ADJUSTED STANDARD FROM 35 ILL. ADMIN. CODE PART 845 OR, IN THE ALTERNATIVE, A FINDING OF INAPPLICABILITY	AS 21-_____ (Adjusted Standard)

I, Katherine Walton, hereby file my appearance in this proceeding on behalf of Southern Illinois Power Cooperative.

/s/ Katherine Walton

Katherine Walton
Schiff Hardin LLP
233 South Wacker Drive
Suite 7100
Chicago, Illinois 60606
312-258-5500
kwalton@schiffhardin.com

Dated: May 11, 2021

CERTIFICATE OF SERVICE

I, the undersigned, certify that on this 11th day of May, 2021:

I have electronically served a true and correct copy of the attached PETITION OF ELECTRIC ENERGY, INC. FOR AN ADJUSTED STANDARD FROM 35 ILL. ADM. CODE PART 845 OR, IN THE ALTERNATIVE, A FINDING OF INAPPLICABILITY and Appearances on behalf of Southern Illinois Power Cooperative, by electronically filing with the Clerk of the Illinois Pollution Control Board and by e-mail upon the following persons:

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

Division of Legal Counsel
Illinois Environmental Protection Agency
1021 N. Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276
Epa.dlc@illinois.gov

My e-mail address is aantoniolli@schiffhardin.com;

The number of pages in the e-mail transmission is 5.

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

/s/ Amy Antoniolli
Amy Antoniolli

Dated: May 11, 2021

SCHIFF HARDIN LLP
Attorney for Petitioner SIPC
Katie Walton
Stephen Bonebrake
Amy Antoniolli
Schiff Hardin LLP
233 South Wacker Drive
Suite 7100
Chicago, Illinois 60606
(312) 258-5500

kwalton@schiffhardin.com
sbonebrake@schiffhardin.com
aantoniolli@schiffhardin.com

EXHIBIT 1

AFFIDAVIT OF WENDELL WATSON ON BEHALF OF SOUTHERN ILLINOIS POWER COOPERATIVE

I, Wendell Watson, first being duly sworn on oath, depose and state as follows:

1. I am currently employed as Director of Environmental Services at Southern Illinois Power Cooperative ("SIPC"), which operates an electric power generating facility, located south of Marion, Illinois, in Williamson County ("Marion Station"). I am responsible for environmental compliance and fuel procurement at the Marion Station. I have worked for SIPC since June of 2018. I received a Bachelor's of Chemistry from Illinois State University in 1986. Prior to my current position at SIPC, I worked for over 30 years as an environmental manager for another company.

2. I participated in the preparation of the Petition of Southern Illinois Power Cooperative for an Adjusted Standard from 30 Ill. Adm. Code Part 845 or, in the Alternative, a Finding of Inapplicability ("Petition").

3. I have read the Petition and, based on my personal knowledge and belief, the facts stated in the following sections of the Petition are true and correct: Section II.A., the introductory paragraphs of Section II.B., IV.B.6. and IV.C.6. regarding Marion Station and SIPC and its operation, business, and financing.

FURTHER, Affiant sayeth not.

Wendell Watson

Subscribed and sworn to before me

this 10th day of May 2021.

"OFFICIAL SEAL"
JODI R HAWKINS
Notary Public, State of Illinois
My Commission Expires: 05/21/2022

EXHIBIT 2

AFFIDAVIT OF TODD GALLENBACH ON BEHALF OF SOUTHERN ILLINOIS POWER COOPERATIVE

I, Todd Gallenbach, first being duly sworn on oath, depose and state as follows:

1. I am currently employed as Vice President of Power Production at Southern Illinois Power Cooperative's ("SIPC") facility located south of Marion, Illinois, in Williamson County ("Marion Station". I am responsible for operations and maintenance of the pond system and landfill area at Marion Station. I have worked at SIPC for more than 30 years, with the last 24 years in my current position. I am a licensed professional engineer in the State of Illinois. I received a Bachelor's of Science and Mechanical Engineering from Southern Illinois University at Carbondale in 1988.

2. I began working at the Marion Power Station in 1991. My responsibilities at the time included periodically inspecting the site and working on various aspects of the plant, including CCR management. From 1991 to 2015, when the on-site landfill ceased receiving materials, I observed that fly ash and scrubber sludge were routinely transported by conveyor belt for disposal in the on-site landfill. The landfill, as of 1991, covered portions of the area that earlier encompassed what are referred to in the Petition of Southern Illinois Power Cooperative for an Adjusted Standard from 30 Ill. Adm. Code Part 845 or, in the Alternative, a Finding of Inapplicability ("Petition") as the three Former Fly Ash Holding Units, based on locations shown in certain historic drawings. As of 1991 and thereafter, the area comprising the area of the Former Fly Ash Holding Units, as shown on certain historic drawings, has been dry, with the only water collecting from time to time due to precipitation, and that area has not received process wastewater or otherwise stored, treated, or disposed of CCR in liquids. At present day, the landfill area subject to the proposed closure plan fully covers the entire footprint of the Former Fly Ash Holding Units, as those units are shown on certain drawings.

3. I participated in the preparation of the Petition.

4. I have read the Petition and, based on my personal knowledge and belief, the facts stated in Sections II.B. and II.C. of the Petition regarding Marion Station and its operation are true and correct.

FURTHER, Affiant sayeth not.

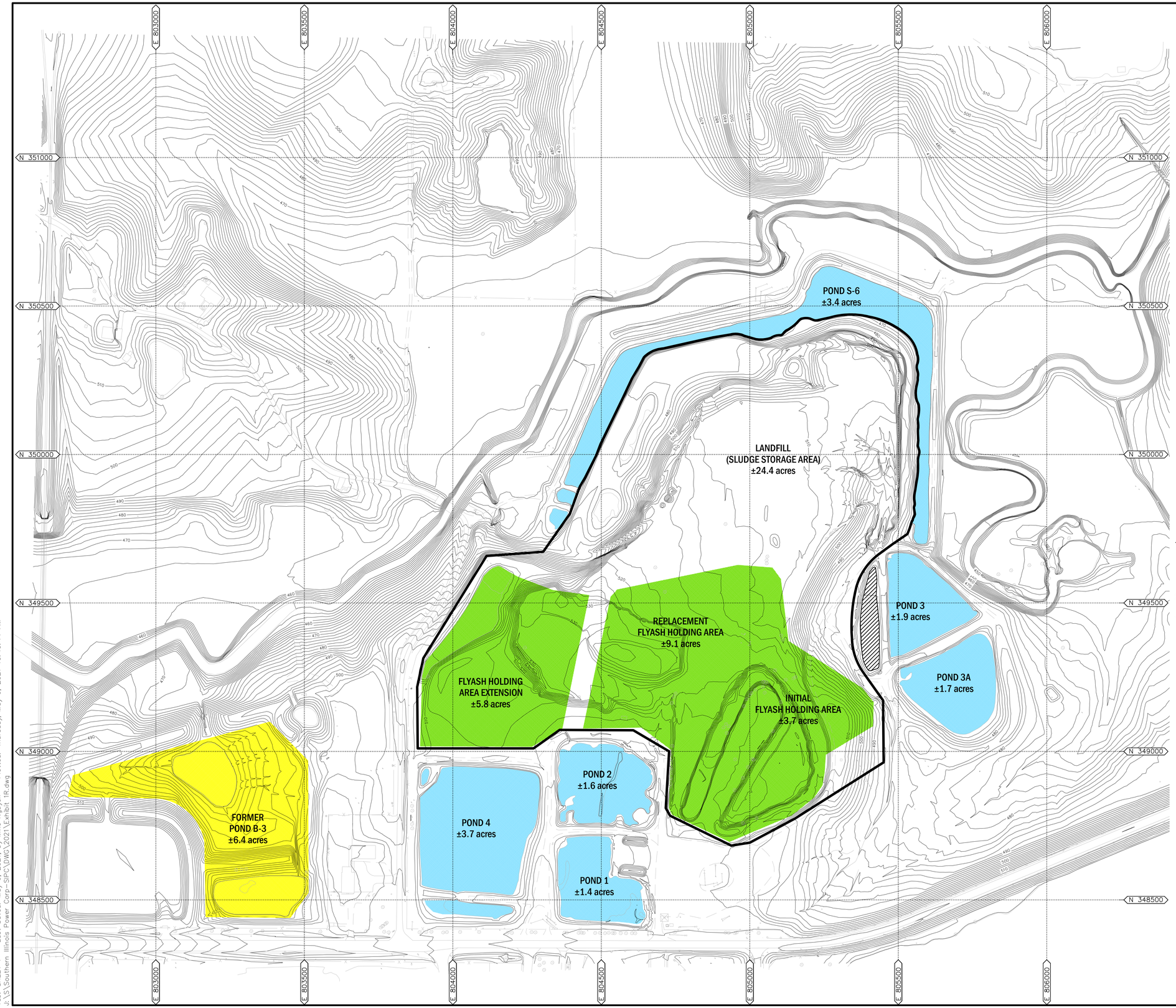
Todd Gallenbach

Subscribed and sworn to before me

this 10th day of May 2021.

"OFFICIAL SEAL"
JODI R HAWKINS
Notary Public, State of Illinois
My Commission Expires: 05/21/2022

EXHIBIT 3



LEGEND

- APPROXIMATE LANDFILL UNIT BOUNDARY/WASTE BOUNDARY
- EXISTING FENCE LINE
- EXISTING TREE LINE
- EXISTING PAVED ROAD
- EXISTING UNPAVED ROAD
- EXISTING LIGHT POLE
- EXISTING POWER POLE
- EXISTING SIGN
- EXISTING TREE
- INTERMITTENT STORMWATER COLLECTION AREA
- POND AREA
- APPROXIMATE FORMER FLYASH HOLDING AREAS
- FORMER POND B-3

NOTES

1. EXISTING AERIAL TOPOGRAPHY WAS GENERATED FROM THE FLYOVER TAKEN ON SEPTEMBER 14, 2020 BY DRONEVIEW TECHNOLOGIES. CONTOUR INTERVAL SHOWN IS 2 FEET.
2. FOR CLARITY, NOT ALL SITE FEATURES ARE SHOWN.
3. FORMER FLYASH AREAS FROM IEPA WATER POLLUTION CONTROL PERMIT 1977-EN-5732, ISSUED NOVEMBER 14, 1977.

N

0 150 300 600

SCALE: IN FEET

NO.	DATE	REVISION DESCRIPTION	BY

ANDREWS ENGINEERING
3300 GINGER CREEK DRIVE
SPRINGFIELD, ILLINOIS 62711-7233
PH (217) 787-2334 WWW.ANDREWS-ENG.COM
PONTIAC, IL • LOMBARD, IL • INDIANAPOLIS, IN • WARRENTON, MO

DESIGNED BY: DWM | DRAWN BY: MPN
APPROVED BY: DWM

SITE MAP

PREPARED FOR
SOUTHERN ILLINOIS POWER COOPERATIVE
WILLIAMSON COUNTY, ILLINOIS

DATE: MAY 2021

PROJECT ID: 200243/0012

SHEET NUMBER: 1

Tab: SHEET 1 Last Saved: May 6, 2021, by Mike Nguyen Plotted: Thursday, May 6, 2021 10:40:44 AM
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LEGEND

- APPROXIMATE UNIT BOUNDARY/WASTE BOUNDARY
- EXISTING FENCE LINE
- EXISTING TREE LINE
- EXISTING PAVED ROAD
- EXISTING UNPAVED ROAD
- EXISTING LIGHT POLE
- EXISTING POWER POLE
- EXISTING SIGN
- EXISTING TREE
- POND AREA

NOTES

1. EXISTING AERIAL TOPOGRAPHY WAS GENERATED FROM THE FLYOVER TAKEN ON SEPTEMBER 14, 2020 BY DRONEVIEW TECHNOLOGIES. CONTOUR INTERVAL SHOWN IS 2 FEET.
2. FOR CLARITY, NOT ALL SITE FEATURES ARE SHOWN.

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0 150 300 600

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PONTIAC, IL • LOMBARD, IL • INDIANAPOLIS, IN • WARRENTON, MO

DESIGNED BY: DWM | DRAWN BY: MPN | APPROVED BY: DWM

SITE MAP

PREPARED FOR
SOUTHERN ILLINOIS POWER COOPERATIVE
WILLIAMSON COUNTY, ILLINOIS

DATE: MAY 2021

PROJECT ID: 200243/0012

SHEET NUMBER: 2

Tab: SHEET 2 Last Saved: May 5, 2021, by Mike Nguyen Plotted: Wednesday, May 5, 2021 10:44:06 AM
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EXHIBIT 4

Annual Drinking Water Quality Report

Lake Egypt Water District IL1995200

Annual Water Quality Report for the period of January 1 to December 31, 2019.

This report is intended to provide you with important information about your drinking water and the efforts made by the water system to provide safe drinking water.

The source of drinking water used by Lake Egypt Water District is Surface Water.

For more information regarding this report contact:

Chris Boyd
(618)964-1380

Este informe contiene información muy importante sobre el agua que usted bebe. Tradúzcalo ó hable con alguien que lo entienda bien.

Source of Drinking Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPAs Safe Drinking Water Hotline at (800) 426-4791.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Some people may be more vulnerable to contaminants in drinking water than the general population.

Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. We cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at http://www.epa.gov/safewater/lead.

Source Water Assessment

We want our valued customers to be informed about their water quality. If you would like to learn more, please feel welcome to attend any of our regularly scheduled meetings. The source water assessment for our supply has been completed by the Illinois EPA. If you would like a copy of this information, please stop by the District Office during regular business hours or call our operator at (618)964-1380. To view a summary version of the completed Source Water Assessments, including: Importance of Source Water; Susceptibility to Contamination Determination; and documentation/recommendation of Source Water Protection Efforts, you may access the Illinois EPA website at http://www.epa.state.il.us/cgi-bin/wp/swap-fact-sheets.pl.

Source of Water: LAKE OF EGYPT PWD. Illinois EPA considers all surface water sources of public water supply to susceptible to potential pollution problems. Hence the reason for mandatory treatment of all public water supplies in Illinois. Mandatory treatment includes coagulation, sedimentation, filtration and disinfection. Primary sources of pollution in Illinois lakes can include agricultural runoff, land disposal (septic systems) and shoreline erosion.

SOURCE WATER INFORMATION

SOURCE WATER NAME	TYPE OF WATER	REPORT STATUS	LOCATION
Lake of Egypt	SW		

2019 Regulated Contaminants Detected

Lead and Copper

Definitions:
Action Level Goal (ALG): The level of a contaminant in drinking water below which there is no known or expected risk to health. ALGs allow for a margin of safety.
Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Lead and Copper	Date Sampled	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Violation	Likely Source of Contamination
Copper	9/19/2017	1.3	1.3	0.024	0	ppm	N	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.

Water Quality Test Results

Definitions: The following table contains scientific terms and measures, some of which may require explanation.

Avg	Regulatory compliance with some MCLs are based on running annual average of monthly samples.
Level 1 Assessment	A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.
Level 2 Assessment	A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.
Maximum Contaminant Level Goal or MCLG	The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
Maximum Contaminant Level or MCL	The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
Maximum residual disinfectant level goal or MRDLG	The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
Maximum residual disinfectant level or MRDL	The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
ppb	micrograms per liter or parts per billion - or one ounce in 7,350,000 gallons of water.
na	not applicable.
ppm	milligrams per liter or parts per million - or one ounce in 7,350 gallons of water.
mrem	millirems per year (a measure of radiation absorbed by the body)
Treatment Technique or TT	A required process intended to reduce the level of a contaminant in drinking water.

Regulated Contaminants

Disinfectants and Disinfection By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Chloramines	2019	2.9	2.7 - 2.9	MRDLG = 4	MRDL = 4	ppm	N	Water additive used to control microbes.
Chlorite	2019	0.81	0.5 - 0.81	0.8	1	ppm	N	By-product of drinking water disinfection.
Haloacetic Acids HAA5	2019	35	16.1 – 42.1	No goal for the total	60	ppb	N	By-product of drinking water disinfection
Total Trihalomethanes (TTHM)	2019	55	6.07 – 76	No goal for the total	80	ppb	N	By-product of drinking water disinfection

Inorganic Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Barium	2019	0.024	0.024 - 0.024	2	2	ppm	N	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Fluoride	2019	0.7	0..688 - 0.688	4	4.0	ppm	N	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Sodium	2019	27	27 - 27			ppm	N	Erosion from naturally occurring deposits. Used in water softener regeneration.

Turbidity

	Limit (Treatment Technique)	Level Detected	Violation	Likely Source of Contamination
Highest Single Measurement	1	0.155	N	Soil Runoff
Lowest monthly % meeting limit	0.3	100%	N	Soil Runoff

Information Statement: Turbidity is a measurement of the cloudiness of the water caused by suspended particles. We monitor it because it is a good indicator of water quality and the effectiveness of our filtration system and disinfectants.

Total Organic Carbon

The percentage of Total Organic Carbon (TOC) removal was measured each month and the system met all TOC removal requirements set, unless a TOC violation is noted in the violations section.

EXHIBIT 5

New Ash Pond 03 1977-EN-5732

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
WATER POLLUTION CONTROL PERMIT

PERMIT NO.: 1977-EN-5732

DATE ISSUED: November 14, 1977

FINAL PLANS, SPECIFICATIONS, APPLICATION AND SUPPORTING DOCUMENTS PREPARED BY: Burns and McDonnell

LOG NUMBERS: 5732-77

SUBJECT: SOUTHERN ILLINOIS POWER CO-OP, INC. - New Ash Pond (Marion)

PERMITTEE TO CONSTRUCT AND OWN
Southern Illinois Power Cooperative, Inc.
Route 4
Box 255
Marion, Illinois 62959

Permit is hereby granted to the above designated permittee(s) to construct and/or operate water pollution control facilities described as follows:

Installation of a 5 million cu. ft. fly ash holding pond and all necessary appurtenances, designed to treat approximately 34,500 gallons of average daily flow fr the power plant. The treated water will be discharged to the Saline River via the existing discharge #001.

This Permit is issued subject to the following Special Condition(s). If such Special Condition(s) require(s) additional or revised facilities, satisfactory engineering pla documents must be submitted to this Agency for review and approval for issuance of a Supplemental Permit.

SPECIAL CONDITION #1: Embankments shall be seeded from the outside toe to 1 foot abov the high water line on the dikes, measured on the sloped.

SPECIAL CONDITION #2: The existing fly ash holding pond shall be abandoned and covere as indicated on the submitted plan. The top soil shall be seeded to prevent erosion.

SPECIAL CONDITION #3: This permit covers construction only. Operation is covered by NPDES Permit IL0004316.

THE STANDARD CONDITIONS OF ISSUANCE INDICATED ON THE REVERSE SIDE OF THIS PERMIT (PAGE 1a) MUST BE COMPLIED WITH IN FULL. READ ALL CONDITIONS CAREFULLY.

DIVISION OF WATER POLLUTION CONTROL

TGM:CCH:sh1064/1
cc: EPA - Region 5
Burns & McDonnell

[redacted]
Manager, Permit Section

LOG NO. 3932-77
DATE RECEIVED:

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF WATER POLLUTION CONTROL
PERMIT SECTION
Springfield, Illinois 62706

RECEIVED
OCT 19 1977
IEPA-DWPC-Records - SPFD

APPLICATION FOR PERMIT OR CONSTRUCTION APPROVAL

WPC-PS-1

1. NAME AND LOCATION:

Name of project: Southern Illinois Power Cooperative, Inc.

Municipality or Township 8 miles south of Marion County Williamson

2. BRIEF DESCRIPTION OF PROJECT: Abandonment of existing fly-ash holding pond and construction of new impoundment. Said impoundment to discharge to existing discharge 001 (Il.NPDES 0004316)

3. DOCUMENTS BEING SUBMITTED: If the project involves any of the items listed below, submit the corresponding schedule, and check the appropriate spaces.

PROJECT

Private Sewer Connection	A___	Spray Irrigation	H___
Public Sewer Extension	B___	Septic Tanks	I___
Sewer Extension Construct Only	C___	Industrial Treatment or Pretreatment	J X
Sewage Treatment Works	D___	Deepwell Injection	K___
Excess Flow Treatment	E___	Cyanide Acceptance	L___
Lift Station/Force Main	F___	Updating Cyanide Acceptance Form	M___
Sludge Disposal	G___	Waste Characteristics	N X

Plans: Title Flyash Wastewater Control System Modifications

Number of Pages

Specifications: Title Impoundment (Flyash Holding)

Number of Books/Pages

Other Documents (Please Specify) SIPC Dwg. G-212 Ash Pond Area

4. This is an Application for: Construction Permit___, Operating Permit___, Joint Construction and Operating X, Cyanide Acceptance Permit___.

5. CERTIFICATIONS AND APPROVAL

5.1 Certificate by Design Engineer

I hereby certify that I am familiar with the information contained in this application and that to the best of my knowledge and belief such information is true, complete and accurate.

ENGINEER E. T. Stinson (NAME) 52-32609 (REGISTRATION NUMBER)

FIRM Burns & McDonnell

ADDRESS 2600 E. 63rd St. - P. O. Box 173

Kansas City, Missouri 64141 PHONE NUMBER 816-333-4375

SIGNATURE E. T. Stinson

DESIGN LOADINGS

7.1 Design population equivalent (one population equivalent is 100 gallons of wastewater per day, containing 0.17 pounds of BOD$ and 0.20 pounds of suspended solids;
BOD N/A ; Suspended Solids N/A ; Flow N/A

7.2 Design Average Flow Rate Flow is intermittent. Pond acts as surge MGD.

7.3 Design Maximum Flow Rate .2.9 basin so that control can be maintained. MGD.

7.4 Design Minimum Flow Rate 0.0 MGD.

7.5 Minimum 7-day, 10-year low flow 0.0 cfs 0.0 MGD.
Minimum 7-day, 10-year flow obtained from U.S.D I Geological Survey Report for Il. Water Resources Data. Data taken from Gauging Sta. located 4-1/2 miles S.W. of Carrier Mills, Il. on Rwy. 45 (SW 1/4 of NE1/4 of Sec. 20, T105, R3E Min. Daily Discharge 29-30 July 66 = 0.6 cfs
Max. Daily Discharge 28 April 66 = 2940 cfs

7.6 Dilution Ratio N/A ; ____.

8. FLOW TO TREATMENT WORKS (if existing):

8.1 Flow (last 12 months)

8.1.1 Average Flow 0.335 MGD *

8.1.2 Maximum Flow 0.452 MGD *

8.2 Equipment used in determing above flows Pumping times and ISCO Model 1700 Flow meter w/rectangular weir.

9. Has a preliminary engineering report for this project been submitted to this Agency for Approval?

YES ___ NO X If so, when was it submitted and approved. Date Submitted ____

Certification# ____

Dated ____

10. List Permits previously issued for the facility: Permit #1969-EB-707 (Discharge 001)
NPDES IL 0004316

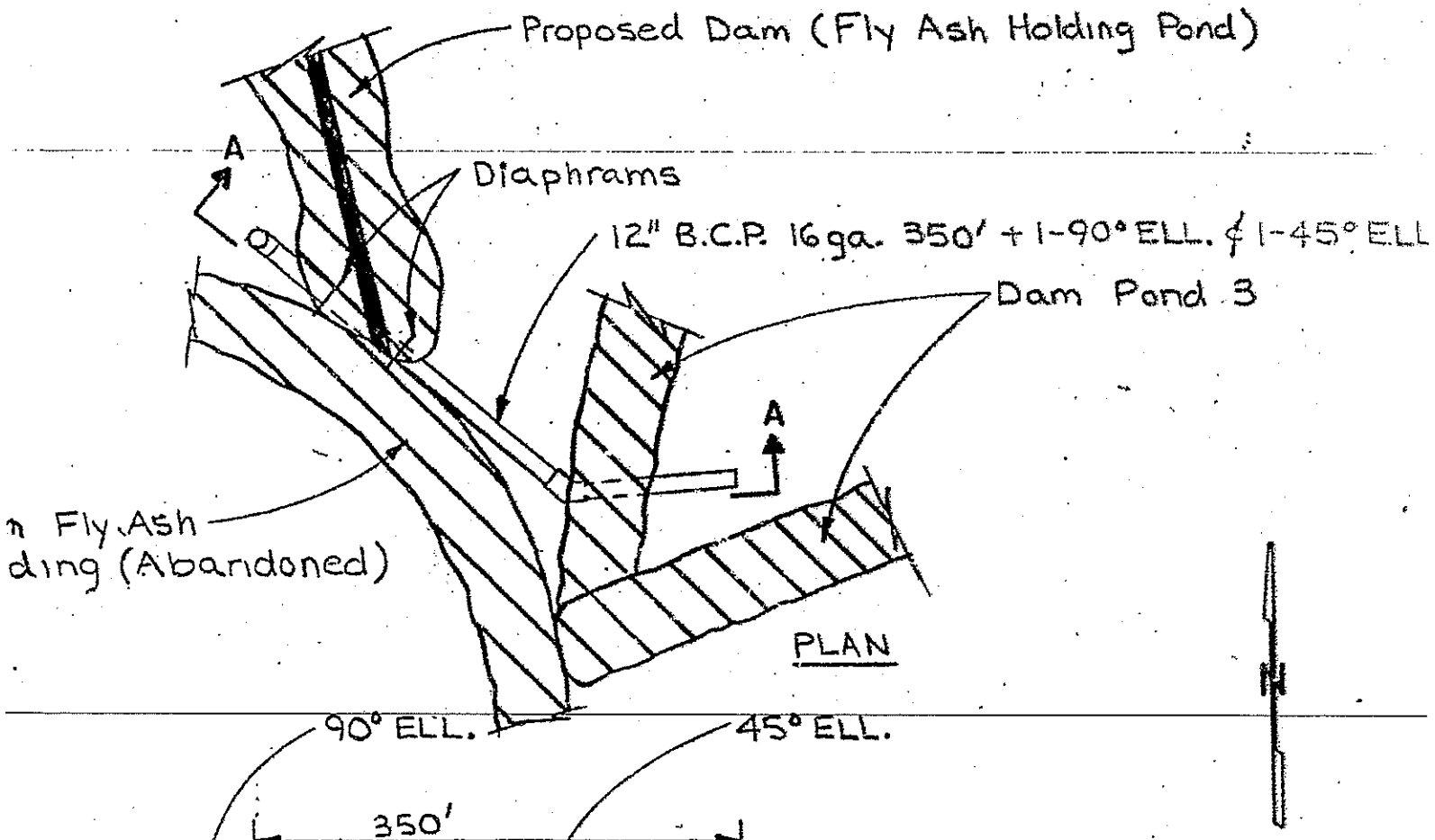
11. Describe provisions for operation during contingencies such as power failures, flooding, peak loads, equipment failure, maintenances shut-downs and other emergencies. This pond will be used for back up treatment only. The existing flows will be discontinued because of the SO_2 scrubber which will produce a stable product. It will contain our flyash, bottom ash, and spent limestone slurry cake from the SO_2 scrubber. When the scrubber malfunctions ashes must be sluiced in the conventional manner as we are doing now.

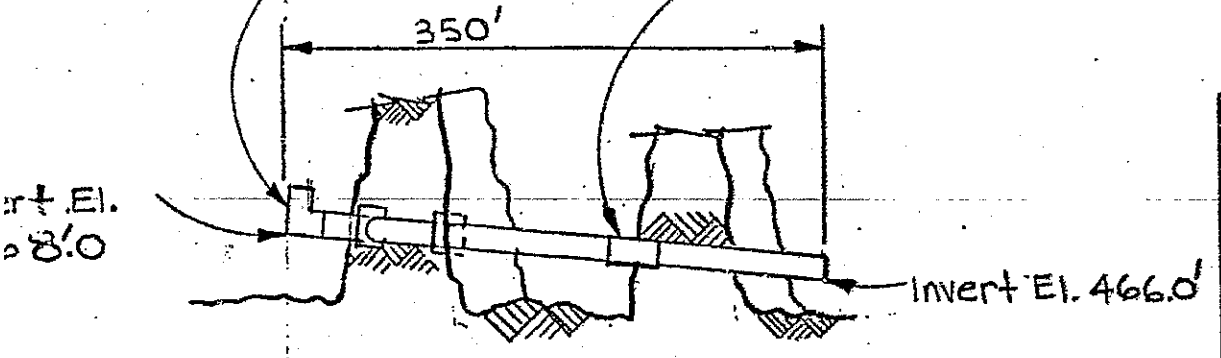
12. Complete and submit Schedule G if sludge disposal will be required by this facility.

13. WASTE CHARACTERISTICS: Schedule N must be submitted.

14. TREATMENT WORKS OPERATOR CERTIFICATION: List names and certification numbers of certified operators:
Carl M. Stafford, Industrial Sewage Treatment Works Operator

* Values given are actual. These values taken from Daily Monitoring Reports over past 8 months.





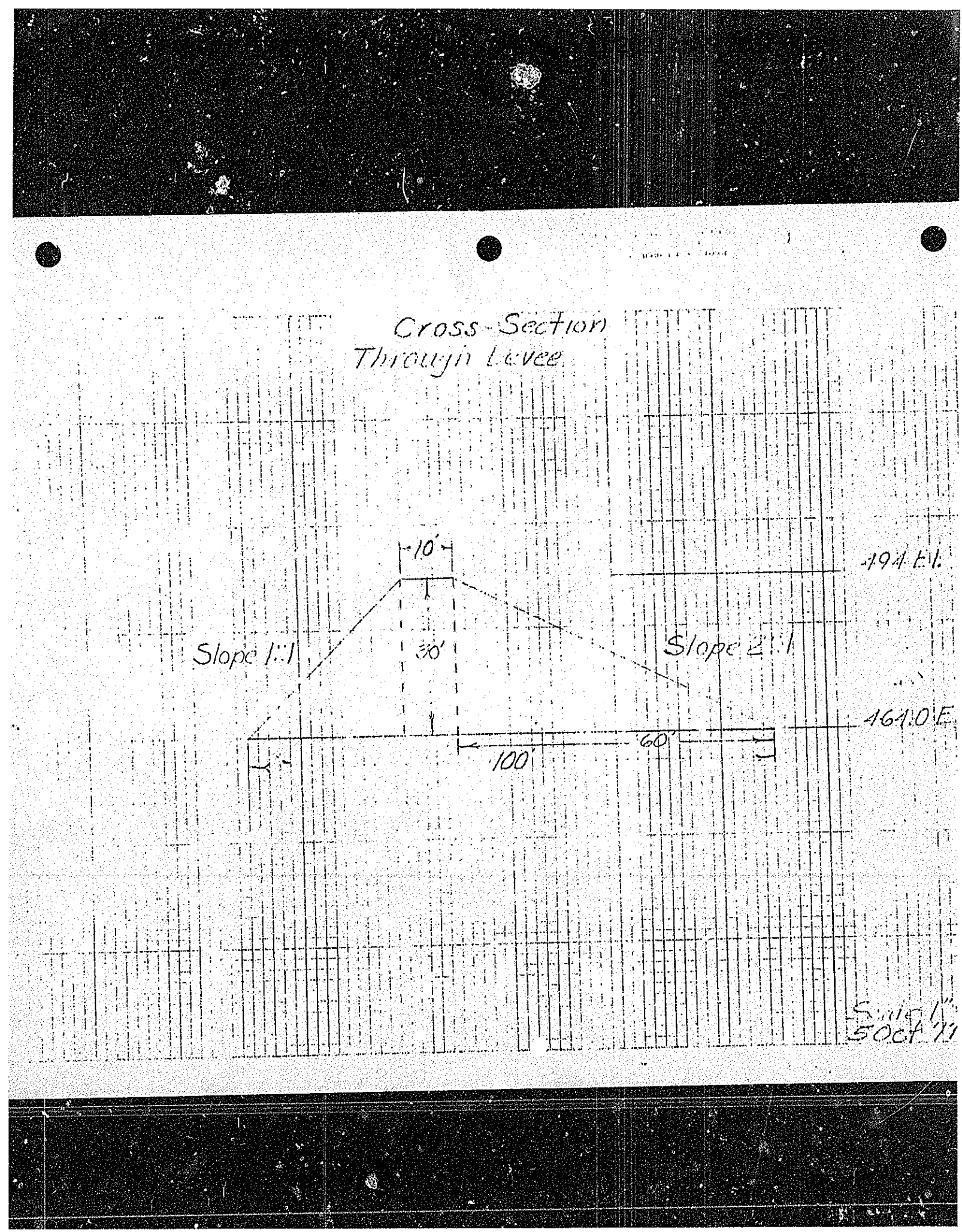
SECTION A-A

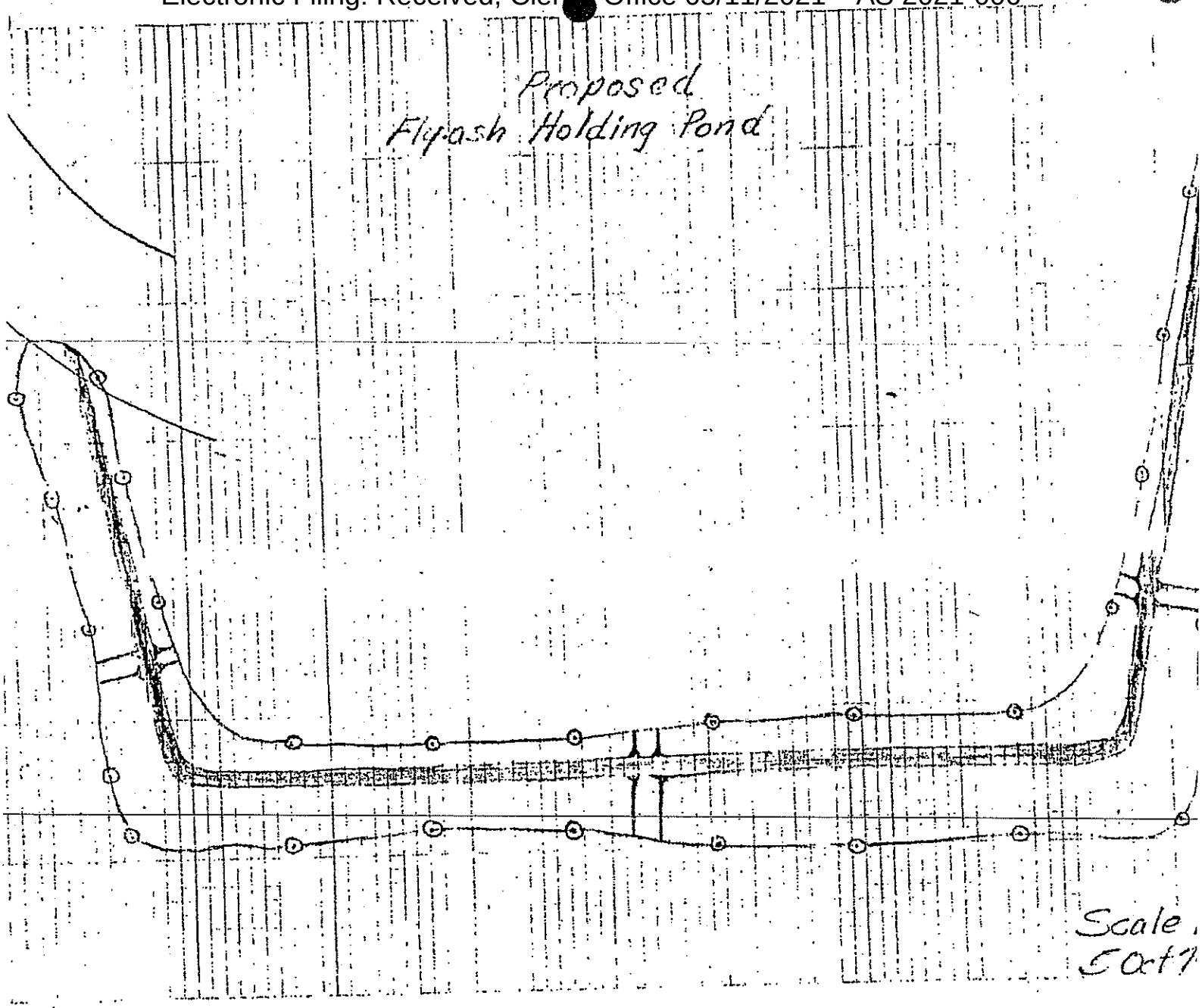
SO. ILLINOIS PO
MARION,

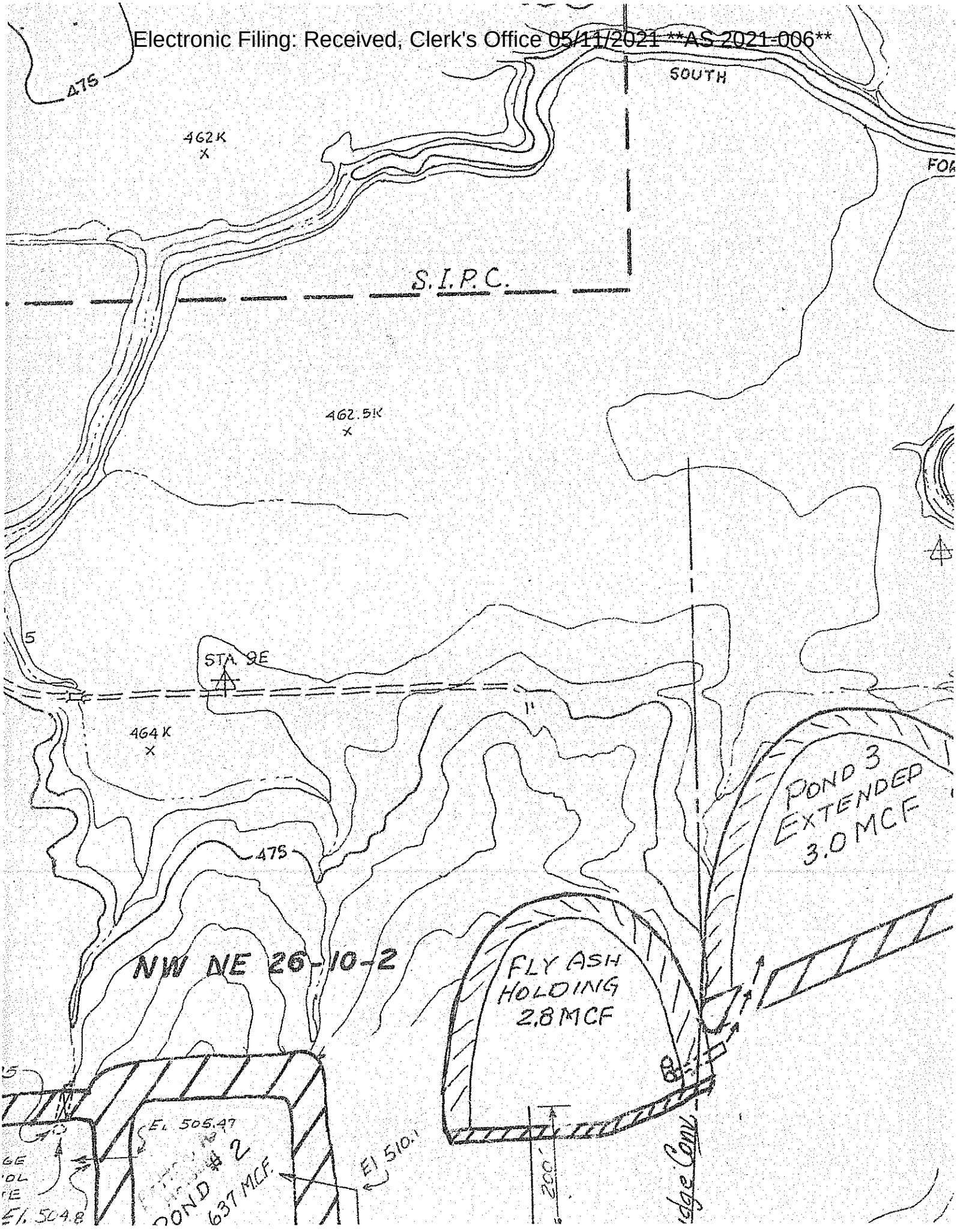
DRAINAGE
PROP
FLY ASH

SCALE None | W.O. 77-I

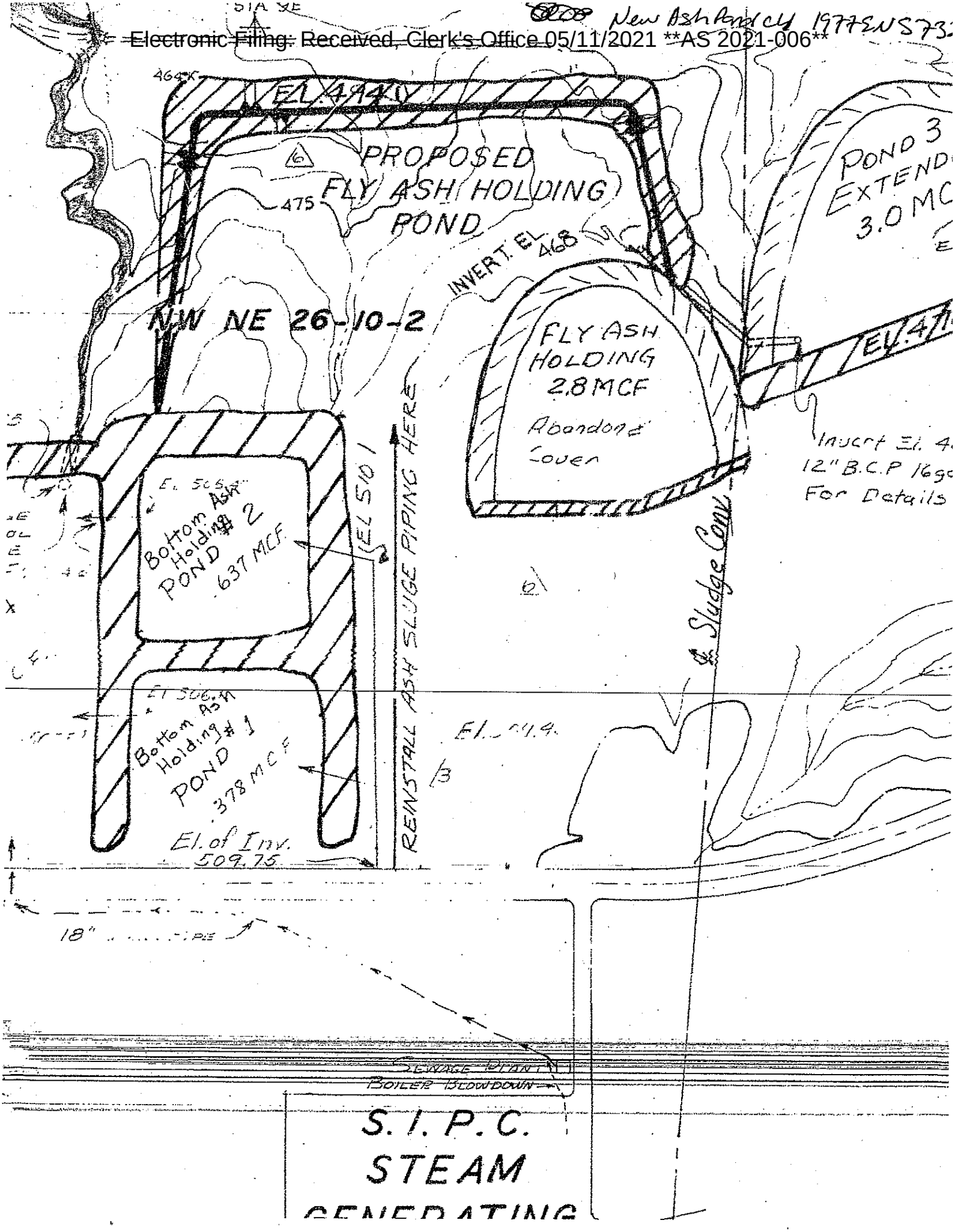
DRAWN SBS


Cross-Section
Through Levee
10'
194 El.
Slope 1:1
30'
Slope 2:1
161.0 E
100'
60'
Scale 1"
50 Ft


Proposed
Flyash Holding Pond
Scale
50ft



New Ash Pond CL 1977 NS 73



5732-77

05100000183

MICROFILM

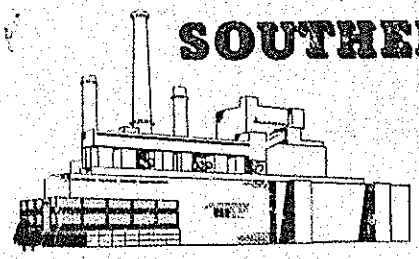
SO. ILLINOIS POWER CO-OP
MARION, ILL.

ASH POND AREA

SCALE 1"=200'-5 CONTOUR INTERVALS | DATE 7-12-71
DRAWN H.M.S. | DWG. NO. G-212

10-13-77
12-20-76
10-1-75
1-22-75 (B)
12-20-74
1-25-73

EXHIBIT 6



SOUTHERN ILLINOIS POWER CO-OP.

ROUTE 4 – BOX 255x 311 • MARION, ILLINOIS 62959
AREA CODE 618/964-1448

July 27, 1982

0821-82

RECEIVED

JUL 30 1982

Environmental Protection Agency
WPC -- Permit Log In

Illinois E.P.A.
Division of Water Pollution Control
Permit Section
2200 Churchill Road
Springfield, IL 62706

Re: Southern Illinois Power Cooperative
Disposal Site Modifications
Construction and Operation

Gentlemen:

We would like to modify our permit No. 1981-EN-2776-1 to allow construction of a 950 foot transport line from our new fly ash holding pond to our existing fly ash settling pond.

As originally designed, we planned for the fly ash transport water, less fly ash, to travel through our existing fly ash holding pond, down the overflow and into the fly ash settling pond. Unfortunately, soon after completion of the dike, we found that the planned flow resulted in wave damage to the new dike.

We, therefore, need to install a pump at the northwest corner of the new pond (see print E-100-1A) and a pipeline along the dike top to the fly ash settling pond. Documents are attached detailing that proposed line and pump system.

We, also, would like to have belated approval for a design modification that was made during construction of the new fly ash holding pond. We changed the pipeline material of construction to plastic and relocated it to the west bank of the pond above the 995' mark. In doing so we accomplished two objectives.

1. the pipeline can be maintained if necessary, and

2. no pipe was laid through the dike. (See Prints E98.1 & E98.6).

- continued -

Page 2 July 27, 1982

Illinois E.P.A.
Division of Water Pollution Control
Springfield, Il. 62706

In an effort to contain any possible runoff from our scrubber sludge/flyash/bottomash storage area, we built a small seven foot dike around that area. (See Print F194). We would like to install a small 800 foot pipeline and pump from the low point to empty into the new fly ash holding pond. If this water contained any materials, they would be similar to the materials from either the scrubber emergency bypass line or the fly ash discharge line which now deliver to that holding pond.

We, also, plan to add a tight shut off valve to the discharge line from outfall 001. (See Print A85.3). This will allow containment of the water if necessary for treatment.

If you have any questions or comments, please contact us.

Very truly yours,

Richard Myott

Richard Myott
Assistant to Manager

RM/em

Enclosures

EXHIBIT 7

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
WATER POLLUTION CONTROL PERMIT

PERMIT NO.: 1981-EN-2776-1

DATE ISSUED: October 13, 1981

FINAL PLANS, SPECIFICATIONS, APPLICATION AND SUPPORTING DOCUMENTS PREPARED BY: Southern Illinois Power Cooperative

LOG NUMBERS: 3052-81

SUBJECT: SOUTHERN ILLINOIS POWER COOPERATIVE -- Marion Facility -- Supplemental Permit to the Fly Ash Storage Pond Extension

PERMITTEE TO CONSTRUCT, OWN AND OPERATE
Southern Illinois Power Cooperative
Route 4 -- Box 255
Marion, Illinois 62959

Supplemental permit is hereby granted to the above designated permittee(s) to construct and/or operate water pollution control facilities, which were previously approved under Permit #1981-EN-2776 dated September 29, 1981. These facilities have been revised as follows:

During the construction of the fly ash storage pond extension, the treated bottom ash discharge from Pond #4 (outfall 002) is to be temporarily diverted to the existing fly ash holding pond, which discharges into Pond #3. In addition, the fly ash discharge line is to be temporarily diverted from the existing fly ash holding pond to an adjacent abandoned fly ash storage pond, which discharges into Pond #3. The combined bottom ash/fly ash discharge will be released from Pond #3 through outfall 001.

All Special Conditions on the original permit issued are also applicable to this permit unless specifically deleted or revised in this permit.

This Permit is issued subject to the following Special Condition(s). If such Special Condition(s) require(s) additional or revised facilities, satisfactory engineering plan documents must be submitted to this Agency for review and approval for issuance of a Supplemental Permit.

SPECIAL CONDITION 1: The combined bottom ash/fly ash discharge through outfall 001 shall comply with the conditions of NPDES permit number IL0004316.

SPECIAL CONDITION 2: This temporary diversion of the bottom ash line and the fly ash line is only permitted during the construction of the fly ash storage pond extension. Upon completion of the fly ash storage pond extension, the placement of the bottom ash line and the fly ash line will be as permitted by Water Pollution Control Permit 1981-EN-2776.

THE STANDARD CONDITIONS OF ISSUANCE INDICATED ON THE REVERSE SIDE MUST BE COMPLIED WITH IN FULL. READ ALL CONDITIONS CAREFULLY.

TGM:BEH ,2081c,1
cc: EPA - Region 7

DIVISION OF WATER POLLUTION CONTROL

Thomas G. McSwiggin, P.E.
Manager, Permit Section

WPC-146 (Rev. 11-79)

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

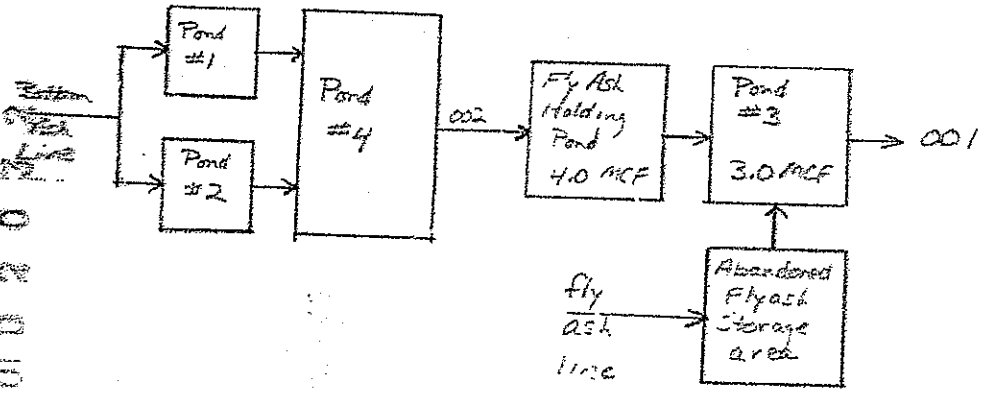
Subject Southern Illinois Power Co-op

Date Log # 302-81

Reviewed by DEU Date 10-7-81

Application to temporarily divert the effluent from Pond #4 (final bottom ash pond) to the existing fly ash holding pond and then to Pond #3 (final fly ash pond); and temporary diversion of the fly ash sluice water to an abandoned fly ash pond prior to pond #3.

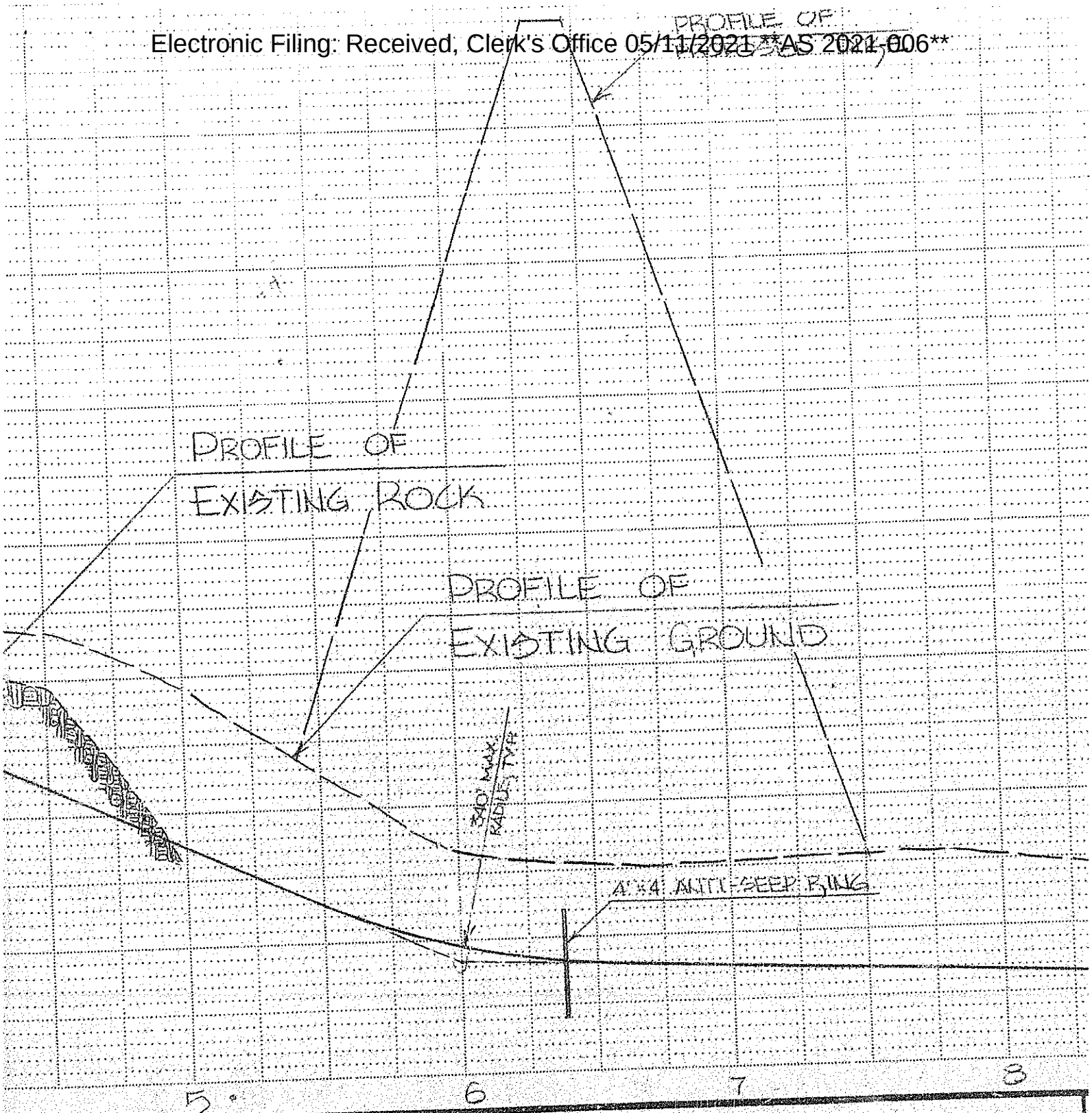
Flow Diagram



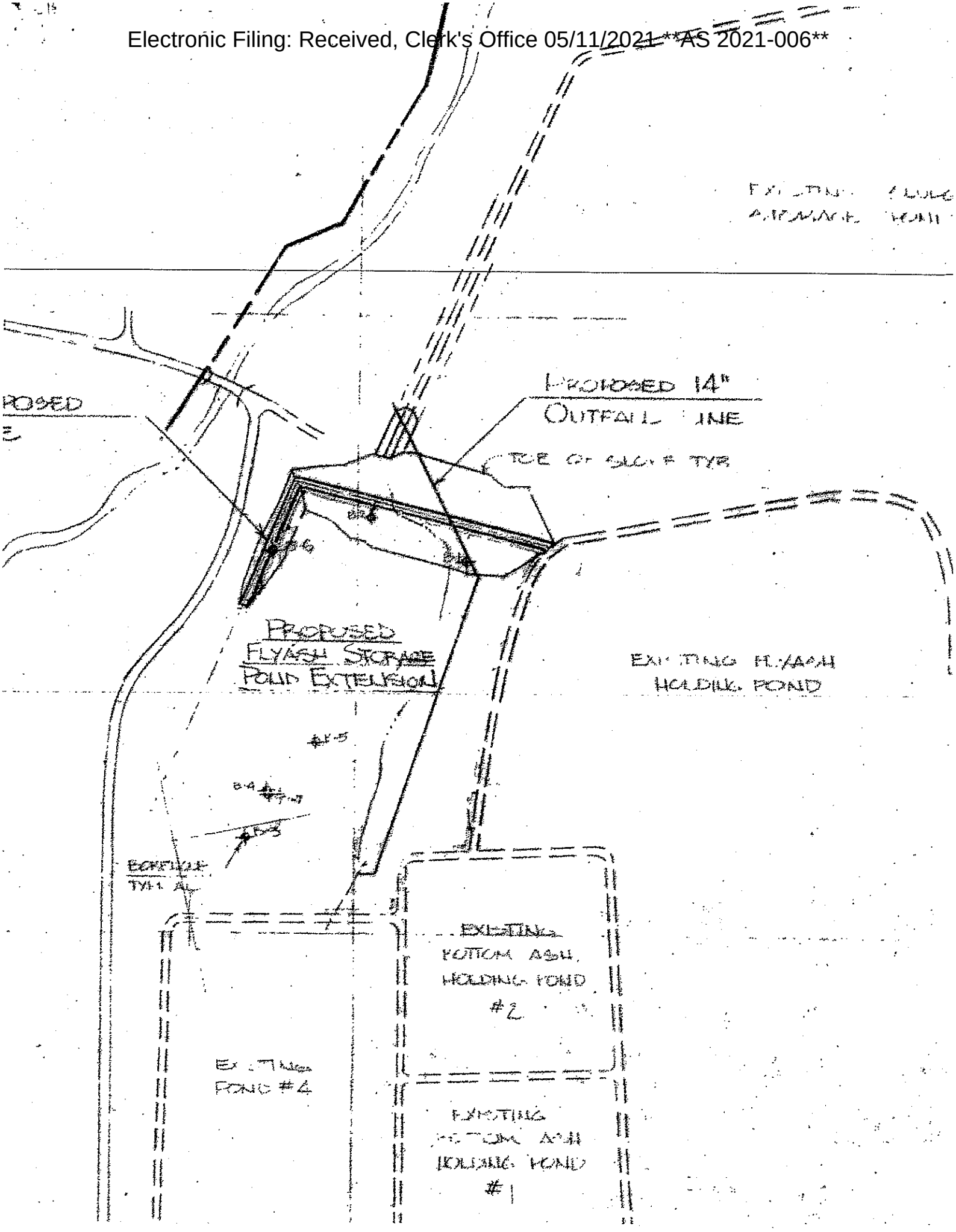
Diversion is expected only to last only 3-4 weeks. Current flow estimations SIPCO indicate that the discharge from Pond #3 will only be increased by i.. by the addition of the bottom ash discharge. Since the bottom ash discharge into Pond should be ≤ 15.0 mg/l because of its treatment in the previous ash ponds and the fly ash discharge will receive treatment in the abandoned fly ash area, d 001 should remain in compliance.

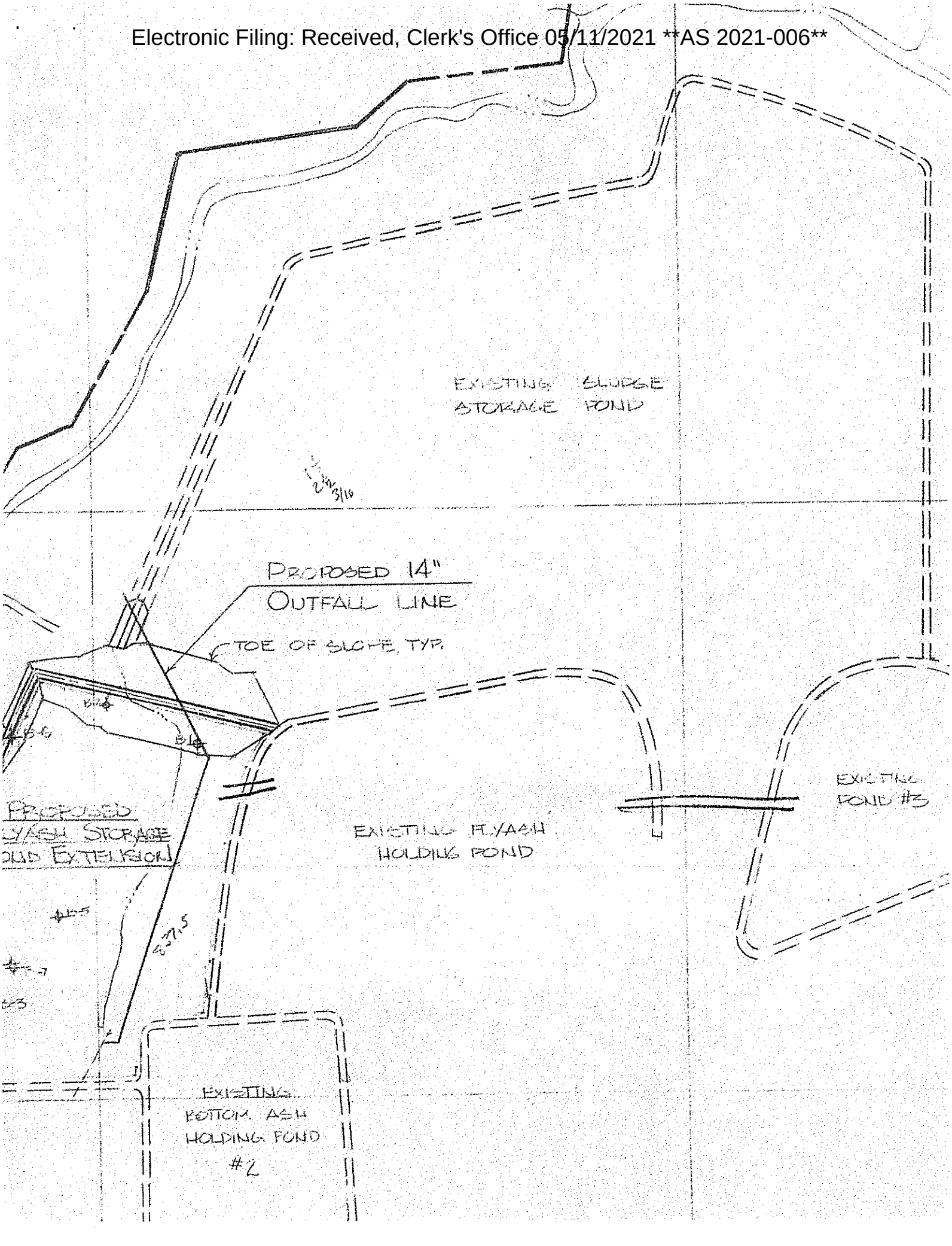
Roger Cruse of CAS had no objections to the above flow scheme. Dick M of SIPC stated that the discharge from 001 would be closely monitored dur this 3-4 week period to maintain compliance.

Action ⇒ Permit



FLYASH STORAGE POND EXTENSION
SOUTHERN ILLINOIS POWER CO-OP
PLAN AND PROFILE - OUTFALL LINE


PROPOSED 14"
OUTFALL LINE
TOE OF SLOPE TYP.
PROPOSED
FLYASH STORAGE
POND EXTENSION
EXISTING FLYASH
HOLDING POND
EXISTING
BOTTOM ASH
HOLDING POND
#2
EXISTING
POND #4
EXISTING
BOTTOM ASH
HOLDING POND
#1


EXISTING SLUDGE STORAGE POND
PROPOSED 14" OUTFALL LINE
TOE OF SLOPE, TYP.
EXISTING FLYASH HOLDING POND
EXISTING POND #3
EXISTING BOTTOM ASH HOLDING POND #2

N

0821-82

E-98.1

CRAWFORD AND WHITESIDE, P.C.
CIVIL ENGINEERS, LAND SURVEYORS
CARTERVILLE, ILLINOIS

SHEET NO.
1 OF 2
ISSUE
1

13630000253

SOUTHERN ILLINOIS POWER CO-OP.

ROUTE 4 – BOX 255 • MARION, ILLINOIS 62959
AREA CODE 618/964-1448

July 30, 1981

2776-81

Illinois EPA
Division of Water Pollution Control
Permit Section
2200 Churchill Road
Springfield, Il. 62706

RE: Southern Illinois Power Cooperative
Flyash storage pond extension
Construction and Operation

Gentlemen:

We have determined that an extension to our existing flyash pond is necessary. This extension is required as the present pond has almost reached its' limits as regards flyash storage.

We intend that this letter serve as our application for a permit to construct and operate the required flyash storage pond extension.

For your evaluation we have attached your form WPC-PS-1 which includes a copy of our plan which discusses this expansion. As you will note, no detailed specifications were included in this submittal. We plan to have these specifications available for your review during the latter portion of August.

We hope that providing this initial information will facilitate your review of our application. If we can provide any additional assistance, please contact us.

Very truly yours,

Richard Myott

Richard G. Myott
Environmental Superintendent

RGM/mp

cc: Jim Chapman
Clyde Rice

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

MEMORANDUM

TO: Dwight Hill (FOS, Region 5); Dan Umfleet (DWPC - Permits) DATE: 9-9-81

FROM: Roger Cruse (DWPC - CAS) RC

☒ Information only

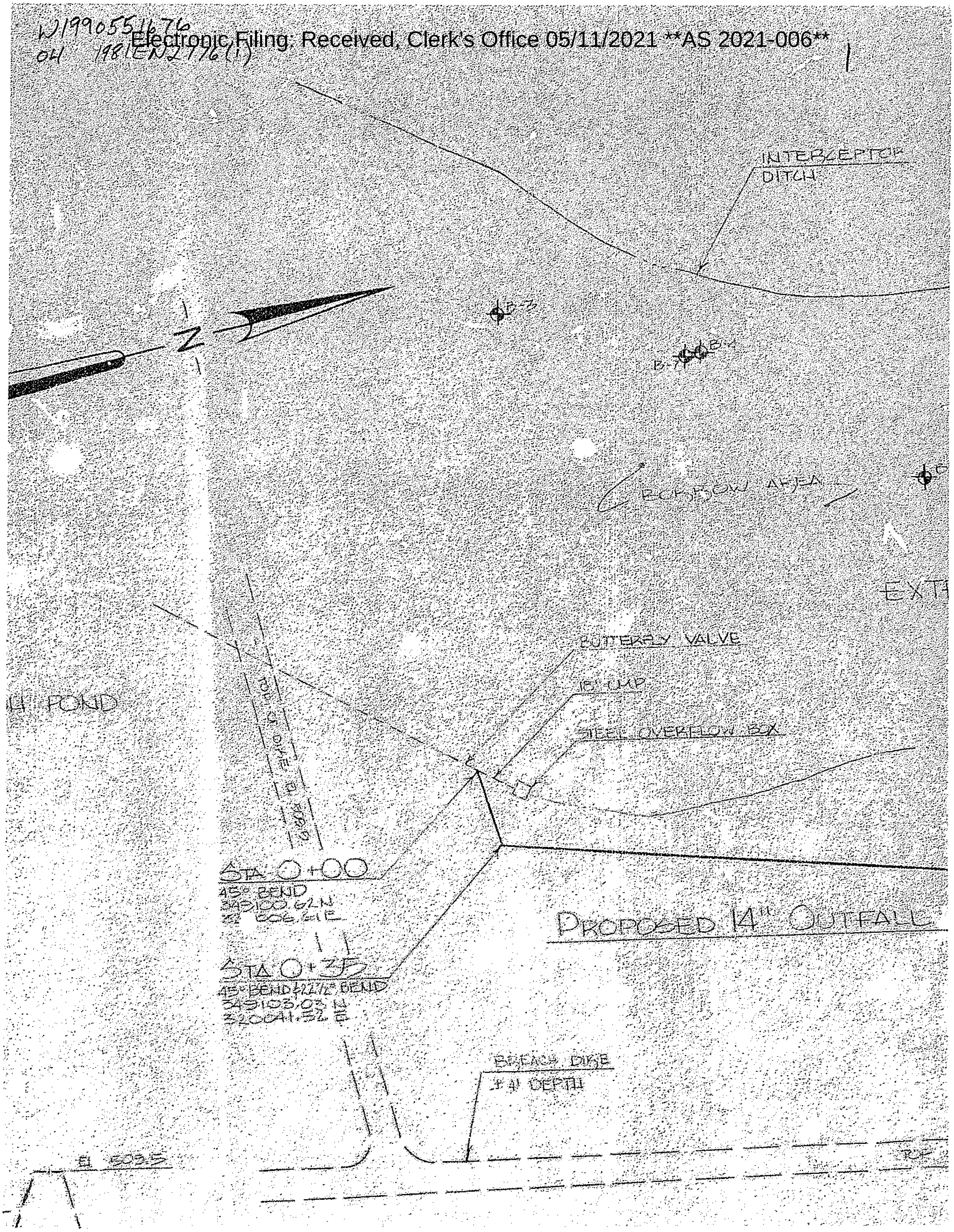
☐ Response requested

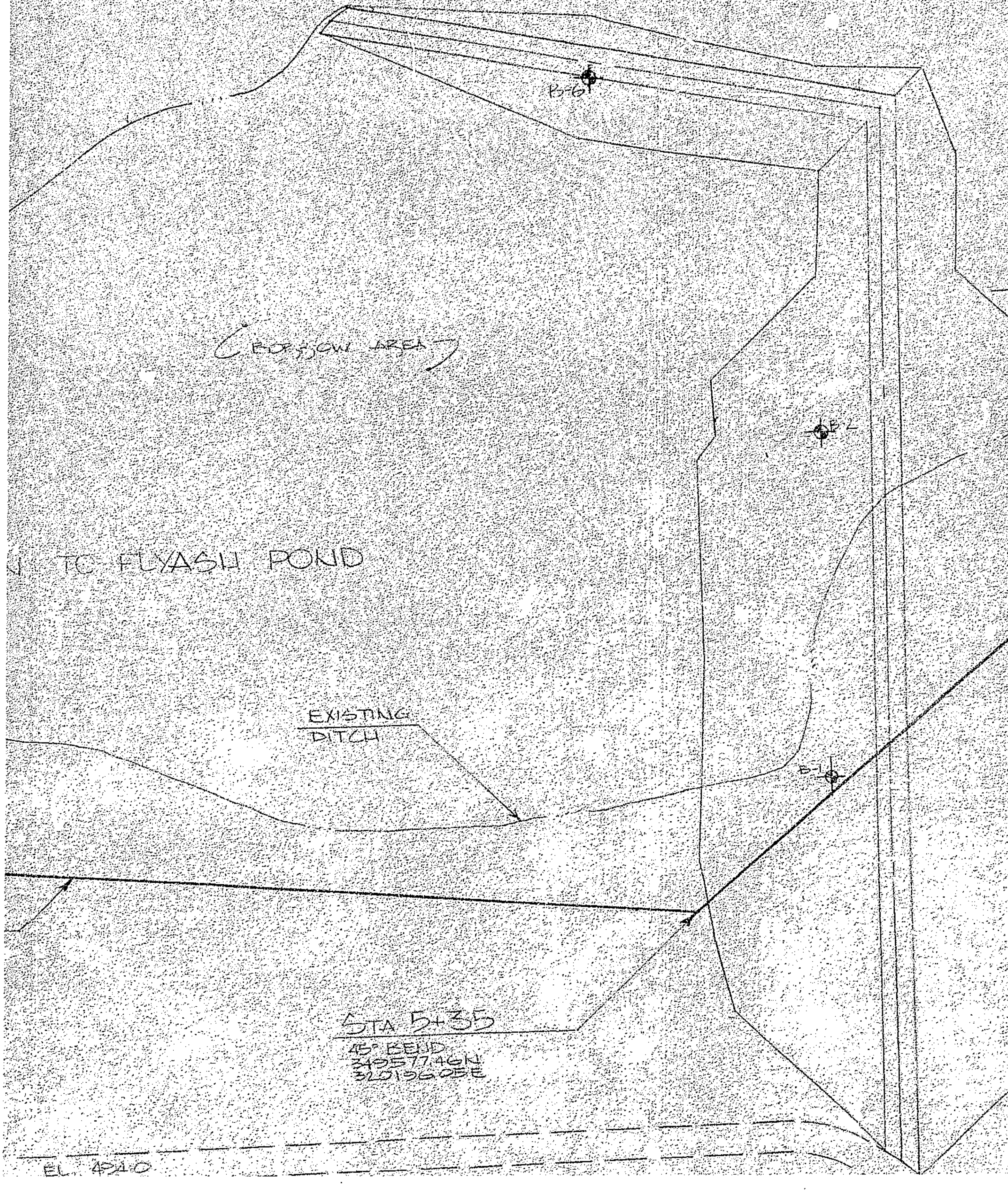
SUBJECT: Southern Illinois Power Coop IL0004316

per conversation with Dick Myott (Environmental Affairs - Southern):

Dick called me today to discuss two subjects which he hopes will alleviate some of the TDS excursions that have been occuring lately (both of which will be submitted in correspondence to the Permit Section soon). They are: (1) The company feels that if the new ash line can be a combination of fly and bottom ash, it could conceivably reduce or eliminate excursions occuring at the fly ash pond discharge. (2) The proposal for the construction of the new dam has been completed and will be mailed in the near future.

Dick is of the opinion that both of these proposals, if implemented, will bring about substantial compliance for his company.





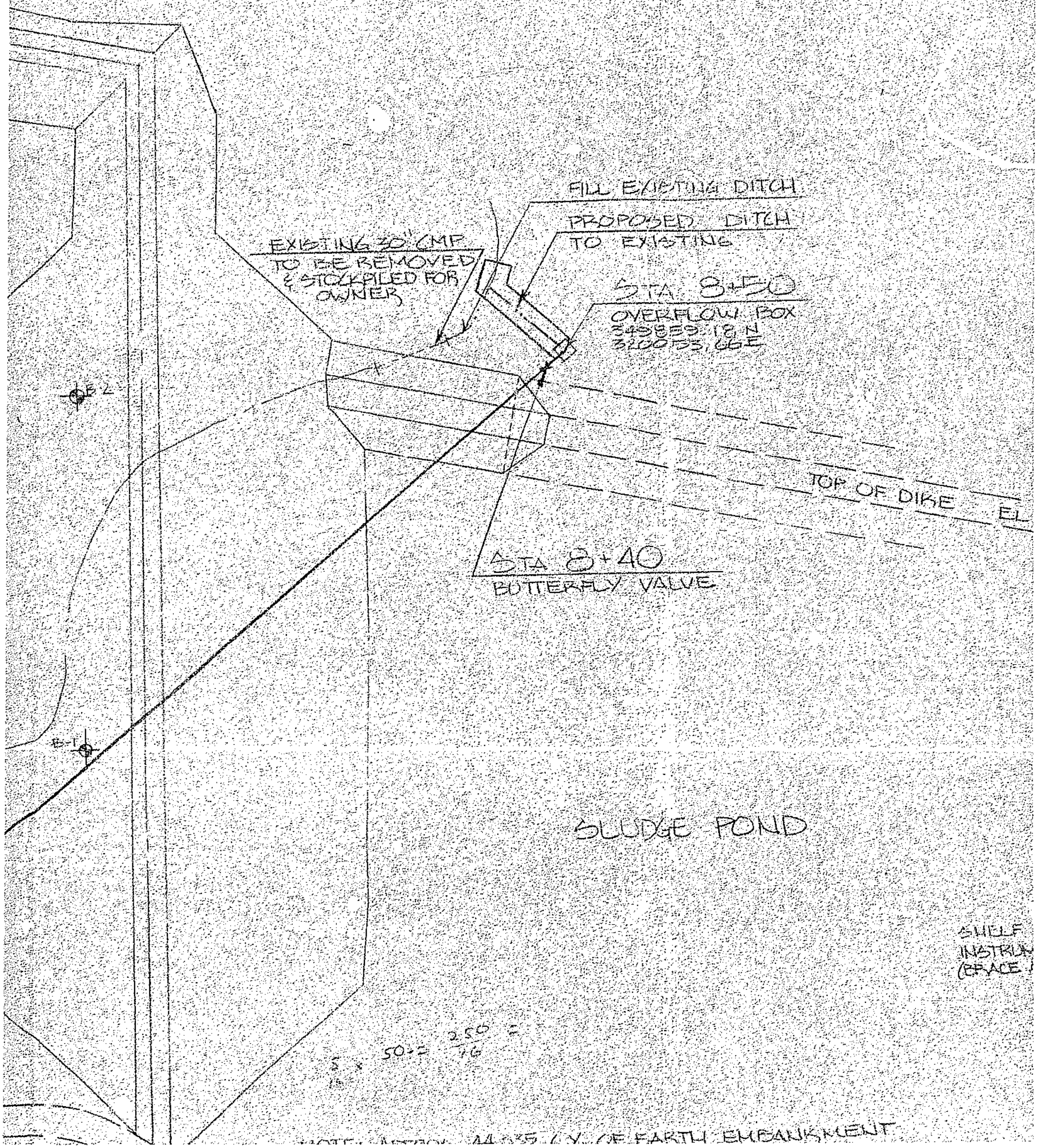


EXHIBIT 8

SOUTHERN ILLINOIS POWER CO-OPERATIVE

Route 4 • Box 607
Marion, Illinois 62959

Telephone
(618) 964-1448

September 16, 1993

Mr. Gary C. Wolf
Illinois E.P.A.
Bureau of Water
Industrial Unit – Permit Section
2200 Churchill Road
Springfield, IL 62794–9276

Re: Outfall & Pond Flow Summary (Per your request)

Dear Mr. Wolf:

Attached for your reference is a map showing our impoundments and NPDES outfalls.

Flyash from Units 1, 2 & 3 is sluiced to Pond A–1 or B–3. The effluent from A–1 drains to B–3, and B–3 drains to Outfall 005.

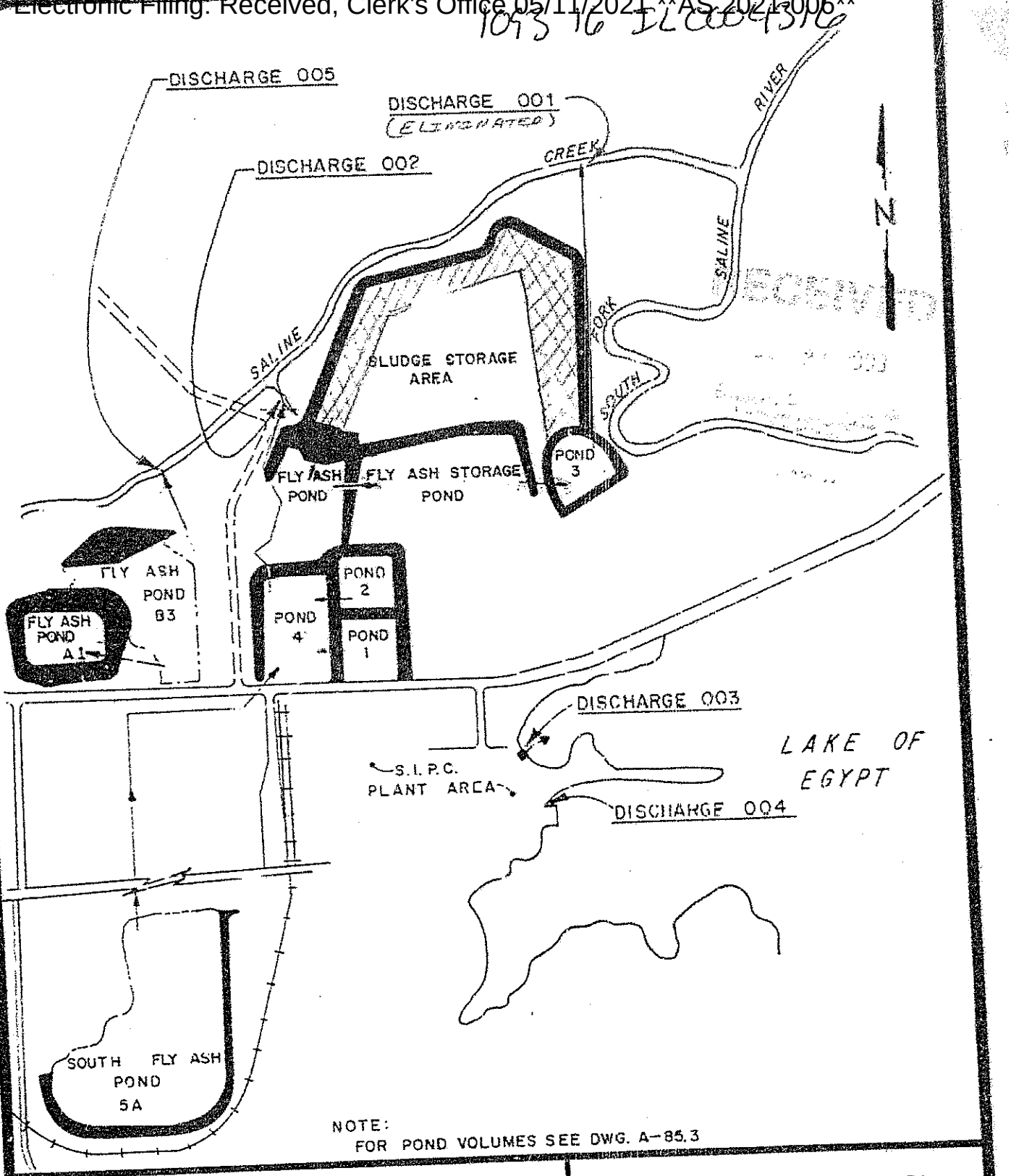
Bottom ash from Units 1, 2, 3 & 4 is sluiced to Ponds 1 or 2. The ash collected in these ponds is sold for re use and hauled off site. The water effluent from Ponds 1 & 2 drains to Pond 4. The effluent from Pond 4 empties to Discharge 002.

The de–ionizer flush is drained (via plant drains) to Pond 3. Water levels of the ponds are at a lower elevation than the general plant. Many plant drains drain via gravity flow to Pond 3 and Pond 4. Pond 3 drains initially northward around the sludge storage area to the "flyash storage pond" area. From there, the effluent is normally pumped to Pond 4. Occasionally we require pumping from the "flyash storage pond" are to Pond B–3 for pH control.

Scrubber sludge mixed with flyash from Unit 4 is conveyed to the sludge storage area. Water that leaches from this mixture mixes with the effluent from Pond 3 and is normally pumped to Pond 4 for eventual discharge via Outfall 002.

General plant & coal pile runoff is directed to Pond 4.

1093 16 IL0004316



NOTE:
FOR POND VOLUMES SEE DWG. A-85.3

Figure – MAP SHOWING OUTFALLS - MARION STATION

SOURCE: SOUTHERN ILLINOIS POWER CO-OP INC. 1989
MARION, ILL.

SOUTHERN ILLINOIS POWER CO-OPERATIVE, INC.
NPDES PERMIT
IL0004316

A-85.2

EXHIBIT 9

DECLARATION OF KENNETH W. LISS

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

1. I am the President of Andrews Engineering. My current responsibilities include managing the day to day business of the company. As a technical consultant, I provide a broad range of environmental expertise to industry, government, and individual clients for regulatory compliance, permitting, remediation and testimony. I currently serve as the Principal-in-Charge and/or Program Manager on a number of multi-year contracts with both private and public sector clients.

2. Prior to my current role, I served an Office Director at Andrews Engineering for nine years, from 1999 to May 2008 and Vice President of Operations from May 2008 to July 2014. Prior to working at Andrews Engineering, I worked for the Illinois Environmental Protection Agency ("IEPA") in the Bureau of Land Permitting Section. Initially my responsibilities included preparing permit conditions and compliance determinations for regulated facilities under various programs including the Resource Conservation and Recovery Act (RCRA) and Illinois solid waste and groundwater protection regulations. In 1990, I became the Acting Manager of the Groundwater Unit in the Permit Section of Bureau of Land. My responsibilities included managing a staff of 12 employees in support of various permit programs focusing on groundwater monitoring systems, hydrogeologic investigations and corrective action. In addition, I provided testimony for compliance/enforcement to legal counsel, permit and regulatory hearings, testimony in proceedings for various regulations at the Illinois Pollution Control Board and testimony for legislative actions before the Illinois House and Senate committees. I have a Bachelor of Science degree in Geology from Illinois State University, December 1983.

3. I am familiar with the operations of Southern Illinois Power Cooperative's ("SIPC") Marion Generating Station.

4. In or around June, 2020, SIPC retained me to develop a closure plan and oversee the closure of the former on-site, permit exempt, CCR landfill at Marion Station. As part of that engagement, I reviewed documents previously filed with the IEPA, documents provided by SIPC, and aerial photographs, participated in conferenced calls with IEPA Bureau of Land employees, prepared and executed a proposal to conduct investigative borings at the landfill, reviewed the landfill groundwater monitoring program, and inspected the area of the former landfill.

5. 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. __ to SIPC's Petition for Adjusted Standard.

6. The proposed closure complies with Part 811 requirements for landfill closure, and includes:

- 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.

- 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.

- Post-closure monitoring and care consistent with SIPC's obligations under Part 811.

7. The proposed closure plan anticipates that Pond 6 will continue to be used to control runoff from the closed landfill.

8. I estimate the costs to complete the landfill closure described in the proposed landfill closure plan to be approximately $3.5 -5.2 million in immediate capital and other up front costs, with approximately $212,000 in annual O&M costs for a period of 5 years after the completion of closure activities, and $124,400 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 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.

9. Following my submission of the proposed landfill closure plan to IEPA, I had conversations with IEPA technical staff in IEPA's Bureau of Land in which they indicated agreement with various aspects of the plan, including the proposed cover.

10. In or around March 2021, I learned for the first time that IEPA technical staff in the Bureau of Water considered the landfill area to be subject to the Part 845 closure requirements for CCR surface impoundments, rather than the Part 811 requirements for landfills.

11. I have since reviewed historic permitting documents provided to me by IEPA and understand that IEPA claims there were three former ponds – labeled on the site map attached to SIPC's Petition for Adjusted Standard as the Initial Fly Ash Holding Area, the Replacement Fly

Ash Holding Area, and the Fly Ash Holding Area Extension (the "Former Fly Ash Holding Units") – within the footprint of the landfill area that SIPC intends to close and cover consistent with Part 811 regulations.

12. I understand that those Former Fly Ash Holding Units have not held water for many decades and have been covered and operated as part of the landfill since at least the early 1990s.

13. SIPC subsequently asked me to provide an estimate to close the landfill area – including the area of the Former Fly Ash Holding Units – consistent with Part 845.

14. Though the cover system required to be applied to the landfill area under Part 845 is essentially identical to the one required under Part 811, Part 845 compliance requires additional work that is not required under Part 811, including but not limited to:

- Performing a location restriction demonstration (35 Ill. Adm. Code 845.300-340);
- Performing a hydrogeological site investigation (35 Ill. Adm. Code 845.620);
- Preparing a hazard potential classification assessment and certification (35 Ill. Adm. Code 845.400(a)(2));
- Preparing a structural stability assessment and certification (35 Ill. Adm. Code 845.450(c));
- Preparing a safety factor assessment and certification with the operating permit application and subsequent annual inspections (35 Ill. Adm. Code 845.460(b));
- Prepare a fugitive dust control plan and certification with the operating permit application and subsequent annual inspections (35 Ill. Adm. Code 845.500(b)(7)).

15. I have prepared a high-level estimate of the potential costs to close the landfill the landfill area in place in compliance with Part 845 to be at least $3.9 to $5.6 million in capital costs and other up front costs, including the costs of the permits, assessments and certifications required by Part 845. I further estimate the annual O&M costs associated with treating the landfill as a Part 845 surface impoundment would be at least $325,000 to $350,000 in annual O&M costs (without an inflation factor) for a 30-year post closure care period, as required by Part 845. 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.

16. SIPC also asked me to prepare a high-level estimate of the potential costs of Part 845 compliance for Ponds 3 (including 3A), 4, 6, B-3 and the South Fly Ash Ponds (the "De Minimis Units") in compliance with Part 845.

17. Part 845 allows for two types of closure, closure by removal and closure and in place. I understand that closure in place is not an option for the De Minimis Units because they continue to be used for storm water management at Marion Statement. Accordingly, I estimated the costs to close the De Minimis Units by removal, with the understanding that they will have to be replaced with new storm water basins.

18. I estimate the costs for Part 845 compliance for the De Minimis Units, including closure by removal, to be at least $8 million to $10.5 million in capital costs and other upfront costs, with at least $510,000 to $535,000 in annual O&M costs (without an inflation factor) for three years. 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 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.

19. 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.

FURTHER, Declarant sayeth not.

DocuSigned by:
Kenneth W. Liss
BE9B9726E10F4CC...

Kenneth W. Liss

EXHIBIT 10

Southern Illinois Power Cooperative
Williamson County, Illinois

Illinois EPA Site Number: 199055505

Closure Plan

December 2020

Submitted to:
Illinois Environmental Protection Agency
Bureau of Land
Springfield, Illinois

Prepared for:
Southern Illinois Power Cooperative
11543 Lake of Egypt Rd.
Marion, IL 62959

ANDREWS ENGINEERING

3300 Ginger Creek Drive, Springfield, IL 62711 | 217.787.2334

ILLINOIS | MISSOURI | INDIANA

ENGINEERING CERTIFICATION STATEMENT

All designs presented in this document have been prepared by, or under the supervision of, a professional engineer. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision and all information submitted is, to the best of my knowledge, true, accurate and complete.

Certified by: _____ Date: 12/16/20

Douglas W. Mauntel, P.E.
Director of Engineering Services
Andrews Engineering, Inc.

Expires 11/30/21

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APPENDICES

1. INTRODUCTION

Southern Illinois Power Cooperative (SIPC) operates the Marion Power Generating Station, which is located approximately 8 miles south of Marion in Williamson County, Illinois. The facility was operational as of May of 1963 with approximately 50 acres of land on-site planned for disposal of coal combustion residuals (CCR) as depicted in the Initial Facility Report (IFR) filed and received by the Illinois Environmental Protection Agency (IEPA) on September 22, 1992.

The landfill operated as one disposal unit during its entire operating life. The landfill started accepting waste in 1978, and ceased accepting waste prior to October 15, 2015. As discussed further below, only ash and scrubber sludge were disposed in the landfill. The 5-year post closure care will begin when the final cover system is completed.

The first coal fired generating units (Units 1, 2, and 3) at the Marion Station went operational in May 1963. Each unit burned coal in a cyclone furnace and provided steam to turbine generators. The facility burned coal obtained from the Southern Illinois coalfields and coal refuse or “carbon”. SIPC installed and began operating an Electrostatic Precipitator (ESP) in accordance with the Clean Air Act in 1975. After the ESP was installed and prior to 2003, SIPC collected fly ash dry using a hydroveyor system. The ash was then pug milled with the scrubber sludge and deposited into the landfill. In 2003, the unit’s boilers were removed and replaced with one Coal Fluidized Bed boiler, and renamed Unit 123. At that time, the water vacuum system was replaced with air vacuum pumps as part of a completely dry handling system for fly ash and bottom ash from the new Unit 123. All ash from Unit 123 has been disposed off-site, and this unit does not generate scrubber sludge.

In 1978, Unit 4 was brought on line. The Joint Construction and Operating Permit No. 199856AAC by the Illinois Environmental Protection Agency (IEPA) for Unit 4 allowed the use of at least a 25% carbon content in the fuel blend in the unit. By-products from the generating process included bottom ash, fly ash and scrubber sludge. Ash from Unit 4 was primarily 80% bottom ash and 20% fly ash. The scrubber sludge (which is predominately Calcium Sulfite) was placed in the landfill.

A conveyor system was utilized to transport the calcium sulfite to the landfill. In order to stabilize the calcium sulfite for transport on the conveyor system, it was mixed with fly ash. This continued from 1978 to 2009, when SIPC modified the Unit 4 scrubber to a forced oxidation system, which produced calcium sulfate, better known as gypsum.

With the change to the scrubber in 2009, the disposal of scrubber sludge in the on-site landfill ceased. Starting in 2009, the oxidation process produced gypsum, which was sold as an agricultural modifier or as an ingredient for cement, reducing the amount of material sent to the landfill.

The maximum volume of scrubber sludge and ash deposited in the on-site landfill is estimated to be 1.5 million cubic yards. Approximately 1,137,359 cubic yards of material was placed in the landfill from 1978 to September 1992. During the time period after September of 1992 until October 2015 approximately 363,000 cubic yards of material was deposited.

During the operating life of the landfill, slopes were maintained to be stable and promote runoff to the existing ponds within the landfill boundaries. No daily cover was applied. Some areas of

the fill supports vegetation; however final cover has not been installed. The area requiring final cover is estimated to be 43 acres.

The material disposed in the landfill is non-combustible, non-putrescible and does not produce an odor. Therefore, a litter control, air quality plan, odor control plan, vector control plan and firefighting and fire safety plan was not necessary or required. A noise control plan was not necessary or required since the landfill is no longer operating.

A complete set of drawings for the on-site landfill ("SIPC Unit") are located in Appendix A, and these drawings meet the requirements for Site Plan Map(s) in 35 IAC 812.107. A Site Location Map is located in Appendix B. Documentation of property ownership is provided in Appendix C.

The SIPC Unit will be closed in accordance with the requirements of 35 IAC 811.314. At a minimum, the final cover system at the SIPC Unit will consist of a conventional soil cap with a minimum thickness of 6.0 feet (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. Soil availability onsite will determine the final cover utilized at the facility.

The final slopes are designed to be constructed to a grade capable of supporting vegetation and minimize wind and water erosion. The final landfill slopes will be no flatter than 2 percent nor steeper than 29 percent (3.5H:1V). These slopes will drain runoff from the cover and prevent ponding. Shallow-rooted grasses and legumes will be used to establish a vegetative growth for erosion control.

1.1 Schedule of Closure Construction

Closure construction is anticipated to begin immediately with clearing, grubbing and waste grading activities. The final cover design may be altered from the attached site plan drawings based upon on-going waste boundary investigations and waste grading activities. However, the final configuration is not expected to change significantly from that shown on the site plans. All construction will be performed in accordance with the regulations and closure plan. Field modifications to the approved final configuration will be documented in the Certification of Closure report. Below is an anticipated schedule for closure construction:

1. Backfilling and grading activities of the existing SIPC Unit will be required prior to placement of the final cover system. This activity may be extensive due to the existing conditions at the facility and may take several months to complete. In addition to backfilling and grading, vegetation from the existing unit must be stripped and removed from portions of the unit receiving final cover. As part of this activity, a waste boundary investigation will be conducted to verify the horizontal limits of waste placed in the unit.
2. Final cover placement will proceed upon the completion of backfilling and grading of the existing unit. Due to the size of the unit and selected design of final cover (traditional soil cap or alternate geosynthetic cap), final cover placement is anticipated to take 6 to 10 months to complete, depending upon weather conditions.
3. Construction of the runoff collection ditches and other drainage structures in conjunction with the closure will occur as the final cover is placed on the unit. Ditches will be

constructed along areas to be closed, and terrace berms and letdowns will be constructed as final cover is placed.

4. Installation of groundwater monitoring wells (if necessary) will be installed during the final cover placement.
5. Vegetation will be established upon completion of the final cover placement and stormwater and drainage features. This will include the placement of seed, fertilizer and mulch. It is anticipated that this activity can be completed within a month of final cover placement.
6. The Certification of Closure with record documentation will be submitted to the Illinois EPA upon completion of the construction activities.

2. FINAL COVER SYSTEM

2.1 35 IAC 811.314 – Final Cover System

The final cover system at the SIPC Unit will consist of a conventional soil cap with a minimum thickness of 6.0 feet (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. Soil availability onsite will determine the final cover utilized at the facility.

The low permeability layer will consist of either a 1.0 foot or 3.0 foot thick recompacted earthen cover that under compaction achieves a hydraulic conductivity of less than or equal to 1×10^{-7} cm/sec. At a minimum, an approximate 12-inch layer of soil will exist between the waste disposal unit and the geomembrane cover (if utilized) to act as a cushion to protect the geomembrane from being damaged or punctured. As shown on the site drawings, the low permeability layer will cover the entire unit.

Earthen material to be used for the low permeability layer will be Unified Soils Classification System (USCS) types CH, CL or ML. The source of this material will be from the excavation(s) within the currently undeveloped portions of the facility and future designated borrow areas.

The low permeability layer is to be placed in multiple lifts not to exceed ten inches loose. This cover should be placed at a moisture content sufficient in meeting hydraulic conductivities of less than or equal to 1×10^{-7} cm/sec. This portion of the final cover system will be recompacted with a self-propelled soil compactor or other suitable equipment and each layer will be worked sufficiently to breakdown oversized clods, obtain a uniform moisture content and ensure uniform density. Roots, cobbles, debris and other deleterious material will be removed from the earthen material prior to compaction. The low permeability layer will be compacted to achieve a value of no greater than 1×10^{-7} cm/sec.

If utilized, a 40-mil LLDPE geomembrane liner will be installed on top of the recompacted earthen cover in accordance with the drawings, specifications and manufacturer's instructions by persons experienced in similar liner installation. All field seaming will be in accordance with the manufacturer's specifications. Geomembrane bonding will use fusion welding when possible and extrusion welding as a secondary means. Fusion welding will typically consist of applying dynamic energy, heat and/or extrudate between two overlapped panels. This will allow

a bonding of the extrudate with the panel material, or panel-to-panel, providing a homogenous mass along the area of the seam. Extrusion welding may be similar to fusion welding but typically lacks the dynamic energy.

A double-sided geocomposite drainage layer will be installed if the 40-mil LLDPE is utilized in the final cover. The geocomposite will drain infiltrated water from the final cover system into the landfill perimeter ditches.

The final protective layer will have a minimum thickness of three feet and will consist of soil materials capable of supporting vegetation on the final cover. This depth should be sufficient to maintain the proposed "open-space" final use of the area, with access to the area controlled as described below. The final protective layer will be placed as soon as possible after placement of the low permeability layer to prevent erosion, desiccation, cracking, freezing or other damage to the low permeability layer. As shown on the attached site drawings, the final protective layer will cover the entire low permeability layer. The final protective layer will protect the low permeability layer from freezing and minimize root penetration of the low permeability layer.

Loams of the USDA soil classification system or USCS types GM, GC, SM, SC, ML and CL are all considered suitable protective soils. The final protective layer may include soils from onsite and a finished compost product. These soils will be made suitable for plant growth with the addition of lime, fertilizer and/or finished compost.

From the time waste was first placed into the SIPC Unit until completely stabilized, it is expected that very little settlement will occur due to the nature of the CCR materials. Any settling should occur prior to the placement of the final cover system.

The final slopes are designed and are to be constructed to a grade capable of supporting vegetation and minimize erosion. Shallow-rooted grasses and legumes should be used to establish a vegetative growth for erosion control. The mixture of grasses and legumes selected must be amenable to the soil quality and thickness, slopes, moisture and climatological conditions that exist without the need for continued maintenance. Seed will typically be incorporated into the upper surface of the final protective layer using hydroseeding or broadcasting techniques. Lime, fertilizer and any other appropriate soil amendments, may be incorporated into the final protective layer at application rates determined from composite soil tests of the area to be seeded. Mulch consisting of straw, yard waste compost, jute and/or wood excelsior may be used as necessary to hold the seed in place and conserve moisture. A person knowledgeable in vegetation establishment will be consulted for determining the specific seed mixtures to be sown, suitable soil amendments and application rates based upon specific seasonal conditions at the time of placement.

3. CLOSURE AND POST-CLOSURE MAINTENANCE PLAN

3.1 35 IAC 811.110 and 111 – Closure and Post-Closure Maintenance Plans

The Closure and Post-closure Maintenance Plans contained herein are prepared in accordance with the requirements of 35 Illinois Administrative Code (IAC) Part 811. The Closure Plan addresses the minimum requirements for capping the landfill and establishing surface runoff controls. The Post-Closure Maintenance Plan addresses monitoring and maintenance of the site for the 5-year period following certification of closure.

Closure activities will be completed in accordance with this Plan. The entire landfilled area requiring final cover is estimated to be 43 acres with an irregular geometry. After IEPA's approval of this plan, SIPC will initiate the placement of the final cover system. In addition, SIPC will remove all equipment and/or structures that will not be necessary for the post-closure care operation, unless otherwise authorized by the IEPA.

The final end use of the unit will be a natural area with passive vegetation and native grasses. The end use will serve as an access restricted open space and will not disturb the integrity of the final cover, any other components of the final cover system or environmental monitoring equipment. The final unit will compliment and blend in with the surrounding topography and land use for the area. In addition, the final unit configuration will minimize the need for further maintenance.

3.1.1 Closure Plan

Closure of the site will occur when the waste disposal unit has been graded in accordance with the approved plans. Closure of the unit will be initiated after IEPA plan approval. Closure is expected to start in the winter of 2020/2021 with waste grading activities and final cover construction completed in 2021. The final cover includes a low permeable layer protected by a vegetated final protective layer as described herein.

The maximum volume of wastes deposited in the SIPC Unit during the active life of the landfill is estimated to be approximately 1.5 million cubic yards, and averaging 30 to 45 feet thick across the main body of the landfill. The surface area requiring final cover is estimated to be 43 acres.

Closure of the SIPC Unit would involve the following tasks. The areas addressed are those required by regulation to be considered during landfill closure.

1. Equipment Decontamination – No extraordinary methods for decontamination of equipment used in the operation will be required. Any equipment that has been in contact with waste material can be manually cleaned (e.g., waste removed from the tracks and undercarriage) and any cleaning residues generated can be placed in the fill at the time of earthen cover placement. Equipment used in the final cover tasks will not be exposed to the waste and will not require decontamination.

2. Backfilling and Grading – Backfilling or grading will be required during closure to achieve positive drainage prior to final cover placement. Significant backfilling and grading is anticipated to achieve the contours shown on the grading plan (Drawing B-3). Backfilling and grading is the first task of closure.

   Based upon the perimeter ditching and erosion control system provided and overall site topography, no adverse effects on local drainage are anticipated during closure. The ditching is designed to pass the 100-year, 24-hour precipitation event without scouring or erosion after closure. Provisions for runoff and run-on have been included in the final cover design.

3. Final Cover Placement – Final cover material will be placed on all previously filled areas. Based upon the design and regulations, it is assumed that a conventional soil cap with a minimum thickness of 6.0 feet (3.0 foot low permeability layer overlain by a 3.0 foot final protective layer) will be required. However, depending upon soil availability onsite, an

alternative geosynthetic cap may be installed. In conjunction with the final cover placement, the stormwater drainage control system, which includes, (1) perimeter ditches; (2) creation of stormwater control terraces and/or letdowns; and (3) installation of the final cover drainage outlet (if a geocomposite drainage layer is installed), will be installed.

4. Vegetation – Shallow-rooted grasses and legumes should be used to establish a vegetative growth for erosion control. The mixture of grasses and legumes selected must be amenable to the soil quality and thickness, slopes, moisture and climatological conditions that exist without the need for continued maintenance. Such a seed mixture could include, but not be limited to: Kentucky Bluegrass, Perennial Ryegrass, Crownvetch and White Clover. Additional seeding of oats and wheat may be done in the spring and fall, respectively, to ensure proper establishment of the vegetative growth.

   Lime, fertilizer and any other appropriate soil amendments, may be incorporated into the final protective layer at application rates determined from composite soil tests of the area to be seeded. Mulch consisting of straw, yard waste compost, jute and/or wood excelsior may be used as necessary to hold the seed in place and conserve moisture. A person knowledgeable in vegetation establishment will be consulted for determining the specific seed mixtures to be sown, suitable soil amendments and application rates based upon specific seasonal conditions at the time of placement.

5. Monitoring Devices – As of the date of this report, it is assumed that all of the groundwater monitoring devices have been installed. However, if it is determined that additional groundwater monitoring wells are required for the unit, the monitoring wells will be installed as part of the closure process.

6. Certification of Closure – Both SIPC and a Professional Engineer (Engineer) must certify that closure is in accordance with the closure plan. Therefore, the Engineer (Andrews Engineering, Inc.) has been retained so that all aspects of the closure can be overseen. The Engineer will need to spend sufficient time on site to ensure adequate cover quality and thickness as well as proper completion of the other tasks. The Engineer's services will include the preparation of plan sheets showing the final conditions at the closed site.

   The Certification of Closure will contain a review of the groundwater monitoring results. This review will be done in accordance with the groundwater monitoring plan and regulatory requirements.

7. Documentation – Following the closure of the SIPC Unit, SIPC will record a notation on the deed for the property encompassing the landfill, or some other instrument that is normally examined during title search, and notify the Illinois EPA that the notation has been recorded and a copy has been placed in the operating record. The notation on the record will, in perpetuity, notify any potential purchaser of the property that the land has been used as a landfill and its use is restricted under 35 IAC 811.111(d). The notation may be removed from the deed if all wastes are removed from the site and permission is granted by the Illinois EPA. The operating record, Engineer and other applicable parties will maintain record copies of all documentation.

3.1.2 Post-Closure Maintenance Plan

The purpose of the post closure inspections and maintenance is to ensure proper functioning of all items that remain after closure. The post closure inspections and maintenance include the following:

1. Inspections – A walking, visual inspection of the entire SIPC Unit should be conducted quarterly with a written record of the inspection made and preserved. The inspector should assess the condition and the need for repair of final cover, vegetation, fencing, monitoring devices and drainage structures. These inspections will be conducted quarterly for a minimum of five years after closure. Inspections must be continued for a minimum of 5 years after closure, i.e., the entire proposed post-closure care period.

   In general, the following guidelines will be followed when assessing the need for remedial actions:

   a) All rills, gullies and crevices six (6) inches or deeper in the final cover will be filled. Areas identified by SIPC or during Illinois EPA inspections as particularly susceptible to erosion will be recontoured;

   b) All reworked surfaces, and areas with failed or eroded vegetation in excess of 100 square feet cumulatively, shall be revegetated;

   c) Brush, trees or similar vegetation with tap roots growing in areas not so designated will be controlled by cutting or other suitable control method;

   d) Holes and depressions created by settling will be filled and recontoured so as to prevent standing water; and

   e) Eroded and scoured drainage channels will be repaired and lining material will be replaced if necessary.

2. Final Cover Maintenance – Erosion may cause the need for cover repairs. Any areas where erosion cuts appear should be promptly repaired in order to maintain the integrity of the final cover system. While recently covered areas will require the most maintenance, the disposal unit will stabilize with time such that little, if any, maintenance will ultimately be required. Earthen material for cover repairs will be made available from borrow areas adjacent to the disposal unit.

3. Vegetation Maintenance – The unit will require re-establishment of vegetation and mowing. Vegetation will be re-established in areas that are sparse and have been reworked or eroded. In addition, the waste disposal unit area will be mowed at least once per year to eliminate trees and bushes from taking root in the final cover.

4. Survey Controls – The most recent topographic mapping of the project site, as shown on the site drawings, was completed on September 14, 2020 by DroneView Technologies out of Bloomfield Hills, Michigan, with ground control by Clarida & Ziegler Engineering in Marion, Illinois. A legal description of the SIPC Unit boundary has been prepared by or under the supervision of a professional surveyor. All stakes, monuments and markers necessary for proper construction and operation of the expanded facility will be inspected annually and will be resurveyed, remarked and replaced as necessary to maintain accurate controls. All survey work will be under the direction of an Illinois Registered Land Surveyor.

3.2 35 IAC 811.322 – Final slope and stabilization

The final slopes are designed to be constructed to a grade capable of supporting vegetation and minimize wind and water erosion. The final landfill slopes will be no flatter than 2 percent nor steeper than 29 percent (3.5H:1V). These slopes will drain runoff from the cover and prevent ponding. Shallow-rooted grasses and legumes will be used to establish a vegetative growth for erosion control.

Seed will typically be incorporated into the upper surface of the final protective layer using hydroseeding or broadcasting techniques. The mixture of grasses and legumes selected will be amenable to the soil quality and thickness, slopes, and moisture and climatological conditions that exist without the need for continued maintenance and with minimal potential for root penetration into the low permeability layer. It will also be a diverse mix of native and introduced species that is consistent with the controlled access "open space" post-closure land use. Such a mixture could include Kentucky Bluegrass, Perennial Ryegrass, Crownvetch and White Clover. All closed areas of the landfill will be seeded as soon as practicable after closure, with seeding usually conducted in the spring and/or fall. A person knowledgeable in vegetation establishment and of Williamson County's climatological conditions will be consulted for determining the specific seed mixtures to be sown, necessary soil amendments and application rates based upon specific seasonal conditions at the time of closure. As a guide, the design procedures and specifications presented in the handbook "Illinois Urban Manual" may be utilized. Lime, fertilizer and any other necessary soil amendments, will be incorporated into the final protective layer at application rates determined from composite soil tests from the area to be seeded. Mulch consisting of straw, jute or wood excelsior, will be used as necessary to hold the seed in place and conserve moisture. To ensure proper establishment of the vegetative growth, additional seeding of oats and wheat may be done in the spring and fall, respectively.

In addition to the foregoing, SIPC will use aggressive erosion control techniques to minimize the generation of sediment in the runoff from disturbed areas. These may include, but not be limited to, straw bale dikes, silt fences and vegetative filters.

No structures are planned to be constructed over the SIPC Unit. However, if a structure is placed over the unit, it will be compatible with the land use and will not interfere with the operation of a cover system or any monitoring system.

Access to the unit is controlled through use of fences, gates and natural barriers such that unauthorized passage to the property is restricted. Gate locations will include the main entrance area plus any other locations where construction or maintenance vehicles may need to enter the site. This series of fences, gates and natural barriers as described have been installed in such a manner so as to restrict access to all areas of the property, including the landfill disposal unit.

Appendix A – Site Drawings (Reduced)

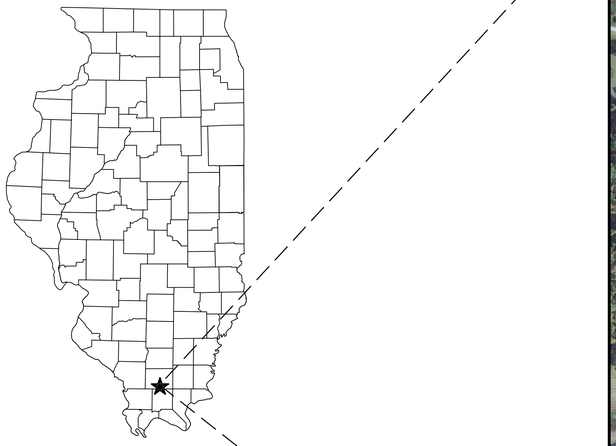
CLOSURE PLAN PERMIT DRAWINGS

SOUTHERN ILLINOIS POWER COOPERATIVE

WILLIAMSON COUNTY, ILLINOIS

IEPA SITE NO. 199055505

NOVEMBER 2020



N

VICINITY MAP

NOT TO SCALE

INDEX OF SHEETS

NO.		TITLE
B-00	–	COVER SHEET
B-01	–	FACILITY LOCATION MAP
B-02	–	EXISTING SITE CONDITIONS
B-03	–	GRADING PLAN
B-04	–	FINAL COVER PLAN
B-05	–	STORMWATER MANAGEMENT PLAN
B-06	–	CROSS-SECTION A-A'
B-07	–	CROSS-SECTION B-B'
B-08	–	DETAILS – 1
B-09	–	DETAILS – 2
B-10	–	DETAILS – 3

PREPARED FOR:

SOUTHERN ILLINOIS POWER COOPERATIVE
11543 LAKE OF EGYPT RD.
MARION, IL 62959
(618) 964-1148

PREPARED BY:

ANDREWS ENGINEERING
3300 GINGER CREEK DRIVE
SPRINGFIELD, ILLINOIS 62711-7233
PH (217) 787-2334 WWW.ANDREWS-ENG.COM
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I HEREBY AFFIRM THAT ALL INFORMATION CONTAINED ON THESE DRAWINGS ARE TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

DOUGLAS W. MAUNTEL, P.E. DATE
ILLINOIS LICENSE NO. 062-054530

SEAL:

EXPIRATION DATE: 11/30/2021

DATE: NOVEMBER 2020

PROJECT ID: 200243

SHEET NUMBER: B-00

NO.	DATE	REVISION DESCRIPTION	BY

Tab: Layout1 Last Saved: November 11, 2020, by Mike Nguyen Plotted: Wednesday, November 11, 2020 1:35:07 PM
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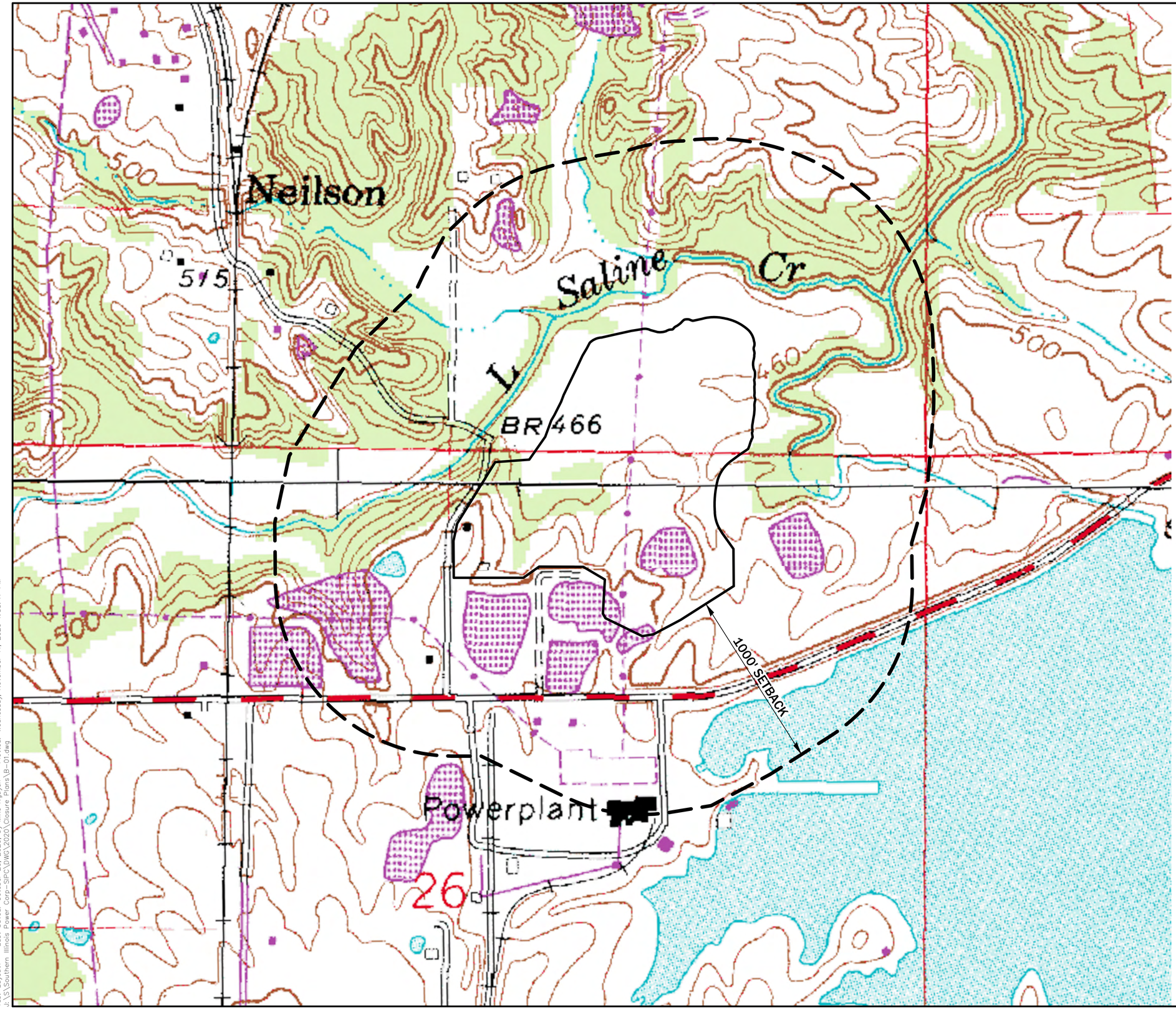

LEGEND

APPROXIMATE UNIT BOUNDARY/WASTE BOUNDARY

N
W
E
S

PREVAILING WIND

NOTE

7.5 MINUTE MARION AND GOREVILLE QUADRANGLES FROM ILLINOIS NATURAL RESOURCES GEOSPATIAL DATA CLEARINGHOUSE.

N

0 250 500 1000

SCALE: IN FEET

NO.	DATE	REVISION DESCRIPTION	BY

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APPROVED BY: DWM | DESIGNED BY: DWM | DRAWN BY: MPN

FACILITY LOCATION MAP

PREPARED FOR
SOUTHERN ILLINOIS POWER COOPERATIVE
WILLIAMSON COUNTY, ILLINOIS

DATE: NOVEMBER 2020

PROJECT ID: 200243

SHEET NUMBER:

B-01

Tab: Layout1 Last Saved: October 20, 2020, by Mike Nguyen Plotted: Wednesday, November 11, 2020 1:35:47 PM
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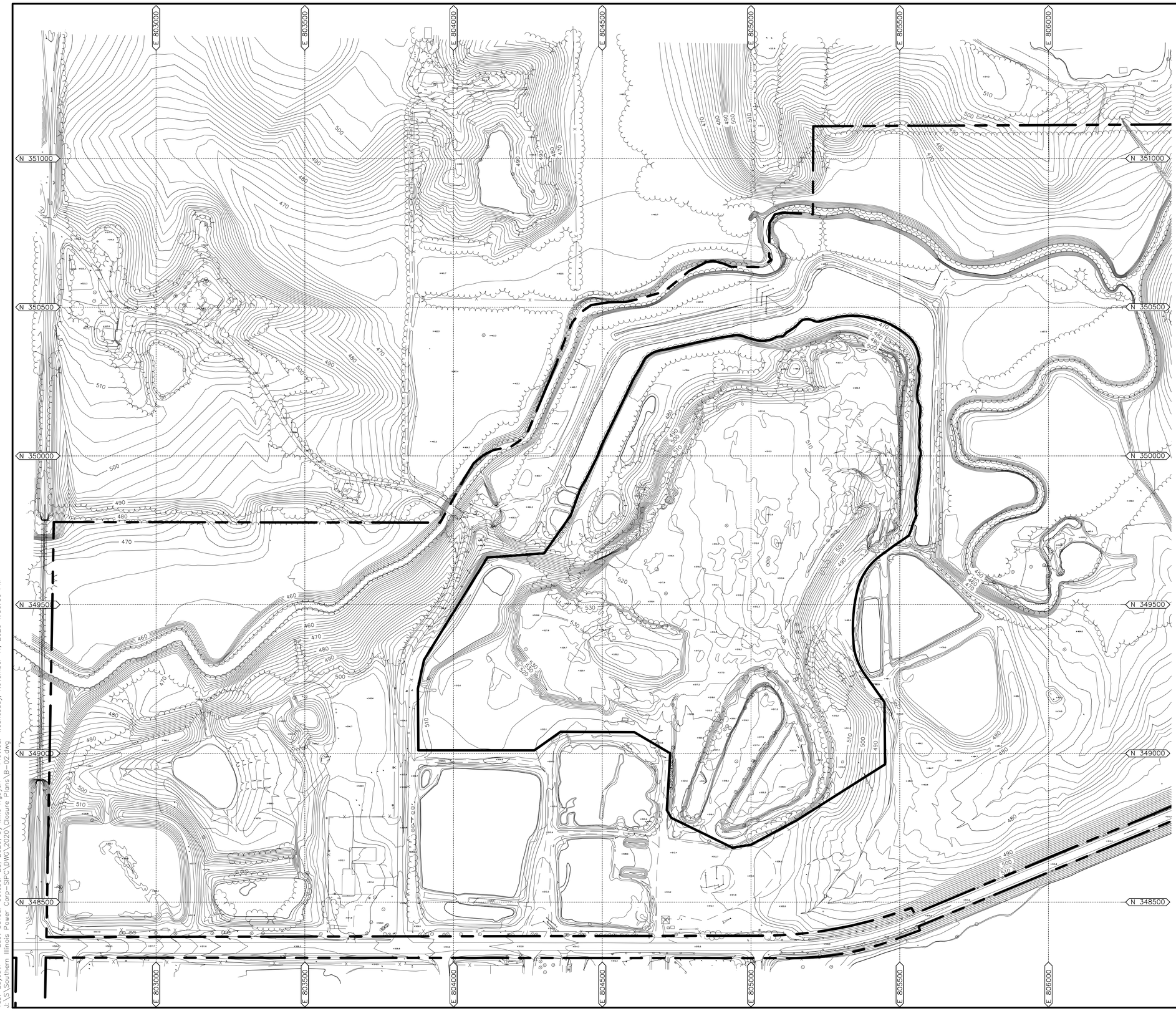

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE UNIT BOUNDARY/WASTE BOUNDARY
- EXISTING FENCE LINE
- EXISTING TREE LINE
- EXISTING PAVED ROAD
- EXISTING UNPAVED ROAD
- EXISTING CONTOUR (10' INTERVAL)
- EXISTING CONTOUR (2' INTERVAL)
- EXISTING LIGHT POLE
- EXISTING POWER POLE
- EXISTING SIGN
- EXISTING TREE

NOTES

1. EXISTING AERIAL TOPOGRAPHY WAS GENERATED FROM THE FLYOVER TAKEN ON SEPTEMBER 14, 2020 BY DRONEVIEW TECHNOLOGIES. CONTOUR INTERVAL SHOWN IS 2 FEET.
2. HORIZONTAL DATUM IS STATE PLANE.
3. CURRENT TOPOGRAPHY MAY DIFFER FROM THAT SHOWN DUE TO MAINTENANCE ACTIVITIES ON-GOING AT THE FACILITY.
4. FOR CLARITY, NOT ALL SITE FEATURES ARE SHOWN.
5. THE BOUNDARY OF WASTE DISPOSAL UNITS, PROPERTY BOUNDARIES, DISTURBED AREAS, AND PERMIT AREAS SUBJECT TO SECTION 21 OF THE ILLINOIS ENVIRONMENTAL PROTECTION ACT SHOWN HERE WERE SURVEYED AND PLATTED BY VARIOUS PROFESSIONAL LAND SURVEYORS AND SHALL BE MAINTAINED IN ACCORDANCE WITH 35 IAC 811.104 BY A PROFESSIONAL LAND SURVEYOR.
6. LIMITS OF EXISTING REFUSE SHOWN IS APPROXIMATE.

N

0 150 300 600

SCALE: IN FEET

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EXISTING SITE CONDITIONS

PREPARED FOR
SOUTHERN ILLINOIS POWER COOPERATIVE
WILLIAMSON COUNTY, ILLINOIS

DATE: NOVEMBER 2020

PROJECT ID: 200243

SHEET NUMBER: B-02

Tab: Layout1 Last Saved: October 23, 2020, by Mike Nguyen Plotted: Wednesday, November 11, 2020 1:36:36 PM
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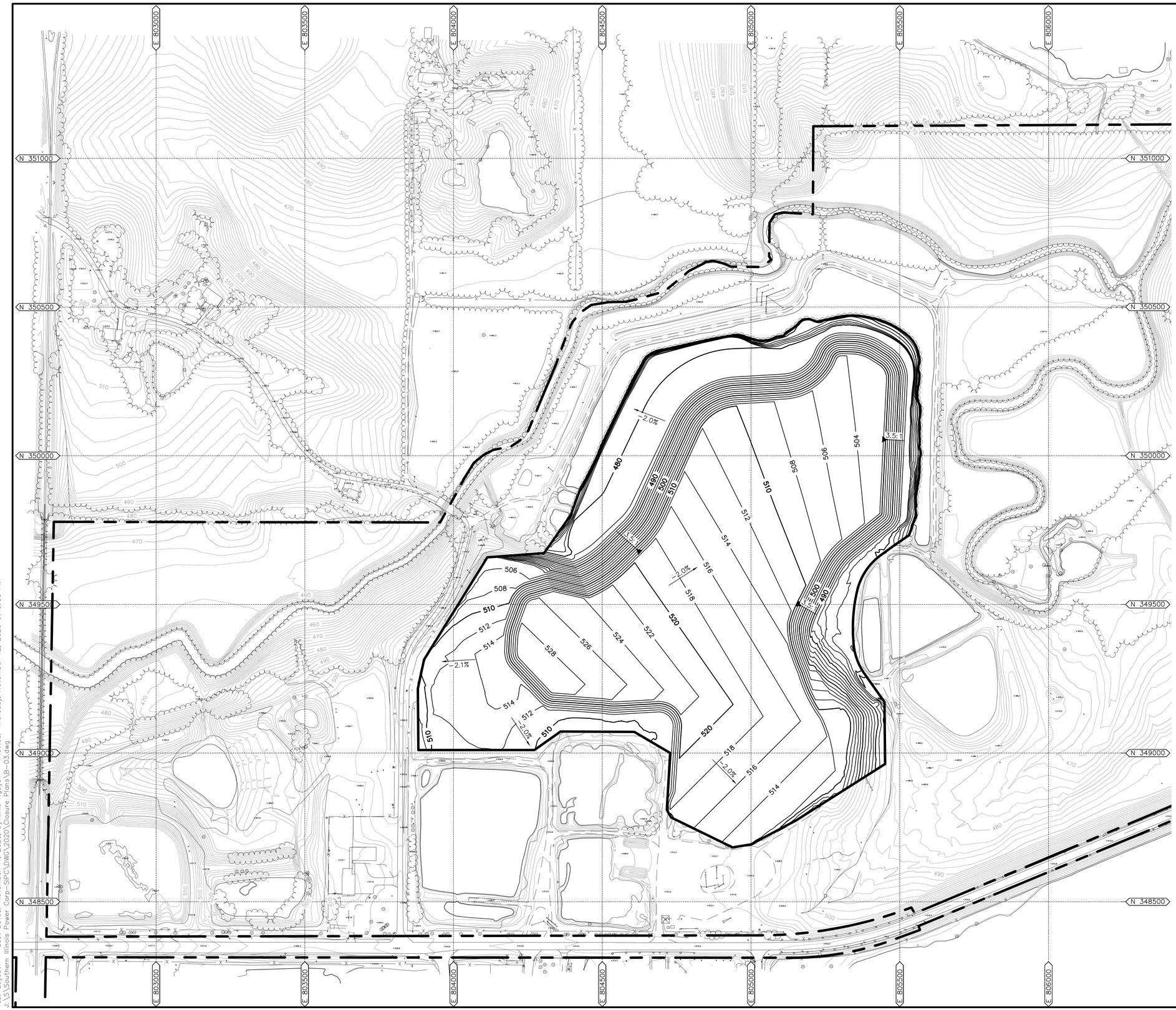

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE UNIT BOUNDARY/WASTE BOUNDARY
- EXISTING FENCE LINE
- EXISTING TREE LINE
- EXISTING PAVED ROAD
- EXISTING UNPAVED ROAD
- EXISTING CONTOUR (10' INTERVAL)
- EXISTING CONTOUR (2' INTERVAL)
- EXISTING LIGHT POLE
- EXISTING POWER POLE
- EXISTING SIGN
- EXISTING TREE
- PROPOSED TOP OF WASTE CONTOUR (10' INTERVAL) — 500
- PROPOSED TOP OF WASTE CONTOUR (2' INTERVAL)

NOTES

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3. THE TYPICAL DETAILS SHOWN ON THIS DRAWING ARE INTENDED TO INDICATE A GENERAL DESIGN CONCEPT FOR THE PARTICULAR ITEMS. ADJUSTMENTS MAY BE MADE IN THE FIELD BY THE CONSTRUCTION QUALITY ASSURANCE OFFICER (CQAO) BASED ON CONDITIONS ENCOUNTERED AT THE TIME OF CONSTRUCTION, AS APPROPRIATE. ANY ADJUSTMENTS WILL BE REFLECTED ON THE RECORD DRAWINGS AND/OR IN CONSTRUCTION CERTIFICATION DOCUMENTATION SUBMITTED TO THE ILLINOIS EPA.
4. LOCATIONS OF PERIMETER AND ACCESS ROADS ARE APPROXIMATE AND MAY BE FIELD ADJUSTED.
5. SOIL STOCKPILES MAY BE LOCATED ON AND OFF-SITE.
6. SEDIMENT CONTROL FENCE WILL BE USED TO MINIMIZE SEDIMENT TRANSFER FROM THE DISTURBED AREAS.
7. LIMITS OF EXISTING REFUSE SHOWN IS APPROXIMATE.
8. FIRE EXTINGUISHERS AND EARTH MOVING EQUIPMENT TYPICALLY USED FOR DEWATERING WILL BE AVAILABLE FOR FIRE PROTECTION AT THE FACILITY.
9. FOR CLARITY, NOT ALL SITE FEATURES ARE SHOWN.

N

0 150 300 600

SCALE: IN FEET

NO.	DATE	REVISION DESCRIPTION	BY

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APPROVED BY: DWM | DESIGNED BY: DWM | DRAWN BY: MPN

GRADING PLAN

PREPARED FOR
SOUTHERN ILLINOIS POWER COOPERATIVE
WILLIAMSON COUNTY, ILLINOIS

DATE: NOVEMBER 2020

PROJECT ID: 200243

SHEET NUMBER: B-03

Tab: Layout1 Last Saved: November 11, 2020, by Mike Nguyen Plotted: Thursday, November 12, 2020 9:16:53 AM
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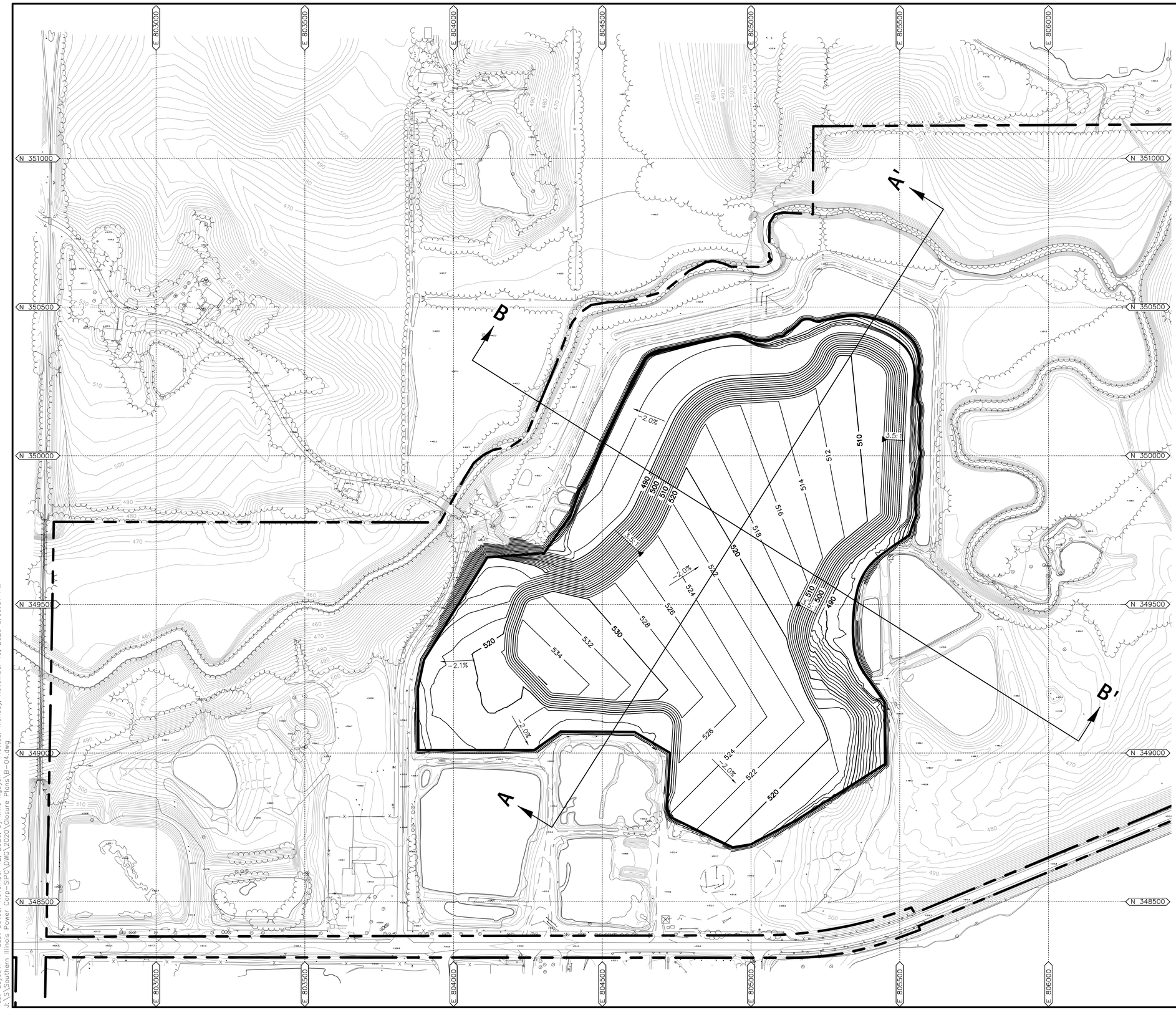

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE UNIT BOUNDARY/WASTE BOUNDARY
- EXISTING FENCE LINE
- EXISTING TREE LINE
- EXISTING PAVED ROAD
- EXISTING UNPAVED ROAD
- EXISTING CONTOUR (10' INTERVAL)
- EXISTING CONTOUR (2' INTERVAL)
- EXISTING LIGHT POLE
- EXISTING POWER POLE
- EXISTING SIGN
- EXISTING TREE
- PROPOSED TOP OF FINAL COVER CONTOUR (10' INTERVAL)
- PROPOSED TOP OF FINAL COVER CONTOUR (2' INTERVAL)

NOTES

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3. TYPICAL SIDE SLOPES VARY IN SLOPE (3.5H:1V MAXIMUM) AND THE TYPICAL TOP SLOPE IS APPROXIMATELY 2%.
4. THE SITE'S END USE WILL BE AN OPEN AREA.
5. ALL STRUCTURES SHOWN ON THIS DRAWING WILL REMAIN AS PERMANENT FEATURES AFTER THE LANDFILL IS CLOSED.
6. THE DESIGN CAPACITY FOR THE PERMANENT CHANNELS ARE BASED UPON THE 25 YEAR, 24 HOUR (SITE ACTIVE) AND 100 YEAR, 24 HOUR (SITE CLOSED COMPLETELY VEGETATED) STORMS WHICHEVER YIELDED THE GREATER FLOW.
7. AS DETERMINED BY AN ILLINOIS PROFESSIONAL ENGINEER, THE CHANNEL DIMENSIONS AND GRADES MAY BE VARIED FROM THAT SHOWN IF THE DESIGN CAPACITY IS MAINTAINED AND EROSION WILL NOT RESULT.
8. ALL DITCHES AND TERRACES ARE DESIGNED TO BE VEGETATED CHANNELS AND SHALL BE SEEDED AND/OR STABILIZED AS SOON AS PRACTICABLE AFTER CONSTRUCTION.
9. FOR CLARITY, NOT ALL SITE FEATURES ARE SHOWN.

N

0 150 300 600

SCALE: IN FEET

NO.	DATE	REVISION DESCRIPTION	BY

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3300 GINGER CREEK DRIVE
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APPROVED BY: DWM | DESIGNED BY: DWM | DRAWN BY: MPN

FINAL COVER PLAN

PREPARED FOR
SOUTHERN ILLINOIS POWER COOPERATIVE
WILLIAMSON COUNTY, ILLINOIS

DATE: NOVEMBER 2020

PROJECT ID: 200243

SHEET NUMBER:

B-04

Tab: Layout1 Last Saved: November 12, 2020, by Mike Nguyen Plotted: Monday, November 16, 2020 3:00:37 PM
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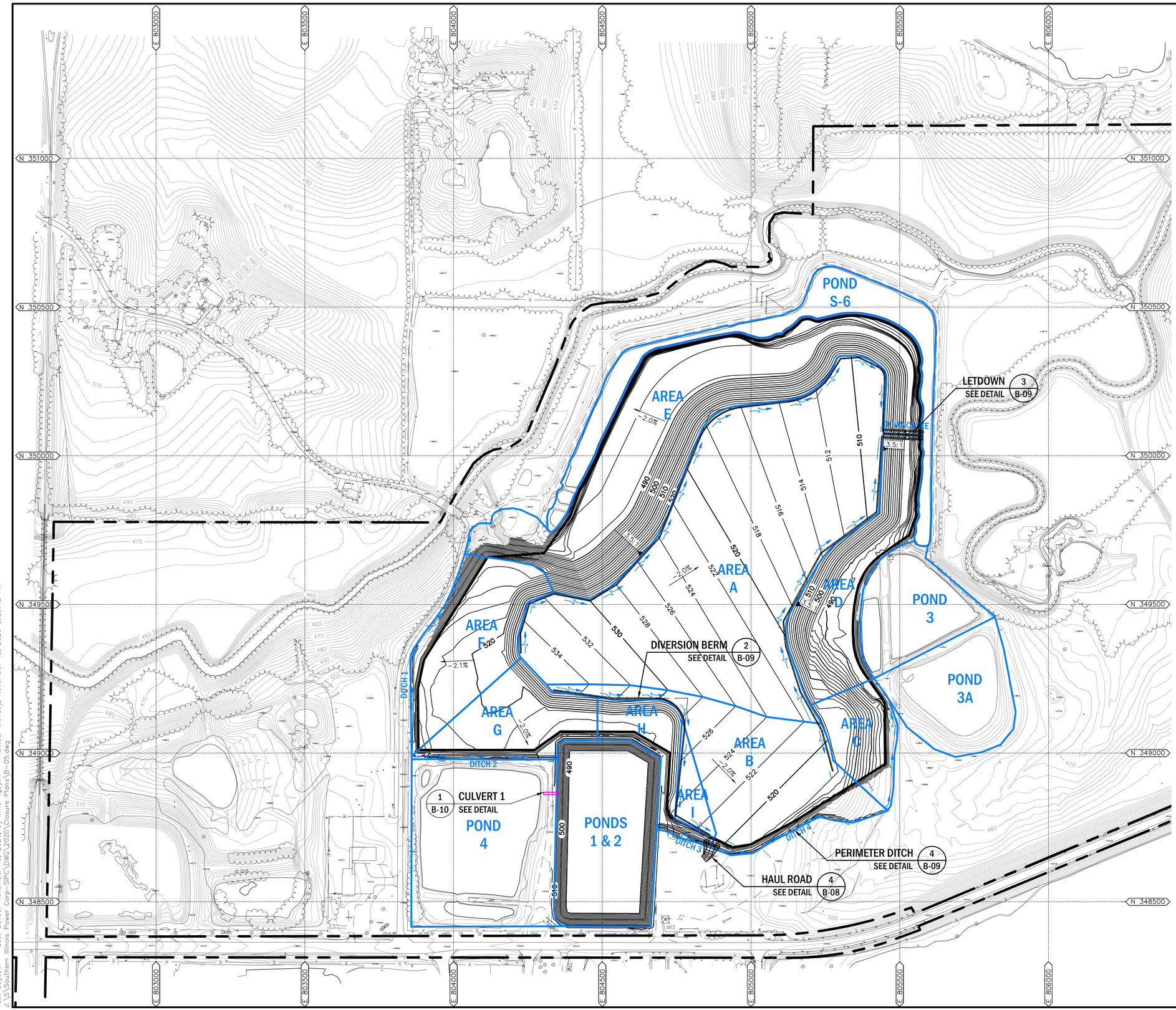

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE UNIT BOUNDARY/WASTE BOUNDARY
- EXISTING FENCE LINE
- EXISTING TREE LINE
- EXISTING PAVED ROAD
- EXISTING UNPAVED ROAD
- EXISTING CONTOUR (10' INTERVAL)
- EXISTING CONTOUR (2' INTERVAL)
- EXISTING LIGHT POLE
- EXISTING POWER POLE
- EXISTING SIGN
- EXISTING TREE
- PROPOSED TOP OF FINAL COVER CONTOUR (10' INTERVAL)
- PROPOSED TOP OF FINAL COVER CONTOUR (2' INTERVAL)
- PROPOSED DRAINAGE FLOW DIRECTION
- AREA A — PROPOSED DRAINAGE AREA
- PROPOSED CULVERT

NOTES

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3. TYPICAL SIDE SLOPES VARY IN SLOPE (3.5H:1V MAXIMUM) AND THE TYPICAL TOP SLOPE IS APPROXIMATELY 2%.
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9. FOR CLARITY, NOT ALL SITE FEATURES ARE SHOWN.

N

0 150 300 600

SCALE: IN FEET

NO.	DATE	REVISION DESCRIPTION	BY

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3300 GINGER CREEK DRIVE
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PH (217) 787-2334 WWW.ANDREWS-ENG.COM
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DESIGNED BY: DWM | DRAWN BY: MPN | APPROVED BY: DWM

STORMWATER MANAGEMENT PLAN

PREPARED FOR
SOUTHERN ILLINOIS POWER COOPERATIVE
WILLIAMSON COUNTY, ILLINOIS

DATE: NOVEMBER 2020

PROJECT ID: 200243

SHEET NUMBER:

B-05

Tab: Layout1 Last Saved: November 16, 2020, by Mike Nguyen Plotted: Monday, November 16, 2020 5:26:12 PM
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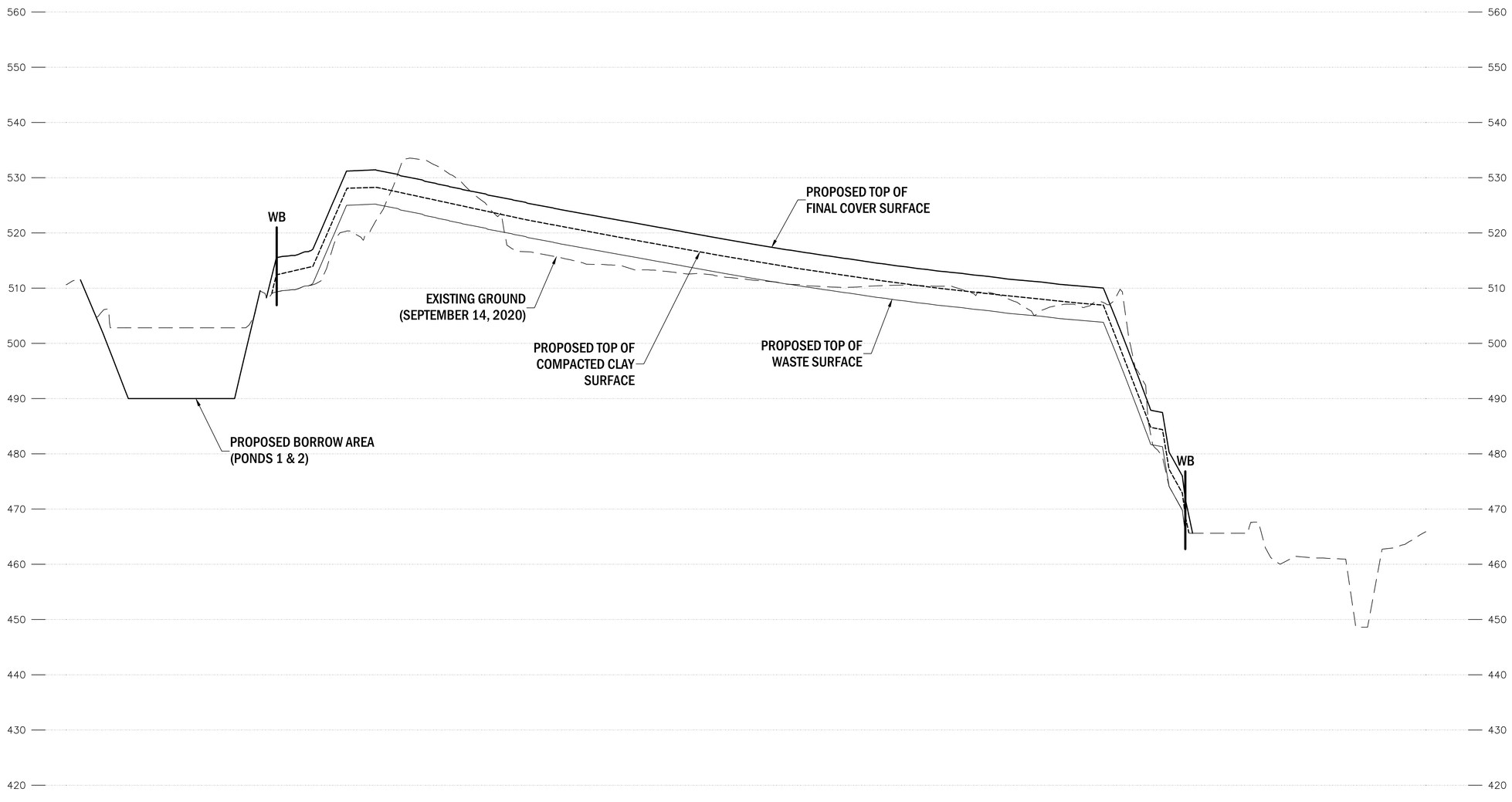

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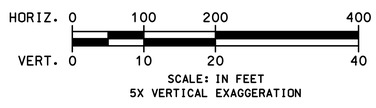
3. AS NECESSARY TO DIVERT ON-SITE SURFACE WATER AROUND CONSTRUCTION AREAS, TEMPORARY DRAINAGE DIVERSION BERMS WILL BE UTILIZED.
4. FOR CLARITY IN DEPICTING THE FEATURE OF THE DISPOSAL AREAS, CROSS SECTION 1 AND 2 HAVE BEEN DISTORTED BY A FACTOR OF 10 IN THE VERTICAL SCALE. THE TRUE PROFILE OF THE LAND FORM IS SHOWN IN CROSS SECTION A-A' ON THIS SHEET.
5. FOR CLARITY, NOT ALL SITE FEATURES ARE SHOWN.



SCALE: IN FEET
5X VERTICAL EXAGGERATION

NO.	DATE	REVISION DESCRIPTION	BY

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DRAWN BY: MPN | DESIGNED BY: DWM | APPROVED BY: DWM

CROSS-SECTION A-A'

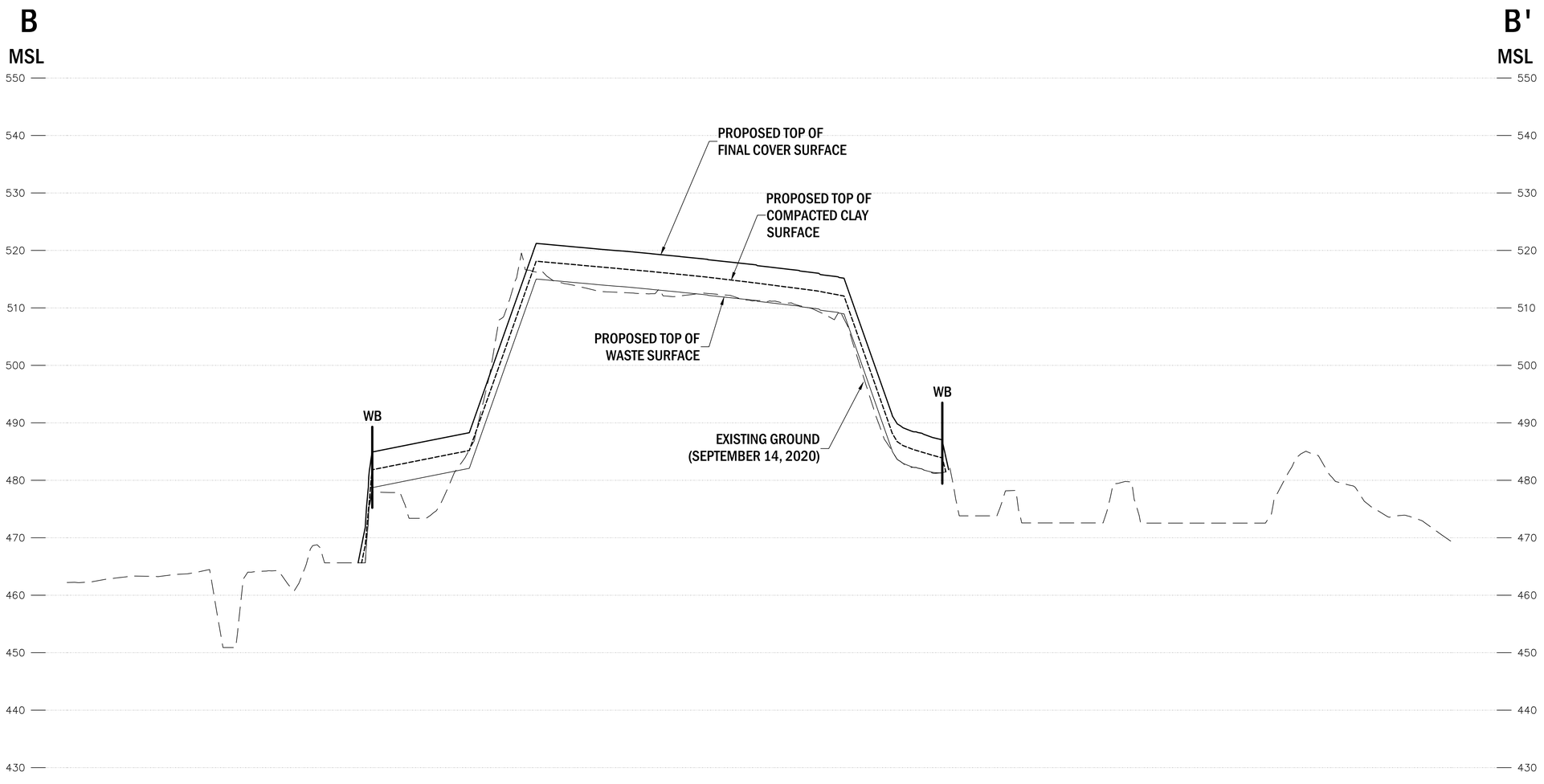
PREPARED FOR
SOUTHERN ILLINOIS POWER COOPERATIVE
WILLIAMSON COUNTY, ILLINOIS

DATE:
NOVEMBER 2020

PROJECT ID:
200243

SHEET NUMBER:

B-06



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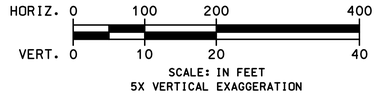
5. FOR CLARITY, NOT ALL SITE FEATURES ARE SHOWN.



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CROSS-SECTION B-B'

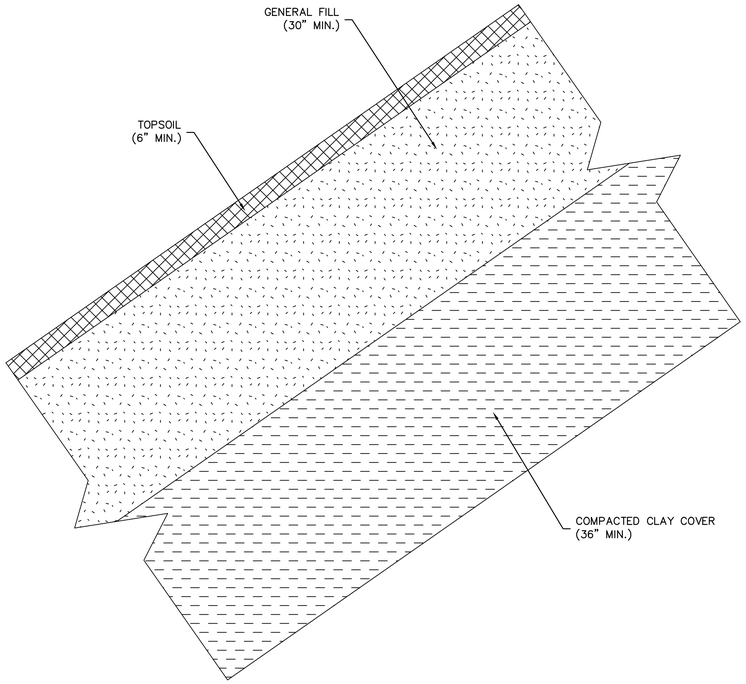
PREPARED FOR
SOUTHERN ILLINOIS POWER COOPERATIVE
WILLIAMSON COUNTY, ILLINOIS

DATE: NOVEMBER 2020

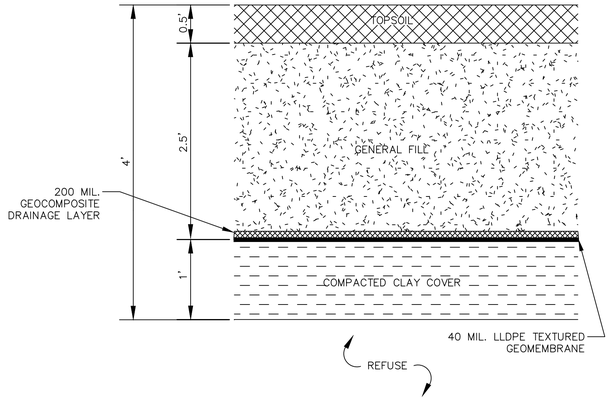
PROJECT ID: 200243

SHEET NUMBER:

B-07



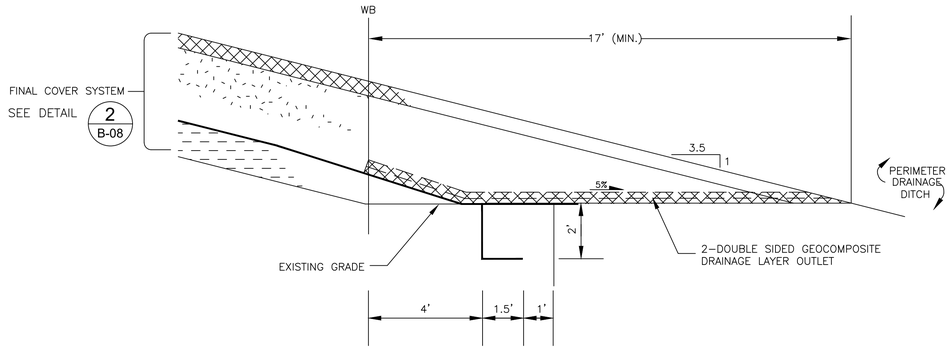
1 B-08 **FINAL COVER SYSTEM**
SCALE: NONE



2 B-08 **FINAL COVER SYSTEM (OPTIONAL)**
SCALE: NONE

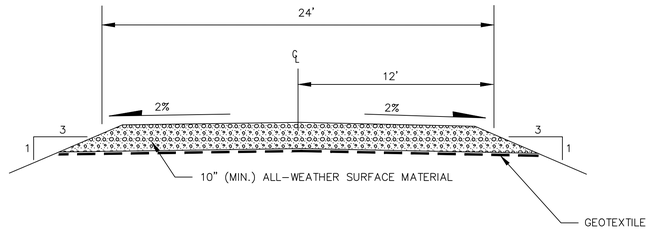
LINE AND SHADING LEGEND

- GEOMEMBRANE
- GEOCOMPOSITE
- GEOTEXTILE
- TOPSOIL
- GENERAL FILL
- GRANULAR DRAINAGE MATERIAL
- SELECT GRADED MATERIAL
- BEDDING MATERIAL
- COMPACTED CLAY
- NATIVE SOIL
- CONCRETE
- RIPRAP
- AGGREGATE DRAINAGE MATERIAL
- GRAVEL
- ALL-WEATHER SURFACE MATERIAL



NOTE
DETAIL 3 ONLY REQUIRED IF INSTALLING OPTIONAL GEOSYNTHETIC FINAL COVER SYSTEM (DETAIL 2).

3 B-08 **COVER GEOMEMBRANE ANCHOR TRENCH & DRAINAGE LAYER OUTLET (OPTIONAL)**
SCALE: NONE



4 B-08 **FINAL COVER HAUL ROAD**
SCALE: NONE

NO.	DATE	REVISION DESCRIPTION	BY

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APPROVED BY: DWM | DESIGNED BY: DWM | DRAWN BY: MPN

DETAILS – 1

PREPARED FOR
SOUTHERN ILLINOIS POWER COOPERATIVE
WILLIAMSON COUNTY, ILLINOIS

DATE: NOVEMBER 2020

PROJECT ID: 200243

SHEET NUMBER: B-08

Tab: B-08 Last Saved: November 16, 2020, by Mike Nguyen Plotted: Monday, November 16, 2020 3:30:19 PM
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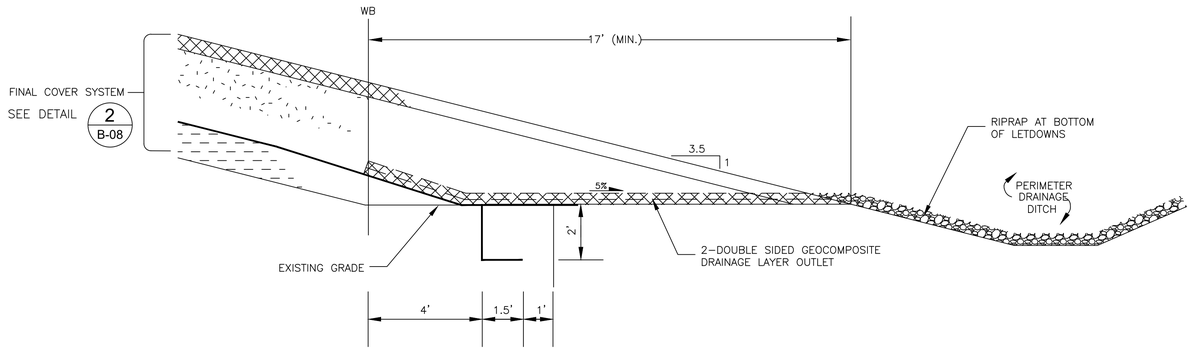
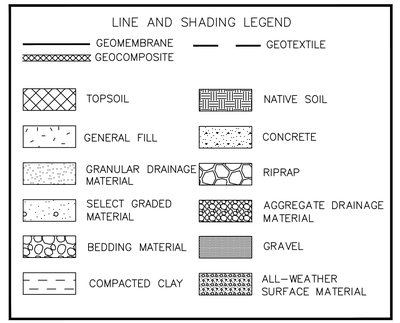
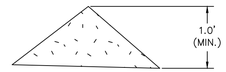


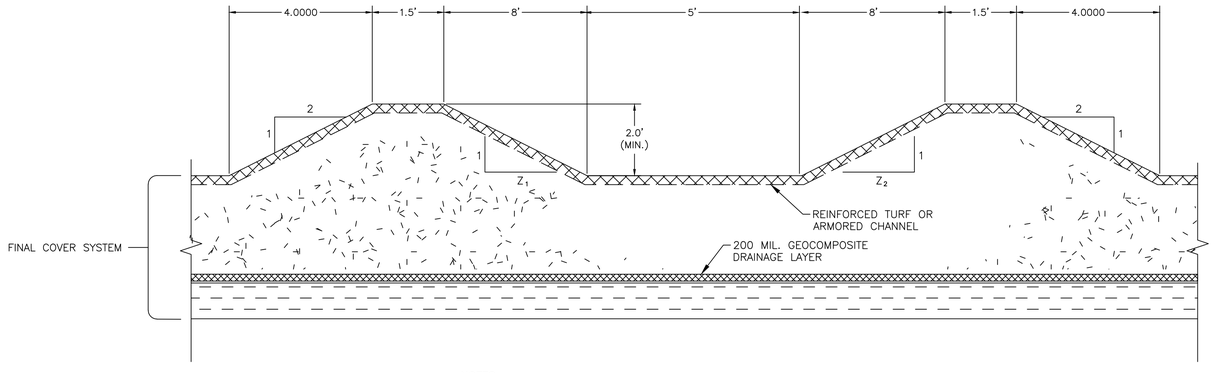
NOTE
DETAIL ILLUSTRATES OPTIONAL GEOSYNTHETIC FINAL COVER SYSTEM.

1 B-09 STILL BASIN AT LETDOWN OUTLETS
SCALE: NONE



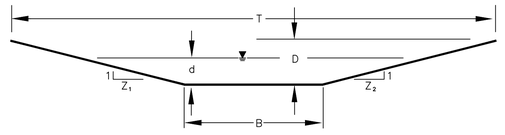


2 B-09 DIVERSION BERM (OPTIONAL)
SCALE: NONE



NOTES:
1. DETAIL ILLUSTRATES OPTIONAL GEOSYNTHETIC FINAL COVER SYSTEM.
2. INSTALLATION OF TRM SIMILAR TO SF10 INSTATURF, HYBRID TURF INSTANT ARMOR MAT.

3 B-09 LETDOWN SECTION
SCALE: NONE



NOTES:
1. AS DETERMINED BY AN ILLINOIS REGISTERED PROFESSIONAL ENGINEER, THE CHANNEL DIMENSIONS AND GRADES MAY BE VARIED FROM THAT SHOWN IF THE DESIGN CAPCITY IS MAINTAINED AND EROSION WILL NOT RESULT.
2. THE DESIGN CAPACITIES FOR THE PERMANENT CHANNELS ARE BASED UPON THE 25-YEAR, 24-HOUR, STORM WITH THE SITE ACTIVE (DISTURBED AREAS PRESENT) OR THE 100-YEAR, 24-HOUR, STORM WITH THE SITE CLOSED (COMPLETELY VEGETATED) WHICHEVER YIELDED THE GREATER FLOW.
3. ALL COLLECTION DITCHES AND TERRACES ARE DESIGNED TO BE VEGETATED CHANNELS AND SHALL BE SEEDED AND/OR STABILIZED AS SOON AS PRACTICLE AFTER CONSTRUCTION. TERRACE AND DITCH OUTLETS SHALL BE CONSTRUCTED WITH RIP RAP OR OTHER EROSION CONTROL LININGS.

DRAINAGE DITCH ID	DITCH TYPE	Q (cfs)	d (feet)	D (feet)	B (feet)	Z_1	Z_2	SLOPE (%)
Downchute	Trapezoidal	3042.81	0.9	2.00	5	4	4	33.0
Ditch 1	V-Notch	26.01	1.7	2.00	0	2	2	0.5
Ditch 2	V-Notch	26.01	1.6	2.00	0	2	2	0.5
Ditch 3	V-Notch	36.79	1.0	2.00	0	2	2	1.0
Ditch 4	V-Notch	36.79	1.9	2.00	0	2	2	1.0

4 B-09 DITCH DETAIL AND SUMMARY TABLE
SCALE: NONE

NO.	DATE	REVISION DESCRIPTION	BY

ANDREWS ENGINEERING
3300 GINGER CREEK DRIVE
SPRINGFIELD, ILLINOIS 62711-7233
PH (217) 787-2334 WWW.ANDREWS-ENG.COM
PONTIAC, IL • LOMBARD, IL • INDIANAPOLIS, IN • WARRENTON, MO

DRAWN BY: MPN | DESIGNED BY: DWM | APPROVED BY: DWM

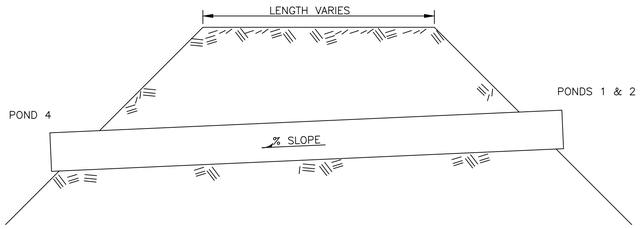
DETAILS - 2

PREPARED FOR
SOUTHERN ILLINOIS POWER COOPERATIVE
WILLIAMSON COUNTY, ILLINOIS

DATE: NOVEMBER 2020

PROJECT ID: 200243

SHEET NUMBER: B-09



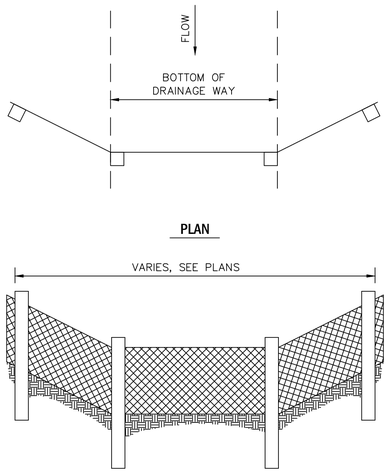
CULVERT TABLE

CONDUIT NUMBER	TYPE OF CONDUIT	NUMBER OF CONDUITS	CONDUIT DIMENSIONS	SLOPE %
CULVERT 1	CMP	1	12" DIA.	5.0

NOTES:

1. MINIMUM SLOPE OF CULVERTS SHALL BE THE SAME AS THE DITCHES ON WHICH THEY ARE PLACED.
2. THE DESIGN CAPACITIES OF THE CULVERTS ARE BASED UPON THE SAME CRITERIA AS THE DITCHES THEY SERVE.
3. RIPRAP OR OTHER SUITABLE EROSION CONTROL MEASURES SHALL BE UTILIZED AROUND THE CULVERT'S INLET AND OUTLET AS NECESSARY TO PREVENT SCOURING.

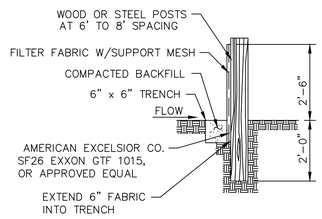
1 / B-10 **CULVERT DETAIL**
SCALE: NONE



2 / B-10 **TYPICAL SILT FENCE BARRIER**
SCALE: NONE

NOTES:

1. ALL SITE DEVELOPMENT ACTIVITIES SHALL BE IN ACCORDANCE WITH THE "PROCEDURES AND STANDARDS FOR URBAN SOIL EROSION AND SEDIMENTATION CONTROL" PUBLISHED BY THE URBAN COMMITTEE OF THE ASSOCIATION OF ILLINOIS SOIL AND WATER CONSERVATION DISTRICTS, JULY, 1988.
2. STOCKPILES SHALL BE PLACED SO AS TO PREVENT SEDIMENT RUNOFF INTO WATERCOURSES OR ONTO ADJACENT ROADWAYS AND PROPERTIES, AND BE SEEDED AS NECESSARY, WITH CEREAL RYE OR WHEAT (150 LBS./ACRE) AS A MEANS OF TEMPORARY EROSION CONTROL.
3. TEMPORARY SEDIMENT BARRIERS SHALL BE INSTALLED AND MAINTAINED WHERE EARTHWORK OPERATIONS CAUSE OFF-SITE EROSION OR SEDIMENTATION PROBLEMS. SUCH BARRIERS MAY BE STRAW BALES OR A FILTER FABRIC FENCE.
4. FINAL GRADING SHALL BE DONE AS SOON AFTER CONSTRUCTION OF SITE IMPROVEMENTS AS IS REASONABLY POSSIBLE. SEEDING, SODDING OR ANY OTHER SPECIFIED SOIL STABILIZATION MEASURES SHALL BE DONE AS SOON AS PRACTICABLE AND SEASONABLE AFTER FINAL GRADE IS ESTABLISHED.
5. ALL SEDIMENT TRAPS AND CATCH BASINS SHALL BE CLEANED PERIODICALLY DURING CONSTRUCTION TO ALLOW THEM TO OPERATE EFFECTIVELY.



3 / B-10 **SILT FENCE SECTION**
SCALE: NONE

NOTES:

1. FILTER BARRIERS SHALL BE PLACED WHERE DIRECTED BY THE C.Q.A. OFFICER AND SITE MANAGEMENT.
2. SEDIMENT TRAPPED BY THE FENCE SHALL BE REMOVED WHENEVER SIGNIFICANT ACCUMULATION OCCURS.
3. BARRIERS SHALL BE MAINTAINED IN PLACE UNTIL THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED AND REMOVAL IS AUTHORIZED BY THE ENGINEER.

NO.	DATE	REVISION DESCRIPTION	BY

ANDREWS ENGINEERING
3300 GINGER CREEK DRIVE
SPRINGFIELD, ILLINOIS 62711-7233
PH (217) 787-2334 WWW.ANDREWS-ENG.COM
PONTIAC, IL • LOMBARD, IL • INDIANAPOLIS, IN • WARRENTON, MO

APPROVED BY: DWM | DESIGNED BY: DWM | DRAWN BY: MPN | CHECKED BY: DWM

DETAILS – 3

PREPARED FOR
SOUTHERN ILLINOIS POWER COOPERATIVE
WILLIAMSON COUNTY, ILLINOIS

DATE: NOVEMBER 2020

PROJECT ID: 200243

SHEET NUMBER: B-10

Appendix B – Site Location Map

FACILITY LOCATION

35 IAC 811.302 – Facility Location

The 35 Illinois Administrative Code (IAC) 811.302 lists all location standards to be met for chemical and putrescible waste landfills. These standards and the manner in which the existing unit complies with these standards are discussed in the following sections.

35 IAC 811.302(a) - Setback Zones

The unit is not located within a setback zone established pursuant to Section 14.2 and 14.3 of the Illinois Environmental Protection Act, which establishes minimum distances that water supply wells must be maintained away from a solid waste disposal facility (i.e., 200 feet for any existing or permitted community water supply well or other potable water supply well). There are no potable water supply wells within 200 feet of the SIPC Unit. Also, community water supply wells may establish a maximum setback of 1,000 feet. There are no community water supply wells within 1,000 feet of the unit. Therefore, the unit is not located within a setback zone established pursuant to Section 14.2 and 14.3 of the Illinois Environmental Protection Act.

35 IAC 811.302(b) - Sole Source Aquifer

The unit is not located within a recharge zone or within 366 meters (1,200 feet), vertically or horizontally, of a sole-source aquifer designated by the United States Environmental Protection Agency pursuant to Section 1424(e) of the Safe Drinking Water Act (42 U.S.C. 300f *et seq.)*.

35 IAC 811.302(c) - Roads and Highways

The closest township or county road located within 500 feet of the unit is Lake Egypt and Nielson Crossing Roads. Lake Egypt Road is located along the south and Nielson Crossing Road is located along the west side of the unit. With regard to the existing unit, the operation is screened from view by natural objects, existing vegetation, consisting of trees, shrubs, etc. and a chain link fence, located along the west and south side of the existing unit.

35 IAC 811.302(d) - Occupied Dwellings, Schools and Hospitals

No part of the unit shall be located closer than 500 feet from a school, hospital or occupied dwelling, unless the owner of such school, hospital or dwelling provides permission to the operator, in writing, for a closer distance. There are no occupied dwellings, schools or hospitals located within 500 feet of the unit.

35 IAC 811.302(e) and 35 IAC 811.302(f) - Airports

The existing unit is not located closer than 5,000 feet of any runway used by piston type aircraft or within 10,000 feet of any runway used by turbojet aircraft. The closest airport to the SIPC Unit is the Veterans Airport of Southern Illinois located in Marion, IL.

LEGEND

- APPROXIMATE UNIT BOUNDARY/WASTE BOUNDARY
- 200' 811.302(a) SETBACK
- 500' 811.302(c)(d) SETBACK
- 1,000' 811.302(a) SETBACK
- 1,200' 811.302(b) SETBACK
- 5,000' 811.302(e) SETBACK
- 10,000' 811.302(f) SETBACK

PREVAILING WIND

NOTE

7.5 MINUTE MARION AND GOREVILLE QUADRANGLES FROM ILLINOIS NATURAL RESOURCES GEOSPATIAL DATA CLEARINGHOUSE.

0 1000 2000 4000

SCALE: IN FEET

NO.	DATE	REVISION DESCRIPTION	BY

ANDREWS ENGINEERING
3300 GINGER CREEK DRIVE
SPRINGFIELD, ILLINOIS 62711-7233
PH (217) 787-2334 WWW.ANDREWS-ENG.COM
LOMBARD, IL • INDIANAPOLIS, IN • WARRENTON, MO
PONTIAC, IL •

DRAWN BY: MPN | DESIGNED BY: DWM | APPROVED BY: DWM

SITE LOCATION MAP

PREPARED FOR

SOUTHERN ILLINOIS POWER COOPERATIVE

WILLIAMSON COUNTY, ILLINOIS

DATE: OCTOBER 2020

PROJECT ID: 200243

SHEET NUMBER: 1

Appendix C – Property Ownership

LEGAL DESCRIPTION
OF
PROPERTY OWNED BY THE
SOUTHERN ILLINOIS POWER CO-OPERATIVE
LAKE OF EGYPT AREA

Prepared by:
PAUL W. GAYER, PLS
CLARIDA ENGINEERING CO.
308 SOUTH COURT ST.
MARION, IL

February 14, 2001
Revisions made June 12, 2003

STATE OF ILLINOIS)
)SS
COUNTY OF WILLIAMSON)

FOR THE BENEFIT OF:

John S. Brewster: Winters, Brewster, Crosby & Schafer
Steve Bond: Marion Abstract Co., Inc.
Southern Illinois Power Co-Operative

I, Paul W. Gayer, Illinois Professional Land Surveyor No. 35-002916, do hereby certify that at the request of John S. Brewster, with offices in Marion, Illinois, attorney for the Southern Illinois Power Co-Operative, I have prepared the attached, seventy three page legal description for all of the real property in the Lake of Egypt area currently deeded to the Southern Illinois Power Co-Operative.

I further declare that no survey was made on the ground by me or by any member of my staff, that this attached description was produced by using the combined information found in surveys and descriptions made and platted by Oscar E. Grant, Illinois Professional Land Surveyor No. 35001412, now deceased, as the original and long time surveyor for the Southern Illinois Power Co-Operative at this Lake of Egypt area.

I further state that, in addition to the Oscar E. Grant surveys, we were furnished, by the Marion Abstract Company, Inc, all of the deeds listing the Southern Illinois Power Co-Operative as the grantee or the grantor for real property in the subject area. Using these deed descriptions, we plotted all of the real property purchased and all of the real property sold by the Southern Illinois Power Co-Operative for the subject area. Because most of the deeds were written with metes and bounds descriptions that matched the datum for the legal survey plats or the surveyed plats were for areas included in deeds using aliquot descriptions, we were able to combine all of this information to write a fairly accurate total description. There were a few areas of the total property description that the legal line calls are accurate but the acres for those areas have been estimated. Any errors in these estimated area calls are a very minor part of the total area of the subject site.

Electronically reproduced parts of the USGS Quadrangle Maps were used to plot the final Southern Illinois Power Co-Operative property boundary lines with excepted areas. These maps are made a part of the legal description documents for clarification purposes only and are in no way intended to be a legal plat of survey.

This total document consisting of descriptions, summary of acres, maps and certification, is in no way intended to be used as a true legal survey

document. The requested and intended purpose of this document is to certify, to certain named and un-named interested parties, a very accurate description of the total real property owned by the Southern Illinois Power Co-Operative in the Lake of Egypt area. This description was to be arrived at using existing information without the benefit of additional on the ground surveying.

Within the guidelines established, this document is a true and correct representation of the full property ownership by the Southern Illinois Power Co-Operative.

In witness thereof, I have hereunto set my hand and affixed my seal at Marion, Illinois this 14th day of February, 2001.

Paul W. Gayer, PLS
#35-002916
Clarida Engineering Co.
308 South Court Street
Marion, Illinois 62959
(618)-993-6411

This document was revised to add a partial of property owned by SIPC but left out of the original documents prepared by this surveyor.

Changes are on the "summary of acreages" page, page 13 of 75 and page 27 of 75. The revisions are shown in "italic type".

Dated: June 12, 2003
P.W.G.

Legal Description
Of Property Owned by
Southern Illinois Power Co-operative
Lake of Egypt Area

Summary of Acreage

item	area in acres, more or less
Parcel 10-2 "A"	*1,636*
Parcel 10-2 "B"	360
Township 10 South, Range 2 East (total)	*1,996*
Parcel 10-3 "A"	253.87
Parcel 10-3 "B"	2.83
Parcel 10-3 "C"	13.43
Township 10 South, Range 3 East (total)	270.13
Williamson County, Illinois (total)	*2,266*
Parcel 11-2 "A"	36.22
Parcel 11-2 "B"	185.81
Parcel 11-2 "C"	20.00
Parcel 11-2 "D"	71.55
Township 11 South, Range 2 East (total)	313.58
Parcel 11-3 "A"	3.52
Parcel 11-3 "B"	0.05
Parcel 11-3 "C"	1,790
Parcel 11-3 "D"	31.11
Parcel 11-3 "E"	147.91
Parcel 11-3 "F"	1.31
Parcel 11-3 "G"	6.52
Township 11 South, Range 3 East (total)	1,980
Johnson County, Illinois (total)	2,294
SIPC Lake of Egypt area (total)	***4,560***

I. Williamson County, Illinois

a. Township 10 South, Range 2 East

i. Parcel 10-2 "A"

Parts of Sections 23, 24, 25, 26, 35, and 36 in Township 10 South, Range 2 East of the Third Principal Meridian, Williamson County, Illinois, being more particularly described as follows:

Beginning at the Southeast Corner of Section 36, Township 10 South, Range 2 East of the Third Principal Meridian;
thence South 86°22'16" West a distance of 1499.80 feet along the South line of Section 36;
thence North 35°29'55" West a distance of 4.44 feet;
thence North 35°31'28" West a distance of 132.21 feet;
thence North 49°00'19" East a distance of 157.61 feet;
thence North 76°21'20" East a distance of 74.95 feet;
thence South 86°32'16" East a distance of 30.10 feet;
thence North 82°32'47" East a distance of 79.58 feet;
thence North 44°01'27" East a distance of 115.06 feet, said point being marked by SIPC survey marker #863;
thence North 58°03'58" East a distance of 92.79 feet;
thence North 21°29'18" East a distance of 108.56 feet;
thence North 25°55'11" East a distance of 60.32 feet;
thence North 13°32'18" East a distance of 54.25 feet;
thence North 03°31'50" East a distance of 123.58 feet;
thence North 10°29'17" East a distance of 54.55 feet;
thence North 14°49'00" East a distance of 63.83 feet;
thence North 13°27'37" East a distance of 63.86 feet;
thence North 11°24'03" East a distance of 89.83 feet;
thence North 00°52'46" East a distance of 91.73 feet;
thence North 22°10'17" East a distance of 66.88 feet;
thence North 21°58'08" East a distance of 102.00 feet;
thence North 05°03'22" West a distance of 136.87 feet;
thence North 16°05'04" East a distance of 158.29 feet;
thence North 22°40'43" East a distance of 85.08 feet;
thence North 35°51'49" East a distance of 195.96 feet;
thence North 32°25'10" East a distance of 152.58 feet;
thence North 09°46'36" East a distance of 80.75 feet;
thence South 34°32'59" West a distance of 229.75 feet;
thence South 33°55'32" West a distance of 191.57 feet;

thence South 30°54'43" West a distance of 102.47 feet;
thence South 28°56'41" West a distance of 193.54 feet;
thence North 85°27'04" East a distance of 12.02 feet;
thence South 28°09'31" West a distance of 93.26 feet;
thence South 27°58'34" West a distance of 79.95 feet;
thence South 25°10'04" West a distance of 93.21 feet;
thence South 16°35'12" West a distance of 79.88 feet;
thence South 05°14'35" West a distance of 108.80 feet;
thence South 09°14'37" West a distance of 50.84 feet;
thence South 11°26'15" West a distance of 61.36 feet;
thence South 13°33'08" West a distance of 57.12 feet;
thence South 19°37'45" West a distance of 60.00 feet;
thence South 20°22'26" West a distance of 50.93 feet;
thence South 23°51'09" West a distance of 47.33 feet;
thence South 33°53'24" West a distance of 54.04 feet;
thence South 51°27'20" West a distance of 55.96 feet;
thence South 64°31'32" West a distance of 32.14 feet;
thence South 00°42'30" West a distance of 181.89 feet along the East line of the Southwest Quarter of the Southeast Quarter of Section 36, said point being marked by SIPC survey marker #864;
thence South 87°01'21" West a distance of 527.70 feet along the North line of the South Quarter of the South Half of the Southeast Quarter of Section 36, said point being marked by SIPC survey marker #865;
thence North 61°59'55" East a distance of 170.08 feet;
thence North 00°46'49" East a distance of 531.12 feet;
thence North 00°46'49" East a distance of 57.71 feet;
thence South 87°31'48" West a distance of 942.50 feet, said point being marked by SIPC survey marker # 823;
thence South 00°01'11" East a distance of 1004.27 feet said point being marked by SIPC survey marker #867;
thence South 88°24'20" West a distance of 11.61 feet to the Southeast Corner of the Southeast Quarter of the Southwest Quarter of Section 36, said point being marked by SIPC survey marker # 14;
thence South 87°51'19" West a distance of 1368.38 feet to the Southwest Corner of said Southeast Quarter of the Southwest Quarter, said point being marked by SIPC survey marker # 944;
thence North 01°03'27" East a distance of 1342.43 feet to the Northwest Corner of said Southeast Quarter of the Southwest Quarter, said point being marked by SIPC survey marker # 774;
thence South 87°43'00" West a distance of 259.34 feet along the South line of the Northwest Quarter of the Southwest Quarter;
thence North 09°52'55" East a distance of 282.66 feet;
thence North 11°36'46" West a distance of 52.25 feet;
thence North 24°19'24" West a distance of 75.54 feet;
thence North 45°53'32" West a distance of 87.27 feet;
thence North 18°13'37" West a distance of 123.92 feet;

thence North 04°09'01" East a distance of 119.41 feet;
thence North 06°41'20" West a distance of 72.25 feet;
thence North 73°37'15" West a distance of 65.87 feet;
thence North 44°08'54" East a distance of 51.95 feet;
thence North 36°12'43" West a distance of 217.67 feet;
thence North 38°48'54" West a distance of 73.33 feet;
thence North 89°21'42" West a distance of 35.72 feet;
thence South 13°04'31" East a distance of 66.89 feet;
thence South 28°00'48" West a distance of 38.61 feet;
thence South 09°54'38" West a distance of 233.69 feet;
thence South 38°16'29" East a distance of 115.78 feet;
thence South 20°23'53" West a distance of 40.44 feet;
thence South 11°50'45" East a distance of 164.73 feet;
thence South 42°18'56" West a distance of 125.33 feet;
thence South 72°01'13" East a distance of 78.33 feet;
thence South 31°25'40" West a distance of 48.41 feet;
thence South 31°01'10" East a distance of 89.50 feet;
thence South 15°21'49" East a distance of 74.76 feet;
thence North 51°09'19" West a distance of 165.09 feet;
thence South 66°07'56" West a distance of 85.52 feet;
thence South 30°37'07" West a distance of 139.46 feet;
thence South 15°29'53" East a distance of 89.78 feet;
thence South 76°33'18" West a distance of 78.99 feet;
thence South 51°41'14" West a distance of 70.39 feet;
thence South 10°32'28" West a distance of 163.79 feet;
thence South 52°43'23" East a distance of 63.33 feet;
thence South 83°20'14" West a distance of 106.07 feet;
thence North 71°37'51" West a distance of 85.44 feet;
thence North 83°04'05" West a distance of 103.69 feet;
thence South 08°26'38" West a distance of 52.15 feet;
thence South 84°04'11" East a distance of 489.71 feet;
thence South 01°12'27" West a distance of 86.63 feet;
thence along a curve to the left,
having a radius of 1145.92 feet,
through a central angle of 12°20'25",
a chord direction of North 78°54'37" West,
and a chord length of 246.33 feet;
thence North 88°30'33" West a distance of 141.12 feet;
thence South 12°41'31" East a distance of 44.39 feet;
thence South 76°32'44" East a distance of 111.41 feet;
thence South 49°48'18" East a distance of 117.28 feet;
thence North 87°46'30" West a distance of 107.47 feet;
thence South 81°28'13" West a distance of 84.19 feet;
thence South 09°33'10" West a distance of 47.55 feet;
thence South 19°36'55" East a distance of 95.72 feet;
thence South 11°53'50" West a distance of 64.59 feet;

thence South 17°51'27" West a distance of 103.06 feet;
thence South 20°47'10" East a distance of 90.15 feet;
thence South 54°00'59" East a distance of 49.80 feet;
thence North 89°48'09" East a distance of 105.48 feet;
thence South 62°19'04" West a distance of 131.85 feet;
thence South 15°21'42" West a distance of 28.27 feet;
thence South 20°25'00" East a distance of 93.85 feet;
thence South 31°52'51" East a distance of 146.35 feet;
thence South 38°48'57" East a distance of 150.00 feet;
thence South 87°51'20" West a distance of 507.75 feet, said point being marked by SIPC survey marker # 732;
thence North 01°02'22" East a distance of 340.01 feet;
thence North 65°25'50" West a distance of 72.97 feet to a point on the West line of the Southwest Quarter of the Southwest Quarter of Section 36;
thence North 54°21'32" West a distance of 46.09 feet;
thence North 74°15'34" West a distance of 85.05 feet;
thence South 60°41'57" West a distance of 62.86 feet;
thence North 28°03'41" West a distance of 52.18 feet;
thence North 88°50'06" West a distance of 70.29 feet;
thence South 59°55'48" West a distance of 102.59 feet;
thence South 38°01'46" West a distance of 60.53 feet;
thence South 69°00'21" West a distance of 108.06 feet;
thence South 52°17'19" West a distance of 59.66 feet;
thence South 79°35'27" West a distance of 66.49 feet;
thence South 51°50'45" West a distance of 109.07 feet;
thence South 34°19'53" West a distance of 109.17 feet;
thence South 16°42'11" West a distance of 85.95 feet to a point in the South line of Section 35;
thence North 89°15'56" West a distance of 1899.36 feet to the Southwest Corner of the Southwest Quarter of the Southeast Quarter of Section 35, said point being marked by SIPC survey marker # 718;
thence North 00°27'42" East a distance of 1331.41 feet to the Northwest Corner of Southwest Quarter of the Southeast Quarter of Section 35, said point being marked by SIPC survey marker # 717;
thence North 00°27'42" East a distance of 1331.41 feet to the Northwest Corner of the Northwest Quarter of the Southeast Quarter of Section 35, said point being marked by SIPC survey marker # 716;
thence North 00°27'41" East a distance of 665.70 feet to the Northwest Corner of the South Half of the Southwest Quarter of the Northeast Quarter of Section 35, said point being marked by SIPC survey marker # 715;
thence South 88°58'01" East a distance of 1336.97 feet to the Northeast Corner of said South Half, said point being marked by SIPC survey marker # 714;
thence South 00°20'14" West a distance of 606.85 feet along the East line of said South Half;
thence North 89°28'24" West a distance of 289.62 feet;

thence South 00°30'31" West a distance of 58.01 feet to a point on the South line of the Northeast Quarter of Section 35;
thence South 00°27'54" West a distance of 566.60 feet;
thence South 89°31'48" East a distance of 289.73 feet;
thence South 89°33'49" East a distance of 769.17 feet;
thence North 00°28'19" East a distance of 139.95 feet;
thence North 89°37'06" West a distance of 389.53 feet;
thence North 00°28'43" East a distance of 60.10 feet;
thence South 89°27'33" East a distance of 59.96 feet;
thence North 00°30'27" East a distance of 59.73 feet;
thence South 89°24'49" East a distance of 139.81 feet;
thence North 00°27'37" East a distance of 200.09 feet;
thence North 89°29'34" West a distance of 199.68 feet;
thence North 00°27'36" East a distance of 79.86 feet;
thence North 89°30'23" West a distance of 379.83 feet to a point on the West line of the Northeast Quarter of the Southeast Quarter of Section 35;
thence North 00°44'10" East a distance of 25.06 feet to the Northwest Corner of said Quarter-Quarter, said point being marked by SIPC survey marker # 694;
thence South 88°55'34" East a distance of 697.02 feet along the North line of said Quarter-Quarter;
thence South 50°08'45" East a distance of 82.43 feet;
thence South 76°59'26" East a distance of 55.94 feet;
thence South 54°03'26" East a distance of 144.23 feet;
thence South 82°57'24" East a distance of 214.90 feet;
thence South 73°33'47" East a distance of 61.35 feet;
thence North 73°43'04" East a distance of 58.05 feet;
thence South 84°08'11" East a distance of 80.53 feet;
thence North 12°12'25" East a distance of 29.96 feet;
thence North 62°36'08" West a distance of 78.50 feet;
thence North 82°36'51" West a distance of 58.64 feet;
thence North 73°56'07" West a distance of 53.48 feet;
thence North 60°38'10" West a distance of 97.31 feet;
thence North 87°41'09" West a distance of 112.71 feet;
thence along a curve to the right,
having a radius of 332.13 feet,
through a central angle of 27°11'24",
a chord direction of North 73°50'51" West,
and a chord length of 156.14 feet;
thence South 88°55'33" East a distance of 179.86 feet along the North line of said Quarter-Quarter, said point being marked by SIPC survey marker # 693;
thence North 05°48'14" West a distance of 133.48 feet;
thence North 49°40'11" West a distance of 114.87 feet;
thence North 24°38'08" West a distance of 95.80 feet;
thence South 80°31'35" East a distance of 108.89 feet;
thence North 45°35'40" East a distance of 55.21 feet;
thence South 31°00'57" East a distance of 85.27 feet;

thence North 69°58'16" East a distance of 64.89 feet;
thence South 70°24'29" East a distance of 149.71 feet;
thence North 09°51'13" West a distance of 69.56 feet;
thence North 52°25'40" West a distance of 140.04 feet;
thence North 24°31'23" West a distance of 69.79 feet;
thence North 69°26'02" East a distance of 69.94 feet;
thence North 12°25'12" East a distance of 99.97 feet;
thence South 73°48'34" East a distance of 135.06 feet;
thence South 37°13'34" East a distance of 116.13 feet;
thence North 75°54'02" East a distance of 49.99 feet;
thence North 32°34'43" West a distance of 134.96 feet;
thence North 53°40'15" East a distance of 69.84 feet;
thence North 13°28'39" West a distance of 94.88 feet;
thence North 48°24'18" East a distance of 55.04 feet;
thence North 04°47'00" East a distance of 174.92 feet;
thence South 43°58'17" East a distance of 124.98 feet;
thence South 63°38'10" East a distance of 54.93 feet;
thence North 31°04'42" East a distance of 184.83 feet;
thence North 89°18'19" East a distance of 49.89 feet;
thence North 28°58'14" East a distance of 74.92 feet;
thence North 25°36'22" West a distance of 115.03 feet;
thence South 89°47'17" East a distance of 114.69 feet;
thence North 18°06'27" East a distance of 144.66 feet;
thence South 87°07'13" East a distance of 73.85 feet;
thence South 32°54'06" East a distance of 43.39 feet;
thence North 66°45'50" East a distance of 44.38 feet;
thence South 50°09'05" East a distance of 30.14 feet;
thence North 55°08'33" East a distance of 58.23 feet;
thence South 16°24'01" East a distance of 77.30 feet;
thence South 86°04'51" East a distance of 95.26 feet;
thence North 70°46'34" East a distance of 112.75 feet;
thence North 20°45'38" East a distance of 183.37 feet;
thence North 02°18'30" East a distance of 18.17 feet;
thence North 02°13'55" East a distance of 83.23 feet;
thence North 44°40'06" West a distance of 41.72 feet;
thence North 11°02'54" East a distance of 168.89 feet;
thence South 55°28'03" West a distance of 37.69 feet;
thence South 71°46'47" West a distance of 73.03 feet;
thence North 79°29'41" West a distance of 76.08 feet;
thence North 31°58'34" East a distance of 188.62 feet;
thence North 65°59'32" West a distance of 58.03 feet;
thence South 33°27'29" West a distance of 107.11 feet;
thence North 72°37'09" West a distance of 51.88 feet;
thence North 43°14'15" West a distance of 46.54 feet;
thence South 68°35'05" West a distance of 25.63 feet;
thence South 04°11'31" East a distance of 67.00 feet;

thence South 17°04'17" West a distance of 43.04 feet;
thence South 56°26'32" West a distance of 35.84 feet;
thence North 44°58'19" West a distance of 120.73 feet;
thence South 11°24'19" East a distance of 46.85 feet;
thence South 17°09'54" West a distance of 41.78 feet;
thence South 25°06'50" East a distance of 78.23 feet;
thence South 74°24'00" West a distance of 81.19 feet;
thence South 00°56'43" East a distance of 32.81 feet;
thence South 45°09'59" West a distance of 54.80 feet;
thence South 14°33'55" East a distance of 34.24 feet;
thence South 25°22'52" West a distance of 90.98 feet;
thence South 53°32'54" West a distance of 62.71 feet;
thence South 71°35'57" West a distance of 101.20 feet;
thence North 24°30'29" East a distance of 69.89 feet;
thence North 24°31'01" East a distance of 31.48 feet;
thence North 20°57'51" East a distance of 73.19 feet;
thence North 36°07'47" West a distance of 41.72 feet;
thence North 29°10'59" East a distance of 92.78 feet;
thence North 05°04'43" West a distance of 131.33 feet;
thence South 55°10'52" West a distance of 82.11 feet;
thence South 83°24'36" West a distance of 63.96 feet;
thence South 26°12'00" West a distance of 53.72 feet;
thence North 68°14'21" West a distance of 63.98 feet;
thence South 11°10'53" West a distance of 94.28 feet;
thence South 43°26'26" West a distance of 70.46 feet;
thence South 04°10'59" East a distance of 105.62 feet;
thence South 07°18'03" West a distance of 25.90 feet;
thence South 07°18'21" West a distance of 81.88 feet;
thence South 48°21'14" West a distance of 59.90 feet;
thence North 14°45'41" East a distance of 70.05 feet;
thence North 85°24'16" West a distance of 120.86 feet;
thence North 85°35'55" West a distance of 31.82 feet;
thence South 82°39'39" West a distance of 119.98 feet;
thence South 09°49'59" East a distance of 84.87 feet;
thence North 64°38'47" West a distance of 80.50 feet;
thence South 63°11'55" West a distance of 110.00 feet;
thence South 26°13'35" West a distance of 117.96 feet;
thence North 16°30'09" West a distance of 129.92 feet;
thence North 65°09'47" West a distance of 100.01 feet;
thence North 70°25'15" East a distance of 187.12 feet;
thence North 51°16'11" East a distance of 45.15 feet, said point being marked by SIPC survey marker # 647;
thence South 89°11'48" East a distance of 17.29 feet;
thence along a curve to the left,
having a radius of 80.93 feet,
through a central angle of 57°24'42",

a chord direction of North 18°43'50" West,
and a chord length of 77.74 feet;
thence North 47°26'11" West a distance of 66.39 feet;
thence along a curve to the right
having a radius of 58.49 feet
through a central angle of 64°59'43"
a chord direction of North 14°56'21" West,
and a chord length of 62.85 feet;
thence North 17°33'31" East a distance of 553.86 feet;
thence North 83°18'35" West a distance of 238.23 feet;
thence along a curve to the right,
having a radius of 103.24 feet,
through a central angle of 116°43'01",
a chord direction of North 24°57'05" West,
and a chord length of 175.79 feet;
thence North 33°24'26" East a distance of 436.96 feet;
thence along a curve to the right,
having a radius of 70.00 feet,
through a central angle of 56°25'41",
a chord direction of North 61°37'09" East,
and a chord length of 66.19 feet;
thence North 89°50'00" East a distance of 211.83 feet;
thence North 00°44'55" East a distance of 4.93 feet;
thence South 89°13'18" East a distance of 525.72 feet;
thence South 00°58'53" West a distance of 180.00 feet, said point being marked by SIPC survey marker # 628;
thence South 00°58'53" West a distance of 60.61 feet;
thence South 54°05'04" East a distance of 34.05 feet;
thence North 82°56'50" East a distance of 56.58 feet;
thence South 00°18'55" East a distance of 61.40 feet;
thence South 73°37'49" East a distance of 26.03 feet;
thence South 39°19'30" East a distance of 55.02 feet;
thence North 78°36'31" East a distance of 89.83 feet;
thence North 28°46'54" East a distance of 84.78 feet;
thence South 56°10'39" East a distance of 106.73 feet;
thence South 74°02'07" East a distance of 40.84 feet;
thence North 16°26'04" East a distance of 58.42 feet;
thence North 77°26'22" East a distance of 79.28 feet;
thence North 08°39'37" West a distance of 18.19 feet;
thence North 64°27'44" West a distance of 128.58 feet;
thence North 33°37'58" West a distance of 77.68 feet;
thence North 30°05'36" East a distance of 53.22 feet;
thence North 70°07'13" East a distance of 36.03 feet;
thence North 30°44'28" East a distance of 55.67 feet;
thence North 88°21'09" East a distance of 125.88 feet;
thence North 41°29'18" West a distance of 51.77 feet;

thence North 27°27'56" West a distance of 74.45 feet;
thence North 39°17'44" East a distance of 59.69 feet;
thence North 21°40'13" East a distance of 122.42 feet;
thence North 65°16'41" West a distance of 75.71 feet;
thence North 87°41'00" West a distance of 45.57 feet;
thence South 61°22'35" West a distance of 71.59 feet;
thence South 26°28'26" West a distance of 39.09 feet;
thence South 13°04'46" East a distance of 116.91 feet;
thence South 52°12'57" West a distance of 44.05 feet;
thence North 48°40'51" West a distance of 47.00 feet;
thence South 71°05'42" West a distance of 20.97 feet;
thence North 46°27'23" West a distance of 56.28 feet;
thence North 44°30'29" West a distance of 43.48 feet;
thence South 85°05'19" West a distance of 64.83 feet;
thence North 21°45'17" West a distance of 52.50 feet;
thence North 29°17'24" West a distance of 57.48 feet;
thence North 68°34'28" West a distance of 91.66 feet;
thence North 24°51'46" East a distance of 47.96 feet;
thence North 05°45'30" West a distance of 66.11 feet;
thence North 56°53'51" East a distance of 63.00 feet;
thence North 28°39'24" West a distance of 110.77 feet;
thence North 62°29'38" East a distance of 54.98 feet;
thence North 40°15'34" East a distance of 75.93 feet;
thence North 71°22'10" East a distance of 95.82 feet;
thence North 69°54'31" East a distance of 106.88 feet;
thence North 19°51'30" East a distance of 72.18 feet, said point being marked by SIPC survey marker # 582;
thence North 09°46'26" East a distance of 58.70 feet;
thence North 67°42'27" East a distance of 72.67 feet;
thence North 11°24'09" West a distance of 42.18 feet;
thence North 11°23'53" West a distance of 40.00 feet;
thence North 25°24'12" West a distance of 75.76 feet;
thence North 18°40'02" East a distance of 42.75 feet;
thence South 82°09'22" East a distance of 153.52 feet;
thence South 57°28'26" East a distance of 107.80 feet;
thence North 86°45'12" East a distance of 77.85 feet;
thence North 86°45'36" East a distance of 80.77 feet;
thence North 79°27'59" East a distance of 39.22 feet;
thence North 79°28'24" East a distance of 63.96 feet;
thence North 48°17'46" East a distance of 52.07 feet;
thence North 11°36'53" East a distance of 80.12 feet;
thence North 67°55'19" West a distance of 46.54 feet;
thence South 64°28'25" West a distance of 81.36 feet;
thence South 64°29'48" West a distance of 5.16 feet;
thence North 44°16'05" West a distance of 54.46 feet;
thence North 70°20'10" West a distance of 80.26 feet;

thence South 75°05'57" West a distance of 101.25 feet;
thence North 73°17'23" West a distance of 108.60 feet;
thence North 27°39'11" West a distance of 74.36 feet;
thence North 80°46'01" West a distance of 25.00 feet;
thence North 80°46'01" West a distance of 106.25 feet;
thence North 03°05'57" East a distance of 137.73 feet;
thence North 62°52'49" East a distance of 128.97 feet;
thence North 62°51'35" East a distance of 11.67 feet;
thence North 26°32'56" East a distance of 61.50 feet;
thence North 16°44'19" West a distance of 106.02 feet;
thence North 41°03'19" West a distance of 55.50 feet;
thence South 79°32'10" West a distance of 88.72 feet;
thence North 77°21'03" West a distance of 85.16 feet;
thence North 12°04'47" East a distance of 80.82 feet;
thence North 22°01'06" East a distance of 131.88 feet;
thence North 76°59'52" West a distance of 66.06 feet;
thence North 17°49'44" West a distance of 79.19 feet;
thence South 76°25'26" West a distance of 58.23 feet;
thence South 12°44'32" West a distance of 49.31 feet;
thence South 84°01'48" West a distance of 62.20 feet;
thence South 62°07'15" West a distance of 107.03 feet;
thence South 66°29'28" West a distance of 30.38 feet;
thence South 66°10'08" West a distance of 63.78 feet;
thence South 53°04'05" West a distance of 63.27 feet;
thence North 07°18'59" West a distance of 73.17 feet;
thence North 33°39'05" East a distance of 108.79 feet;
thence North 32°56'55" East a distance of 104.09 feet;
thence North 25°25'56" East a distance of 102.89 feet;
thence North 46°37'18" East a distance of 148.57 feet;
thence North 30°01'54" East a distance of 67.03 feet;
thence North 06°07'44" West a distance of 59.00 feet;
thence North 31°15'24" West a distance of 50.89 feet;
thence North 25°50'29" West a distance of 80.48 feet;
thence North 77°34'26" West a distance of 28.91 feet;
thence South 31°34'54" West a distance of 74.87 feet;
thence South 11°08'24" West a distance of 184.69 feet;
thence South 47°00'46" West a distance of 144.95 feet;
thence South 32°40'21" West a distance of 145.09 feet;
thence South 65°21'41" West a distance of 90.62 feet;
thence South 15°21'04" West a distance of 111.24 feet;
thence North 81°21'01" West a distance of 124.83 feet;
thence South 66°47'38" West a distance of 46.07 feet;
thence South 27°08'37" West a distance of 64.58 feet;
thence South 01°55'42" West a distance of 46.18 feet;
thence South 39°33'49" West a distance of 48.38 feet;
thence South 39°33'52" West a distance of 41.46 feet;

thence South 67°24'34" West a distance of 113.01 feet;
thence South 25°48'48" West a distance of 160.95 feet;
thence South 22°00'22" East a distance of 64.59 feet;
thence South 13°01'31" East a distance of 74.38 feet;
thence South 70°22'32" West a distance of 67.95 feet;
thence South 16°46'19" East a distance of 27.87 feet;
thence South 16°46'19" East a distance of 100.60 feet;
thence South 45°29'25" West a distance of 36.49 feet;
thence South 45°29'01" West a distance of 15.57 feet;
thence North 72°55'47" West a distance of 99.72 feet;
thence South 46°57'34" West a distance of 83.54 feet;
thence South 06°15'21" West a distance of 78.65 feet;
thence South 06°06'03" West a distance of 32.76 feet;
thence North 85°44'26" West a distance of 77.81 feet;
thence South 09°20'17" East a distance of 54.54 feet;
thence North 89°17'22" West a distance of 126.86 feet;
thence South 21°29'34" West a distance of 76.78 feet;
thence South 25°55'30" West a distance of 119.12 feet;
thence South 01°40'23" West a distance of 74.16 feet;
thence North 66°08'46" West a distance of 92.72 feet;
thence South 74°29'24" West a distance of 99.92 feet;
thence South 56°55'34" West a distance of 64.14 feet;
thence South 82°06'05" West a distance of 51.25 feet;
thence South 00°36'07" West a distance of 580.13 feet;
thence North 86°45'15" West a distance of 411.64 feet to a point in the East line of the Southwest Quarter of the Southeast Quarter of Section 26;
thence South 00°16'55" West a distance of 29.54 feet to the Southeast Corner of said Quarter-Quarter, said point being marked by SIPC survey marker # 559;
thence North 89°17'09" West a distance of 1331.27 feet to the Southwest Corner of said Quarter-Quarter, said point being marked by SIPC survey marker #556;

thence Southerly along the East line of the North Half of the Northeast Quarter of the Northwest Quarter of Section 35, Township 10 South, Range 2 East of the Third Principal Meridian to the Southeast corner of said Half-Quarter-Quarter;

thence Westerly along the South line of said Half-Quarter-Quarter to the East right-of-way line of the Union Pacific Railroad, formerly the C&EI Railroad;

thence Northerly along said East right-of-way line to the Southwest corner of the North 16 acres East of said railroad of the Southeast Quarter of the Southwest Quarter of Section 26, said point being marked by SIPC survey marker #549;

thence North 01°05'19" East a distance of 578.68 feet;
thence North 01°05'20" East a distance of 1311.94 feet;
thence North 01°05'18" East a distance of 846.81 feet;
thence South 88°54'40" East a distance of 20.00 feet;

thence North 01°05'19" East a distance of 517.50 feet, said point being marked by SIPC survey marker #513;

thence continuing Northerly along the East right-of-way line of said railroad to a point in the North line of the Northeast Quarter of the Northwest Quarter of Section 26;

thence Easterly along said North line to the Northeast corner of said Quarter-Quarter, said point being marked by SIPC survey marker #508;

thence South 88°43'06" East a distance of 101.01 feet;
thence North 29°14'08" East a distance of 312.03 feet;
thence North 67°47'01" East a distance of 116.66 feet;
thence North 28°46'04" East a distance of 304.84 feet;
thence North 18°54'37" East a distance of 72.07 feet;
thence North 18°54'20" East a distance of 118.19 feet;
thence North 79°05'12" East a distance of 262.62 feet;
thence North 48°08'17" East a distance of 146.09 feet;
thence North 85°18'47" East a distance of 227.63 feet;
thence North 14°27'09" East a distance of 138.87 feet;
thence North 72°14'50" East a distance of 145.95 feet;
thence South 83°26'10" East a distance of 35.96 feet to a point in the West line of the Southeast Quarter of the Southeast Quarter of Section 23;
thence North 00°50'51" East a distance of 191.74 feet to the Northwest Corner of said Quarter-Quarter, said point being marked by SIPC survey marker # 501;
thence South 88°49'57" East a distance of 1317.54 feet to the Northeast Corner of said Quarter-Quarter, said point being marked by SIPC survey marker # 500;
thence North 87°45'27" East a distance of 1353.91 feet to the Northeast Quarter of the Southwest Quarter of the Southwest Quarter of Section 24, said point being marked by SIPC survey marker # 499;
thence South 00°06'45" West a distance of 343.70 feet along the East line of said Quarter-Quarter, said point being marked by SIPC survey marker # 498;
thence continuing South 00°06'45" West a distance of 815.58 feet along said East line;
thence North 80°54'38" West a distance of 99.45 feet;
thence South 23°25'43" West a distance of 204.11 feet;
thence South 18°18'31" East a distance of 171.55 feet;
thence North 66°17'09" East a distance of 135.79 feet;
thence North 72°19'38" East a distance of 126.32 feet;
thence North 75°39'52" East a distance of 94.02 feet;
thence North 00°00'00" East a distance of 345.42 feet;
thence North 90°00'00" East a distance of 300.00 feet;
thence North 00°00'00" East a distance of 200.00 feet;
thence North 90°00'00" East a distance of 858.99 feet to a point in the East line of the Southeast Quarter of the Southwest Quarter of Section 24;
thence South 00°14'38" West a distance of 451.98 feet to the Southeast Corner of said Quarter-Quarter, said point being marked by SIPC survey marker # 496;
thence South 00°57'35" West a distance of 178.94 feet;

thence South 00°13'00" West a distance of 102.29 feet;
thence South 83°42'02" East a distance of 936.16 feet, said point being marked by SIPC survey marker # 463;
thence South 07°39'09" West a distance of 916.85 feet;
thence South 87°31'27" West a distance of 252.96 feet;
thence South 02°29'09" West a distance of 300.62 feet;
thence North 64°32'58" East a distance of 225.87 feet;
thence South 08°28'33" East a distance of 74.91 feet;
thence South 21°04'36" West a distance of 127.05 feet;
thence South 50°07'15" East a distance of 200.03 feet;
thence North 39°24'37" East a distance of 224.97 feet;
thence South 66°36'53" East a distance of 59.73 feet;
thence South 11°36'41" East a distance of 102.09 feet;
thence South 03°21'02" West a distance of 125.07 feet;
thence South 31°29'19" West a distance of 84.99 feet;
thence South 19°23'36" West a distance of 130.42 feet;
thence North 87°40'38" East a distance of 337.10 feet;
thence North 87°38'03" East a distance of 339.36 feet;
thence North 02°53'37" West a distance of 99.04 feet;
thence North 24°21'49" West a distance of 254.21 feet;
thence North 39°39'04" East a distance of 102.24 feet;
thence North 12°22'02" West a distance of 122.94 feet;
thence North 88°38'31" East a distance of 77.01 feet;
thence North 00°41'09" East a distance of 284.02 feet to a point in the North line of the Southeast Quarter of the Northeast Quarter of Section 25;
thence North 87°31'26" East a distance of 1018.88 feet to the Northeast Corner of said Quarter-Quarter, said point being marked by SIPC survey marker # 441;
thence South 00°39'47" West a distance of 1311.86 feet to the Southeast Corner of said Quarter-Quarter, said point being marked by SIPC survey marker # 440;
thence South 87°34'03" West a distance of 623.69 feet along the South line of said Quarter-Quarter;
thence North 21°22'12" West a distance of 82.98 feet;
thence South 83°27'11" West a distance of 52.82 feet;
thence South 33°29'59" West a distance of 65.93 feet;
thence South 61°23'22" West a distance of 48.34 feet;
thence South 61°23'51" West a distance of 115.46 feet;
thence South 38°20'56" West a distance of 80.47 feet;
thence South 12°17'18" West a distance of 56.23 feet;
thence South 14°28'53" East a distance of 64.22 feet;
thence South 06°52'30" West a distance of 78.03 feet;
thence South 50°40'34" East a distance of 125.92 feet;
thence North 88°36'28" East a distance of 110.56 feet;
thence South 37°54'33" West a distance of 74.86 feet;
thence South 44°59'46" East a distance of 82.21 feet;
thence South 03°11'39" East a distance of 89.69 feet;
thence North 36°30'47" West a distance of 70.10 feet;

thence North 60°48'41" West a distance of 101.28 feet;
thence North 77°04'47" West a distance of 77.22 feet;
thence South 26°55'12" West a distance of 84.21 feet;
thence North 22°15'03" West a distance of 97.79 feet;
thence South 70°08'04" West a distance of 77.45 feet;
thence North 83°34'44" West a distance of 57.28 feet;
thence North 64°45'44" West a distance of 40.34 feet;
thence South 69°33'33" West a distance of 69.69 feet;
thence North 76°01'23" West a distance of 62.00 feet;
thence South 43°37'27" West a distance of 112.96 feet;
thence South 12°57'26" East a distance of 160.13 feet;
thence South 33°12'38" East a distance of 116.00 feet;
thence South 35°18'18" East a distance of 134.95 feet;
thence South 28°50'27" East a distance of 89.29 feet;
thence North 72°30'32" West a distance of 96.02 feet;
thence North 44°35'02" West a distance of 96.03 feet;
thence North 56°42'49" West a distance of 84.91 feet;
thence North 56°22'57" West a distance of 119.92 feet;
thence North 17°12'57" West a distance of 84.94 feet;
thence North 83°00'50" West a distance of 46.63 feet;
thence North 47°49'20" West a distance of 95.50 feet;
thence North 20°37'01" West a distance of 152.91 feet;
thence North 65°41'51" West a distance of 83.61 feet;
thence North 36°11'53" West a distance of 279.61 feet;
thence North 60°38'34" West a distance of 99.00 feet;
thence North 41°13'23" West a distance of 152.89 feet;
thence North 27°52'30" West a distance of 11.00 feet;
thence North 27°52'30" West a distance of 104.53 feet;
thence North 88°08'59" West a distance of 108.54 feet;
thence South 18°28'00" West a distance of 62.77 feet;
thence South 78°20'46" West a distance of 150.74 feet;
thence South 09°53'01" East a distance of 19.87 feet;
thence South 09°53'30" East a distance of 84.91 feet;
thence South 62°16'41" West a distance of 83.78 feet;
thence North 65°49'48" West a distance of 83.15 feet;
thence South 38°00'57" West a distance of 173.08 feet;
thence South 35°12'24" West a distance of 70.91 feet;
thence South 35°12'17" West a distance of 79.83 feet;
thence South 70°27'25" West a distance of 150.64 feet;
thence North 78°39'33" West a distance of 138.57 feet;
thence North 51°17'36" West a distance of 134.17 feet;
thence South 68°22'47" West a distance of 139.21 feet;
thence South 32°08'50" East a distance of 99.72 feet;
thence South 02°49'27" East a distance of 129.49 feet;
thence South 83°42'08" East a distance of 88.00 feet;
thence South 57°05'00" East a distance of 130.20 feet;

thence North 20°54'15" East a distance of 187.59 feet;
thence North 70°27'25" East a distance of 247.95 feet;
thence North 70°27'28" East a distance of 355.07 feet;
thence South 22°48'27" East a distance of 85.40 feet;
thence South 47°05'29" East a distance of 286.79 feet;
thence South 55°52'22" West a distance of 158.39 feet;
thence South 19°18'28" West a distance of 107.06 feet;
thence South 63°52'40" East a distance of 140.20 feet;
thence South 00°12'29" West a distance of 116.78 feet;
thence South 67°20'15" West a distance of 109.82 feet;
thence South 13°19'56" East a distance of 74.47 feet;
thence South 48°51'21" West a distance of 79.06 feet;
thence North 67°32'25" West a distance of 112.09 feet;
thence South 71°29'50" West a distance of 115.32 feet;
thence South 40°20'08" West a distance of 69.70 feet;
thence South 18°24'06" East a distance of 116.32 feet;
thence South 53°44'45" West a distance of 119.20 feet;
thence North 82°54'32" West a distance of 87.54 feet;
thence North 82°54'12" West a distance of 20.69 feet;
thence South 07°15'11" East a distance of 38.96 feet;
thence South 07°14'01" East a distance of 31.38 feet;
thence South 37°40'14" East a distance of 17.44 feet;
thence South 37°42'02" East a distance of 79.10 feet;
thence South 20°24'27" East a distance of 161.48 feet;
thence North 38°08'56" East a distance of 111.43 feet;
thence North 69°40'28" East a distance of 144.66 feet;
thence North 23°28'39" East a distance of 62.62 feet;
thence North 75°23'23" East a distance of 60.74 feet;
thence North 33°26'14" East a distance of 53.67 feet;
thence North 50°06'16" East a distance of 38.24 feet;
thence North 50°05'56" East a distance of 108.50 feet;
thence North 37°55'00" East a distance of 138.66 feet;
thence North 76°26'17" East a distance of 78.75 feet;
thence North 35°30'42" East a distance of 81.63 feet;
thence North 85°26'26" East a distance of 101.51 feet;
thence South 64°37'33" East a distance of 134.55 feet;
thence North 39°01'21" East a distance of 108.86 feet;
thence South 67°10'55" East a distance of 282.98 feet;
thence South 18°10'07" West a distance of 78.75 feet;
thence South 12°36'53" East a distance of 78.37 feet;
thence North 87°24'22" East a distance of 45.28 feet;
thence South 00°11'33" East a distance of 18.13 feet;
thence South 55°14'03" East a distance of 98.43 feet;
thence South 36°01'57" West a distance of 105.39 feet;
thence South 48°20'12" East a distance of 52.15 feet;
thence North 79°48'58" East a distance of 48.30 feet;

thence South 75°56'13" East a distance of 64.30 feet;
thence South 22°03'35" West a distance of 85.37 feet;
thence South 09°17'19" West a distance of 76.74 feet;
thence South 63°10'27" East a distance of 54.20 feet;
thence North 71°28'42" East a distance of 57.51 feet;
thence South 46°25'36" East a distance of 81.52 feet;
thence South 02°59'58" East a distance of 55.17 feet;
thence South 51°24'54" West a distance of 110.39 feet;
thence South 74°36'27" East a distance of 89.92 feet;
thence North 85°08'25" East a distance of 190.83 feet;
thence South 01°53'52" East a distance of 55.63 feet;
thence South 47°23'25" West a distance of 128.83 feet;
thence South 52°43'53" West a distance of 120.58 feet;
thence South 71°47'25" West a distance of 77.15 feet;
thence South 37°11'44" West a distance of 68.89 feet;
thence South 56°51'59" East a distance of 50.26 feet;
thence North 79°50'14" East a distance of 86.84 feet;
thence South 47°19'51" East a distance of 129.88 feet;
thence South 09°02'10" West a distance of 73.21 feet;
thence South 74°26'22" East a distance of 49.39 feet;
thence North 70°35'59" East a distance of 106.95 feet;
thence South 29°57'15" East a distance of 85.70 feet;
thence North 51°33'00" East a distance of 109.03 feet;
thence South 13°04'35" East a distance of 201.99 feet;
thence South 02°54'29" East a distance of 70.43 feet;
thence South 31°55'01" East a distance of 43.61 feet;
thence North 69°57'55" East a distance of 105.20 feet;
thence North 07°39'45" East a distance of 58.32 feet;
thence North 31°41'37" East a distance of 101.37 feet;
thence North 02°51'04" West a distance of 77.20 feet;
thence North 56°56'45" East a distance of 93.95 feet;
thence North 00°53'21" West a distance of 88.60 feet;
thence South 84°55'47" East a distance of 62.43 feet;
thence North 09°37'16" West a distance of 112.02 feet;
thence South 76°21'38" East a distance of 169.04 feet;
thence North 68°27'21" East a distance of 158.39 feet;
thence South 89°59'03" East a distance of 40.25 feet to a point in the East line of the Southeast Quarter of the Southeast Quarter of Section 25;
thence South 00°39'44" West a distance of 206.75 feet along said East line, said point being marked by SIPC survey marker # 418;
thence South 89°10'02" West a distance of 150.00 feet;
thence South 31°17'55" West a distance of 151.34 feet;
thence South 42°34'25" West a distance of 64.72 feet;
thence South 85°52'39" East a distance of 113.15 feet;
thence South 16°34'29" East a distance of 29.24 feet;
thence North 77°57'11" East a distance of 118.98 feet;

thence South 22°00'59" East a distance of 84.62 feet to the Southeast Corner of Section 25, said point being marked by SIPC survey marker # 413;
thence South 00°39'49" West a distance of 83.07 feet along the East line of Section 36;
thence South 62°41'50" West a distance of 224.82 feet;
thence South 03°40'06" East a distance of 140.00 feet;
thence South 35°33'33" East a distance of 199.89 feet;
thence North 86°11'55" East a distance of 70.09 feet, to a point in the East line of Section 36, said point being marked by SIPC survey marker # 408;
thence South 00°39'49" West a distance of 4838.13 feet along said East to the Point of Beginning;

EXCEPT the following 9 parcels:

Exception #1

A part of the East Half the Northwest Quarter of Section 25, Township 10 South, Range 2 East of the Third Principal Meridian, Williamson County, Illinois being more particularly described as follows:
Commencing at the North Quarter Corner of Section 25, said point being marked by SIPC survey marker #496;
thence South 00°57'33" West a distance of 279.40 feet;
thence North 83°35'19" West a distance of 340.19 feet to the Point of Beginning;
thence South 04°41'00" East a distance of 1211.78 feet, said point being marked by SIPC survey marker # 487;
thence North 44°47'10" West a distance of 155.30 feet, said point being marked by SIPC survey marker # 488;
thence South 38°48'51" West a distance of 220.97 feet, said point being marked by SIPC survey marker # 489;
thence North 72°13'49" West a distance of 114.68 feet, said point being marked by SIPC survey marker # 490;
thence North 01°33'34" West a distance of 86.76 feet, said point being marked by SIPC survey marker # 491;
thence North 78°25'04" East a distance of 153.21 feet, said point being marked by SIPC survey marker # 492;
thence North 48°33'55" East a distance of 168.20 feet, said point being marked by SIPC survey marker # 493;
thence North 57°39'19" West a distance of 562.02 feet, said point being marked by SIPC survey marker # 494;
thence North 06°24'41" East a distance of 752.06 feet, said point being marked by SIPC survey marker # 495;
thence South 83°35'19" East a distance of 377.55 feet to the Point of Beginning;
containing 10.38 acres more or less.

Exception #2

A part of the North Half of the Northwest Quarter of Section 36, Township 10 South, Range 2 East of the Third Principal Meridian being more particularly described as follows:
Commencing at the Center Quarter Corner of Section 36, said point being marked by SIPC survey marker #802;
thence South 87°15'22" West a distance of 1340.85 feet to the Southwest Corner of the Southeast Quarter of the Northwest Quarter;
thence North 00°29'07" East a distance of 1723.56 feet along the West line of the East Half of the Northwest Quarter to the Point of Beginning;
thence North 86°52'56" West a distance of 76.54 feet;
thence South 71°00'15" West a distance of 112.10 feet;
thence North 74°48'03" West a distance of 35.03 feet;
thence North 39°31'47" East a distance of 66.81 feet;
thence North 64°13'40" East a distance of 35.69 feet;
thence North 19°18'25" East a distance of 55.53 feet;
thence North 65°35'31" East a distance of 74.10 feet;
thence North 12°23'38" East a distance of 45.00 feet;
thence North 39°28'02" East a distance of 75.26 feet;
thence North 39°28'05" East a distance of 34.37 feet;
thence South 34°10'31" East a distance of 43.78 feet;
thence South 77°22'00" East a distance of 74.87 feet;
thence North 77°59'15" East a distance of 36.37 feet;
thence South 49°49'56" East a distance of 88.48 feet;
thence North 38°28'38" East a distance of 90.64 feet;
thence North 06°16'27" East a distance of 118.21 feet;
thence North 65°57'33" West a distance of 61.83 feet;
thence North 32°36'46" West a distance of 77.02 feet;
thence South 86°38'41" East a distance of 73.10 feet;
thence South 61°32'41" East a distance of 72.38 feet;
thence North 17°00'36" East a distance of 117.48 feet;
thence South 84°34'23" East a distance of 109.26 feet;
thence South 23°30'14" East a distance of 44.70 feet;
thence South 69°29'15" East a distance of 57.98 feet;
thence South 47°24'46" East a distance of 83.72 feet;
thence North 36°30'47" East a distance of 146.83 feet;
thence North 77°11'46" East a distance of 42.97 feet;
thence North 44°05'00" East a distance of 17.18 feet;
thence South 45°43'41" East a distance of 11.18 feet;
thence North 77°11'18" East a distance of 45.79 feet;
thence North 16°59'56" East a distance of 31.74 feet;
thence North 81°58'06" East a distance of 16.28 feet;
thence South 51°12'29" East a distance of 17.37 feet;
thence South 07°44'17" East a distance of 12.63 feet;
thence North 77°11'43" East a distance of 29.51 feet;

thence South 43°08'51" West a distance of 89.13 feet;
thence South 45°25'17" East a distance of 3.74 feet;
thence South 44°35'18" West a distance of 26.24 feet;
thence North 45°27'18" West a distance of 3.08 feet;
thence South 43°08'51" West a distance of 181.10 feet;
thence South 19°03'36" East a distance of 171.55 feet;
thence South 22°26'40" West a distance of 204.31 feet;
thence South 44°29'52" West a distance of 82.69 feet;
thence South 27°25'46" West a distance of 103.63 feet;
thence South 89°34'23" West a distance of 38.02 feet;
thence North 38°43'47" West a distance of 114.66 feet;
thence North 50°54'23" East a distance of 49.20 feet;
thence North 37°36'44" West a distance of 64.00 feet;
thence North 03°02'04" East a distance of 54.74 feet;
thence South 80°11'04" West a distance of 85.96 feet;
thence North 18°00'49" West a distance of 57.54 feet;
thence South 72°54'25" West a distance of 70.98 feet;
thence North 72°17'22" West a distance of 56.31 feet;
thence South 63°09'54" West a distance of 89.14 feet;
thence South 06°39'54" West a distance of 65.51 feet;
thence North 68°12'14" West a distance of 61.55 feet;
thence North 86°52'57" West a distance of 66.25 feet to the Point of Beginning;
containing 6.73 acres more or less.

Exception #3

A part of Section 36, Township 10 South, Range 2 East of the Third Principal Meridian, Williamson County, Illinois being more particularly described as follows:
Commencing at the Center Quarter of Section 36, said point being marked by SIPC survey marker #802;
thence South 00°10'36" East a distance of 528.73 feet to the Point of Beginning, said point being marked by SIPC survey marker # 817;
thence South 00°10'36" East a distance of 140.16 feet;
thence South 87°03'39" West a distance of 60.04 feet;
thence South 00°10'36" East a distance of 988.32 feet;
thence South 87°43'59" West a distance of 299.57 feet;
thence North 00°11'04" West a distance of 324.59 feet to a point in the South line of the Northeast Quarter of the Southwest Quarter;
thence South 87°45'16" West a distance of 771.40 feet along said South line, said point being marked by SIPC survey marker # 868;
thence North 00°13'59" West a distance of 330.70 feet;
thence South 87°37'45" West a distance of 208.47 feet;
thence North 00°16'21" West a distance of 330.87 feet;
thence North 00°14'23" East a distance of 164.41 feet;
thence South 87°55'57" West a distance of 210.17 feet;
thence North 79°35'43" East a distance of 125.02 feet;

thence North 66°10'44" West a distance of 204.57 feet;
thence North 02°47'48" East a distance of 165.78 feet;
thence North 35°40'21" West a distance of 80.00 feet;
thence North 16°44'34" East a distance of 24.78 feet;
thence North 87°15'28" East a distance of 25.13 feet;
thence North 14°55'45" East a distance of 18.90 feet;
thence North 78°06'21" East a distance of 151.72 feet;
thence South 00°19'29" East a distance of 42.19 feet;
thence North 87°15'38" East a distance of 30.03 feet;
thence North 00°19'28" West a distance of 47.30 feet;
thence North 82°13'30" East a distance of 95.73 feet;
thence North 00°18'56" West a distance of 74.09 feet to the Northwest Corner of said Quarter-Quarter;
thence South 87°16'17" West a distance of 294.90 feet along the South line of the Southwest Quarter of the Northwest Quarter;
thence North 22°34'24" East a distance of 88.62 feet;
thence North 06°09'30" West a distance of 99.92 feet;
thence North 32°04'02" West a distance of 100.04 feet;
thence North 24°29'49" East a distance of 89.89 feet;
thence North 72°37'20" West a distance of 119.92 feet;
thence North 01°32'00" East a distance of 194.86 feet;
thence North 46°19'46" West a distance of 89.78 feet;
thence North 23°45'15" West a distance of 140.04 feet;
thence North 00°02'47" West a distance of 136.22 feet;
thence North 80°41'41" East a distance of 169.68 feet;
thence North 65°36'51" East a distance of 130.10 feet;
thence South 30°40'32" East a distance of 109.85 feet;
thence North 49°58'03" East a distance of 133.92 feet;
thence South 50°54'55" East a distance of 104.44 feet to a point in the West line of the Southeast Quarter of the Northwest Quarter, said point being marked by SIPC survey marker # 801;
thence North 00°29'42" East a distance of 63.08 feet along said West line;
thence North 83°14'52" East a distance of 46.58 feet;
thence South 19°43'20" East a distance of 70.93 feet;
thence North 49°18'31" East a distance of 42.79 feet;
thence North 86°28'01" East a distance of 94.19 feet;
thence North 02°48'20" West a distance of 108.45 feet;
thence North 26°23'38" West a distance of 104.84 feet;
thence North 04°16'29" East a distance of 86.93 feet;
thence North 47°40'29" East a distance of 54.87 feet;
thence North 71°13'58" East a distance of 98.87 feet;
thence South 60°11'25" East a distance of 45.36 feet;
thence North 88°41'51" East a distance of 304.15 feet;
thence North 64°53'21" East a distance of 81.81 feet;
thence North 47°36'12" East a distance of 98.22 feet;
thence North 47°35'42" East a distance of 26.37 feet;

thence North 13°36'22" East a distance of 67.02 feet;
thence North 57°07'57" East a distance of 74.41 feet;
thence North 42°35'47" East a distance of 128.54 feet;
thence North 50°36'12" East a distance of 109.49 feet;
thence North 42°26'32" East a distance of 101.04 feet;
thence North 31°10'43" East a distance of 92.56 feet;
thence North 41°45'35" East a distance of 87.95 feet;
thence North 64°35'48" East a distance of 67.99 feet;
thence South 50°42'07" East a distance of 96.49 feet;
thence South 24°12'18" East a distance of 86.46 feet;
thence South 68°51'18" West a distance of 40.11 feet;
thence South 68°51'16" West a distance of 86.19 feet;
thence South 20°43'21" West a distance of 178.00 feet;
thence South 52°25'21" West a distance of 229.35 feet;
thence South 06°03'07" West a distance of 32.34 feet;
thence South 06°03'02" West a distance of 59.07 feet;
thence South 19°25'45" East a distance of 101.55 feet;
thence South 26°23'37" West a distance of 265.36 feet;
thence South 15°39'42" West a distance of 116.96 feet;
thence North 51°42'04" East a distance of 179.78 feet;
thence South 81°15'03" East a distance of 71.62 feet;
thence North 29°21'00" East a distance of 54.09 feet;
thence North 75°49'07" East a distance of 60.08 feet;
thence North 52°34'37" East a distance of 152.60 feet;
thence South 05°18'40" East a distance of 230.73 feet;
thence South 06°10'37" East a distance of 46.28 feet;
thence South 00°37'18" West a distance of 116.41 feet;
thence South 03°17'59" East a distance of 160.64 feet;
thence South 75°22'24" West a distance of 17.89 feet;
thence South 75°21'01" West a distance of 62.32 feet;
thence South 10°33'13" West a distance of 119.47 feet;
thence North 88°34'39" East a distance of 50.88 feet;
thence South 04°19'20" East a distance of 75.86 feet;
thence South 38°32'09" West a distance of 60.97 feet;
thence South 57°31'10" East a distance of 70.71 feet;
thence South 49°16'41" East a distance of 43.10 feet;
thence North 31°07'00" East a distance of 94.67 feet, said point being marked by SIPC survey marker # 804;
thence North 49°33'46" East a distance of 119.84 feet;
thence South 61°18'20" East a distance of 128.56 feet;
thence South 24°58'03" East a distance of 156.31 feet;
thence North 46°40'22" East a distance of 159.96 feet;
thence South 73°08'44" East a distance of 243.68 feet;
thence North 44°37'51" East a distance of 90.07 feet;
thence South 76°07'58" East a distance of 293.19 feet;
thence North 52°53'03" East a distance of 244.84 feet;

thence South 32°47'44" West a distance of 333.96 feet to a point in the South line of the Southwest Quarter of the Northeast Quarter;
thence South 87°15'33" West a distance of 813.71 feet along said South line, said point being marked by SIPC survey marker # 814;
thence South 00°29'43" West a distance of 526.93 feet, said point being marked by SIPC survey marker # 816;
thence South 86°46'21" West a distance of 247.82 feet to the Point of Beginning;
containing 97.87 acres more or less.

Exception #4

A part of the North Half of the Southeast Quarter of Section 36, Township 10 South, Range 2 East of the Third Principal Meridian, Williamson County, Illinois being more particularly described as follows:
Beginning at the Southwest Corner of the Northeast Quarter of the Southeast Quarter, said point being marked by SIPC survey marker #843;
thence South 87°31'11" West a distance of 487.44 feet along the South line of the Northwest Quarter of the Southeast Quarter, said point being marked by SIPC survey marker # 844;
thence North 02°29'46" West a distance of 384.90 feet, said point being marked by SIPC survey marker # 845;
thence North 75°46'01" East a distance of 325.18 feet, said point being marked by SIPC survey marker # 846;
thence North 62°54'05" East a distance of 574.62 feet, said point being marked by SIPC survey marker # 847;
thence North 82°51'37" East a distance of 269.98 feet, said point being marked by SIPC survey marker # 848;
thence South 00°55'19" West a distance of 219.95 feet, said point being marked by SIPC survey marker # 849;
thence South 30°56'51" West a distance of 590.65 feet to a point in the South line of the Northeast Quarter of the Southeast Quarter, said point being marked by SIPC survey marker # 842;
thence South 87°32'08" West a distance of 283.86 feet along said South line to the Point of Beginning;
containing 12.21 acres more or less.

Exception #5

A part of the Southeast Quarter of Section 35, Township 10 South, Range 2 East of the Third Principal Meridian, Williamson County, Illinois being more particularly described as follows:
Commencing at the Southwest corner of the Northwest Quarter of the Southeast Quarter, said point being marked by SIPC survey marker #717;
thence South 89°03'52" East a distance of 1332.02 feet;
thence North 00°44'57" East a distance of 439.52 feet to the Point of Beginning;
thence North 89°57'09" East a distance of 713.17 feet;

thence South 76°20'03" East a distance of 121.61 feet;
thence South 40°58'01" East a distance of 212.61 feet;
thence South 15°02'44" East a distance of 147.96 feet;
thence South 49°26'44" East a distance of 46.24 feet;
thence South 84°15'14" East a distance of 114.11 feet;
thence South 01°02'25" West a distance of 67.15 feet;
thence South 66°59'45" West a distance of 45.07 feet;
thence South 67°00'26" West a distance of 17.89 feet;
thence South 35°55'52" West a distance of 46.23 feet;
thence South 74°56'52" East a distance of 79.70 feet;
thence South 57°28'08" East a distance of 48.69 feet;
thence South 02°22'20" East a distance of 94.43 feet;
thence South 83°20'23" West a distance of 66.62 feet;
thence North 84°12'36" West a distance of 636.62 feet;
thence along a curve to the left,
having a radius of 716.20 feet,
through a central angle of 32°26'43",
a chord direction of South 79°34'02" West,
and a chord length of 400.17 feet;
thence along a curve to the right,
having a radius of 712.26 feet,
through a central angle of 09°30'23",
a chord direction of South 68°13'53" West,
and a chord length of 118.04 feet;
thence along a curve to the right,
having a radius of 698.74 feet,
through a central angle of 20°57'24",
a chord direction of South 83°30'32" West,
and a chord length of 254.15 feet;
thence North 86°00'46" West a distance of 561.04 feet;
thence along a curve to the right,
having a radius of 475.43 feet,
through a central angle of 86°12'50",
a chord direction of North 42°53'45" West,
and a chord length of 649.78 feet;
thence North 00°13'00" East a distance of 215.87 feet;
thence North 89°57'12" East a distance of 1262.96 feet to the Point of Beginning;
containing 34.04 acres, more or less.

Exception #6

A part of the East Half of the Southeast Quarter of Section 26, Township 10 South, Range 2 East of the Third Principal Meridian, being more particularly described as follows:
Commencing at the Southwest Corner of the East Half of the Southeast Quarter, said point being marked by SIPC survey marker #559;

thence North 00°41'25" East a distance of 1849.17 feet along the West line of the East Half of the Southeast Quarter;
thence North 89°54'12" East a distance of 535.38 feet to the Point of Beginning;
thence along a curve to the left,
having a radius of 754.60 feet,
through a central angle of 15°30'15",
a chord direction of North 22°12'27" East,
and a chord length of 203.57 feet;
thence North 14°27'20" East a distance of 33.56 feet;
thence along a curve to the right,
having a radius of 20.00 feet,
through a central angle of 84°43'55",
a chord direction of North 56°49'17" East,
and a chord length of 26.95 feet;
thence South 80°48'45" East a distance of 132.59 feet;
thence North 09°11'15" East a distance of 20.00 feet;
thence North 80°48'45" West a distance of 148.99 feet;
thence North 14°27'21" East a distance of 125.70 feet;
thence South 50°12'36" East a distance of 55.06 feet;
thence North 79°22'17" East a distance of 69.72 feet;
thence South 76°01'05" East a distance of 77.41 feet;
thence South 01°00'04" East a distance of 95.82 feet;
thence South 57°08'04" East a distance of 93.78 feet;
thence South 12°38'31" East a distance of 72.13 feet;
thence South 51°49'30" West a distance of 87.53 feet;
thence North 76°57'18" West a distance of 187.10 feet;
thence North 89°30'54" West a distance of 58.32 feet;
thence South 01°41'50" East a distance of 37.16 feet;
thence South 49°51'35" West a distance of 54.14 feet;
thence South 56°57'18" West a distance of 70.09 feet to the Point of Beginning;
containing 1.62 acres, more or less.

Exception #7

A part of the East Half of the Southeast Quarter of Section 26, Township 10 South, Range 2 East of the Third Principal Meridian, being more particularly described as follows:
Commencing at the Southwest Corner of the East Half of the Southeast Quarter, said point being marked by SIPC survey marker #559;
thence North 00°41'25" East a distance of 1424.95 feet along the West line of the East Half of the Southeast Quarter;
thence North 89°53'27" East a distance of 295.78 feet to the Point of Beginning;
thence North 29°57'34" East a distance of 179.67 feet;
thence along a curve to the right,
having a radius of 20.00 feet,
through a central angle of 57°53'38",

a chord direction of North 58°54'49" East,
and a chord length of 19.36 feet;
thence North 87°52'03" East a distance of 186.60 feet;
thence North 02°07'57" West a distance of 20.00 feet;
thence South 87°52'03" West a distance of 148.97 feet;
thence along a curve to the right,
having a radius of 20.00 feet,
through a central angle of 122°05'24",
a chord direction of North 31°05'11" West,
and a chord length of 35.00 feet;
thence North 29°57'34" East a distance of 166.24 feet;
thence North 85°01'45" East a distance of 158.83 feet;
thence South 19°55'16" East a distance of 60.51 feet;
thence South 67°10'10" East a distance of 142.06 feet;
thence South 18°45'10" West a distance of 176.03 feet;
thence South 55°28'46" West a distance of 192.34 feet;
thence South 89°27'29" West a distance of 91.60 feet;
thence North 56°28'47" West a distance of 54.78 feet;
thence South 60°34'16" West a distance of 98.69 feet;
thence North 68°06'06" West a distance of 85.79 feet to the Point of Beginning;
containing 2.83 acres, more or less.

Exception #8

A part of the East Half of the Southeast Quarter of Section 26, Township 10 South, Range 2 East of the Third Principal Meridian, being more particularly described as follows:
Commencing at the Southwest Corner of the East Half of the Southeast Quarter, said point being marked by SIPC survey marker #559;
thence North 00°41'25" East a distance of 1308.17 feet along the West line of the East Half of the Southeast Quarter;
thence North 89°54'12" East a distance of 255.89 feet to the Point of Beginning;
thence North 13°12'41" East a distance of 18.79 feet;
thence South 84°14'40" East a distance of 146.45 feet;
thence South 50°10'04" East a distance of 74.00 feet;
thence South 13°52'30" West a distance of 67.89 feet;
thence North 78°47'49" East a distance of 0.01 feet;
thence South 78°47'47" West a distance of 200.04 feet;
thence along a curve to the right,
having a radius of 20.00 feet,
through a central angle of 114°21'04",
a chord direction of North 44°01'39" West,
and a chord length of 33.61 feet;
thence North 13°08'09" East a distance of 127.74 feet to the Point of Beginning;
containing 0.66 acres, more or less.

Exception #9

A part of the East Half of the Southeast Quarter of Section 26, Township 10 South, Range 2 East of the Third Principal Meridian, being more particularly described as follows:
Commencing at the Southwest Corner of the East Half of the Southeast Quarter, said point being marked by SIPC survey marker #559;
thence North 00°41'25" East a distance of 1057.09 feet along the West line of the East Half of the Southeast Quarter;
thence North 89°54'12" East a distance of 169.77 feet to the Point of Beginning;
thence along a curve to the left,
having a radius of 195.27 feet,
through a central angle of 23°05'43",
a chord direction of North 33°39'48" East,
and a chord length of 78.18 feet;
thence along a curve to the right,
having a radius of 20.00 feet,
through a central angle of 56°48'58",
a chord direction of North 50°23'20" East,
and a chord length of 19.03 feet;
thence North 78°47'49" East a distance of 18.19 feet;
thence North 78°47'49" East a distance of 125.57 feet;
thence North 78°47'49" East a distance of 125.57 feet;
thence North 11°12'11" West a distance of 20.00 feet;
thence North 78°47'49" East a distance of 114.41 feet;
thence South 87°58'54" East a distance of 87.49 feet;
thence South 24°21'42" West a distance of 99.29 feet;
thence South 53°42'25" West a distance of 85.47 feet;
thence South 53°42'25" West a distance of 35.34 feet;
thence South 55°33'06" West a distance of 75.10 feet;
thence South 55°33'06" West a distance of 33.53 feet;
thence South 57°19'46" West a distance of 77.26 feet;
thence South 57°19'46" West a distance of 110.92 feet;
thence North 40°02'21" West a distance of 204.66 feet to the Point of Beginning;
containing 1.88 acres, more or less.

Parcel 10-2 "A" containing in total 1,630 acres, more or less.

ii. Parcel 10-2 "B"

Parts of Sections 26, 27, 34, and 35, Township 10 South, Range 2 East of the Third Principal Meridian, being more particularly described as follows:

Beginning at the Northwest Corner of the Southwest Quarter of the Northeast Quarter of Section 27, Township 10 South, Range 2 East of the Third Principal Meridian, said point being marked by SIPC survey marker #525;
thence South 89°16'38" East a distance of 1349.74 feet to the Northeast Corner of said Quarter-Quarter, said point being marked by SIPC survey marker # 524;
thence continuing South 89°16'38" East a distance of 343.65 feet along the North line of the Southeast Quarter of the Northeast Quarter;
thence South 00°00'46" East a distance of 575.99 feet;
thence South 89°54'08" East a distance of 11.38 feet;
thence North 78°49'43" East a distance of 337.92 feet, said point being marked by SIPC survey marker # 521;
thence North 16°27'21" East a distance of 115.53 feet;
thence North 41°09'43" East a distance of 518.95 feet, said point being marked by SIPC survey marker # 523;
thence South 89°16'38" East a distance of 255.66 feet to the Northeast Corner of said Quarter-Quarter, said point being marked by SIPC survey marker # 517;
thence North 00°38'22" East a distance of 679.59 feet to the Northwest Corner of the South Half of the Northwest Quarter of the Northwest Quarter of Section 26, said point being marked by SIPC survey marker # 516;
thence South 89°36'16" East a distance of 1179.56 feet along the North line of said South Half;
thence South 00°47'39" West a distance of 677.92 feet to a point in the South line of said Quarter-Quarter;
thence South 89°41'10" East a distance of 165.00 feet along said South line to a point in the West right-of-way line of the Union Pacific Railroad, formerly the C&EI Railroad, said point being marked by SIPC survey marker # 514;
thence South 01°02'18" West a distance of 116.66 feet along said West right-of-way line, said point being marked by SIPC survey marker #542;
thence continuing Southerly along said West right-of-way line to a point on the South line of Section 26;
thence continuing Southerly along said West right-of-way line to a point on the South line of the North Half of the North Half of the Northwest Quarter of Section 35, Township 10 South, Range 2 East of the Third Principal Meridian;
thence Westerly along said South line to a point in the East line of the Northeast Quarter of the Northeast Quarter of Section 34, Township 10 South, Range 2 East of the Third Principal Meridian;
thence Southerly to the Southeast corner of said Quarter-Quarter;
thence Westerly to the Southwest corner of said Quarter-Quarter;
thence Northerly to the Northwest corner of said Quarter-Quarter;
thence continuing Northerly along the West line of the Southeast Quarter of the Southeast Quarter of Section 27, Township 10 South, Range 2 East of the Third Principal Meridian, to the Northwest corner of said Quarter-Quarter;
thence Easterly along the North line of said Quarter-Quarter to the center of Saline Creek;
thence in a Northeasterly direction along and with the center of Saline Creek to the North line of the Northeast Quarter of the Southeast Quarter of Section 27;

Unit Boundary Legal Description

DEGREES 26 MINUTES 20 SECONDS EAST, 48.29 FEET; THENCE SOUTH 00 DEGREES 44 MINUTES 42 SECONDS EAST, 28.45 FEET; THENCE SOUTH 05 DEGREES 04 MINUTES 53 SECONDS WEST, 30.26 FEET; THENCE SOUTH 09 DEGREES 22 MINUTES 40 SECONDS WEST, 43.51 FEET; THENCE SOUTH 06 DEGREES 05 MINUTES 53 SECONDS WEST, 28.99 FEET; THENCE SOUTH 02 DEGREES 11 MINUTES 23 SECONDS WEST, 27.48 FEET; THENCE SOUTH 08 DEGREES 20 MINUTES 30 SECONDS EAST, 24.13 FEET; THENCE SOUTH 20 DEGREES 54 MINUTES 33 SECONDS WEST, 35.26 FEET TO THE NORTH LINE OF THE NORTHEAST QUARTER OF SECTION 26; THENCE SOUTH 20 DEGREES 54 MINUTES 33 SECONDS WEST, 35.74 FEET; THENCE SOUTH 55 DEGREES 36 MINUTES 48 SECONDS WEST, 61.13 FEET; THENCE SOUTH 53 DEGREES 45 MINUTES 28 SECONDS WEST, 55.82 FEET; THENCE SOUTHWESTERLY ALONG A NON-TANGENT CURVE TO THE LEFT, WITH A RADIUS OF 207.33 FEET, A CHORD BEARING AND DISTANCE OF SOUTH 34 DEGREES 51 MINUTES 45 SECONDS WEST, 132.96 FEET, AND AN ARC LENGTH OF 135.35 FEET; THENCE SOUTHERLY ALONG A NON-TANGENT CURVE TO THE LEFT, WITH A RADIUS OF 547.44 FEET, A CHORD BEARING AND DISTANCE OF SOUTH 04 DEGREES 51 MINUTES 45 SECONDS WEST, 178.46 FEET, AND AN ARC LENGTH OF 179.26 FEET; THENCE SOUTHEASTERLY ALONG A NON-TANGENT CURVE TO THE LEFT, WITH A RADIUS OF 205.32 FEET, A CHORD BEARING AND DISTANCE OF SOUTH 19 DEGREES 15 MINUTES 14 SECONDS EAST, 121.95 FEET, AND AN ARC LENGTH OF 123.82 FEET; THENCE SOUTH 35 DEGREES 14 MINUTES 08 SECONDS EAST, 111.42 FEET; THENCE SOUTH 00 DEGREES 32 MINUTES 34 SECONDS EAST, 208.47 FEET; THENCE SOUTH 57 DEGREES 35 MINUTES 19 SECONDS WEST, 236.13 FEET; THENCE SOUTH 57 DEGREES 35 MINUTES 19 SECONDS WEST, 117.15 FEET; THENCE SOUTH 61 DEGREES 58 MINUTES 33 SECONDS WEST, 172.27 FEET; THENCE SOUTH 80 DEGREES 44 MINUTES 01 SECONDS WEST, 63.00 FEET; THENCE NORTH 64 DEGREES 03 MINUTES 20 SECONDS WEST, 229.74 FEET; THENCE NORTH 29 DEGREES 08 MINUTES 27 SECONDS WEST, 29.76 FEET; THENCE NORTH 03 DEGREES 21 MINUTES 43 SECONDS EAST, 191.15 FEET; THENCE NORTH 59 DEGREES 27 MINUTES 59 SECONDS WEST, 139.90 FEET; THENCE NORTH 89 DEGREES 41 MINUTES 56 SECONDS WEST, 247.90 FEET; THENCE SOUTH 54 DEGREES 41 MINUTES 16 SECONDS WEST, 107.98 FEET; THENCE NORTH 90 DEGREES 00 MINUTES 00 SECONDS WEST, 389.94 FEET; THENCE NORTH 00 DEGREES 30 MINUTES 18 SECONDS WEST, 206.73 FEET; THENCE NORTH 12 DEGREES 09 MINUTES 46 SECONDS EAST, 99.29 FEET; THENCE NORTH 31 DEGREES 42 MINUTES 18 SECONDS EAST, 404.81 FEET; THENCE NORTH 85 DEGREES 45 MINUTES 35 SECONDS EAST, 191.37 FEET; THENCE NORTH 35 DEGREES 05 MINUTES 59 SECONDS EAST, 103.98 FEET TO THE POINT OF BEGINNING, CONTAINING 43.049 ACRES (1,875,207 SQUARE FEET), MORE OR LESS.

A PART OF THE SOUTHEAST QUARTER OF SECTION 23 AND A PART OF THE NORTHEAST QUARTER OF SECTION 26, ALL IN TOWNSHIP 10 SOUTH, RANGE 2 EAST OF THE THIRD PRINCIPAL MERIDIAN, WILLIAMSON COUNTY, ILLINOIS, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF THE SOUTHEAST QUARTER OF SECTION 23; THENCE NORTH 89 DEGREES 36 MINUTES 11 SECONDS EAST, ALONG THE SOUTH LINE OF SAID QUARTER, 532.28 FEET TO THE POINT OF BEGINNING FOR THIS DESCRIPTION; THENCE NORTH 35 DEGREES 05 MINUTES 59 SECONDS EAST, 52.36 FEET; THENCE NORTH 22 DEGREES 44 MINUTES 10 SECONDS EAST, 131.91 FEET; THENCE NORTH 24 DEGREES 43 MINUTES 08 SECONDS EAST, 124.66 FEET; THENCE NORTH 25 DEGREES 51 MINUTES 26 SECONDS EAST, 176.28 FEET; THENCE NORTH 24 DEGREES 57 MINUTES 27 SECONDS EAST, 67.12 FEET; THENCE NORTH 30 DEGREES 34 MINUTES 32 SECONDS EAST, 48.34 FEET; THENCE NORTH 27 DEGREES 33 MINUTES 56 SECONDS EAST, 34.83 FEET; THENCE NORTH 55 DEGREES 46 MINUTES 31 SECONDS EAST, 38.05 FEET; THENCE NORTH 76 DEGREES 24 MINUTES 47 SECONDS EAST, 34.95 FEET; THENCE NORTH 77 DEGREES 27 MINUTES 11 SECONDS EAST, 171.61 FEET; THENCE NORTH 80 DEGREES 25 MINUTES 44 SECONDS EAST, 61.40 FEET; THENCE NORTH 88 DEGREES 00 MINUTES 06 SECONDS EAST, 26.10 FEET; THENCE SOUTH 72 DEGREES 21 MINUTES 12 SECONDS EAST, 20.91 FEET; THENCE SOUTH 74 DEGREES 00 MINUTES 29 SECONDS EAST, 38.95 FEET; THENCE NORTH 89 DEGREES 20 MINUTES 27 SECONDS EAST, 35.64 FEET; THENCE NORTH 70 DEGREES 07 MINUTES 12 SECONDS EAST, 33.23 FEET; THENCE NORTH 80 DEGREES 57 MINUTES 38 SECONDS EAST, 21.39 FEET; THENCE NORTH 52 DEGREES 12 MINUTES 48 SECONDS EAST, 53.50 FEET; THENCE NORTH 46 DEGREES 14 MINUTES 00 SECONDS EAST, 29.56 FEET; THENCE NORTH 81 DEGREES 34 MINUTES 35 SECONDS EAST, 18.77 FEET; THENCE SOUTH 78 DEGREES 05 MINUTES 58 SECONDS EAST, 37.10 FEET; THENCE NORTH 77 DEGREES 01 MINUTES 01 SECONDS EAST, 60.04 FEET; THENCE NORTH 80 DEGREES 43 MINUTES 54 SECONDS EAST, 30.11 FEET; THENCE NORTH 87 DEGREES 33 MINUTES 48 SECONDS EAST, 30.11 FEET; THENCE SOUTH 85 DEGREES 00 MINUTES 07 SECONDS EAST, 35.12 FEET; THENCE SOUTH 78 DEGREES 40 MINUTES 33 SECONDS EAST, 31.42 FEET; THENCE SOUTH 73 DEGREES 28 MINUTES 48 SECONDS EAST, 36.15 FEET; THENCE SOUTH 66 DEGREES 48 MINUTES 37 SECONDS EAST, 25.83 FEET; THENCE SOUTH 60 DEGREES 09 MINUTES 32 SECONDS EAST, 36.15 FEET; THENCE SOUTH 53 DEGREES 30 MINUTES 10 SECONDS EAST, 25.82 FEET; THENCE SOUTH 44 DEGREES 23 MINUTES 56 SECONDS EAST, 31.67 FEET; THENCE SOUTH 26 DEGREES 54 MINUTES 36 SECONDS EAST, 36.41 FEET; THENCE SOUTH 10 DEGREES 07 MINUTES 27 SECONDS EAST, 36.58 FEET; THENCE SOUTH 09 DEGREES 37 MINUTES 41 SECONDS WEST, 26.13 FEET; THENCE SOUTH 04 DEGREES 43 MINUTES 52 SECONDS EAST, 41.10 FEET; THENCE SOUTH 07 DEGREES 57 MINUTES 33 SECONDS WEST, 48.32 FEET; THENCE SOUTH 14 DEGREES 52 MINUTES 18 SECONDS EAST, 38.92 FEET; THENCE SOUTH 02 DEGREES 06 MINUTES 48 SECONDS EAST, 18.98 FEET; THENCE SOUTH 09 DEGREES 20 MINUTES 17 SECONDS WEST, 27.30 FEET; THENCE SOUTH 01 DEGREES 08 MINUTES 04 SECONDS EAST, 37.88 FEET; THENCE SOUTH 00 DEGREES 10 MINUTES 29 SECONDS WEST, 52.50 FEET; THENCE SOUTH 00

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EXHIBIT 11

Emery Pond

Corrective Action and Selected Remedy Plan, Including GMZ Petition

Marion Power Plant
Southern Illinois Power Cooperative
Marion, Williamson County, Illinois

March 29, 2019
revised March 30, 2021

HANSON
Engineering | Planning | Allied Services

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Figures and Tables

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Abbreviations

BGS – below ground surface
CAP – Correction Action Plan
CCR – Coal Combustion Residuals
CFR – Code of Federal Regulations
COC – Contaminant of Concern
EPA – Environmental Protection Agency
GMZ – Groundwater Management Zone
GPS – groundwater protection standard [after 40 CFR 257.95(h)]
IAC – Illinois Administrative Code
NELAP – National Environmental Laboratory Accreditation Program
mg/L – milligram per liter
SSL – statistically significant level
ug/L – micrograms per liter

1. Introduction

Marion Power Plant (Plant) is owned and operated by the Southern Illinois Power Cooperative (SIPC). The Emery Pond is a coal combustion residuals (CCR) impoundment at the Plant and has functioned from the late-1980's to the present as a storm water storage structure for drainage from the adjacent Plant area, including the more recent Gypsum Loadout Area. The Emery Pond and adjacent Gypsum Loadout Area are referred to in this Plan as the Site.

This Plan outlines the selection of a remedy to address the 35 IAC Part 620 exceedances due to the Site alleged in Illinois EPA's Violation Notice No. 6364 issued on July 3, 2018, and any additional detected Part 620 exceedances attributable to the Site, as further described below. The selected remedy for impacted groundwater is also consistent with the federal CCR rule, including 40 CFR 257.97 and 40 CFR 257.98. The remedy selected in this plan includes both active remedial actions, including the removal of CCR from the Site, and a request for a groundwater management zone (GMZ) for a limited time to allow the active corrective action to achieve relevant Part 620 groundwater quality standards. As discussed further below, the impacted groundwater has not measurably impacted nearby surface waters, specifically Lake of Egypt, and no such impact is expected during the requested GMZ period.

Figure 1 shows the Site location on a USGS Topographic Map and Figure 2 depicts the Emery Pond and other features/units at the Site.

2. Groundwater Impacts

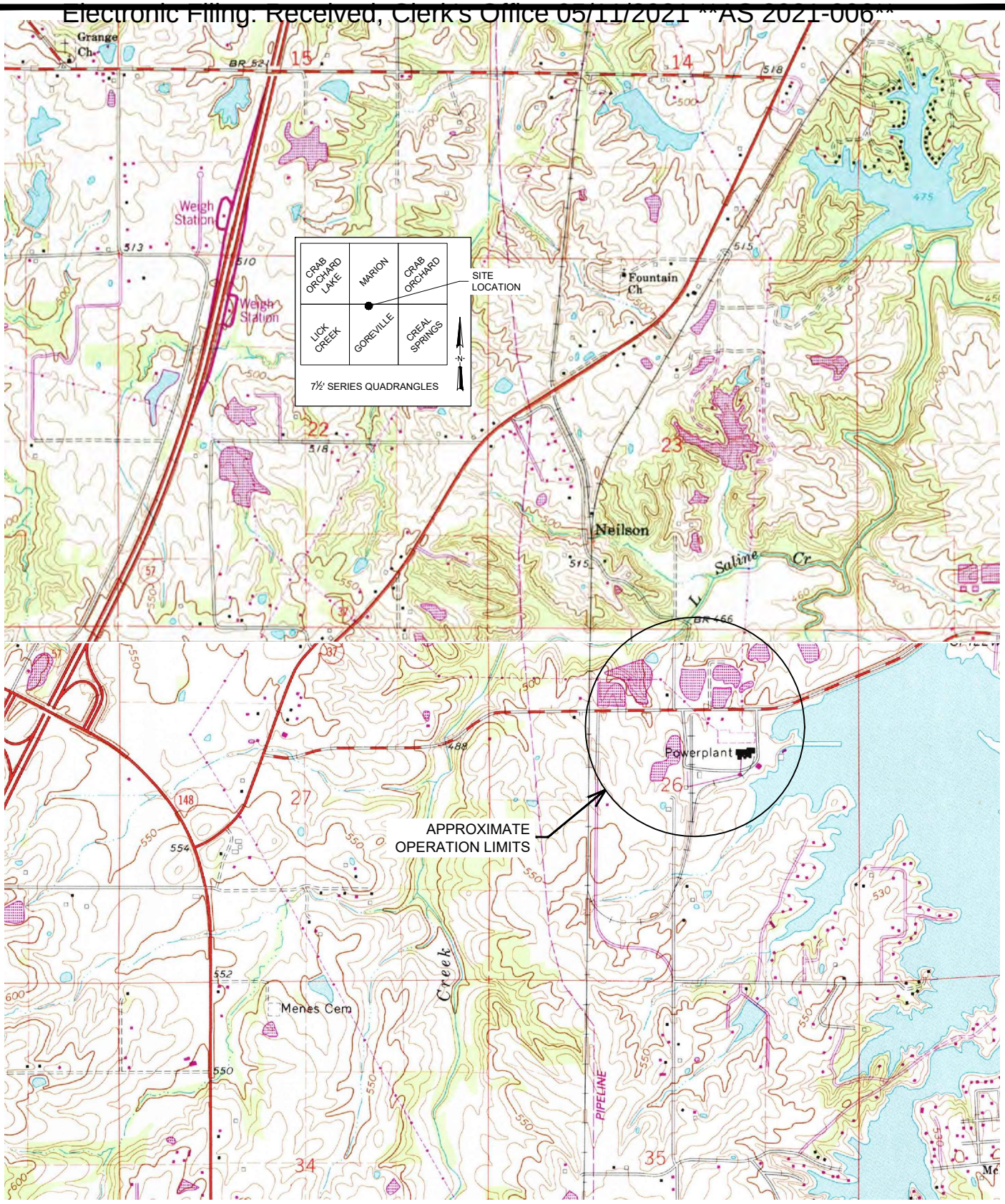
2.1 Site Hydrogeology

The site is located in the Shawnee Hills Section within the Interior Low Plateaus (physiographic) Province (Leighton et al., 1948). Site geology consists of glacially derived deposits of the Illinoisan Stage overlying Pennsylvanian Age bedrock. Table 1 list the hydro- and litho-stratigraphic units with their descriptions located within 50 feet of the surface at the Site (Willman et al, 1995 and Berg & Kempton, 1988).

Table 1. Site Geologic/Hydrogeologic Units

Litho-stratigraphic Unit	Hydro-stratigraphic Unit	Lithologic Description
Peoria/Roxana Silt	Unlithified Unit	light yellow tan to gray, fine sandy silt
Glasford Formation (undifferentiated)		silty/sandy diamictons with thin lenticular bodies of silt, sand, and gravel
Caseyville Formation	Bedrock Unit	primarily sandstone with shales

The current groundwater monitoring wells for the Site are all screened at the Unlithified/Bedrock Units interface. This zone has relatively low hydraulic conductivity (< $1x10^{-4}$ cm/s) and only a few feet (5-10 ft.) of saturated thickness. Because of this low hydraulic conductivity, groundwater in the Unlithified Unit and upper portion of the Bedrock Unit (approximately the upper 11 ft.) is classified as Class II: General Resource Groundwater. At the request of Illinois EPA, compliance will be evaluated against the Class I: Potable Resource Groundwater standards. Groundwater in the rest of the explored Bedrock Unit is Class I: Potable Resource Groundwater.



SCALE

2,000 0 2,000 4,000

1 inch = 2,000 feet Contour interval = 10 feet

Approximate Site Location: n½ of Section 26; T10S., R2E.

SITE LOCATION MAP

EMERY POND
MARION POWER PLANT
WILLIAMSON CO., ILLINOIS

HANSON NO. 18E0022A FIGURE 1

MAR 15, 2019 10:01 AM HASEN01154
I:\18JOBS\18E0022A\ADMIN\14-REPORTS\HYDROGEO\FIG_1SITEMAP_20190314.DWG

EXPLANATION

- Monitoring Well
- Direct Push Boring
- Bedrock Boring

SCALE: 1 inch equals 60 feet

0 ft. 60 ft. 120 ft. 180 ft. 240 ft.

HANSON
Hanson Professional Services Inc.

Site Features Map

EMERY POND
MARION POWER PLANT
WILLIAMSON CO., ILLINOIS

HANSON NO. 18E0022A FIGURE NO. 2

The following reasons are used for these classifications:

The Unlithified Unit is classified as Class II groundwater because:

1. The Unit does not contain a sand, gravel, or sand & gravel deposit greater than 5 ft. thick, and
2. The slug test results (see Hanson, 2019a and 2019b) are less than 1 x 10^{-4} cm/s.

The upper (approximately 11 ft.) of the Bedrock Unit is classified as Class II groundwater because:

1. The Unit contains less than 10 ft. of sandstone,
2. The Unit contains less than 15 ft. of fractured carbonate rock, and
3. The packer test results (see Hanson, 2019a) are less than 1 x 10^{-4} cm/s.

The lower Bedrock Unit is classified as Class I groundwater because:

1. The Unit has two continuous segments of sandstone that exceed 10 ft. in thickness,
2. Although the packer test results (see Hanson, 2019a) are less than 1 x 10^{-4} cm/s.

Although groundwater is present in the Unlithified and upper/lower Bedrock Units, there is no groundwater use associated with any of the operations at the Marion Power Plant. Additionally, given existing groundwater data and because SIPC owns the property immediately surrounding the Marion Power Plant and Lake of Egypt, there is no off-site migration of groundwater. The nearest water well is located at the Lake of Egypt County Club, approximately 2,500 feet south southeast from Emery Pond and is screened from 65-90 feet below ground surface. This water well is also located on SIPC property.

For the purposes of the Emery Pond corrective action and closure work, SIPC has agreed to monitor and conduct corrective action for the purpose of achieving compliance with Class I groundwater quality standards.

2.2 Groundwater Monitoring History

Five monitoring wells were installed to meet the monitoring requirements of the US EPA's CCR Rule, background well EBG and downgradient wells EP-1, EP-2, EP-3, and EP-4 (see Figure 2). Groundwater monitoring at the Site has been ongoing since evaluation of background water quality began in 2017, consistent with 40 CFR 257.90. SIPC conducted detection monitoring in compliance with the CCR Rule (40 CFR 257.94). The results of detection monitoring triggered assessment monitoring (40 CFR 257.95) in 2018 for Appendix IV constituents.

The Illinois EPA issued Violation Notice No. 6364 on July 3, 2018. This notice alleged the exceedances of the Class I: Potable Use Groundwater Standards (35 IAC 620.410) summarized in Table 2. As identified in the Hydrogeologic Investigation Report (Hanson, 2019a) and Hydrogeologic Investigation Addendum (Hanson, 2019b), groundwater at the Site has been classified as Class II: General Resource Groundwater (35 IAC 620.240) in the Unlithified Unit and the upper (approx. 11 ft.) of the Bedrock Unit.

Table 2. Exceedances of the Class I: Potable Resource GW Standards

Parameter	Class I Std.	Units	EP-1	EP-2	EP-3	EP-4
Arsenic	0.010	mg/L				X
Boron	2.0	mg/L				X
Cadmium	0.005	mg/L	X			X
Chloride	200	mg/L			X	
Lead	0.0075	mg/L				X
pH	6.5 – 9.0	SU		X	X	X
Selenium	0.050	mg/L				X
Sulfate	400	mg/L	X	X		X
TDS	1,200	mg/L	X	X	X	
Thallium	0.002	mg/L				X

An extent of contamination study was performed in February 2019. The isopleth maps showing the results of that study are in Appendix C. Seven (7) linear sets of borings were drilled (direct push method) in a radial pattern around the Site at approximately 25 ft. intervals outward from the Emery Pond (see Figure 2). Groundwater samples were collected at each boring and analyzed for total analytes of the Class I inorganic parameter list. During sample collection, several borings were found to be either dry or were unable to produce sufficient volume of water for sampling. These borings were: DP1a, DP1b, DP2a, DP4a, DP4b, DP4c, and DP6b. An additional map, showing the location of each direct push boring, its bottom elevation, and the top of bedrock elevation (assumed to be the bottom of Emery Pond) is also included in Appendix C.

Appendix A contains the tabulated groundwater data and Appendix B and Appendix C contain the graphical groundwater data for the COCs identified and discussed below. While Hanson contends that the groundwater relevant to the Site is Class II under Part 620, it recognizes Illinois EPA's allegations of Class I standards. Accordingly, the below evaluations of Site water quality compare groundwater investigation results to both the Class I and Class II Part 620 groundwater standards and/or the Site Groundwater Protection Standards (GPS) under the federal CCR rule [40 CFR 257.95(h)], as applicable. Parameters with only one exceedance at a well are treated as a false positive result or not a confirmed exceedance† (e.g., Chromium, Lithium, etc.) assuming a 95% confidence limit and observable data trends.

2.2.1 Part 257, Appendix III Parameters

2.2.1a Boron

Boron (CAS# 7440-42-8) concentrations exceeded the 35 IAC 620.410 Class I and Class II Standard (2.0 mg/L) at EP-4 since the well was first sampled. Boron has exceeded the Site's background water quality at EP-1, EP-2, and EP-4. Boron had a high concentration in the Emery Pond water sample (72 mg/L). The Boron Concentration Map (in Appendix C) shows the pattern of elevated Boron concentrations at the Site. Note that high concentrations were observed in Line 6 (DP6a and DP6c) in Line 7 (DP7c), in EP-4, and Line 1 (DP1c and DP1e). Migration of Boron does not appear to be to the south of the Emery Pond.

† The alternative source demonstration in 40 CFR 257.94(e)(2) allows for the evaluation of natural variation in groundwater quality. Should a re-sample show the previous result was not statistically significant, then that result is a false positive or not a confirmed exceedance.

2.2.1b Calcium

Calcium (CAS# 7440-70-2) does not have a 35 IAC 620 Class I or Class II Standard. However, Calcium has exceeded the Site's background water quality at EP-1, EP-2, and EP-4. The Calcium Concentration Map (in Appendix C) shows the pattern of elevated Calcium concentrations at the Site. Emery Pond water had a Calcium concentration of 899 mg/L, while the gypsum leachate extract had a concentration of 629 mg/L. Calcium concentrations along the south-side of the Emery Pond are generally lower than the pond water or gypsum (in the low- to mid-hundreds). Along the north-side of the pond, concentrations are much higher (exceeding the pond and gypsum concentrations), with an extreme value at DP1e of 16,700 mg/L.

2.2.1c Chloride

Chloride (CAS# 7782-50-5) concentrations exceeded the 35 IAC 620 Class I and Class II groundwater standard (200 mg/L) at EP-4. Chloride has exceeded the Site's background water quality at EP-4 and intermittently at EP-3. The Chloride Concentration Map (in Appendix C) shows the pattern of elevated Chloride concentrations at the Site. Emery Pond had a Chloride concentration of 2190 mg/L. The isopleth map shows high concentrations at DP5a, DP5b, DP6a, DP7c, and EP4. Again, the south side of the Emery Pond generally has concentrations below the Class I and Class II Standards.

2.2.1d pH

pH (CAS# 13967-14-1) has concentrations below the 35 IAC 620 Class I and Class II (lower) groundwater standard (6.5 SU) at EP-4, EP-3, and intermittently at EP-2. pH falls below the Site's lower background water quality limit at EP-4, EP-3, and intermittently at EP-2. The pH Concentration Map (in Appendix C) shows the pattern of pH concentrations at the Site. The pH Isopleth Map shows the historic area of the Emery Pond with pH levels above both the upper-Class II Standard and the upper GPS at DP5a and DP5b. Conversely, pH levels below the lower Class II Standard and lower background water quality limit are found at EP-3, EP-4, DP2g, and DP2h. The Emery Pond had a pH concentration of 7.77 SU.

2.2.1e Sulfate

Sulfate (CAS# 14996-02-2) concentrations have consistently exceeded the 35 IAC 620 Class I and Class II groundwater standard (400 mg/L) at EP-1, EP-2, and EP-4. Sulfate has exceeded the Site's background water quality limit at all four downgradient monitoring wells and upgradient well, EBG for the past two rounds. The Emery Pond had a concentration of 2,000 mg/L and the gypsum leachate had a concentration of 1,350 mg/L. The Sulfate Concentration Map (in Appendix C) shows the pattern of elevated Sulfate concentrations at the Site. Several exploration lines have concentrations that are higher at further distances from the Emery Pond than those closer (see Line 1, Line 3, and Line 6).

2.2.1f Total Dissolved Solids (TDS)

TDS (CAS# 10-05-2) concentrations have consistently exceeded the 35 IAC 620 Class I and Class II groundwater standard (1,200 mg/L) at EP-1, EP-2, and EP-4 and intermittently at EP-3. TDS has also exceeded the Site's background water quality limit at all four downgradient monitoring wells. The TDS Concentration Map (in Appendix C) shows the pattern of elevated TDS concentrations at the Site. This isopleth map displays a similar pattern as Sulfate, whereby some exploration lines have higher concentrations at distance from the Emery Pond. TDS concentrations in the Emery Pond were 6,540 mg/L and the gypsum leachate was 2,140 mg/L.

2.2.2 Part 257, Appendix IV Parameters

2.2.2a Arsenic

Arsenic (CAS# 7440-38-2) concentrations have not exceeded the 35 IAC 620.420 Class II Standard (0.2 mg/L) but did exceed and Class I Standard (0.01 mg/L) at EP-4. Arsenic has exceeded the Site's GPS at EP-3 and EP-4. The Arsenic concentration in the Emery Pond water sample was only 0.0025 mg/L and the gypsum leachate was <0.01 mg/L. The Arsenic Concentration Map (in Appendix C) shows the pattern of elevated Arsenic concentrations at the Site.

2.2.2b Lead

Lead (CAS# 7439-92-1) concentrations have not exceeded the 35 IAC 620 Class II Standard (0.1 mg/L) at any of the monitoring wells but did exceed the Class I Standard at EP-4. Lead has intermittently had concentrations above the Site's GPS of 0.015 mg/L (twice since the end of 2016, but these were not confirmed exceedances that would establish an SSL of the GPS). The Lead concentration in the Emery Pond water sample was only 0.0026 mg/L and the gypsum leachate was <0.0075 mg/L. The Lead Concentration Map (in Appendix C) shows the elevated Lead concentrations around EP-4.

2.2.2c Selenium

Selenium (CAS# 7782-49-2) concentrations exceeded the 35 IAC 620 Class I and Class II Standard (0.05 mg/L) at EP-4 since the well was first sampled. Selenium has also been detected during the background monitoring period above the Site's GPS but has not been observed at an SSL above the GPS at EP-3 and EP-4. The Selenium concentration in the Emery Pond water sample was only 0.082 mg/L and the gypsum leachate was <0.0462 mg/L. The Selenium Concentration Map (in Appendix C) shows the pattern of elevated Selenium concentrations around the Site.

2.2.2d Cobalt

Cobalt (CAS# 7440-48-4) concentrations have not exceeded the 35 IAC 620 Class I or Class II groundwater standards (1.0 mg/L). However, Cobalt has exceeded the Site's GPS at EP-2, EP-3, and EP-4. The Cobalt Concentration Map (in Appendix C) shows the pattern of elevated Cobalt concentrations at the Site. Note that there are two extent borings with high Cobalt, DP1e and DP6a. Both have concentrations above the Emery Pond water and gypsum leachate, 0.145 mg/L and <0.005 mg/L, respectively. No obvious source for these exceedances exists and there is also no apparent connection between the two borings.

2.2.2e Cadmium

Cadmium (CAS# 7440-43-9) concentrations have not exceeded the 35 IAC 620.410 Class II: General Resource groundwater standard (0.05 mg/L), but Cadmium has been reported above the GPS (0.005 mg/L) once (not a confirmed exceedance that would establish an SSL above the GPS). Note that there are two extent borings with high Cadmium, DP1e and DP6a. Both have concentrations above the Emery Pond water and gypsum leachate, 0.019 mg/L and <0.002 mg/L, respectively. No obvious source for these Class II exceedances exists and there is also no apparent connection between the two borings.

2.2.2f Thallium

Thallium (CAS# 7440-28-0) concentrations may have exceeded the 35 IAC 620 Class I and Class II: groundwater standard (0.002 and 0.02 mg/L, respectively) at all the monitoring wells, because the laboratory performing the analyses had a reporting limit of 0.050 mg/L. However, Thallium has had been

detected during the background monitoring period above the Site's GPS but has not been observed at an SSL above the GPS. The Thallium Concentration Map (in Appendix C) shows the pattern of elevated Thallium concentrations at the Site. Note that both the Emery Pond and gypsum leachate have concentrations at or below 0.002 mg/L. Therefore, it is unlikely that the Thallium exceedances are related to a release from the Site.

2.2.3 Other 35 IAC 620 Exceedances

The February 2019 investigation identified three other parameters that exceeded the Class I and Class II groundwater standards – Iron, Manganese, and Zinc.

2.2.3a Iron

Iron (CAS# 7439-89-6) concentrations were observed above the Class I and Class II groundwater standard (5.0 mg/L) during the extent investigation. Iron exceedances were observed at all the extent borings plus EP-3 and EP-4. The background monitoring well, EBG, had an Iron concentration that almost reached the Class II Standard (EBG Iron = 4.4 mg/L), but the Emery Pond and gypsum leachate samples had Iron concentrations of 0.899 and 0.0719 mg/L. This implies that Iron is naturally occurring at these elevated concentrations, likely related to the residual iron in the bedrock and RedOx conditions at the Site.

2.2.3b Manganese

Manganese (CAS# 7439-96-5) concentrations were observed above the Class I and Class II groundwater standards (0.150 mg/L and 10.0 mg/L, respectively) during the extent investigation. Manganese exceedances were observed at many of the extent borings plus EP-4. The Emery Pond and gypsum leachate samples had Manganese concentrations of 4.56 and 0.0444 mg/L, respectively. This implies that Manganese, like Iron, at these observed concentrations are naturally occurring, and not related to a release at the Site.

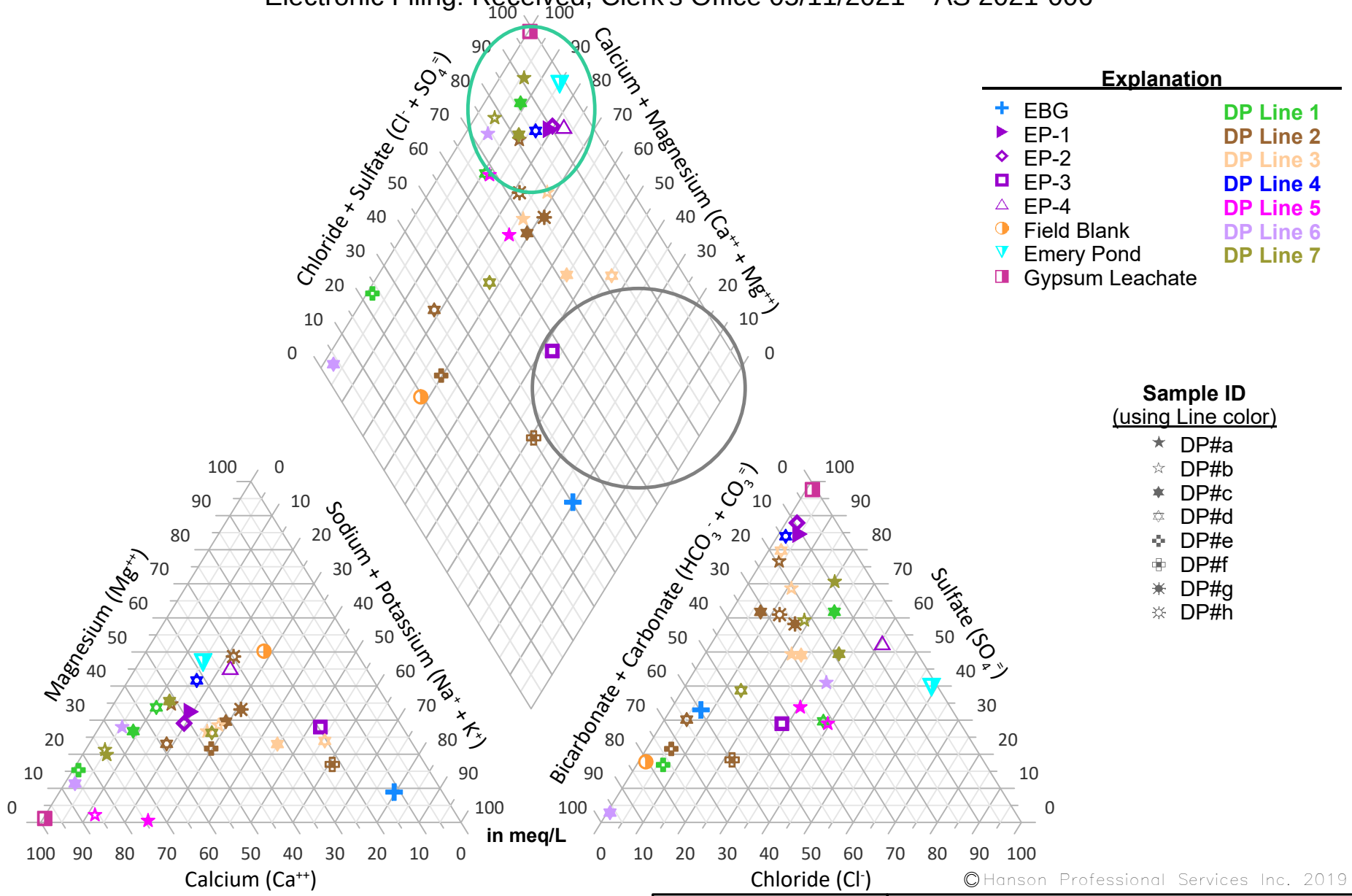
2.2.3c Zinc

Zinc (CAS# 7439-66-6) concentrations were observed above the Class II General Resource groundwater standard (5.0 mg/L) during the extent investigation. Zinc exceedances were observed at three extent borings, DP1e, DP7a, and DP7b. The Emery Pond and gypsum leachate samples had Zinc concentrations of 0.215 and <0.01 mg/L, respectively. The low source water concentrations indicate that these exceedances are not related to a release at the Site.

2.3 Major Cation and Anion Geochemistry

Figure 3 presents the major cation and anion data from the Emery Pond monitoring wells, investigation borings, and potential source water samples. Also shown are ellipses representing possible CCR source waters. Many of the sample results lie in the area identified as Calcium-Chloride type waters. Note that the gypsum leachate sample lies at the apex of this area and is further delineated by the possible scrubber (gypsum) impacted water ellipse. Three of the five monitoring wells also lie in this area (EP-1, EP-2, and EP-4).

The other two monitoring wells (EP-3 and upgradient well, EBG), lie within or near the other CCR source water ellipse. This area to the right of the diamond is identified as Sodium-Chloride type waters and is more indicative of ash impacted waters (either ash leachate or pond water). The investigation borings identified between the two ellipses are likely indicative of mixing of water types from the background waters to the impacted waters. The conclusion drawn from the cation/anion geochemistry is that gypsum is impacting the Emery Pond monitoring system.



Explanation

EBG	DP Line 1
EP-1	DP Line 2
EP-2	DP Line 3
EP-3	DP Line 4
EP-4	DP Line 5
Field Blank	DP Line 6
Emery Pond	DP Line 7
Gypsum Leachate	

Sample ID
(using Line color)

- DP#a
- DP#b
- DP#c
- DP#d
- DP#e
- DP#f
- DP#g
- DP#h

Possible CCR Waters

- Scrubber (gypsum) impacted waters
- Ash (leachate and ponds) impacted waters

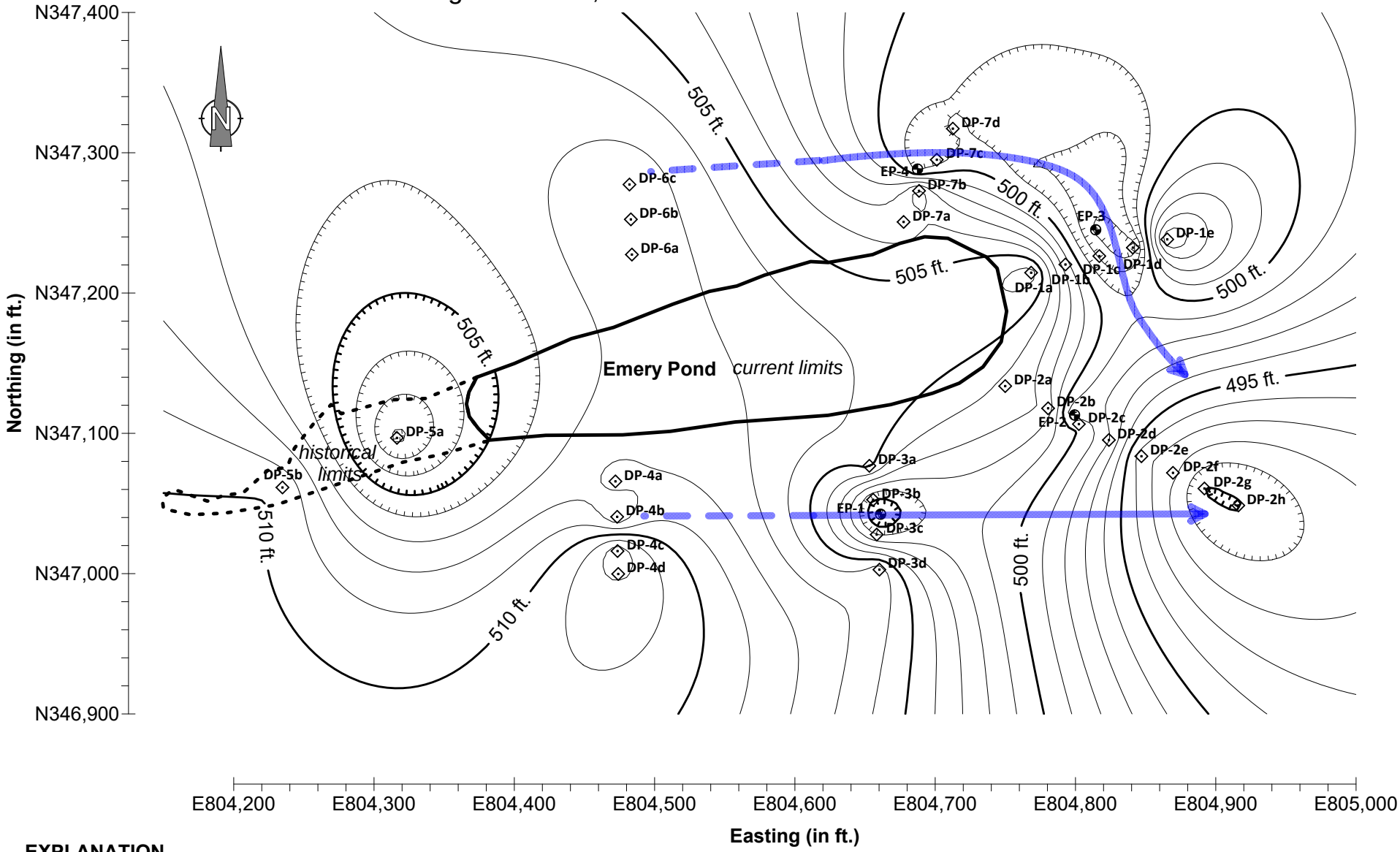
HANSON
Hanson Professional Services Inc.

Emery Pond Piper (Tri-linear) Diagram

EMERY POND
MARION POWER PLANT
WILLIAMSON CO., ILLINOIS

HANSON NO. 18E0022A FIGURE 3

I:\18jobs\18E0022A\Admin\14-Reports\CAP\FIG_3PiperDiagram_20190308.grf



EXPLANATION

- Monitoring Well
- Direct Push Boring
- Bedrock Boring

Contour Interval = 1 foot
SCALE: 1 inch equals 100 feet

0 ft. 100 ft. 200 ft. 300 ft.

HANSON
Hanson Professional Services Inc.

Preferential Flow Paths (Bedrock Surface)

EMERY POND
MARION POWER PLANT
WILLIAMSON CO., ILLINOIS

HANSON NO. 18E0022A FIGURE 4

2.4 Groundwater Monitoring Observations

Several overall trends can be observed in the graphs and maps found in Appendix B and Appendix C, including:

1. Several investigation borings have higher concentrations at points further from the Emery Pond than those borings that are closer (e.g., Boron at DP1e and DP7c and Sulfate at DP3b and DP6c). Hanson believes that groundwater flow is controlled by the bedrock topography and the amount and type of fill materials that appear to have been used along the north and east side of the Emery Pond (see Figure 4 for flow paths).
2. Increasing concentration trends can be observed in several wells for many COCs. The most notable is Sulfate, which has had three consecutive increases in concentration over the past four sampling events. Even EBG has seen concentration increases, although to a lesser degree.

   Note that the Groundwater Protection Evaluation model also shows increasing concentrations prior to the implementation of clean closure. In fact, the model shows concentrations continuing to increase for 2-3 years after CCR removal activities are complete, but then reduces over time.
3. pH levels vary dramatically across the Site, from over 10 SU in the bottom ash fill beneath the Gypsum Loadout Area to just above 6 SU at select points east of the Emery Pond. Hanson is unsure of the mechanism that is buffering the pH levels from one side of the Site to the other.

3. Assessment of Corrective Measures

3.1 Corrective Measures Alternatives

An Assessment of Corrective Measures (ACM) is required by 40 CFR 257.96. This requires an evaluation of the available options to mitigating groundwater impacts at the Site. An evaluation addressing the requirements of 257.96 and 257.97 as applied to remedy options is discussed in this Section and Sections 4 and 5, and is summarized in Table 4, Table 5, and Table 6. This evaluation also supports the selected remedy as an adequate and appropriate remedy to address any Part 620 exceedances due to the Site, including those alleged in Illinois EPA's 2018 Violation Notice.

The assessment of corrective measures must include an analysis of the effectiveness of potential corrective measures in meeting the requirements and objectives of the remedy as described under § 257.97, including at least the following:

- The performance, reliability, ease of implementation, and potential impacts of appropriate potential remedies, including safety impacts, cross-media impacts, and control of exposure to any residual contamination;
- The time required to begin and complete the remedy;
- The institutional requirements, such as state or local permit requirements or other environmental or public health requirements that may substantially affect implementation of the remedy(s).

Corrective Measures under review are the following techniques:

Do nothing	Close in Place	Clean Close	Barrier Wall	
Monitored Natural Attenuation		Pump and Treat	Pump Station	Retrofit

The next subsection will discuss each of these alternatives.

3.1.1 Do Nothing

Performing no further action at Emery Pond is a potential corrective measure. It takes no time to implement or complete. However, it does nothing to reduce impacts, control exposure, or limit residual contamination. It also opens the owner to additional scrutiny by Federal and State regulators as well as third-party intervention.

This remedy is not protective of human health, nor does it provide a clear path to attaining the GPS or controlling releases. The CCR is not removed or managed. Because of this, there is an exposure potential.

3.1.2 Close in Place

Leaving the CCR in place and providing an isolating cover system is one of the more commonly used remedy alternatives, especially for larger impoundments. This requires construction of a final cover system that restricts the amount of water infiltration into the CCR and thereby limits the amount of leachate generated. Implementation requires a specialty contractor for the placement and welding of a geosynthetic liner and a regular dirt contractor for placement of the recompacted soil liner and vegetative soil later. The time required to install the cover system varies by the size of the project. For Emery Pond, installation would take between 6-8 weeks. This project would require a new construction permit from Illinois EPA Bureau of Water, which would add 90+ days to the schedule. A construction permit under the proposed Part 845 regulations is not needed if completed prior to July 2021. A down side to close in place is loss, or at least reduction, of storm water storage, which is the primary future function of the new Storm Water Basin.

This potential corrective measure is limited in effectiveness because the potential future groundwater contact with the CCR could prevent attaining the GPS.

3.1.3 Clean Close

Removal of CCR from the Emery Pond is perhaps the most effective and efficient corrective measure for this small pond. The small size of Emery Pond makes this remedy more cost effective, practical, and efficient than at larger ponds, where transposition and disposal of huge amounts of CCR may take months or more, be impractical and create additional concerns and risks. Clean closure will remove CCR and thus any future impact to groundwater. Excavation of bottom sediments in Emery Pond and the removal of the Gypsum Loadout Area and CCR beneath the loadout area will have an immediate benefit to the Site groundwater. CCR will be transported offsite to a solid waste disposal facility in accordance with the proposed Part 845 regulations. Implementation of the plan and removal of CCR should be limited to a 4- to 6-week timeframe. At this time, no additional permitting should be needed (a water pollution control permit has already been received for the work, no additional NPDES permitting should be required, as discussed below, and a construction permit under the proposed Part 845 regulations is not needed, if closure is completed prior to July 2021), but there will be disposal fees associated with disposal of the CCR in a State permitted facility.

3.1.4 Barrier Wall

Barrier walls have been used for some time to protect groundwater from contaminated sources that are too large or too dangerous to economically remove. The most common type of barrier wall is a bentonite slurry wall, where an excavation is made, and a high-solids bentonite slurry is pumped into the excavation. The excavation is extended as bentonite slurry is added. There are some problems with barrier wall systems. First, they can be expensive to construct, with prices in the millions of dollars

for even fractions of mile long walls. Secondly, the precipitation that lands within the confines of the wall must be managed to not overtop the barrier or cause additional releases of contaminants to the environment. Overtopping would be a concern for a slurry wall here because it would likely be adjacent to Lake of Egypt and raise the potential for exposure to the contaminants of concern in the lake. Third, a barrier wall likely provides the most return when CCR is left in place and where the CCR could continue to cause groundwater impacts. In that case, the barrier wall may mitigate such impacts. However, when the source CCR is removed, which would occur with the clean close option, a barrier wall provides far less benefit, especially if there is no identified groundwater receptor at risk. This is true for Emery Pond, as discussed in this report. Evidence indicates that even without a slurry wall, current groundwater is not impacting the surface waters of Lake of Egypt (see Section 6.3).

Another issue with constructing a slurry wall around Emery Pond are the underground utilities and foundations associated with the power plant. Utilities (electrical, water, sewer, fuel, etc.) would almost certainly have to be relocated or terminated before construction of the wall could begin with potential interruption to plant operations. Furthermore, excavations adjacent to a large existing structure (i.e., Unit 4 smoke stack) could cause foundation instability. Additional geotechnical investigations would need to be done to establish safe excavation practices prior to any slurry wall construction. Excluding any additional investigations or utility relocations, Hanson estimates an 8- to 12-week installation timeline for slurry wall construction, assuming it could be constructed at this location.

3.1.5 Pump and Treat

As with barrier walls, pump and treat systems have been implemented as a corrective action for decades. Either vertical well points or horizontal trenches can be used to collect groundwater. Although treatment for metals can be straightforward, treating anion contamination can be time consuming and expensive. For example, chloride and sulfate treatment must be done with reverse osmosis (RO). RO uses a semi-permeable membrane to remove many of the dissolved solids in groundwater. This process is slow, expensive, and still generates a waste water stream that could require additional treatment or disposal.

Although horizontal trenches may be more efficient, as noted above, subsurface conditions or utilities may prevent installation of a trench system. The use of well points to collect groundwater also has limits, especially in low hydraulic conductivity soils. The low hydraulic conductivity causes rapid drawdown at the well points with reduced zones of capture. Permitting for this system would require modifying the Site's NPDES permit to allow discharge of the collected groundwater or any treated groundwater. As is true for barrier walls, pump and treat systems typically provide far less benefit when CCR is removed, especially when there are no identified at-risk groundwater receptors. Time for installation could range from 4- to 8-weeks, depending on the system used.

3.1.6 Pump Station

Since the new Stormwater Basin's purpose was to manage storm water, the closure of Emery Pond causes the need to replace that storm water collection function. A pump station is a potential alternative to a new storm water detention basin. This measure must be implemented with either the clean close or close in place options. The pump station could conceptually replace a detention basin with a cistern or sump. The smaller storm water collection volume would require that a larger pump, sized for the appropriate precipitation event (or storm) be used to control flow and prevent storm water discharges directly to Lake of Egypt. With the larger capacity pump, a larger discharge pipe may also be required to get storm water routed through the NPDES discharge system. Storm water would then continue to be discharged via the pond system to NPDES Outfall 002. This option would require a

change to the currently planned and permitted construction of the new Stormwater Basin, causing substantial additional delay in the work and no meaningful corrective action benefit. The benefits and limitations of the clean close and close in place options have been previously discussed.

3.1.7 Retrofit

A retrofit of the Emery Pond to a CCR compliant impoundment was also considered. A retrofit would include excavating the CCR present in Emery Pond and the FGD load out area and decontaminating the area, which would remove CCR and its likelihood to impact groundwater. The composite liner system would protect groundwater from future CCR impacts and the impoundment could continue to provide storm water detention. Additionally, a final cover system would need to be placed at the Gypsum Loadout Area after removal of the bed ash found there. This system would take more time than just lining or covering Emery Pond, likely 8- to 10-weeks. Removal of CCR would also require proper transportation and disposal at a State permitted facility. A Bureau of Water construction permit would also be needed and may require an Illinois Department of Natural Resources dam permit. However, because Unit 4 shut down in October 2020, a new CCR surface impoundment is no longer needed.

3.1.8 Monitored Natural Attenuation

Monitored Natural Attenuation (MNA) can work as a corrective measure for both organic and inorganic parameters. "Attenuation processes include ions, act without human intervention to reduce the mass, toxicity, mobility, volume, or concentration of contaminants in soil or groundwater. These in-situ processes include biodegradation; dispersion; dilution; sorption; volatilization; radioactive decay; and chemical or biological stabilization, transformation, or destruction of contaminants" (US EPA, 2015b). As noted by US EPA (2012), MNA works best when the source of contamination has been removed. Natural processes will, over time, remove or attenuate the small amounts of contaminants left in the soil and groundwater.

One or more of the MNA processes will be involved with the return to Class I groundwater standard for the inorganic constituents that show exceedances of Class I standards and Federal CCR rule standards. Dilution and dispersion were incorporated into the contaminant transport model used to assess Emery Pond (Hanson, 2020a), but none of the current site investigations or the contaminant transport modeling have looked at any of the "reactive" attenuation processes (e.g., sorption, chemical reaction, etc.) that could enhance clean up times. Further, that modeling shows that attaining the Part 257 GPS for Arsenic and Cobalt (the only two Appendix IV parameters with SSLs above the GPS) occurs much quicker. Table 3 lists the time to compliance at each of the downgradient monitoring wells. Note that Cobalt, at the various compliance points does not have exceedances after clean closure is achieved. MNA is an effective process here when paired with active source removal principally due to the small size of Emery Pond and the short duration of the CCR exposure (beginning 2007/08 with the construction of the Gypsum Loadout Area).

Table 3. Time to Reach Compliance at Monitoring Locations

Well ID	Arsenic SSL (time in years)	Arsenic Class I (time in years)	Cobalt SSL (time in years)	Cobalt Class I (time in years)
EP-1	8	2	n/a	n/a
EP-2	10	8	n/a	n/a
EP-3	n/a	n/a	n/a	n/a
EP-4	1	n/a	n/a	n/a

4. Evaluation of Potential Remedies

From the list of remedial option presented in the previous section, several of the more viable alternatives will be discussed here and in the next Section. Based on 40 CFR 257.97, remedies must:

- Be protective of human health and the environment;
- Attain the groundwater protection standard as specified pursuant to § 257.95(h);
- Control the source(s) of releases to reduce or eliminate, to the maximum extent feasible, further releases of constituents in appendix IV to this part into the environment;
- Remove from the environment as much of the contaminated material that was released from the CCR unit as is feasible, considering factors such as avoiding inappropriate disturbance of sensitive ecosystems;
- Comply with standards for management of wastes as specified in § 257.98(d).

Based on the Site hydrogeology, effectiveness, identified risks, and constructability of the closure alternative, SIPC selected three options to further evaluate as part of the Groundwater Protection Evaluation: Closure by Removal with backfill, Closure by Removal with Composite Liner System, Closure by Removal with Composite Liner System and Perimeter Drain, and MNA. All these options meet the needs of the selection criteria for the following reasons:

- Protective of human health and the environment – removal of the CCR removes any probability of future releases from the source of contamination above the GPS. A barrier wall or additional pump and treat system is not warranted because this remedy removes the source, thus eliminating any future releases to be treated by a barrier wall or pump and treat system, and there are no identified at-risk groundwater receptors. Further a barrier wall or pump and treat system would require considerably more time to obtain approval and then construct and would substantially raise costs without any material demonstrated benefit.
- Attain the groundwater standards – Over time, with source removal and monitored natural attenuation, groundwater concentrations are predicted to timely return to below Site background concentrations, Federal GPS (40 CFR 257.95(h)), and the Illinois Class I groundwater standards (35 IAC 620.410) based on model results. Indeed, that modeling predicts that GPS for the exceeded Part 257 constituents should be achieved within 7 years, as mentioned above.
- Remove from the environment as much of the contaminated material that was released from the CCR unit as is feasible – Clean closure removes the physical CCR material within the limits of Emery Pond, including the Gypsum Loadout Area.
- Comply with standards for management of wastes per 257.98(d) – Wastes removed as part of the clean closure will be managed, transported, and disposed of pursuant to RCRA requirements.

5. Corrective Action and Selected Remedy

This Corrective Action and Selected Remedy is submitted to address the groundwater exceedances identified in Section 2, above. Hanson (2020b) proposes to mitigate any groundwater impacts due to the Emery Pond CCR impoundment and adjacent Gypsum Loadout Area by using multiple alternatives from the Table 4 assessed options. These alternatives are consistent with the federal CCR rule and should lead to timely compliance with the Illinois Part 620 groundwater quality standards and the Part 257 GPS.

5.1 Selected Remedy

SIPC proposes to close Emery Pond and the adjacent Gypsum Loadout Area by removal, construct a CCR-compliant composite liner system in the footprint of the existing Emery Pond to continue the storm water management function, construct a perimeter drain at the toe of the liner system to protect the liner from external hydrostatic pressure with the additional benefit of recovering contaminated groundwater, continue to monitor the natural attenuation of contaminants in groundwater, and establish a Groundwater Management Zone (GMZ) pursuant to 35 IAC 620.250(a)(2) to address any Part 620 exceedances due to the Site, including those alleged in Illinois EPA's 2018 Violation Notice.

5.1.1 CCR Removal

Hanson (2020b) proposes to remove the CCR from the current footprint of the Emery Pond and any additional CCR located at and beneath the Gypsum Loadout Area to visually clean levels. Clean closure (removal of any CCR materials) will be visually confirmed and certified by a Professional Engineer prior to continued construction activities. The CCR removal is expected to remove the source of the observed groundwater impacts at the Site, allowing groundwater to improve while the requested GMZ is in effect.

5.1.2 Construction of a CCR Rule Compliant Liner

After removal of the CCR from the current footprint of Emery Pond, a new storm water basin will be constructed within the footprint of the former Emery Pond, which will include a CCR Rule compliant composite liner system and a perimeter drainage system located beneath the outside toe of the liner system (Hanson, 2020b). The liner system is not required by the federal CCR rule because regulated CCR is not expected to be discharged to the new basin following CCR removal from the existing pond. However, the liner will be added as a conservative, protective measure at significant expense, and it should eliminate any discharges to groundwater from the new basin.

5.1.3 Perimeter Drain System

Additionally, the installation of the perimeter toe drain around the base of the basin liner system provides protection from hydraulic (hydrostatic) pressures to the liner system and further affords for collection of groundwater in the vicinity of the new basin. The collected groundwater would be discharged to the new basin and routed to NPDES Outfall 002, which is currently permitted to discharge the types of constituents that would be present in the groundwater. Section 3.9 of the Closure Plan (submitted with this Plan) contains a complete description of the perimeter toe drain and IEPA has issued SIPC a construction permit for the work, which suggests that no additional NPDES permitting is required. However, a confirming question with supporting information concerning NPDES permitting is currently pending with Bureau of Water.

5.1.4 Monitored Natural Attenuation

MNA (dilution and dispersion) will be used to aid in returning groundwater to below the Illinois Class I standards and Federal CCR rule standards. With the removal of the CCR at Emery Pond, MNA functions as a finishing or polishing step in the timely return of groundwater compliance.

5.2 Long- and Short-Term Effectiveness, Protectiveness, and Certainty

The selected remedy provides the best combination of corrective measures to address the long- and short-term effectiveness, protectiveness, and certainty of reaching and maintaining the GPS and Class I groundwater standards.

5.2.1 Magnitude of Reduction of Existing Risks

Removal of the CCR from the Emery Pond and vicinity is the best alternative for reducing risk by allowing the material to be disposed of in a permitted landfill facility that meets the current Illinois landfill rules (35 IAC 810-815). Further protections are included due to the facility's composite liner, leachate collection, and final cover requirement. The added benefit of the perimeter drain will also lower risk with the removal of a currently impacted groundwater.

5.2.2 Magnitude of Residual Risks, Likelihood of Further CCR Releases

As noted in Section 5.2.1, removal prevents further CCR releases from Emery Pond.

5.2.3 Type and Degree of Long-Term Management Required

Long term management of the selected remedy should be nominal. There are operation and management (O & M) needs, including perimeter drain pump maintenance and/or replacement and protection of the geomembrane component of the composite liner system.

However, the O & M costs associated with a close in place and treatment solution would be much greater. Operating a Pump and Treat system or managing precipitation falling within a slurry wall (this water could pick up contamination from contact with the in place CCR) would require further management, create additional risks and concerns (as discussed above) and cost much more than simply removing the CCR and allowing natural attenuation to aid with cleanup.

Groundwater monitoring wells will need to be maintained and repaired/replaced, as needed.

5.2.4 Short-term Risks to the Community or the Environment During Implementation

Potential short-term risks to the removal of the CCR include fugitive dust from storage and loading the dry CCR for transport and the actual transport of the CCR to the permitted disposal facility. Fugitive dust controls will follow the requirements of 40 CFR 257.80 and the proposed 35 IAC 845.500.

Loading CCR for transport will only occur within the Site boundaries, limiting community exposure. Transportation of the CCR will follow the requirements of the proposed 35 IAC 845.740.

5.2.5 Time Until Full Protection is Achieved

Hanson's Groundwater Protection Evaluation indicates that all GPS and Class I groundwater standards will be reached in approximately 27 years, and some will take less time. Further meeting the Part 257 GPS for arsenic and cobalt (only two parameters with an established SSL of the GPS) is predicted to occur much quicker, with arsenic modeled to reach the GPS in approximately 7 years and cobalt never causing a GPS compliance issue at the nearest potential groundwater receptor, the edge of Lake of Egypt.

5.2.6 Potential for Exposure of Human and Environmental Receptors to Remaining CCR

With clean closure there will be no remaining wastes. Groundwater is not used by the Plant, but nominal amounts of groundwater will be collected (estimated to be approximately 600 gallons per day) by the perimeter drain system and discharged to the Storm Water Basin and eventually NPDES Outfall 002. CCR transported to the permitted disposal facility will be entombed and eventually covered with a composite liner system preventing future exposure. The permitted off-site landfill's leachate collection system will restrict potential migration of contaminants to groundwater.

5.2.7 Long-Term Reliability of the Engineering and Institutional Controls

Long-term reliability of the selected remedy is excellent provided routine O & M is performed. Clean closure of the Emery Pond removes continued impacts to groundwater by CCR. Groundwater, as modeled, should return to compliance with Class I standards three years before the end of the 30-year post-closure care period, and compliance with the Part 257 GPS much faster than that.

5.2.8 Potential Need for Replacement of the Remedy

The primary remedy is the removal of CCR from the Emery Pond. Although there are other components to the selected remedy that could need replacement, they are primarily present to continue the use of the impoundment for storm water management, and do not present an exposure potential to CCR. Proper O & M will also defer the need for replacement of parts of the selected remedy.

5.3 Source Control Effectiveness

The selected remedy for Emery Pond does not rely on a source control as the primary mitigation method. New releases of CCR around Emery Pond, with the closure of Unit 4, are unlikely.

5.3.1 The Extent to Which Containment Practices Will Reduce Further Releases

As previously noted, there will be no CCR containment associated with the selected remedy.

5.3.2 Extent to Which Treatment Technologies May be Used

Although there is some groundwater collection associated with the selected remedy, discharge of those waters is controlled by the Site NPDES permit. The only additional treatment technology used is natural attenuation, in conjunction with source removal.

5.4 Implementing Selected Remedy

This section looks at the ease and operational reliability of implementation of the remedy and includes consideration of regulatory requirements and necessary resource for implementation.

5.4.1 Degree of Difficulty Associated with Constructing the Technology

CCR excavation and construction of the perimeter drain and composite liner system are common construction activities. The installation of the geomembrane does require a specialized contractor, but primarily for the equipment needed to make water-tight connections between the geomembrane panels and the remaining water control structures needed for storm water management.

The small size of the Emery Pond also reduces the difficulty and time needed for the closure activity and any risks or concerns that might otherwise be associated with CCR removal, transport, and off-site disposal.

5.4.2 Expected Operational Reliability of Technologies

Composite liner systems have been used at municipal solid waste landfills for over 30 years. With proper construction techniques and third-party construction quality assurance inspections, the selected remedy should perform reliably for as long as the Plant will need to control storm water. Of course, this would include any required O & M to maintain pumps and repair any damages.

Table 4. Corrective Measures Options

Potential Remedies	Pros	Cons	Human Health	Attain GPS	Control Release	Material Removal	Manage RCRA Wastes
Do nothing	• Inexpensive	• Liability	No	No	No	No	n/a
Close in Place	• 40 CFR 257 compliant	• Loss of storm water storage	Somewhat	No	Some	No	Yes
Clean close	• 40 CFR 257 compliant	• Loss of storm water storage	Protective	Yes	Yes	Yes	Yes
Barrier wall	• Containment of COCs	• Still an unlined CCR impoundment • Working around buried utilities	Protective	Yes	Yes	No	n/a
Pump and Treat	• Removal of COCs	• Still an unlined CCR impoundment • Low hydraulic conductivity causes narrow capture zones at wells	Protective	Unk	Unk	No	n/a
Pump Station	• No dam or dam permit • Smaller footprint	• Increased O & M • Additional measures to control CCR	Protective	Yes	Unk	n/a	Yes
Retrofit	• 40 CFR 257 compliant Removes COC source	• Pond unusable during construction • Requires CCR removal • Requires dam permit • New compliant unit no longer needed with shutdown of Unit 4	Protective	Yes	Yes	Yes	Yes

Table 5. Long and Short-term Effectiveness of Options

Potential Remedies	Reduce Existing Risk	Residual Risk	Long-term Management			Short-term Risk	Completion Date	Potential Receptor Exposure	Long-term Reliability	Need to Replace
			Monitoring	Operation	Maintenance					
Do nothing	No	No	No	n/a	n/a	High	Immediately	High	Low	Likely
Close in Place	Somewhat	No	Some	n/a	Yes	Moderate	Fall 2020	Low	Moderate	Possibly
Clean close	Protective	Yes	Yes	Yes	Yes	Low	Fall 2020	Low	Low	Unlikely
Barrier wall	Protective	Yes	Yes	n/a	n/a	Moderate	Fall 2019	Low	Moderate	Possibly
Pump and Treat	Protective	Unk	Unk	n/a	n/a	Moderate	Fall 2019	Moderate	Moderate	Possibly
Pump Station	Protective	Yes	Unk	n/a	Yes	Low	Fall 2020	Low	Low	Unlikely
Retrofit	Protective	Yes	Yes	Yes	Yes	Low	Fall 2020	Low	Low	Unlikely

Table 6. Implementation of Options

Potential Remedies	Construction Difficulties	Operational Reliability	Permits & Approvals	Specialty Equip./Eng.	Availability Treatment, Disposal, & Storage
Do nothing	None	n/a	None	None	None
Close in Place	Nothing major	Good	None	None	None
Clean close	Nothing major	Good	None	None	Need disposal site
Barrier wall	Excavation & buried utilities	Good	None	Specialty Contractor	Unknown fill
Pump and Treat	Drilling & well installation	Good	NPDES	Drilling & Pumps	GW discharges
Pump Station	Drilled shafts	Good	Water Treatment permit	Drilling Contractor	Just like pond
Retrofit	Clean close existing pond	Good	Water Treatment & Dam permits	Geosynthetics	None

5.4.3 Need to Coordinate and Obtain Necessary Approvals / Permits from Other Agencies

SIPC has been working with Bureau of Water to obtain the needed Water Treatment Device permit (35 IAC 309, Subpart B) and any NPDES permitting (35 IAC 309, Subpart A) that might be required for the selected remedy. The construction permit for the water treatment device was issued by Bureau of Water on October 16, 2020. Pursuant to submissions that have been made to Illinois EPA, the proposed remedy adds no new wastewater constituents to the currently permitted discharge and should not adversely impact any receiving water. Indeed, with the recent closure of Unit 4, all CCR from the facility will be managed dry and waste water discharges associated with the Site and facility will decrease. Accordingly, the proposed action should be covered under the facility's current NPDES permit, as suggested by the issued construction permit. Illinois EPA has not informed SIPC that this position is incorrect, and SIPC must proceed with the proposed action immediately to achieve timely closure under the federal CCR rule.

Additionally, the Illinois Department of Natural Resources dam permit re-classified the Emery Pond Dam as a Class III dam on December 16, 2020.

5.4.4 Availability of Necessary Equipment and Specialists

Excavation and recompacted soil placement are common earth work activities done by many contractors with the needed earthmoving equipment and trained operators. Drainage systems, like the perimeter drain, are also common construction activities. The water-tight placement of the geomembrane is the only specialty task associated with the selected remedy. Although specialized, there are several trained installation companies. Many of these installers are associated with the geomembrane manufacturing companies.

5.5 Groundwater Monitoring Plan

Groundwater monitoring will continue at the Site. Groundwater monitoring proposed with respect to the Part 620 groundwater standards is detailed in Hanson's (2020c) Groundwater Monitoring Plan that accompanies this Plan. Additionally, assessment monitoring in accordance with 40 CFR 257 will continue. Thus, future monitoring will include both monitoring required by the federal CCR rule, which may be implemented by an Illinois rule once adopted and monitoring proposed to address Part 620 groundwater standard compliance.

5.5.1 Timetable

Active corrective action activities were proposed to coincide with the closure of Unit 4 in fall 2020. See Hanson's (2020b) Closure Plan for details. That timetable has been delayed given the need to work with Illinois EPA to obtain approval of these and related plans and reports with Illinois EPA. However, some work has begun, and the remainder must proceed in the very near future to timely close Emery Pond under the federal CCR rule.

Illinois EPA has requested that SIPC address permitting with respect to certain elements of the selected remedy described above. A 35 IAC 302, Subpart B construction permit for the work, including the new, non-CCR Storm Water Basin (that replaces Emery Pond) was issued by Illinois EPA Bureau of Water on October 16, 2020. In addition, SIPC earlier submitted a permit modification for its current NPDES permit. However, in light of the subsequent closure of Unit 4, and attendant reductions in wastewater discharges, and because the remedial action for this small pond would not cause the discharge of any new or different constituents and would not adversely impact any receiving water, SIPC believes that the proposed remedial action is covered under its current NPDES permit, which is

also supported by the terms of the issued construction permit. SIPC has been waiting for months for Illinois EPA to provide a further clarifying response, and SIPC respectfully asks once again for Illinois EPA's immediate concurrence that no further NPDES permit action is needed so that SIPC may timely complete closure of Emery Pond.

In addition to the proposed active remedies, SIPC is also requesting a GMZ and proposing future groundwater monitoring, including to assess the ameliorative impacts of CCR source removal with dispersive and diffusive flux of COCs over time. The duration and scope of the requested GMZ is described in Section 6, below.

6. Application for a Groundwater Management Zone (GMZ)

6.1 Technical Support Documentation

A previously submitted Hydrogeologic Investigation Report (Hanson, 2019a) and Hydrogeologic Investigation Addendum (Hanson, 2019b), as well as an updated Closure Plan (Hanson, 2020b), Groundwater Monitoring Plan (Hanson, 2020c), and Groundwater Protection Evaluation (Hanson, 2020a) submitted with this Plan, support this Plan and GMZ Application. These documents provide descriptions of the site geology, hydrogeology, closure methods, and groundwater monitoring.

6.2 Groundwater Management Zone

As part of this Plan, SIPC requests establishment of a Groundwater Management Zone (GMZ) pursuant to 35 IAC Part 620. As provided in 35 IAC 620.250(a)(2), a GMZ may be established for sites at which the owner or operator undertakes "an adequate corrective action in a timely and appropriate manner and provides a written confirmation to the Agency." A GMZ is defined as "a three-dimensional region containing groundwater being managed to mitigate impairment caused by the release of contaminants from a site." SIPC plans to undertake in the very near future, corrective actions, including CCR removal from the Site and installation of a liner in the new basin, as well as prospective groundwater monitoring to assess the ameliorative impacts of CCR source removal and dispersive and diffusive flux of COCs over time. This corrective action is both timely, considering the ongoing negotiations between Illinois EPA and SIPC in connection with the earlier issued violation notice and federal CCR rule requirements, and adequate to address any groundwater impacts to the Site. Further, as described below, recent investigations confirm that any groundwater impacts are not causing any measurable impact to nearby surface waters.

The horizontal extent of the proposed GMZ is depicted in the Plat found in Appendix D, and contains approximately 7.5 acres. The GMZ does not extend beyond the Plant boundaries. A description of the platted area is also found in Appendix D. Vertically, the GMZ is bounded by the ground surface down to the bottom of the upper (weathered) portion of the Bedrock Unit. Hanson has identified this depth as approximately 21.5 ft. BGS at bedrock boring, EBR, or an approximate elevation of 489 ft. The parameters to be covered by the GMZ include the following: Arsenic, Boron, Calcium, Chloride, pH, Sulfate, Selenium, Total Dissolved Solids, Cobalt, Thallium, Iron, Lead, Manganese, and Zinc. Pursuant to the modeling referenced below, the GMZ's expected duration is 27 years.

The Notice of Adequate Corrective Action forms are included in Appendix E.

Table 7. Lake of Egypt Sample Analytical Results

PARAMETER NAME	UNITS	LE-b1	LE-b2	LE-d	LE-in	LE-u
pH (field)	SU	7.09	7.25	7.07	6.57	7.19
Specific Conductivity	µS/cm	139.4	137.1	144.2	173.5	136.2
Temperature	°C	28.2	28.6	28.7	26.7	28.
Dissolved Oxygen	mg/L	5.06	6.21	6.22	4.71	5.65
Oxidation/Reduction Potential	mV	+171.4	+184.7	+172.5	+231.4	+186.7
Turbidity	NTU	3.53	2.88	2.55	4.45	2.54
Arsenic, total	µg/L	<25.	<25.	<25.	<25.	<25.
Barium, total	µg/L	2.52	2.65	2.27	2.34	2.51
Bicarbonate, total	mg/L	38.	38.	39.	39.	38.
Boron, total	µg/L	<20.	<20.	<20.	<20.	<20.
Cadmium, total	µg/L	<1.	<1.	<1.	<1.	<1.
Calcium, total	mg/L	14.1	14.1	13.7	15.4	14.1
Carbonate, total	mg/L	0.	0.	0.	0.	0.
Chloride, total	mg/L	<4.	4.	<4.	<4.	<4.
Chromium, total	µg/L	<5.	<5.	<5.	<5.	<5.
Cobalt, total	µg/L	<5.	<5.	<5.	<5.	<5.
Copper, total	µg/L	<5.	<5.	<5.	<5.	5.6
Fluoride, total	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Iron, total	mg/L	0.077	0.076	0.056	0.099	0.057
Lead, total	µg/L	<1.	<1.	<1.	<1.	<1.
Magnesium, total	mg/L	3.97	3.98	3.92	3.96	3.97
Manganese, total	µg/L	395.	423.	236.	250.	371.
Mercury, total	mg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Nickel, total	µg/L	<5.	<5.	<5.	<5.	<5.
Nitrogen, Ammonia, total	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrogen, Nitrate, total	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrogen, Nitrite, total	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Phosphorus, total (as P)	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Potassium, total	mg/L	1.96	2.	1.94	1.94	2.
Selenium, total	µg/L	<1.	<1.	<1.	<1.	<1.
Silver, total	µg/L	<1.	<1.	<1.	<1.	<1.
Sodium, total	mg/L	4.11	4.16	4.03	4.03	4.13
Sulfate, total	mg/L	16.	17.	16.	16.	17.
Thallium, total	µg/L	<2.	<2.	<2.	<2.	<2.
Total Dissolved Solids	mg/L	60.	56.	44.	56.	46.
Total Suspended Solids	mg/L	<6.	<6.	<6.	<6.	<6.
Zinc, total	µg/L	<10.	<10.	<10.	<10.	<10.

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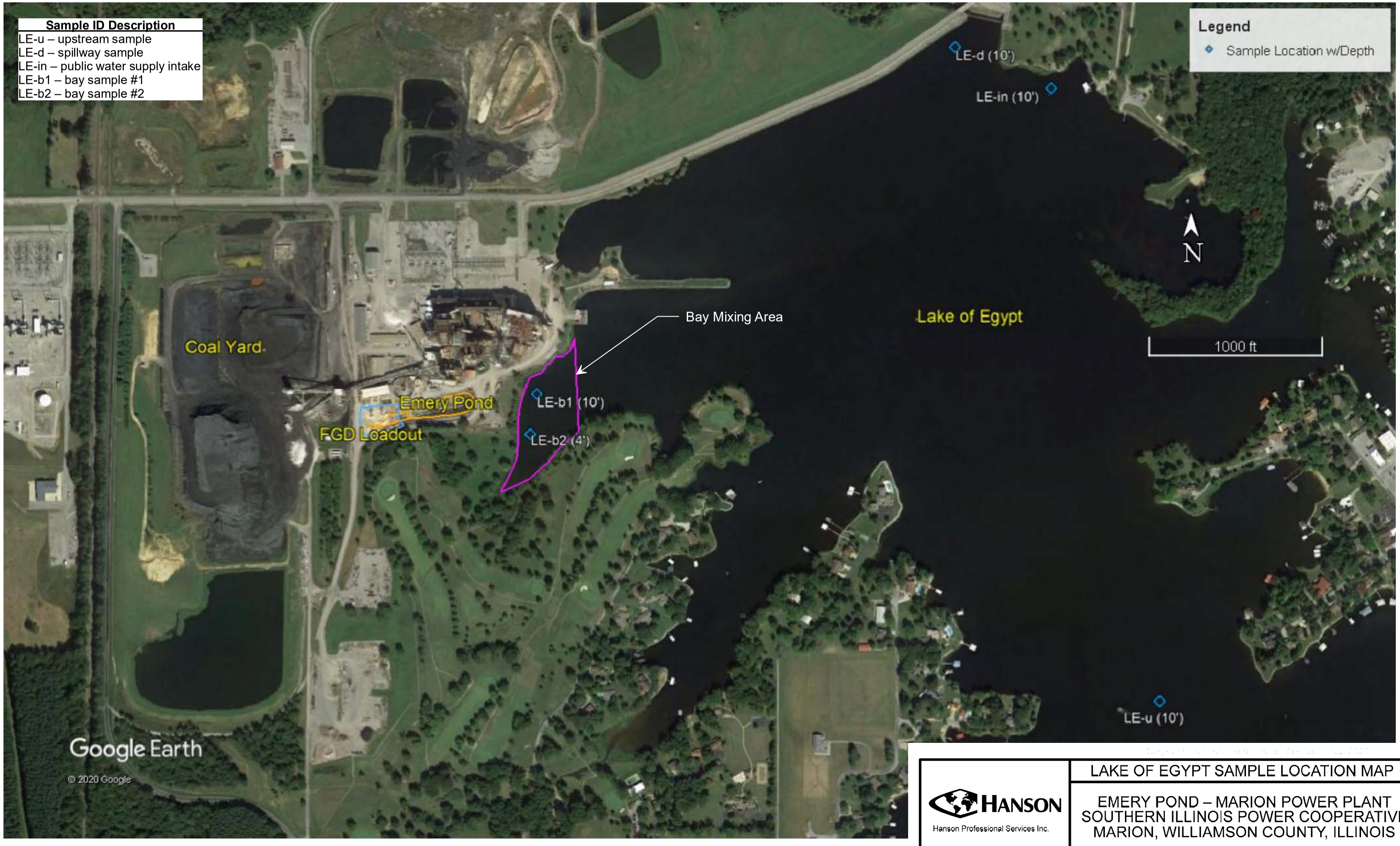


Revised 7/17/2020 – added Bay Mixing Area and label to figure.

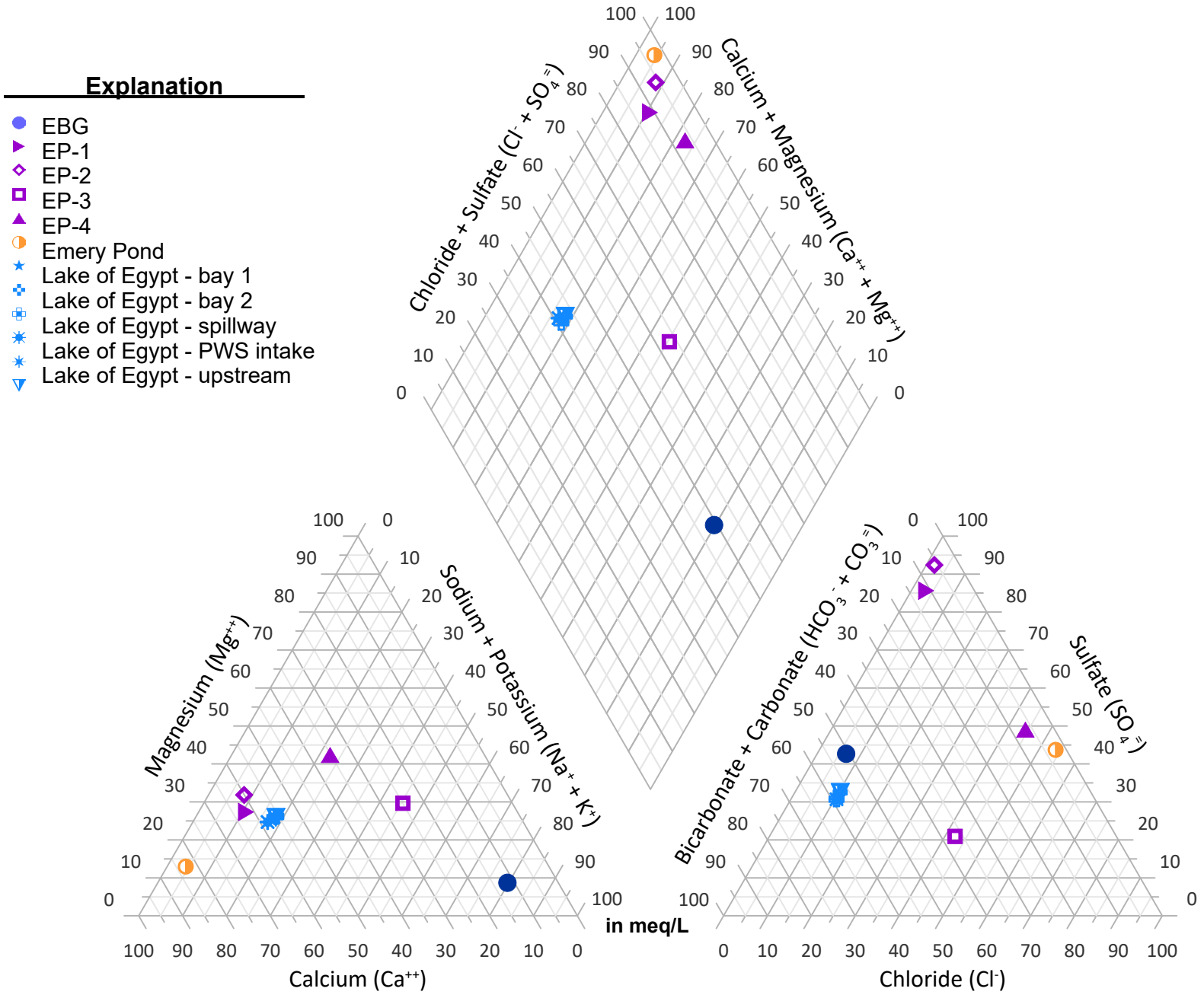
HANSON
Hanson Professional Services Inc.

LAKE OF EGYPT SAMPLE LOCATION MAP

EMERY POND – MARION POWER PLANT
SOUTHERN ILLINOIS POWER COOPERATIVE
MARION, WILLIAMSON COUNTY, ILLINOIS

HANSON NO. 18E0022B FIGURE 5

FIGURE 6. June 2020 Piper (Tri-linear) Diagram



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6.3 Environmental Impact of Proposed Corrective Action

Implementation of this Plan and establishment of the GMZ will have a positive environmental impact. The removal of existing CCR materials and installation of a new CCR Rule compliant liner in the new storm water basin will reduce the impact from the COCs at the Site. The GMZ will remain in place until the groundwater meets applicable Part 620 water quality standards, as established through proposed monitoring.

The Groundwater Protection Evaluation (Hanson, 2020a) submitted herewith, assesses groundwater flow and contaminant transport utilizing the USGS MODFLOW groundwater flow model (McDonald and Harbaugh, 1988) and MT3D contaminant transport model (Zheng, 1990) incorporated into the pre- and post-processor software, Processing Modflow X (Simcore, 2020), to evaluate some of the corrective measures options for Emery Pond and determine the time needed for contaminant concentrations to fall below Class I: Potable Resource groundwater standards (35 IAC 620.410). After selecting the CCR removal with Liner and Drain scenario as the appropriate remedy, each of the contaminants of concern were modeled using a worst-case source concentration (maximum observed concentration from various potential sources). Based on these evaluations, it was found that total Boron took the longest to achieve Class I compliance, with concentrations at a compliance point located adjacent to Lake of Egypt returning to below Class I limits at 27 years. Meeting the Part 257 GPS for Arsenic and Cobalt occurs much quicker. Table 3 lists the time to compliance at each of the downgradient monitoring wells.

Section 5 of the Groundwater Protection Evaluation (Hanson, 2020a) used calculated surface water concentrations, based on mass flux discharges from groundwater to the General Head Boundary (representing Lake of Egypt), to show no predicted surface water standard exceedances due to any groundwater impacts from the Site.

To substantiate this prediction, samples were collected in June 2020 from Lake of Egypt and analyzed for the COCs. Results are presented in Table 7 and sample locations are shown on Figure 6. Analytical results showed no appreciable differences in analyte concentrations between the five lake samples taken adjacent to Emery Pond and other more distant locations. The Piper diagram (Figure 6) also shows the lake samples clustered with no apparent groundwater mixing trends. In addition, no surface water quality standard exceedances were observed.

Illinois EPA has questioned if plant operations and the number of operating units could influence surface water quality. To limit how the calculated results could be interpreted, Hanson (2020a) chose to limit the mixing zone used in the surface water mixing calculations. The bay mixing area shown in Figure 5 does not reach the cooling water intake structure, and therefore groundwater/surface water interactions, based on the calculations in the Groundwater Protection Evaluation, should not be influenced by plant operations.

7. Conclusion

Hanson has reviewed the available groundwater data at the Marion Power Plant's Emery Pond and has found concentrations of Arsenic, Boron, Calcium, Chloride, Lead, pH, Sulfate, Thallium, and TDS, above the Class I: Potable Resource Groundwater Standards (35 IAC 620.410) and Class II: General Use Groundwater Standards (35 IAC 620.420). Only assessment monitoring for Cobalt and Arsenic yielded SSLs of GPS exceedances. Hanson also found concentrations of Iron, Manganese, and Zinc that were above the Class I and Class II Standards, but the exceedances do not appear attributable to the Site. Hanson believes that groundwater concentrations of Arsenic, Boron, Calcium, Chloride, Cobalt, Lead, pH, Sulfate, Thallium, and TDS, found above the Class I or Class II Standards are the result of pond and contact water migration from the Site.

This Plan proposes to address and mitigate the release of contaminants and resulting groundwater impacts by clean closing the Emery Pond and Gypsum Loadout Area. A new Storm Water Basin will be constructed within the footprint of the current Emery Pond and the Gypsum Loadout Area will be filled with clean earthen materials that meet the requirements of the applicable state and/or federal regulation. By removing the sources of the groundwater impacts, the concentration of contaminants will be reduced over time, as indicated by Hanson's (2020a) contaminant transport modeling. Time for all COC concentration levels to drop below Class I: Potable Resource limits is approximately 27 years after closure by removal. Meeting the GPS for Arsenic and Cobalt (SSL of GPS) occurs much quicker, with Arsenic modeled to reach the GPS in approximately 7 years and Cobalt never modeled to cause a GPS compliance issue at the modeled compliance point adjacent to Lake of Egypt.

Groundwater monitoring, as required by the CCR Rule will continue after clean closure. Additional groundwater monitoring proposed as part of this Corrective Action and request for a GMZ, is detailed in Hanson's (2020c) Groundwater Monitoring Plan. Prospective groundwater monitoring will assess the expected ameliorative impacts of the corrective actions proposed in this Plan.

8. Licensed Professional Signature/Seal

The geological work product contained in this document has been prepared under my personal supervision and has been prepared and administered in accordance with the standards of reasonable professional skill and diligence.

Rhonald W. Hasenyager, P.G.
Hanson Professional Services Inc.
1525 South Sixth Street
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(217) 788-2450
Registration No. 196-000246

Seal:

Expires 31 March 2023

Signature: _____ Date: 30 March 2021

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Appendix A

Tabulated Groundwater Monitoring Results

TABLE A-1. Analytical Data for Emery Pond (2017-2018)

			Appendix III Constituents																															
Analyte Name			Boron		Calcium		Chloride		Fluoride		pH		Sulfate		TDS		Appendix IV Constituents																			
																	Antimony		Arsenic		Barium		Beryllium		Cadmium		Chromium		Cobalt		Fluoride			
Units			mg/L		mg/L		mg/L		mg/L		S.U.		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L			
Downgradient Wells	EP-01	03/23/17	0.13		220.		54.		0.5	U	6.94		820.		2000.		0.0004	J	0.005	U	0.045		0.0002	U	0.005	U	0.005	U	0.0017	J	0.5	U		
		04/24/17	0.21		280.		54.		0.5	U	6.89		910.		2300.	H1	0.0002	U	0.005	U	0.04		0.0002	U	0.006		0.005	U	0.0008	J	0.5	U		
		05/25/17	0.28		310.		48.		0.5	U	6.55		850.		2300.		0.005	U	0.005	U	0.041		0.005	U	0.01	U	0.01	U	0.005	U	0.5	U		
		06/22/17	0.26		310.		50.		0.5	U	6.52		850.		2300.		0.0006	J	0.005	U	0.032		0.0002	U	0.01	U	0.01	U	0.0008	J	0.5	U		
		06/29/17	0.32		310.		50.		0.5	U	6.64		440.		2200.		0.001	J	0.005	U	0.033		0.0002	U	0.01	U	0.01	U	0.0006	J	0.5	U		
		07/24/17	0.21		270.		51.		0.5	U	6.57		540.		2200.		0.005	U	0.005	U	0.029		0.005	U	0.01	U	0.01	U	0.005	U	0.5	U		
		08/01/17	0.23		250.		48.		0.5	U	6.82		520.		2100.		0.0002	U	0.005	U	0.028		0.0002	U	0.01	U	0.01	U	0.0007	J	0.5	U		
		08/31/17	0.17		240.		48.		0.5	U	6.79		440.		2100.		0.005	U	0.005	U	0.026		0.005	U	0.01	U	0.01	U	0.005	U	0.5	U		
		03/22/18	0.38		330.		60.		0.5	U	6.25		510.		2400.																			
		08/27/18	0.92		410.		63.		0.5	U	6.36		1000.		2700.		0.012	U	0.3	U	0.023	U	0.008	U	0.01	U	0.01	U	0.01	U	0.05	U		
	EP-02	03/23/17	0.22		190.		42.		0.5	U	6.18		860.		1800.		0.0003	J	0.005	U	0.039		0.0002	U	0.005	U	0.005	U	0.052		0.5	U		
		04/24/17	0.19		170.		39.		0.5	U	6.39		660.		1800.	H1	0.0002	U	0.005	U	0.035		0.0002	U	0.005	U	0.005	U	0.029		0.5	U		
		05/25/17	0.2		200.		36.		0.5	U	6.31		780.		1900.		0.005	U	0.005	U	0.038		0.005	U	0.01	U	0.01	U	0.023		0.5	U		
		06/22/17	0.23		200.		37.		0.5	U	6.1		780.		1800.		0.0004	J	0.005	U	0.03		0.0002	U	0.01	U	0.01	U	0.016		0.5	U		
		06/29/17	0.29		470.		36.		0.5	U	5.75		470.		1900.		0.0007	J	0.005	U	0.029		0.0002	U	0.01	U	0.01	U	0.0087		0.5	U		
		07/24/17	0.26		200.		36.		0.5	U	5.86		430.		1800.		0.005	U	0.005	U	0.025		0.005	U	0.01	U	0.01	U	0.005	U	0.5	U		
		08/01/17	0.31		190.		36.		0.5	U	5.88		770.		1800.		0.0002	U	0.005	U	0.025		0.0002	U	0.01	U	0.01	U	0.0009	J	0.5	U		
		08/31/17	0.23		180.		36.		0.5	U	6.33		340.		1800.		0.005	U	0.005	U	0.025		0.005	U	0.01	U	0.01	U	0.005	U	0.5	U		
		03/22/18	0.24		230.		30.		0.5	U	6.27		420.		1700.																			
		08/27/18	0.2		190.		35.		0.5	U	6.28		740.		1800.		0.012	U	0.3	U	0.018		0.008	U	0.01	U	0.01	U	0.01	U	0.5	U		
	EP-03	03/23/17	0.11		34.		100.		0.5	U	5.99		120.		680.		0.0002	J	0.005	U	0.072		0.0002	U	0.005	U	0.005	U	0.11		0.5	U		
		04/24/17	0.089		29.		120.		0.5	U	5.96		180.		820.	H1	0.0002	U	0.0088		0.059		0.0002	U	0.005	U	0.005	U	0.12		0.5	U		
		05/25/17	0.081		45.		140.		0.5	U	6.03		190.		1400.		0.005	U	0.0076		0.059		0.005	U	0.01	U	0.01	U	0.091		0.5	U		
		06/22/17	0.057		93.		220.		0.5	U	6.08		300.		560.		0.0003	J	0.0061		0.061		0.0002	U	0.01	U	0.01	U	0.037		0.5	U		
		06/29/17	0.085		30.		66.		0.5	U	6.01		73.		570.		0.0009	J	0.005	U	0.065		0.0002	U	0.01	U	0.01	U	0.11		0.5	U		
		07/24/17	0.083		32.		110.		0.5	U	5.96		130.		720.		0.005	U	0.0093		0.064		0.005	U	0.01	U	0.01	U	0.12		0.5	U		
		08/01/17	0.09		34.		120.		0.5	U	6.02		140.		630.		0.0002	U	0.0062		0.057		0.0002	U	0.01	U	0.01	U	0.1		0.5	U		
		08/31/17	0.09		33.		110.		0.5	U	6.13		110.		1000.		0.005	U	0.0069		0.058		0.005	U	0.01	U	0.01	U	0.11		0.5	U		
		03/22/18	0.078		34.		110.		0.5	U	6.1		110.		700.																			
		08/27/18	0.082		38.		140.		0.5	U	6.1		150.		690.		0.012	U	0.3	U	0.064		0.008	U	0.01	U	0.01	U	0.088		0.5	U		
	EP-04	03/23/17	15.	D	190.		460.		0.5	U	5.51		620.		2300.		0.0003	J	0.035		0.035		0.0002	U	0.005	U	0.005	U	0.39		0.5	U		
		04/24/17	23.	D	170.		290.		0.5	U	5.88		530.		2300.	H1	0.0002	U	0.039		0.026		0.0002	U	0.0052		0.005	U	0.41		0.5	U		
		05/25/17	14.	D	170.		380.		0.5	U	5.77		660.		2400.		0.005	U	0.037		0.028		0.005	U	0.01	U	0.01	U	0.41		0.5	U		
		06/22/17	11.	D	150.		430.		0.5	U	5.8		730.		2000.		0.0003	J	0.053		0.029		0.0002	U	0.01	U	0.01	U	0.44		0.5	U		
		06/29/17	13.	D	190.		250.		0.5	U	5.81		410.		2100.		0.0005	J	0.044		0.037		0.0002	U	0.01	U	0.01	U	0.34		0.5	U		
		07/24/17	11.	D	160.		180.		0.5	U	5.8		290.		2300.		0.005	U	0.044		0.026		0.005	U	0.01	U	0.01	U	0.41		0.5	U		
		08/01/17	14.	D	150.		210.		0.5	U	5.8		330.		2200.		0.0002	U	0.035		0.031		0.0002	U	0.01	U	0.01	U	0.42		0.5	U		
		08/31/17	11.	D	150.		210.		0.5	U	5.85		340.		2300.		0.005	U	0.049		0.023		0.005	U	0.01	U	0.01	U	0.38		0.5	U		
		03/22/18	13.		200.		200.		0.5	U	6.04		320.		2100.																			
		08/27/18	11.		150.		310.		0.5	U	5.85		520.		1900.		0.012	U	0.3	U	0.023		0.008	U	0.01	U	0.011		0.31		0.5	U		
Upgradient Wells	EBG	03/23/17	0.12		23.		55.		0.5	U	6.5		64.		480.		0.0006	J	0.005	U	0.13		0.0003	J	0.005	U	0.006	U	0.008		0.5	U		
		04/24/17	0.079		10.		11.		0.5	U	6.8		54.		400.	H1	0.0009	J	0.005	U	0.029		0.0002	U	0.005	U	0.005	U	0.0002	J	0.5	U		
		05/25/17	0.1		30.		84.		0.5	U	6.41		42.		440.		0.005	U	0.005	U	0.17		0.005	U	0.01	U	0.01	U	0.014		0.5	U		
		06/22/17	0.071		23.		68.		0.5	U	6.45		57.		470.		0.0007	J	0.005	U	0.049		0.0002	U	0.01	U	0.01	U	0.0002	J	0.5	U		
		06/29/17	0.073		32.		79.		0.5	U	6.53		50.		280.		0.0014	J	0.005	U	0.086		0.0002	U	0.01	U	0.01	U	0.0014	J	0.5	U		
		07/24/17	0.079		37.		27.	M2	0.64	M1	6.59		61.	M2	420.		0.005	U	0.005	U	0.19		0.005	U	0.01	U	0.01	U	0.0093		0.64	M1		
		08/01/17	0.074		35.	M3	86.		0.5	U	6.66		45.		380.		0.0002	J	0.005	U	0.18		0.0002	U	0.01	U	0.01	U	0.0038	J	0.5	U		
		08/31/17	0.056		35.		82.		0.5	U	6.26		44.		470.		0.005	U	0.005	U	0.16		0.005	U	0.01	U	0.01	U	0.0073		0.5	U		
		03/22/18	0.033		14.		12.		0.53		6.35		63.		300.																			
		08/27/18	0.035		15.		16.		0.55		6.57		72.		360.		0.012	U	0.3	U	0.091		0.008	U	0.01	U	0.01	U	0.01	U	0.5	U		
GPS Upper Limit			**0.1216**		**46.304**		**118.631**		**0.64**		**6.94**		**68.6063**		**550.253**		**0.005**		**0.005**		**0.2491**		**0.005**		**0.01**		**0.01**		**0.0191**		**0.64**			
GPS Lower Limit											**6.11**																							

TABLE A-1. Analytical Data for Emery Pond (2017-2018)

Appendix IV Constituents																				
Lead		Lithium		Mercury		Molybdenum		Selenium		Thallium		Radium 226* (pCi/L)			Radium 228* (pCi/L)			Radium 226+228 (pCi/L)		
mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		Result	Uncertainty		Result	Uncertainty		Result	Uncertainty	
0.005	U	0.024	J	0.0002	U	0.0028	J	0.0012	J	0.025	U	0.603	±0.277		0.0552	±0.431	U	0.6582	±0.708	U
0.005	U	0.028	J	0.0002	U	0.0016	J	0.0014	J	0.025	U	0.223	±0.196		0.496	±0.298		0.719	±0.494	
0.01	U	0.1	U	0.0002	U	0.005	U	0.005	U	0.025	U	0.805	±0.22		0.555	±0.448		1.36	±0.668	
0.01	U	0.032	J	0.0002	U	0.0008	J	0.005	J	0.05	U	0.313	±0.176		0.496	±0.245		0.809	±0.421	
0.01	U	0.029	J	0.0002	U	0.0018	J	0.0025	J	0.05	U	0.139	±0.129		0.0387	±0.323	U	0.1777	±0.452	U
0.01	U	0.1	U	0.0002	U	0.005	U	0.005	U	0.05	U	0.16			-0.27			-0.11		
0.01	U	0.024	J	0.0002	U	0.0019	J	0.0011	J	0.05	U	0.38			1.04			1.42		
0.01	U	0.1	U	0.0002	U	0.005	U	0.005	U	0.05	U	0.24			1.15			1.39		
0.01	U	0.1	U	0.0002	U	0.005	U	0.002	U	0.05	U	0.453	±0.384		0.992	±0.899		1.445	±1.283	
0.005	U	0.018	J	0.0002	U	0.0015	J	0.0038	J	0.025	U	0.187	±0.259	U	0.853	±0.396		1.04	±0.655	
0.005	U	0.015	J	0.0002	U	0.0017	J	0.0027	J	0.025	U	0.341	±0.194		0.55	±0.298		0.891	±0.492	
0.01	U	0.1	U	0.0002	U	0.005	U	0.005	U	0.05	U	0.37	±0.15		0.609	±0.224		0.979	±0.374	
0.01	U	0.02	JU	0.0002	U	0.0003	J	0.0074		0.05	U	0.197	±0.142		-0.127	±0.359	U	0.07	±0.501	U
0.01	U	0.025	J	0.0002	U	0.0006	J	0.0061		0.05	U	1.9	±0.416		0.458	±0.303		2.358	±0.719	
0.01	U	0.1	U	0.0002	U	0.005	U	0.0054		0.05	U	0.08			0.4			0.48		
0.01	U	0.021	J	0.0002	U	0.0008	J	0.0046	J	0.05	U	0.14			1.35			1.49		
0.01	U	0.1	U	0.0002	U	0.005	U	0.005	U	0.05	U	0.08			0.64			0.72		
0.01	U	0.1	U	0.0002	U	0.005	U	0.002	U	0.05	U	0.	±0.3	U	0.443	±0.322		0.443	±0.622	U
0.005	U	0.003	U	0.0002	U	0.0004	J	0.013		0.025	U	1.64	±0.517		0.438	±0.471	U	2.078	±0.988	
0.0056	U	0.0095	J	0.0002	U	0.0005	J	0.011		0.025	U	0.338	±0.285		0.0622	±0.587	U	0.4002	±0.872	U
0.01	U	0.1	U	0.0002	U	0.005	U	0.016		0.05	U	0.177	±0.327	U	0.126	±0.485	U	0.303	±0.812	U
0.01	U	0.12		0.0002	U	0.0002	U	0.028		0.05	U	0.355	±0.178		0.42	±0.259		0.775	±0.437	
0.01	U	0.012	J	0.0002	U	0.0002	U	0.013		0.05	U	0.317	±0.178		0.397	±0.364		0.714	±0.542	
0.01	U	0.1	U	0.0002	U	0.005	U	0.016		0.05	U	0.19			0.77			0.96		
0.01	U	0.028	j	0.0002	U	0.0005	J	0.012		0.05	U	0.46			2.42			2.88		
0.01	U	0.1	U	0.0002	U	0.005	U	0.022		0.05	U	0.41			0.77			1.18		
0.01	U	0.1	U	0.0002	U	0.005	U	0.002	U	0.05	U	0.679	±0.682	U	0.717	±0.403		1.396	±1.085	
0.009		0.0044	J	0.0002	U	0.0009	J	0.13		0.025	U	1.1	±0.489		0.442	±0.442		1.542	±0.931	
0.013		0.0062	J	0.0002	U	0.0011	J	0.12		0.065		0.715	±0.399		1.92	±0.406		2.635	±0.805	
0.011		0.1	U	0.0002	U	0.005	U	0.13		0.092		1.	±0.142		0.633	±0.36		1.633	±0.502	
0.017		0.0047	J	0.0002	U	0.0002	U	0.2		0.094		0.18	±0.13		0.897	±0.354		1.077	±0.484	
0.01	U	0.0063	J	0.0002	U	0.0006	J	0.13		0.058		0.219	±0.172		0.49	±0.32		0.709	±0.492	
0.011		0.1	U	0.0002	U	0.005	U	0.13		0.3		0.3			0.44			0.74		
0.012		0.0053	J	0.0002	U	0.001	J	0.11		0.075		0.15			0.96			1.11		
0.012		0.1	U	0.0002	U	0.005	U	0.16		0.075		0.33			2.14			2.47		
0.015		0.1	U	0.0002	U	0.005	U	0.021		0.14		0.262	±0.364	U	0.79	±0.384		1.052	±0.748	
0.005	U	0.0046	J	0.0002	U	0.0034	J	0.0019	J	0.025	U	0.878	±0.42		1.06	±0.33		1.938	±0.75	
0.005	U	0.0074	J	0.0002	U	0.0043	J	0.0005	U	0.025	U	1.17	±0.205		0.353	±0.416	U	1.523	±0.621	
0.01	U	0.1	U	0.0002	U	0.005	U	0.005	U	0.05	U	0.0457	±0.278	U	0.864	±0.289		0.9097	±0.567	
0.01	U	0.028	J	0.0002	U	0.0017	J	0.0036	J	0.05	U	0.262	±0.189		0.0695	±0.21	U	0.3315	±0.399	U
0.01	U	0.059	J	0.0002	U	0.0016	J	0.0019	J	0.05	U	0.245	±0.199		0.371	±0.289		0.616	±0.488	
0.01	U	0.1	U	0.0002	U	0.005	U	0.005	U	0.05	U	0.43			0.98			1.41		
0.01	U	0.082	J	0.0002	U	0.0024	J	0.0028	J	0.05	U	0.28			1.24			1.52		
0.01	U	0.1	U	0.0002	U	0.005	U	0.007		0.05	U	0.77			2.22			2.99		
0.01	U	0.1	U	0.0002	U	0.005	U	0.002	U	0.05	U	0.933	±0.543		0.447	±0.378		1.38	±0.921	
0.01		**0.1**		**0.0002**		**0.005**		**0.007**		**0.05**		**1.2076**			**2.7454**			**4.0038**		

Statistically significant increase (SSI) over baseline sampling using well specific and parameter specific statistical limits.

TDS = Total Dissolved Solids
NA = Not Analyzed
mg/L = milligrams per liter
S.U. = Standard Units
pCi/L = picoCurie/liter
D = Dilution
J = The analyte was positively identified, but the quanitation was 'below The RL.
U = analyte analyzed for but not detected
* = "U" flag for radionuclides is not detected above the minimum detectable concentration which differs from similar flag for aqueous results.
M1 = Matrix Spike recovery outside Control Limits due to sample matrix interference; biased high.
M2 = Matrix Spike recovery outside Control Limits due to sample Matrix interference; biased low
M3 = Analyte in the parent sample for the Matrix Spike was >4x the concentration of the spike solution which renders the spike amount insignificant. Matrix spike recoveries do not impact the quality of the parent sample data for this analyte.
H1 = Sample received outside of holding time for these analyses.

TABLE A-2. Extent of Contamination Study Results (2019)

PARAMETER NAME	UNITS	Class II Std	No. of Exceedances	EBG	EP-3	DP1a	DP1b	DP1c	DP1d	DP1e	EP-2	DP2a	DP2b	DP2c	DP2d	DP2e
Conductivity	µmhos/cm							3420.	1560.	4080.			3230.	2560.	1750.	1760.
pH	SU	6.5 - 9.0	9	6.85	6.11			6.28	6.16	7.74	6.62		6.92	7.06	6.61	6.94
Temperature	°C			8.9	17.2			11.8	8.9	5.6	13.5		13.3	12.8	13.3	12.2
Alkalinity, Bicarbonate, total	mg/L			160.	400.			350.	410.	9500.	140.		440.	470.	1300.	1620.
Alkalinity, Carbonate, total	mg/L			<5.	<5.			0.	0.	0.	<5.		0.	0.	0.	0.
Antimony, total	mg/L	0.024	0	<0.001	<0.001			<0.002	0.001	0.0008	<0.001		0.0011	<0.004	0.0008	0.001
Arsenic, total	mg/L	0.2	5	<0.0012	0.0068			0.163	0.28	0.0884	<0.001		0.0325	0.0941	0.012	0.0546
Barium, total	mg/L	2.	11	0.064	0.036			5.5	5.86	2.05	<0.01		0.316	2.9	0.276	0.78
Beryllium, total	mg/L	0.5	0	<0.0004	<0.001			0.0265	0.0345	0.0258	<0.001		0.0027	0.0245	0.001	0.0049
Boron, total	mg/L	2.	10	0.041	<0.1			5.16	0.404	7.29	0.35		0.157	<0.04	0.0627	0.013
Cadmium, total	mg/L	0.05	3	<0.01	<0.01			0.0032	0.0125	0.545	<0.01		0.0012	0.0012	0.0016	0.0007
Calcium, total	mg/L			13.	62.			892.	433.	16700.	280.		480.	343.	271.	285.
Chloride, total	mg/L	200.	14	12.	160.			368.	281.	454.	25.		54.	62.	62.	77.
Chromium, total	mg/L	1.	4	<0.01	<0.01			0.785	1.11	<0.015	<0.01		0.0839	0.606	0.0232	0.168
Cobalt, total	mg/L	1.	2	<0.0038	0.063			0.56	0.668	1.1	0.0005		0.131	0.225	0.0927	0.0806
Copper, total	mg/L	0.65	6	<0.0045	0.0012			0.552	0.936	2.32	0.0007		0.0541	0.341	0.0269	0.0714
Cyanide, total	mg/L	0.6	0	<0.005	<0.005			<0.005	<0.005	<0.005	<0.005		<0.005	<0.005	<0.005	<0.005
Fluoride, total	mg/L	4.	1	<0.5	<0.5			0.23	0.1	1.02	<0.5		0.49	0.3	0.49	0.26
Iron, total	mg/L	5.	25	4.4	57.			946.	1370.	592.	0.15		81.6	583.	24.3	177.
Lead, total	mg/L	0.1	15	<0.01	<0.01			0.632	0.949	3.28	<0.01		0.053	0.29	0.0239	0.0979
Magnesium, total	mg/L			6.1	54.			224.	159.	1860.	96.		195.	149.	64.6	77.
Manganese, total	mg/L	10.	16	0.65	8.			26.7	53.4	71.	0.064		12.3	10.3	6.83	6.02
Mercury, total	mg/L	0.01	2	<0.0002	<0.0002			0.0012	0.0015	0.0184	<0.0002		0.0001	0.0009	<0.0002	0.0001
Nickel, total	mg/L	2.	2	<0.0049	0.016			0.617	0.747	2.04	0.0061		0.201	0.367	0.115	0.115
Nitrogen, Nitrate, total	mg/L	100.	0	0.68	<0.11			0.084	0.052	0.551	1.		0.154	0.065	0.036	0.039
Potassium, total	mg/L			6.2	3.3			25.1	37.6	75.7	4.5		7.92	17.6	3.86	8.59
Selenium, total	mg/L	0.05	5	<0.0068	0.0007			<0.04	<0.004	<0.02	0.006		0.0012	<0.01	0.0006	<0.001
Silver, total	mg/L		0	<0.001	<0.001			<0.014	<0.014	<0.035	<0.001		<0.007	<0.014	<0.007	<0.007
Sodium, total	mg/L			100.	190.			122.	73.	262.	120.		142.	269.	95.6	195.
Sulfate, total	mg/L	400.	21	74.	220.			1250.	296.	1640.	1100.		1370.	732.	478.	379.
Thallium, total	mg/L	0.02	3	<0.05	<0.05			0.0049	0.0062	0.0441	<0.05		<0.002	<0.008	<0.002	0.001
Total Dissolved Solids (TDS)	mg/L	1200.	22	350.	1300.			2590.	1040.	3400.	1900.		2810.	1880.	1260.	1160.
Vanadium, total	mg/L	0.1	20	<0.0079	0.0012			1.1	1.52	<0.01	0.0011		0.111	0.822	0.0398	0.211
Zinc, total	mg/L	5.	3	<0.021	0.011			1.52	2.45	27.3	0.0049		0.298	0.882	0.195	0.214

CCR (Appendix III or IV) parameter =	*Lead, total*
Upgradient monitoring well =	EBG
Downgradient monitoring well =	EP-3
Extent investigation boring =	DP2c
Concentration exceeds Class II Std. =	65.
Insuficient water to sample =	

Some CCR parameters (Lithium, Molybdenum, & Radium 226/228) do not have Class II GW Standards

TABLE A-2. Extent of Contamination Study Results (2019)

PARAMETER NAME	UNITS	Class II Std	No. of Exceedances	DP2f	DP2g	DP2h	EP-1	DP3a	DP3b	DP3c	DP3d	DP4a	DP4b	DP4c	DP4d	DP5a
Conductivity	µmhos/cm			1630.	869.	733.		1980.	3320.	3060.	672.				512.	8540.
pH	SU	6.5 - 9.0	9	7.06	6.41	6.03	6.33	7.23	7.11	7.21	7.38				7.07	12.5
Temperature	°C			12.8	12.5	12.2	13.9	10.7	12.1	12.9	10.7				8.8	13.8
Alkalinity, Bicarbonate, total	mg/L			690.	120.	120.	240.	560.	480.	470.	70.				50.	n/a
Alkalinity, Carbonate, total	mg/L			0.	0.	0.	<5.	0.	0.	0.	0.				0.	840.
Antimony, total	mg/L	0.024	0	0.0009	0.0049	<0.004	<0.005	<0.002	<0.004	0.0008	0.0006				0.0009	0.0027
Arsenic, total	mg/L	0.2	5	0.11	0.07	0.0681	<0.005	0.0989	0.0882	0.0281	0.0355				0.043	0.0214
Barium, total	mg/L	2.	11	4.87	1.68	3.41	<0.01	2.2	2.83	0.641	0.589				0.91	0.288
Beryllium, total	mg/L	0.5	0	0.006	0.0082	0.0207	<0.005	0.0128	0.018	0.0023	0.0036				0.0043	0.003
Boron, total	mg/L	2.	10	<0.02	0.014	<0.04	0.73	0.054	<0.04	<0.02	<0.02				0.0324	0.854
Cadmium, total	mg/L	0.05	3	0.0024	<0.002	0.0025	<0.01	0.0019	0.0023	0.0008	<0.002				0.0005	0.0031
Calcium, total	mg/L			97.1	96.9	86.1	390.	376.	446.	209.	34.2				67.2	1360.
Chloride, total	mg/L	200.	14	148.	48.	31.	70.	224.	150.	226.	7.				4.	848.
Chromium, total	mg/L	1.	4	0.155	0.274	0.574	<0.01	0.395	0.473	0.0754	0.138				0.108	0.0345
Cobalt, total	mg/L	1.	2	0.127	0.321	0.466	0.0004	0.136	0.225	0.0454	0.0594				0.0587	0.0089
Copper, total	mg/L	0.65	6	0.0901	0.208	0.604	0.0009	0.246	0.31	0.0369	0.0657				0.0982	0.0455
Cyanide, total	mg/L	0.6	0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				<0.005	<0.005
Fluoride, total	mg/L	4.	1	0.38	0.44	0.14	<0.5	0.58	0.32	0.23	0.18				0.18	0.05
Iron, total	mg/L	5.	25	253.	329.	546.	0.44	389.	519.	84.7	122.				128.	18.
Lead, total	mg/L	0.1	15	0.0956	0.157	0.414	<0.01	0.183	0.289	0.037	0.0593				0.0621	0.0676
Magnesium, total	mg/L			45.2	54.4	85.2	160.	129.	177.	90.3	24.2				40.3	5.16
Manganese, total	mg/L	10.	16	37.7	23.8	33.8	0.035	8.44	13.7	4.38	1.79				2.61	0.312
Mercury, total	mg/L	0.01	2	0.0001	0.0006	0.0017	<0.0002	0.0007	0.0008	0.0001	0.0002				0.0002	0.0007
Nickel, total	mg/L	2.	2	0.225	0.236	0.449	0.0066	0.329	0.404	0.0728	0.0931				0.127	0.0415
Nitrogen, Nitrate, total	mg/L	100.	0	0.035	0.023	0.059	<0.11	0.112	0.079	0.068	1.1				0.113	0.341
Potassium, total	mg/L			5.93	18.9	17.6	4.6	11.6	15.2	4.95	4.5				6.13	545.
Selenium, total	mg/L	0.05	5	<0.001	<0.001	0.0027	<0.005	<0.01	<0.01	0.0023	0.0083				<0.001	0.0762
Silver, total	mg/L		0	<0.007	<0.007	<0.007	<0.001	<0.007	<0.007	<0.007	<0.007				<0.007	<0.007
Sodium, total	mg/L			303.	85.4	61.1	180.	234.	322.	331.	104.				26.3	211.
Sulfate, total	mg/L	400.	21	167.	222.	213.	1600.	724.	1270.	651.	254.				234.	1270.
Thallium, total	mg/L	0.02	3	0.0015	0.0013	0.0057	<0.05	0.0021	0.0033	<0.002	<0.002				0.0017	0.0023
Total Dissolved Solids (TDS)	mg/L	1200.	22	1030.	555.	500.	2800.	1230.	2520.	2140.	470.				365.	4520.
Vanadium, total	mg/L	0.1	20	0.31	0.397	0.727	<0.025	0.415	0.602	0.0902	0.166				0.175	0.178
Zinc, total	mg/L	5.	3	0.26	0.504	1.18	<0.01	0.682	0.896	0.117	0.195				0.503	0.196

CCR (Appendix III or IV) parameter =	*Lead, total*
Upgradient monitoring well =	EBG
Downgradient monitoring well =	EP-3
Extent investigation boring =	DP2c
Concentration exceeds Class II Std. =	65.
Insuficient water to sample =	

Some CCR parameters (Lithium, Molybdenum, & Radium 226/228) do not have Class II GW Standards

TABLE A-2. Extent of Contamination Study Results (2019)

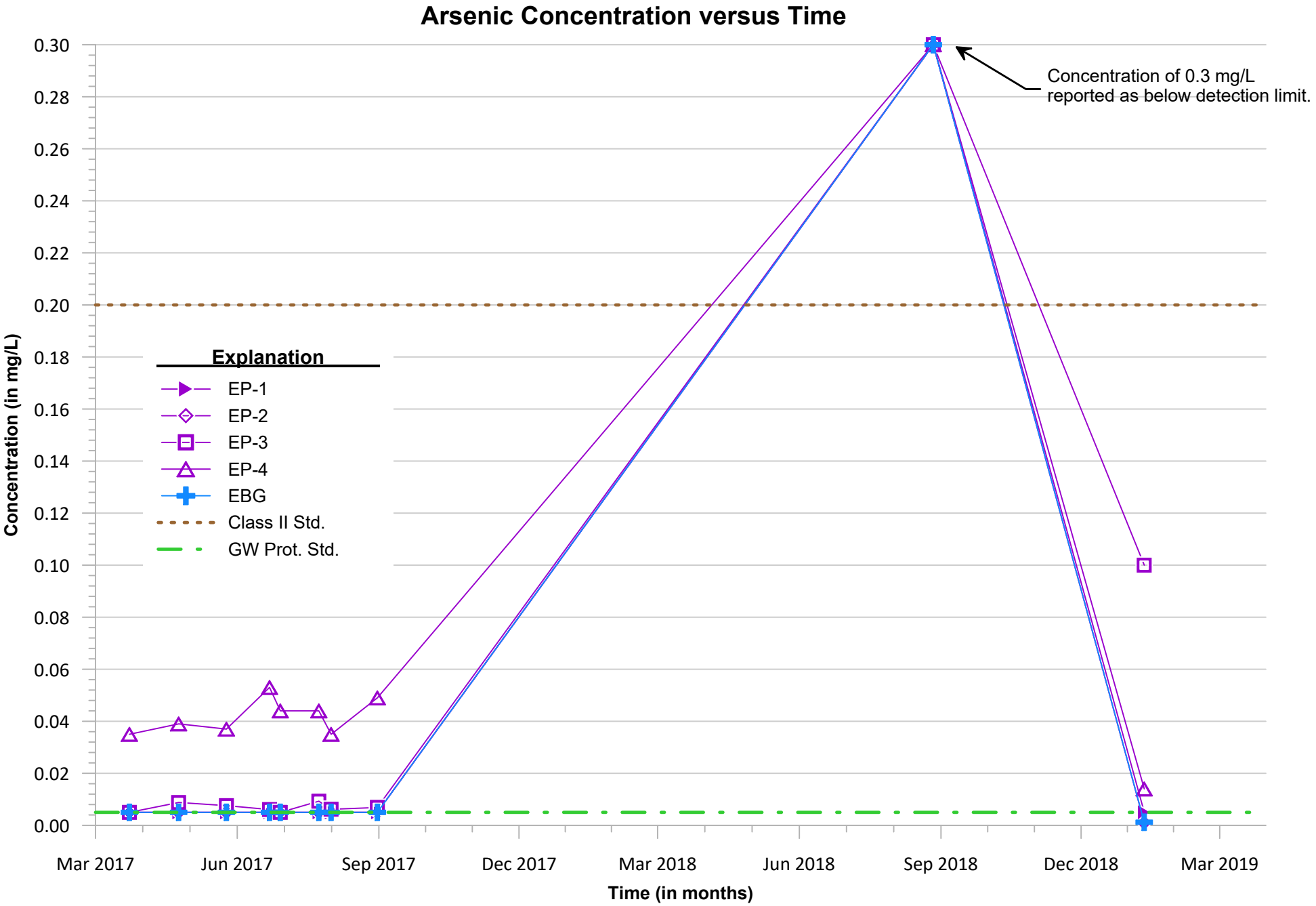
PARAMETER NAME	UNITS	Class II Std	No. of Exceedances	DP5b	DP6a	DP6b	DP6c	EP-4	DP7a	DP7b	DP7c	DP7d	Emery Pond	Gypsum
Conductivity	µmhos/cm			6020.	5160.		3380.		4000.	3580.	3210.	2470.	9630.	
pH	SU	6.5 - 9.0	9	10.6	6.48		7.11	6.07	6.51	6.61	6.44	6.66	7.77	
Temperature	°C			9.9	6.3		5.8	16.	9.7	7.6	9.8	8.9	17.3	
Alkalinity, Bicarbonate, total	mg/L			1260.	1320.		72700.	110.	294.	750.	500.	754.	100.	16.
Alkalinity, Carbonate, total	mg/L			200.	0.		0.	<5.	0.	0.	0.	0.	0.	0.
Antimony, total	mg/L	0.024	0	0.0096	<0.01		0.0018	<0.005	<0.004	<0.01	<0.002	<0.01	0.0007	<0.001
Arsenic, total	mg/L	0.2	5	0.181	0.359		0.188	0.014	1.1	1.64	0.339	0.14	0.0025	<0.01
Barium, total	mg/L	2.	11	1.32	3.22		1.48	0.024	1.49	1.59	2.84	2.46	0.121	0.0111
Beryllium, total	mg/L	0.5	0	0.019	0.083		0.0091	<0.005	0.037	0.06	0.0171	0.0226	<0.0005	<0.0005
Boron, total	mg/L	2.	10	4.88	14.		8.09	12.	3.38	3.38	6.9	0.06	72.7	0.498
Cadmium, total	mg/L	0.05	3	0.018	0.127		0.0147	<0.01	0.0565	0.044	0.0053	0.0005	0.019	<0.002
Calcium, total	mg/L			2820.	1850.		6180.	140.	2000.	2870.	505.	331.	899.	629.
Chloride, total	mg/L	200.	14	1210.	980.		309.	420.	380.	371.	495.	129.	2190.	15.
Chromium, total	mg/L	1.	4	0.328	1.52		0.702	<0.01	1.39	1.95	0.457	0.681	0.0075	0.0149
Cobalt, total	mg/L	1.	2	0.0895	3.87		0.173	0.39	0.421	0.658	0.547	0.281	0.0149	<0.005
Copper, total	mg/L	0.65	6	0.325	1.43		1.1	0.0016	2.12	3.27	0.48	0.292	0.0077	<0.005
Cyanide, total	mg/L	0.6	0	<0.005	<0.005		<0.025	<0.005	<0.005	0.003	0.004	<0.005	0.183	<0.005
Fluoride, total	mg/L	4.	1	0.15	0.21		2.26	<0.5	1.26	0.3	0.14	0.43	17.1	1.67
Iron, total	mg/L	5.	25	177.	1780.		332.	230.	1570.	2660.	824.	780.	0.899	0.0719
Lead, total	mg/L	0.1	15	0.527	1.87		0.375	<0.01	2.47	5.17	0.583	0.319	0.0026	<0.0075
Magnesium, total	mg/L			42.1	470.		495.	120.	322.	499.	211.	114.	673.	4.45
Manganese, total	mg/L	10.	16	2.85	112.		11.8	77.	30.7	53.4	45.1	12.3	4.56	0.0444
Mercury, total	mg/L	0.01	2	0.0129	0.0078		0.0014	<0.0002	0.0099	0.0069	0.0006	0.0005	0.0004	<0.0002
Nickel, total	mg/L	2.	2	0.348	2.23		0.513	0.056	1.45	1.45	0.476	0.39	0.118	0.01
Nitrogen, Nitrate, total	mg/L	100.	0	0.235	0.336		0.334	<0.11	0.122	0.033	0.185	<0.05	4.86	<0.05
Potassium, total	mg/L			488.	61.5		20.4	2.7	51.9	66.2	18.	15.	8.66	0.11
Selenium, total	mg/L	0.05	5	0.137	0.0288		0.0347	<0.005	0.407	0.304	<0.002	0.0083	0.082	0.0462
Silver, total	mg/L		0	<0.007	<0.07		<0.035	<0.001	<0.014	<0.035	<0.014	<0.007	<0.007	<0.007
Sodium, total	mg/L			158.	136.		189.	110.	149.	169.	134.	218.	408.	2.68
Sulfate, total	mg/L	400.	21	1200.	1640.		1680.	740.	1790.	1590.	1040.	485.	2000.	1350.
Thallium, total	mg/L	0.02	3	0.0089	0.0251		0.0032	0.097	0.0059	<0.02	0.0044	<0.004	0.002	<0.002
Total Dissolved Solids (TDS)	mg/L	1200.	22	4080.	3700.		3220.	2000.	3240.	2900.	2450.	1640.	6540.	2140.
Vanadium, total	mg/L	0.1	20	1.01	2.47		0.508	<0.025	1.59	2.34	0.761	0.659	0.0161	<0.01
Zinc, total	mg/L	5.	3	1.69	4.88		2.79	0.02	6.06	7.75	1.72	0.913	0.215	<0.01

CCR (Appendix III or IV) parameter =	*Lead, total*
Upgradient monitoring well =	EBG
Downgradient monitoring well =	EP-3
Extent investigation boring =	DP2c
Concentration exceeds Class II Std. =	65.
Insuficient water to sample =	

Some CCR parameters (Lithium, Molybdenum, & Radium 226/228) do not have Class II GW Standards

Appendix B

Graphical Groundwater Monitoring Results



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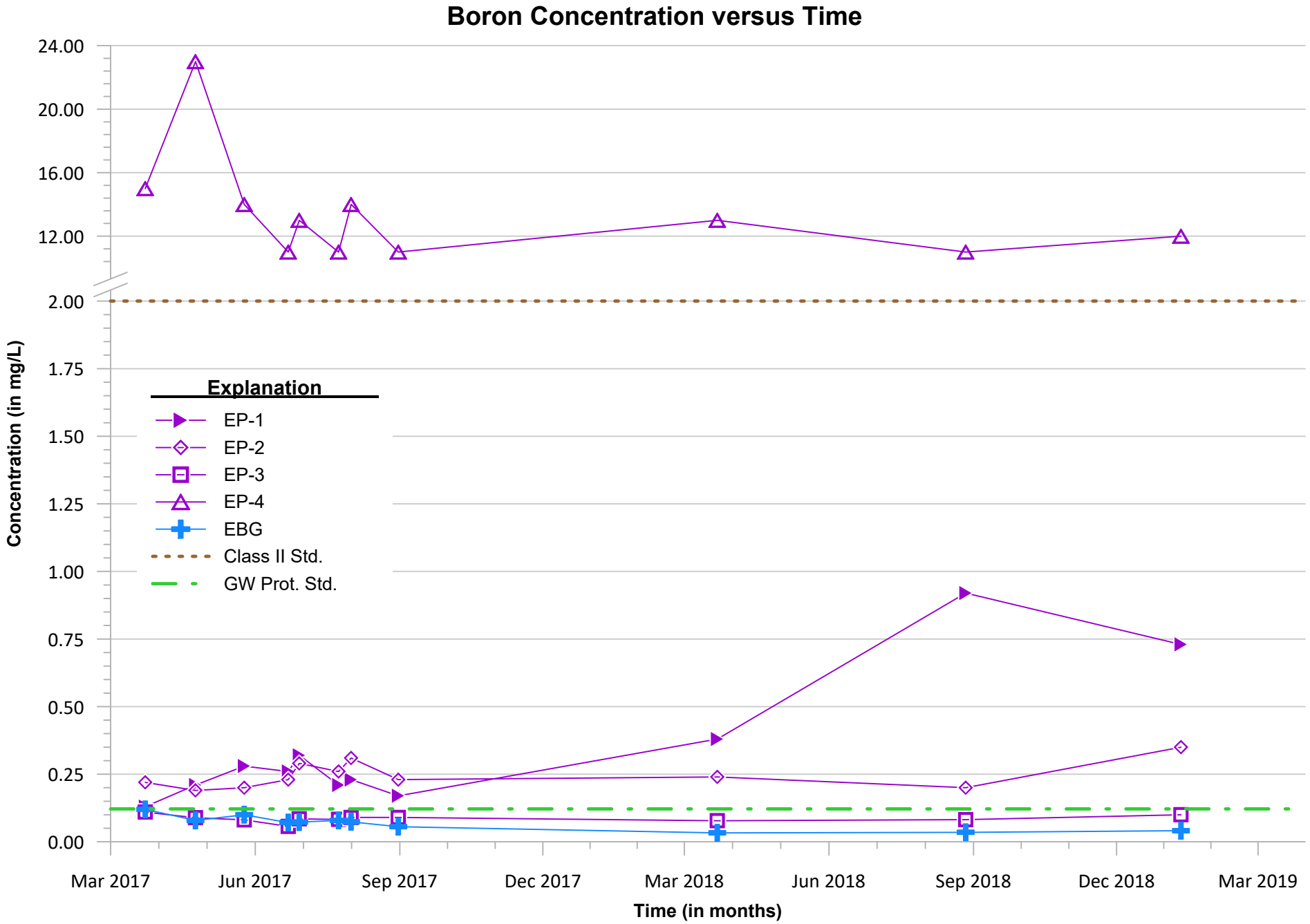

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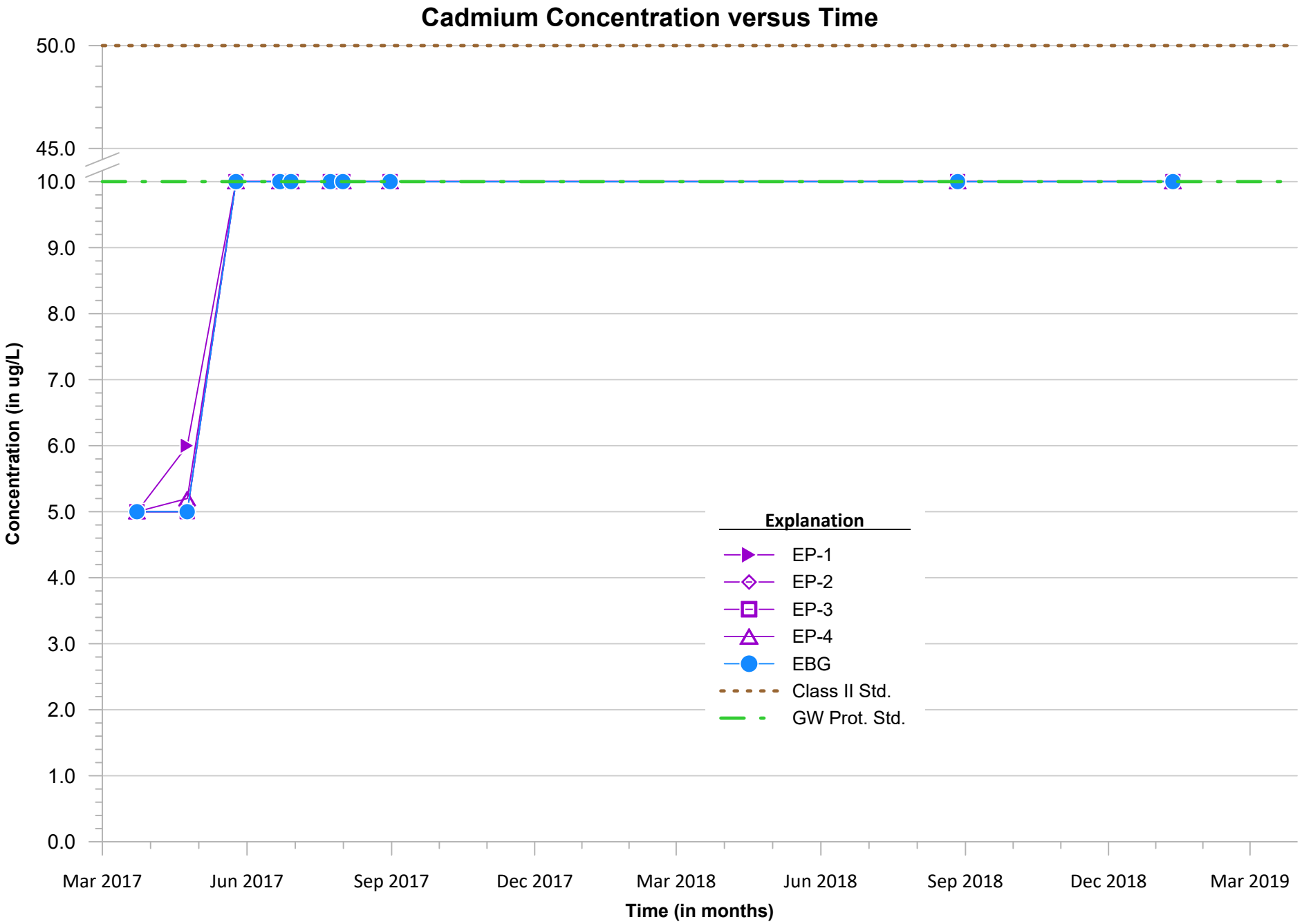

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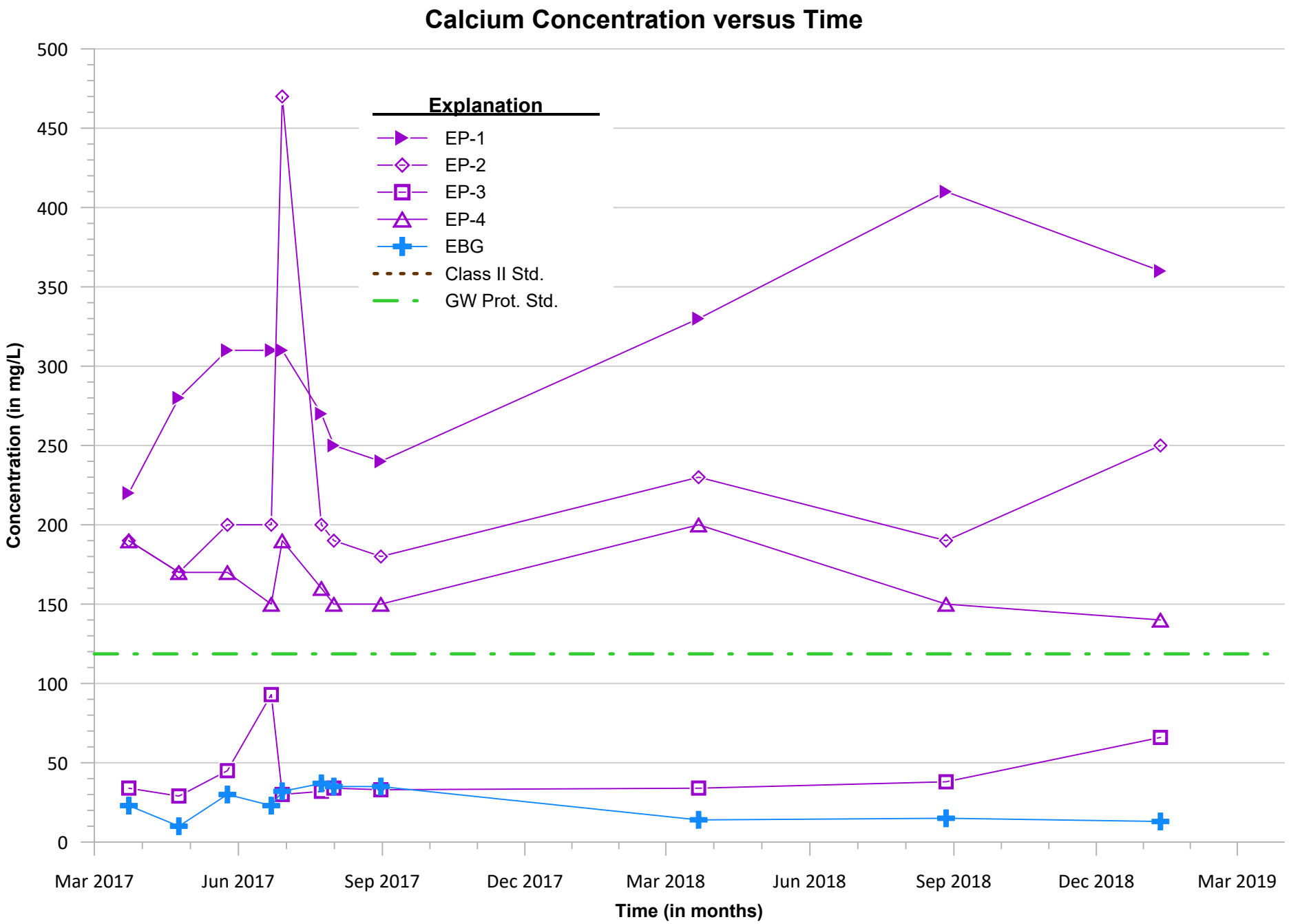
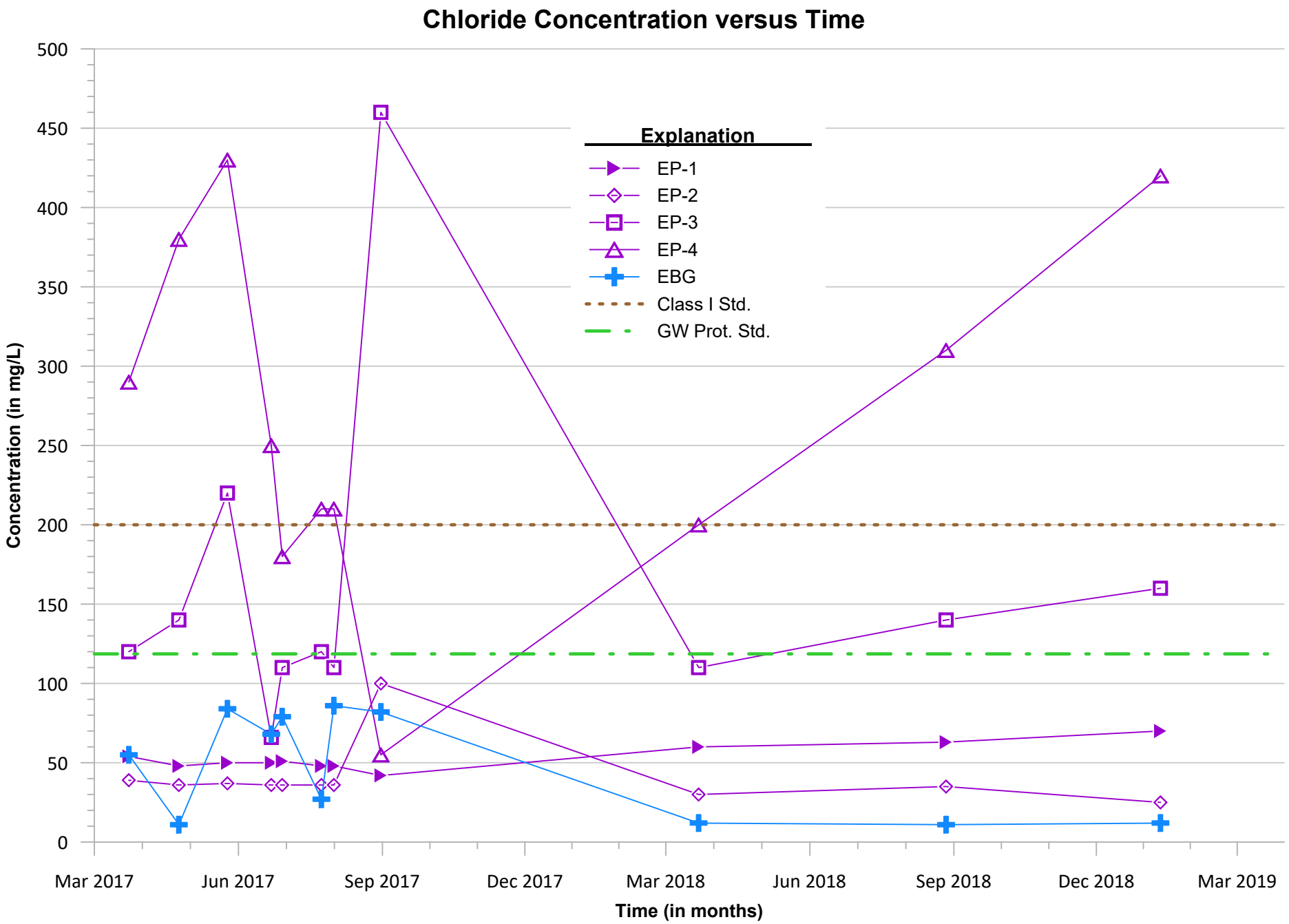

Calcium Concentration versus Time
Explanation
EP-1
EP-2
EP-3
EP-4
EBG
Class II Std.
GW Prot. Std.
Concentration (in mg/L)
500
450
400
350
300
250
200
150
100
50
0
Mar 2017
Jun 2017
Sep 2017
Dec 2017
Mar 2018
Jun 2018
Sep 2018
Dec 2018
Mar 2019
Time (in months)



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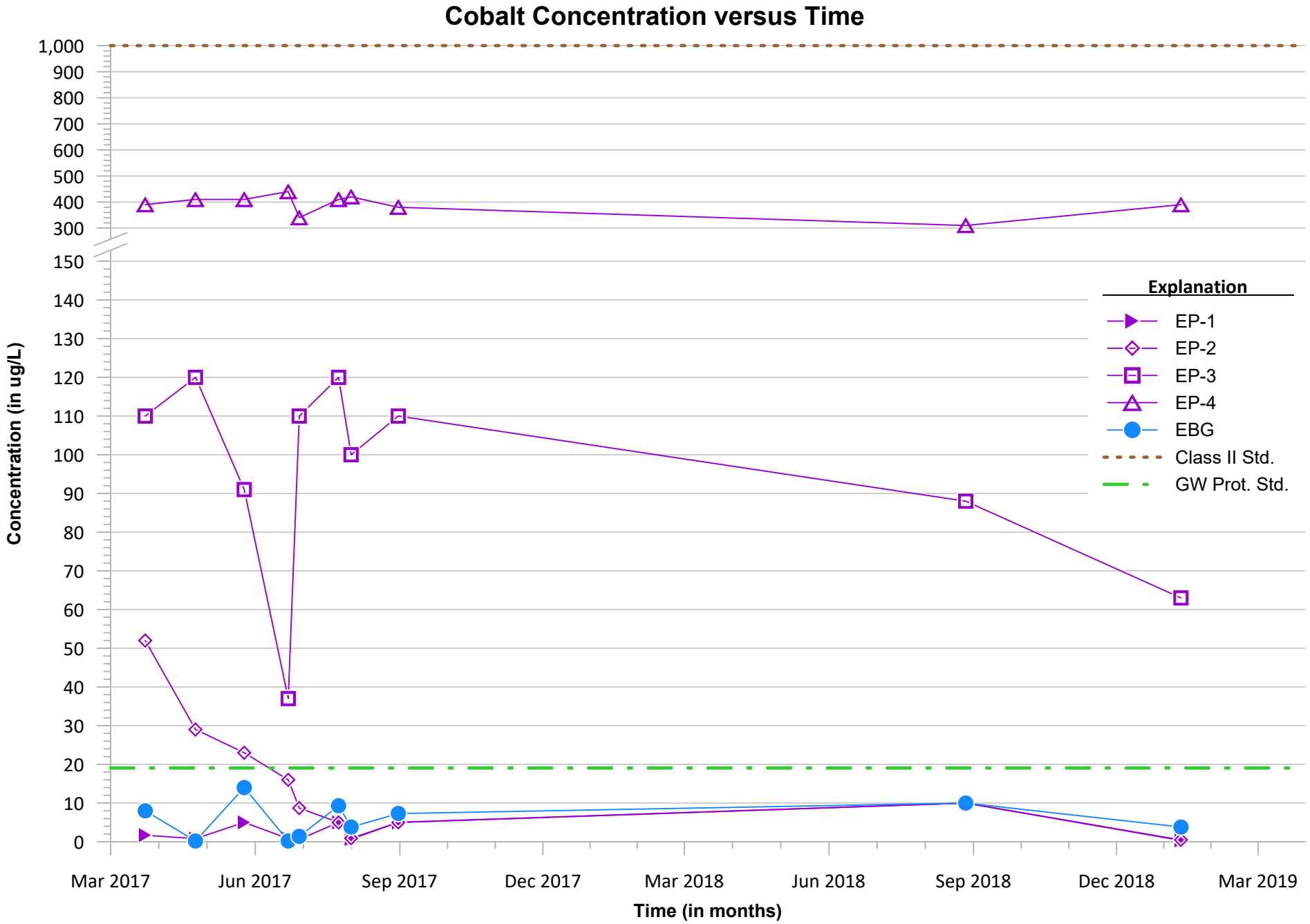

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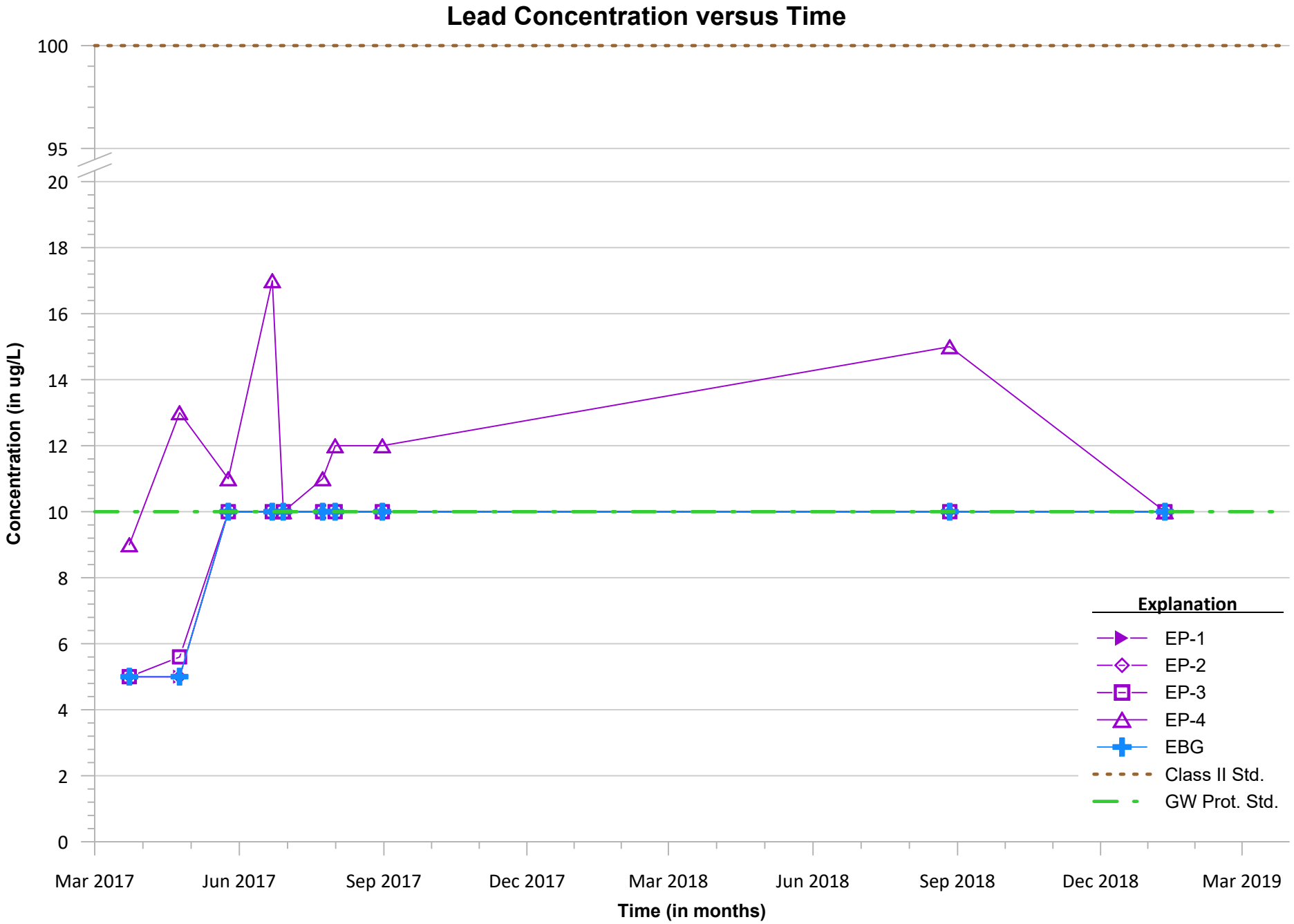

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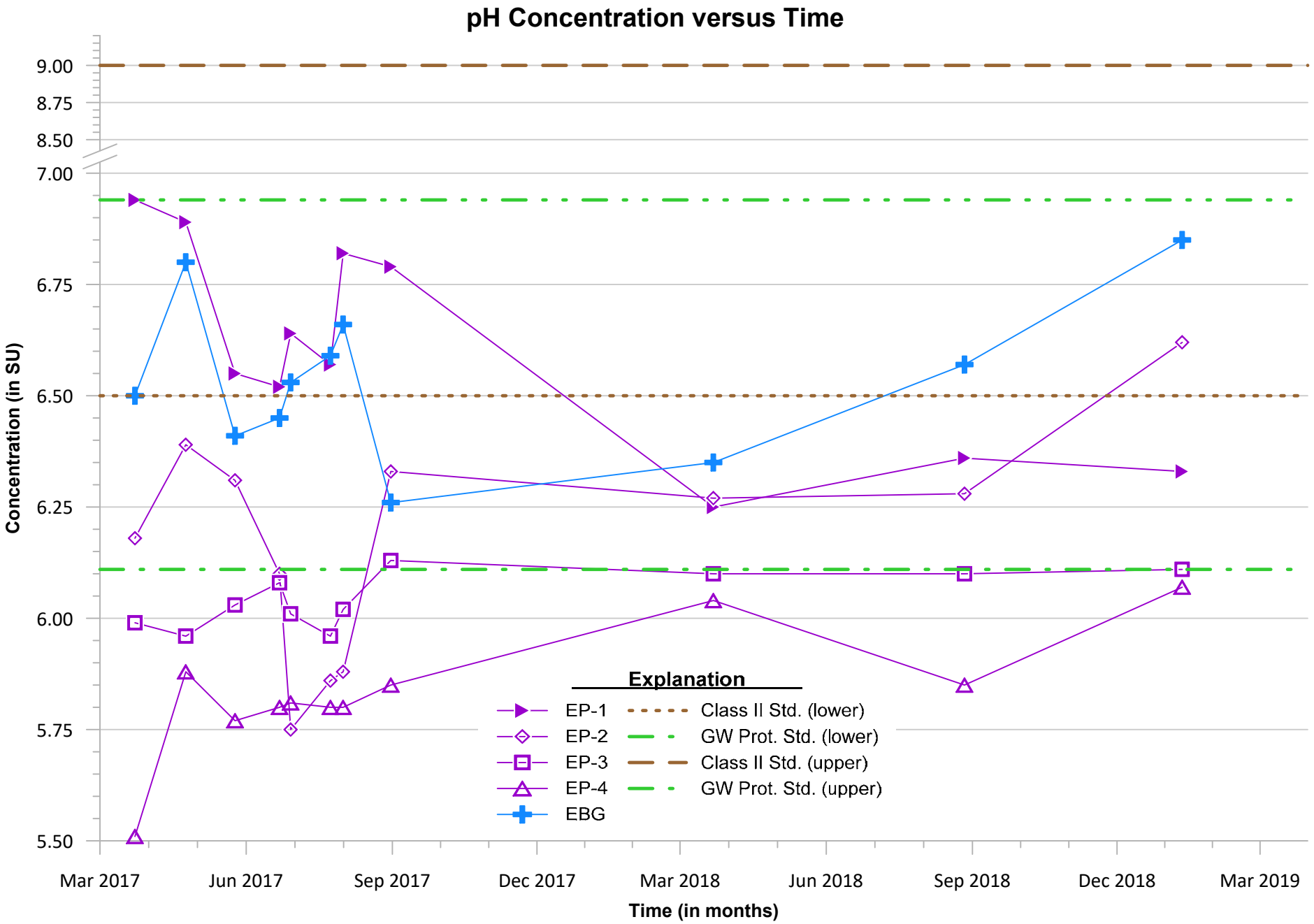
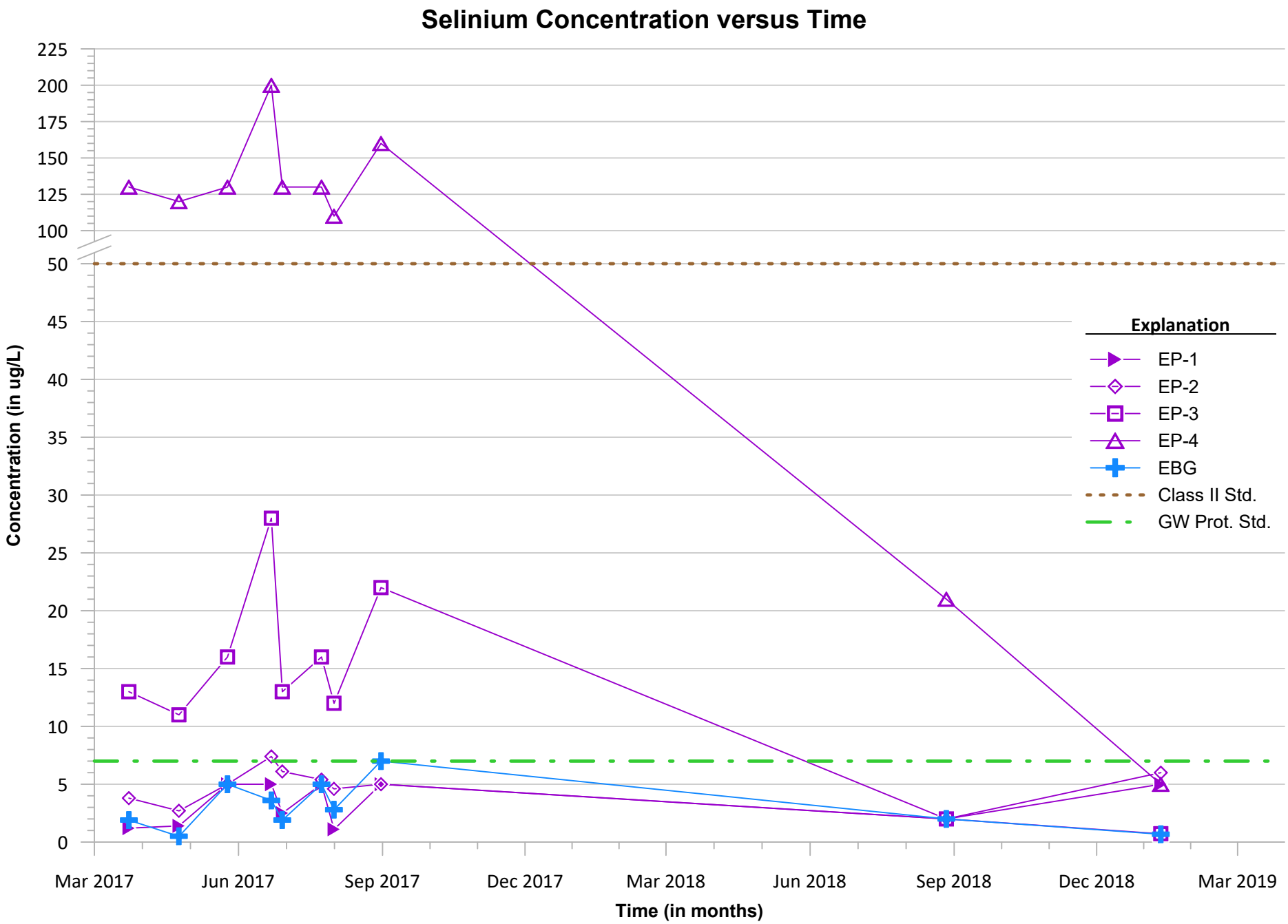

pH Concentration versus Time
9.00
8.75
8.50
7.00
6.75
6.50
6.25
6.00
5.75
5.50
Concentration (in SU)
Mar 2017
Jun 2017
Sep 2017
Dec 2017
Mar 2018
Jun 2018
Sep 2018
Dec 2018
Mar 2019
Time (in months)
Explanation
EP-1
EP-2
EP-3
EP-4
EBG
Class II Std. (lower)
GW Prot. Std. (lower)
Class II Std. (upper)
GW Prot. Std. (upper)



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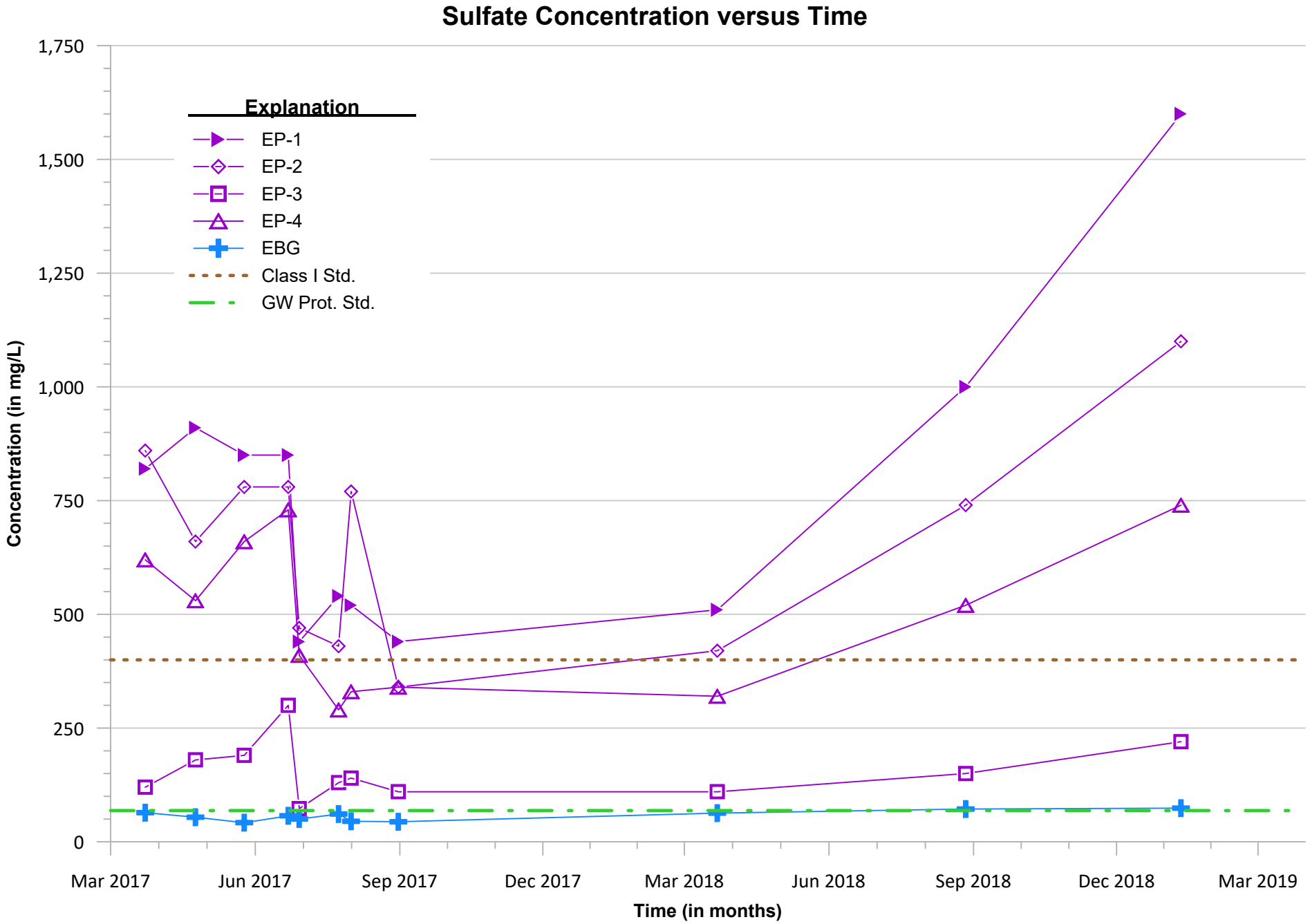

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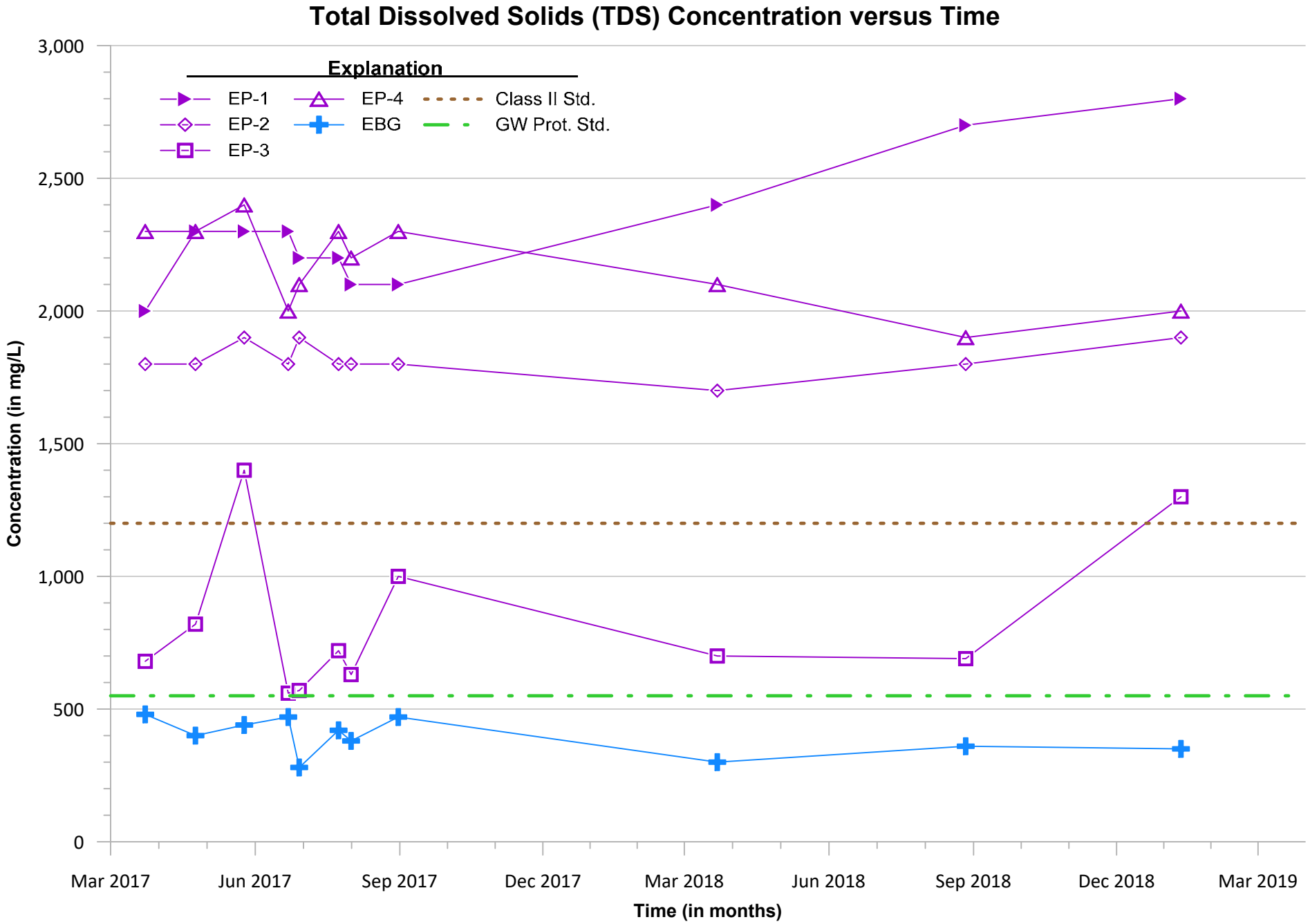
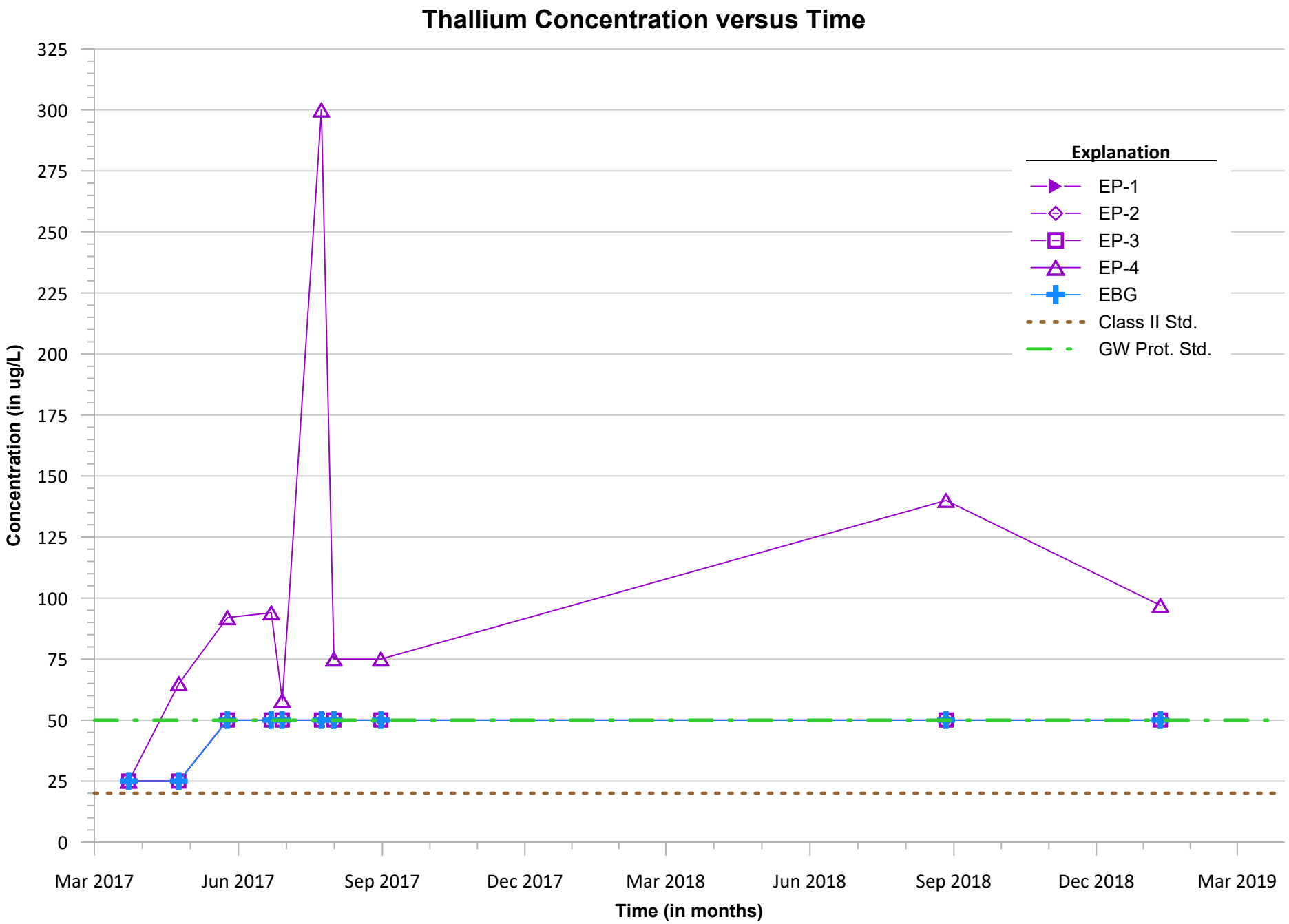

Total Dissolved Solids (TDS) Concentration versus Time
Explanation
EP-1
EP-2
EP-3
EP-4
EBG
Class II Std.
GW Prot. Std.
Concentration (in mg/L)
3,000
2,500
2,000
1,500
1,000
500
0
Mar 2017
Jun 2017
Sep 2017
Dec 2017
Mar 2018
Jun 2018
Sep 2018
Dec 2018
Mar 2019
Time (in months)



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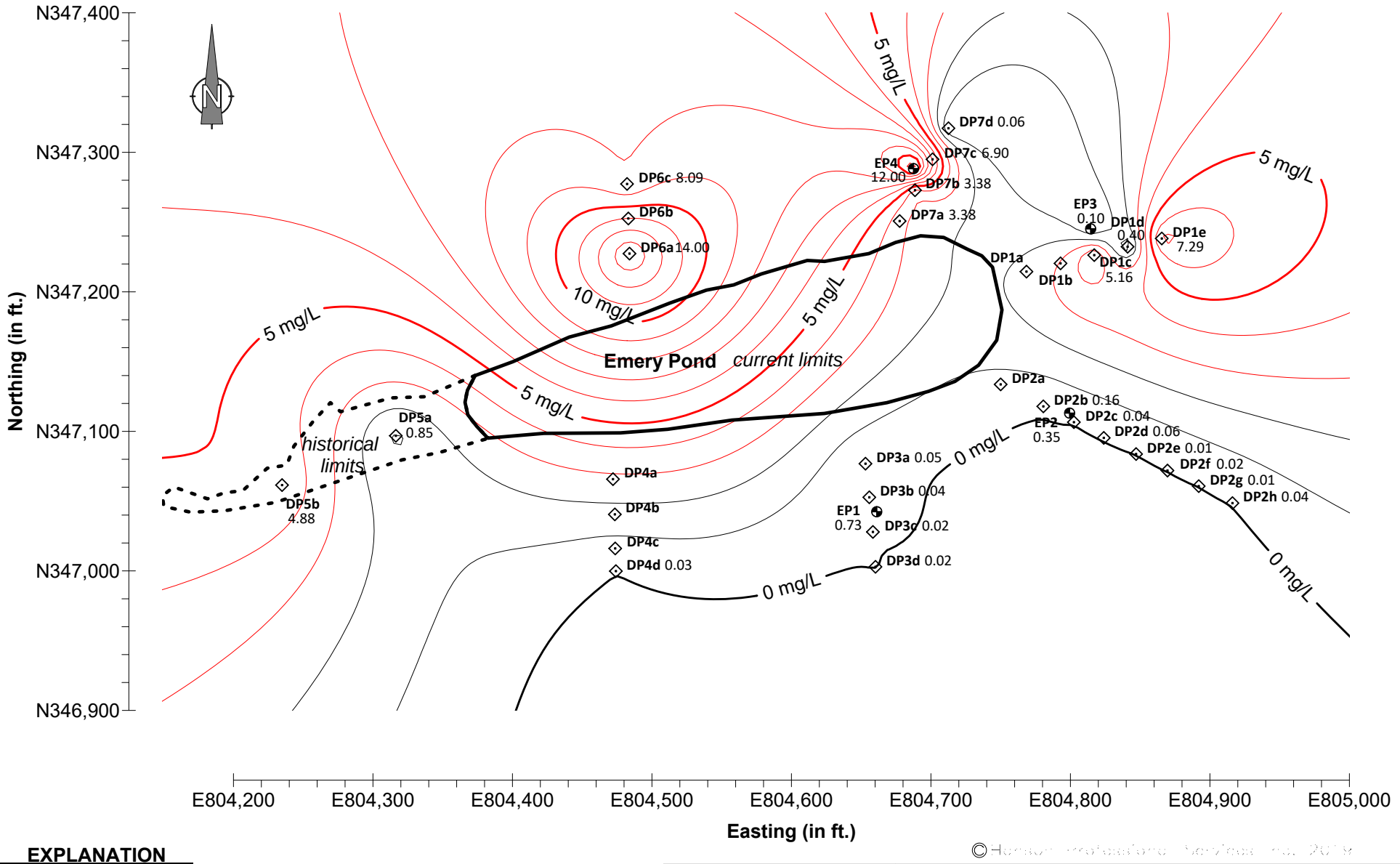
Appendix C

Extent of Impacted Groundwater Isopleth Maps



EXPLANATION

- Monitoring Well
- Direct Push Boring
- Bedrock Boring

NOTE: Red contours above Class II GW Std. (2.0 mg/L)

Contour Interval = 1 mg/L
SCALE: 1 inch equals 100 feet

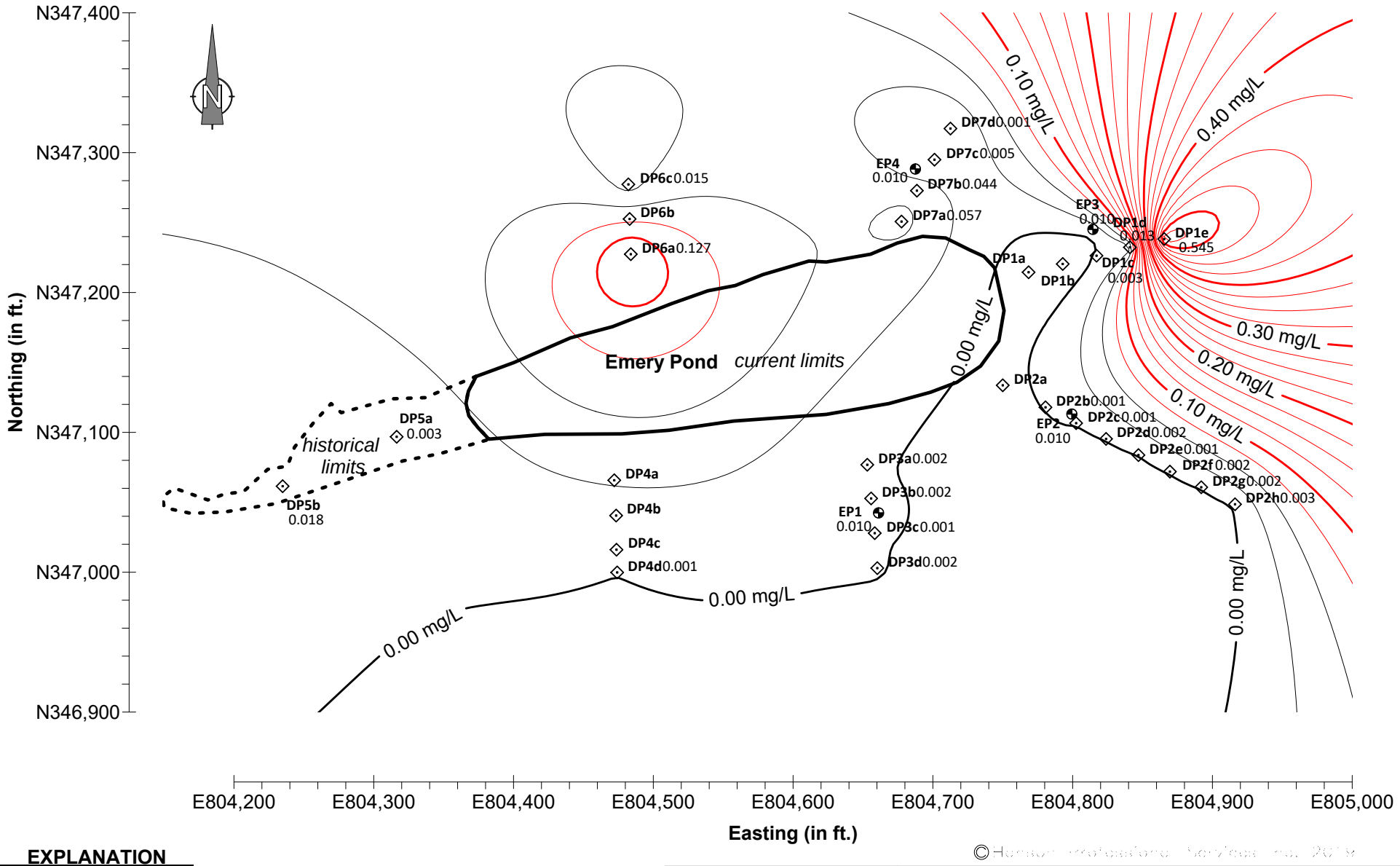
0 ft. 100 ft. 200 ft. 300 ft.

HANSON
Hanson Professional Services Inc.

Boron Concentration Isopleth Map

EMERY POND
MARION POWER PLANT
WILLIAMSON CO., ILLINOIS

HANSON NO. 18E0022A FIGURE C-1



EXPLANATION

- Monitoring Well
- Direct Push Boring
- Bedrock Boring

NOTE: Red contours above Class II GW Std. (0.05 mg/L)

Contour Interval = 1 mg/L
SCALE: 1 inch equals 100 feet

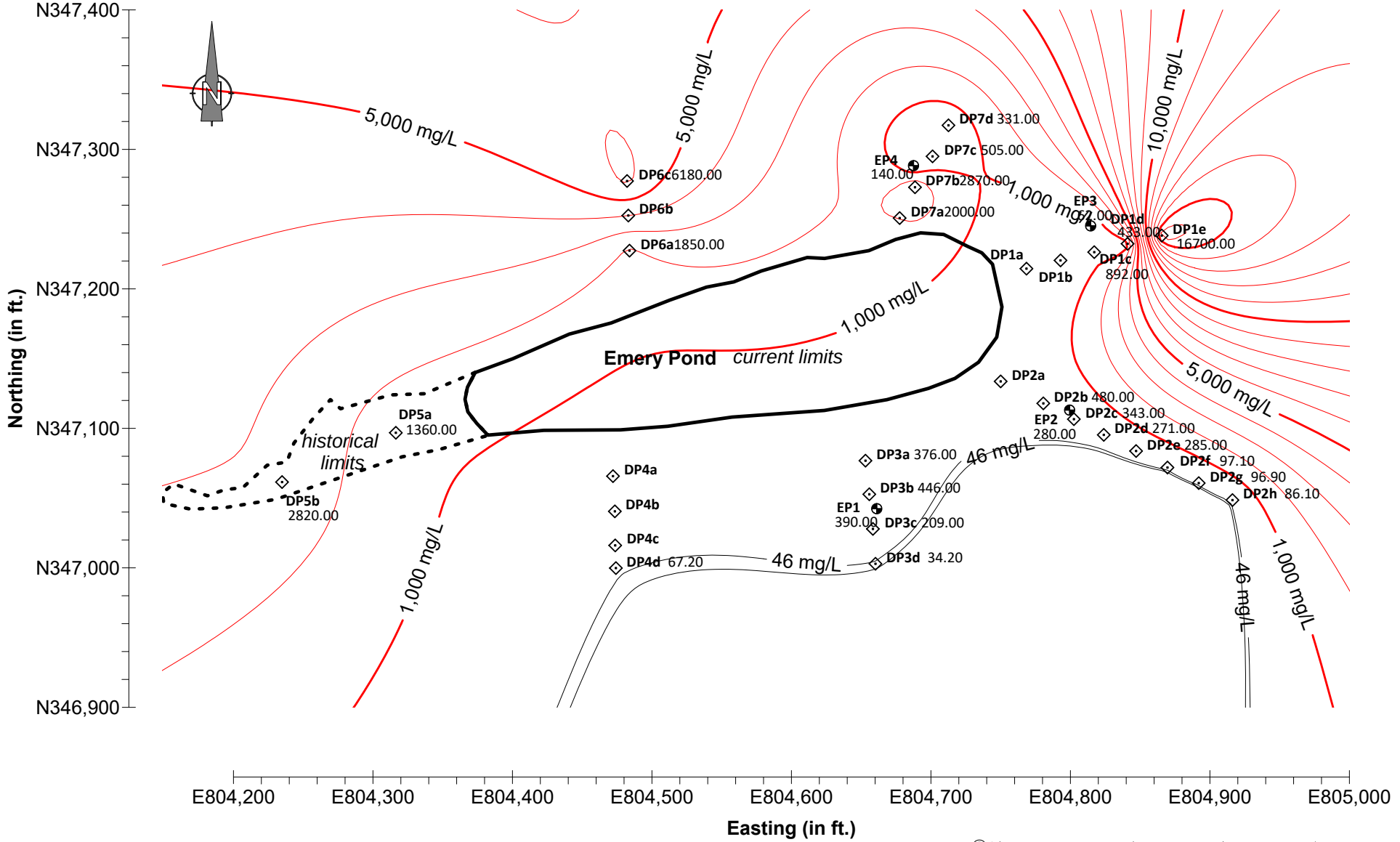
0 ft. 100 ft. 200 ft. 300 ft.

HANSON
Hanson Professional Services Inc.

Cadmium Concentration Isopleth Map

EMERY POND
MARION POWER PLANT
WILLIAMSON CO., ILLINOIS

HANSON NO. 18E0022A FIGURE C-2



EXPLANATION

- Monitoring Well
- Direct Push Boring
- Bedrock Boring

NOTE: Red contours above the GW Protection Std. (46.304 mg/L)

Contour Interval = 1 mg/L
SCALE: 1 inch equals 100 feet

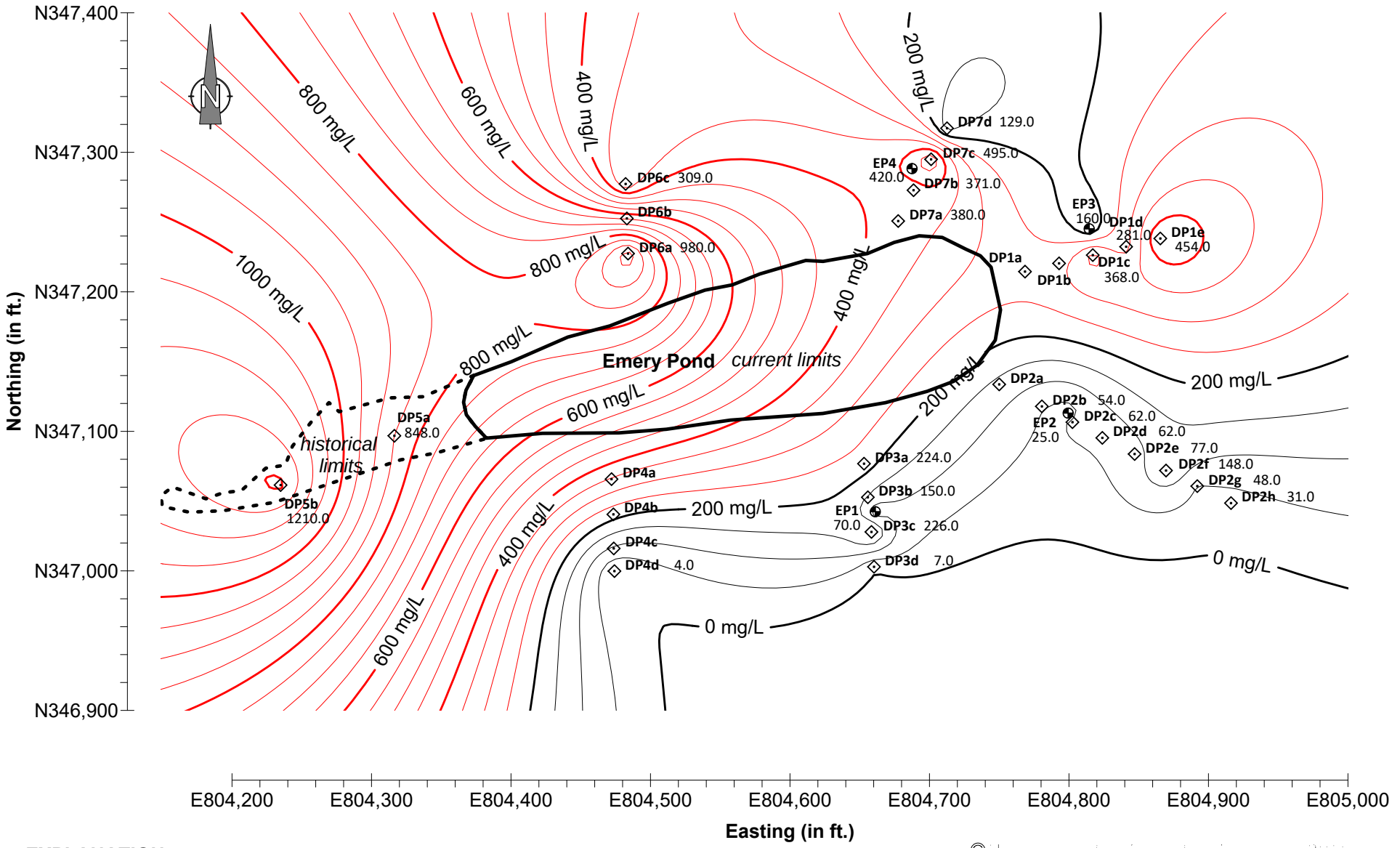
0 ft. 100 ft. 200 ft. 300 ft.

HANSON
Hanson Professional Services Inc.

Calcium Concentration Isopleth Map

EMERY POND
MARION POWER PLANT
WILLIAMSON CO., ILLINOIS

HANSON NO. 18E0022A FIGURE C-3



EXPLANATION

- Monitoring Well
- Direct Push Boring
- Bedrock Boring

NOTE: Red contours above Class II GW Std. (200 mg/L)

Contour Interval = 50 mg/L
SCALE: 1 inch equals 100 feet

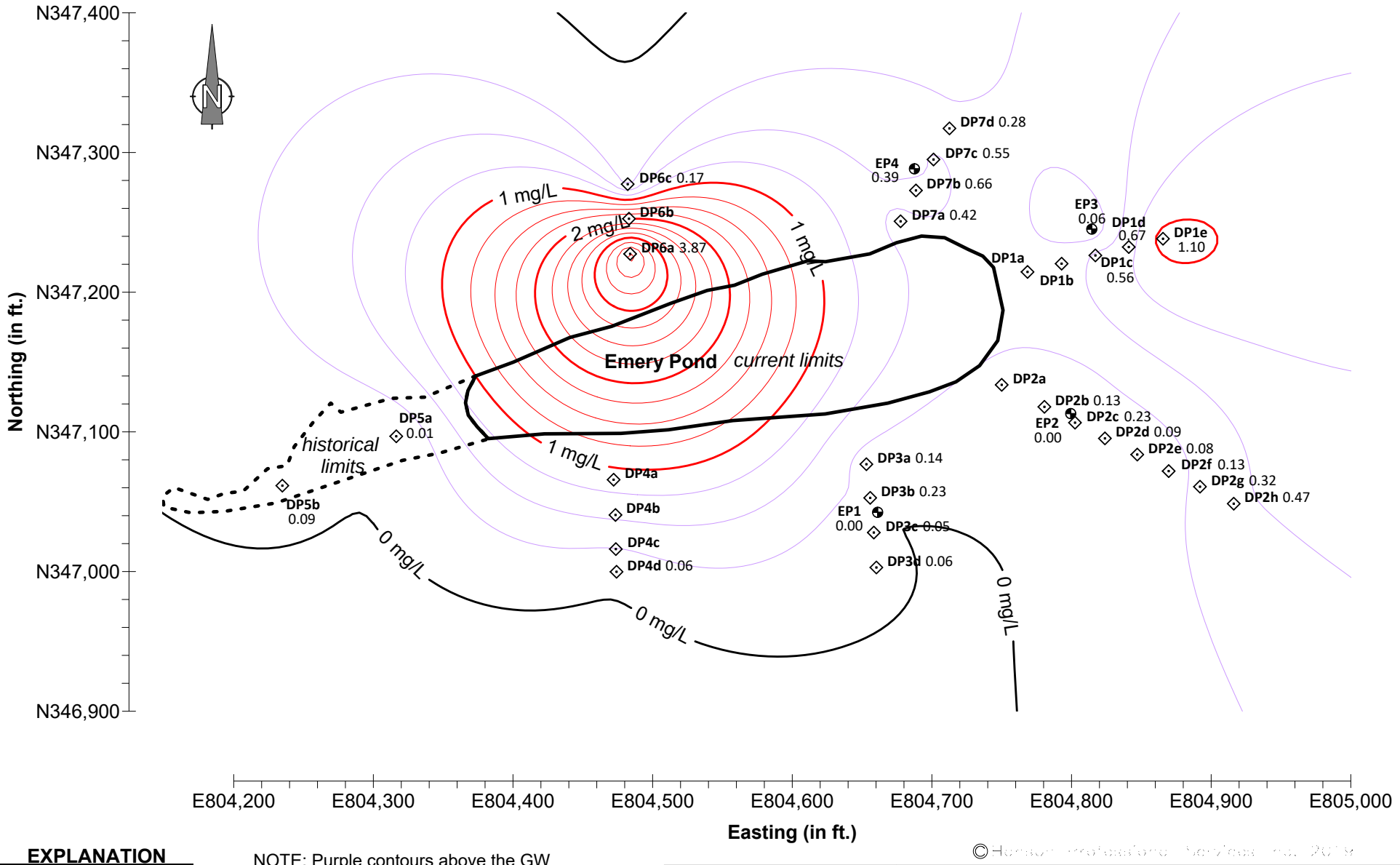
0 ft. 100 ft. 200 ft. 300 ft.

HANSON
Hanson Professional Services Inc.

Chloride Concentration Isopleth Map

EMERY POND
MARION POWER PLANT
WILLIAMSON CO., ILLINOIS

HANSON NO. 18E0022A FIGURE C-4



EXPLANATION

- Monitoring Well
- Direct Push Boring
- Bedrock Boring

NOTE: Purple contours above the GW Protection Std. (0.0191 mg/L) and Red contours are above the Class II Standard (1.0 mg/L).

Contour Interval = 1 mg/L
SCALE: 1 inch equals 100 feet

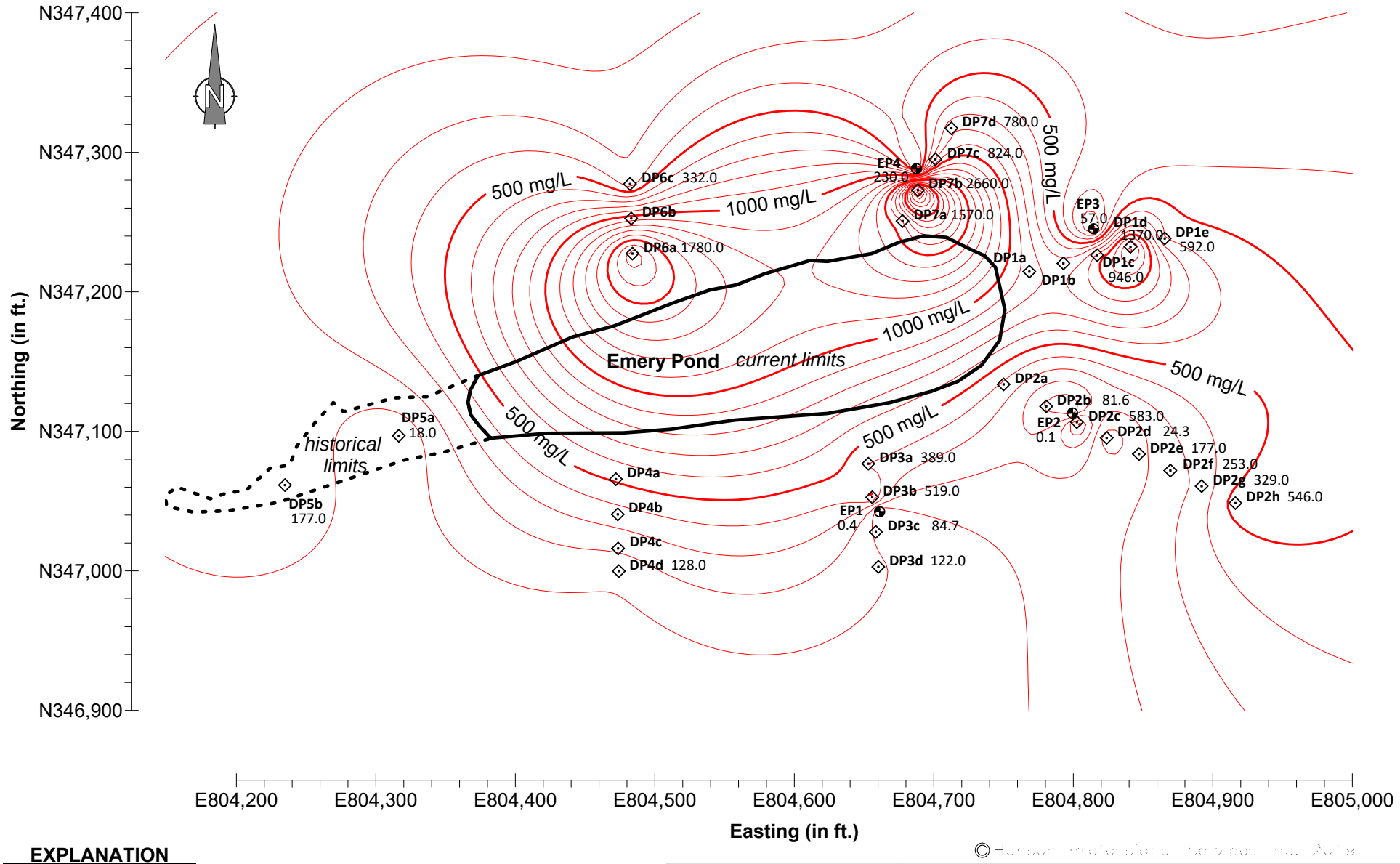
0 ft. 100 ft. 200 ft. 300 ft.

HANSON
Hanson Professional Services Inc.

Cobalt Concentration Isopleth Map

EMERY POND
MARION POWER PLANT
WILLIAMSON CO., ILLINOIS

HANSON NO. 18E0022A FIGURE C-5



EXPLANATION

- Monitoring Well
- Direct Push Boring
- Bedrock Boring

NOTE: Red contours above Class II GW Std. (5.0 mg/L)

Contour Interval = 50 mg/L
SCALE: 1 inch equals 100 feet

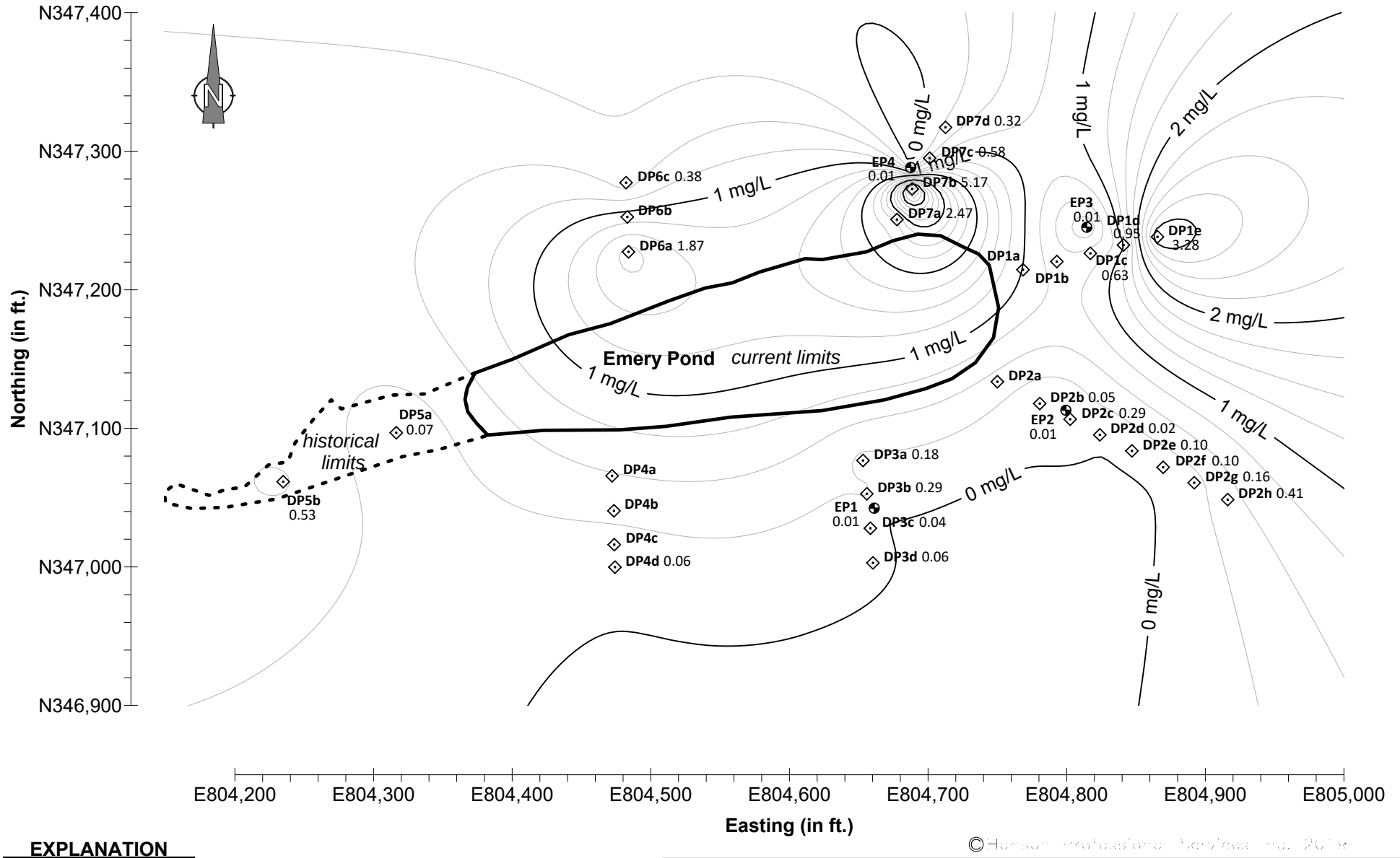
0 ft. 100 ft. 200 ft. 300 ft.

HANSON
Hanson Professional Services Inc.

Iron Concentration Isopleth Map

EMERY POND
MARION POWER PLANT
WILLIAMSON CO., ILLINOIS

HANSON NO. 18E0022A FIGURE C-6



EXPLANATION

- Monitoring Well
- Direct Push Boring
- Bedrock Boring

Contour Interval = 0.25 mg/L
SCALE: 1 inch equals 100 feet

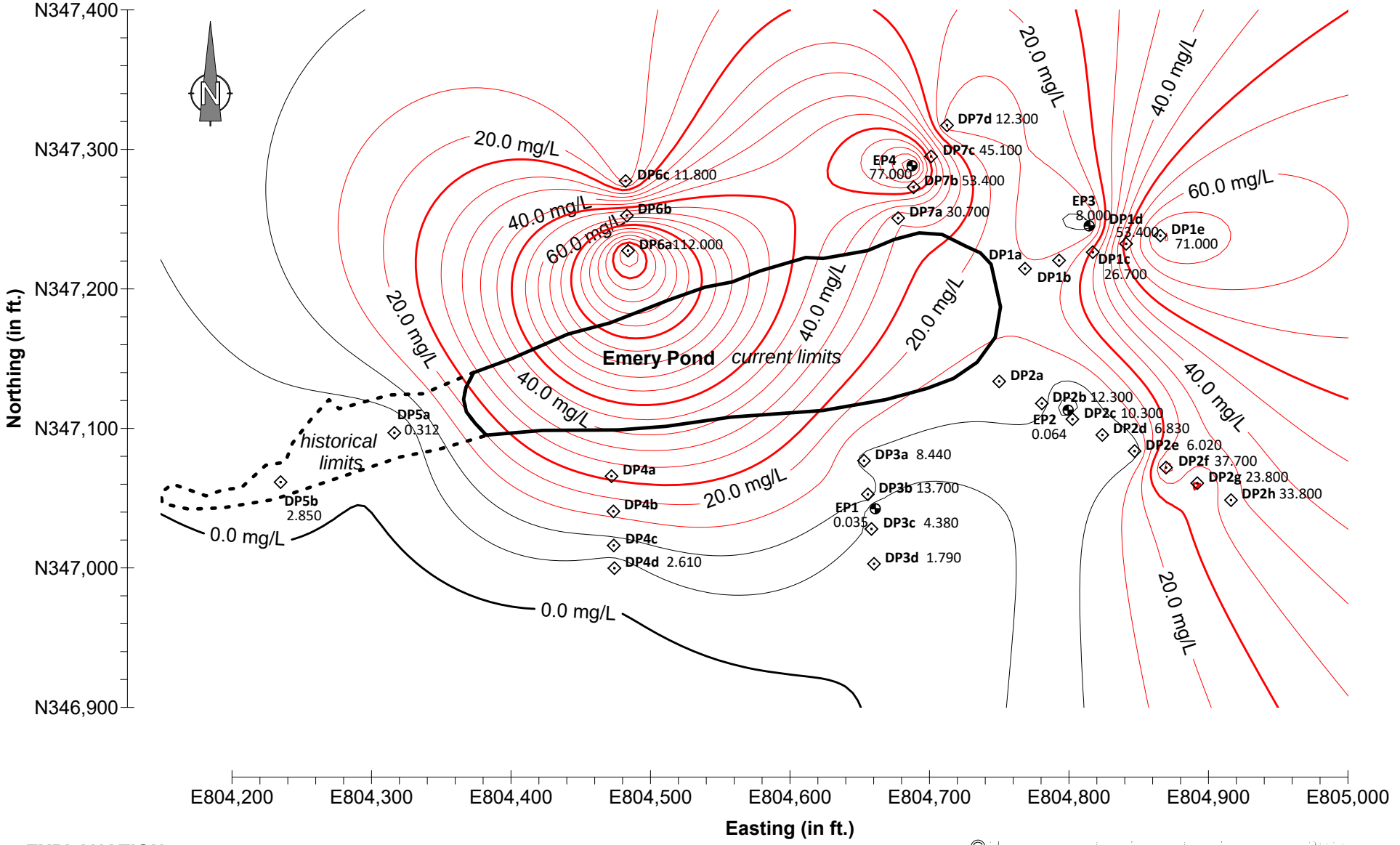
0 ft. 100 ft. 200 ft. 300 ft.

HANSON
Hanson Professional Services Inc.

Lead Concentration Isopleth Map

EMERY POND
MARION POWER PLANT
WILLIAMSON CO., ILLINOIS

HANSON NO. 18E0022A FIGURE C-7



EXPLANATION

- Monitoring Well
- Direct Push Boring
- Bedrock Boring

NOTE: Red contours above Class II GW Std. (10.0 mg/L)

Contour Interval = 1 mg/L
SCALE: 1 inch equals 100 feet

0 ft. 100 ft. 200 ft. 300 ft.

HANSON
Hanson Professional Services Inc.

Manganese Concentration Isopleth Map

EMERY POND
MARION POWER PLANT
WILLIAMSON CO., ILLINOIS

HANSON NO. 18E0022A FIGURE C-8

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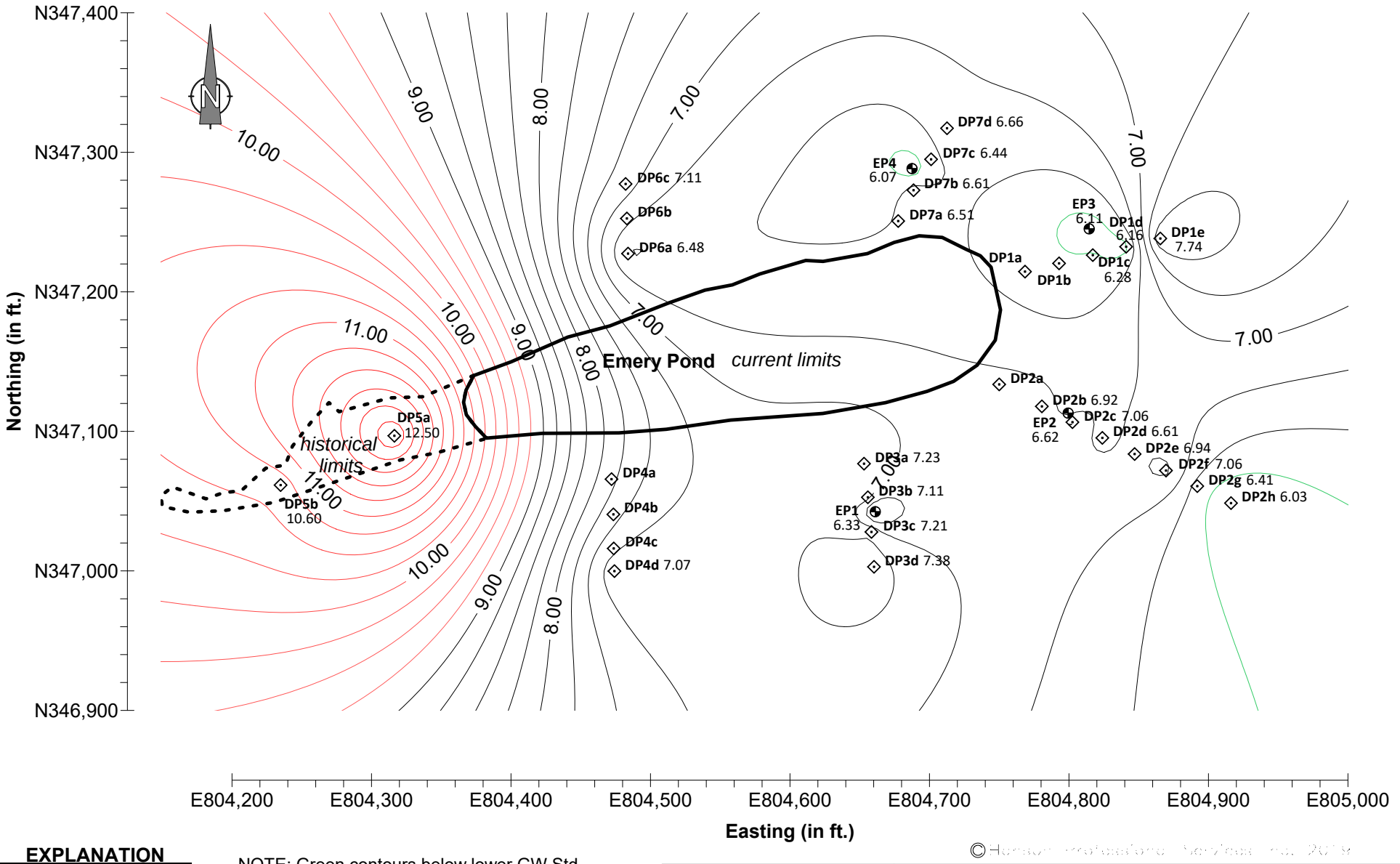


EXPLANATION

- Monitoring Well
- Direct Push Boring
- Bedrock Boring

NOTE: Green contours below lower GW Std. and red contours above upper GW Std.

Contour Interval = 0.25 SU
SCALE: 1 inch equals 100 feet

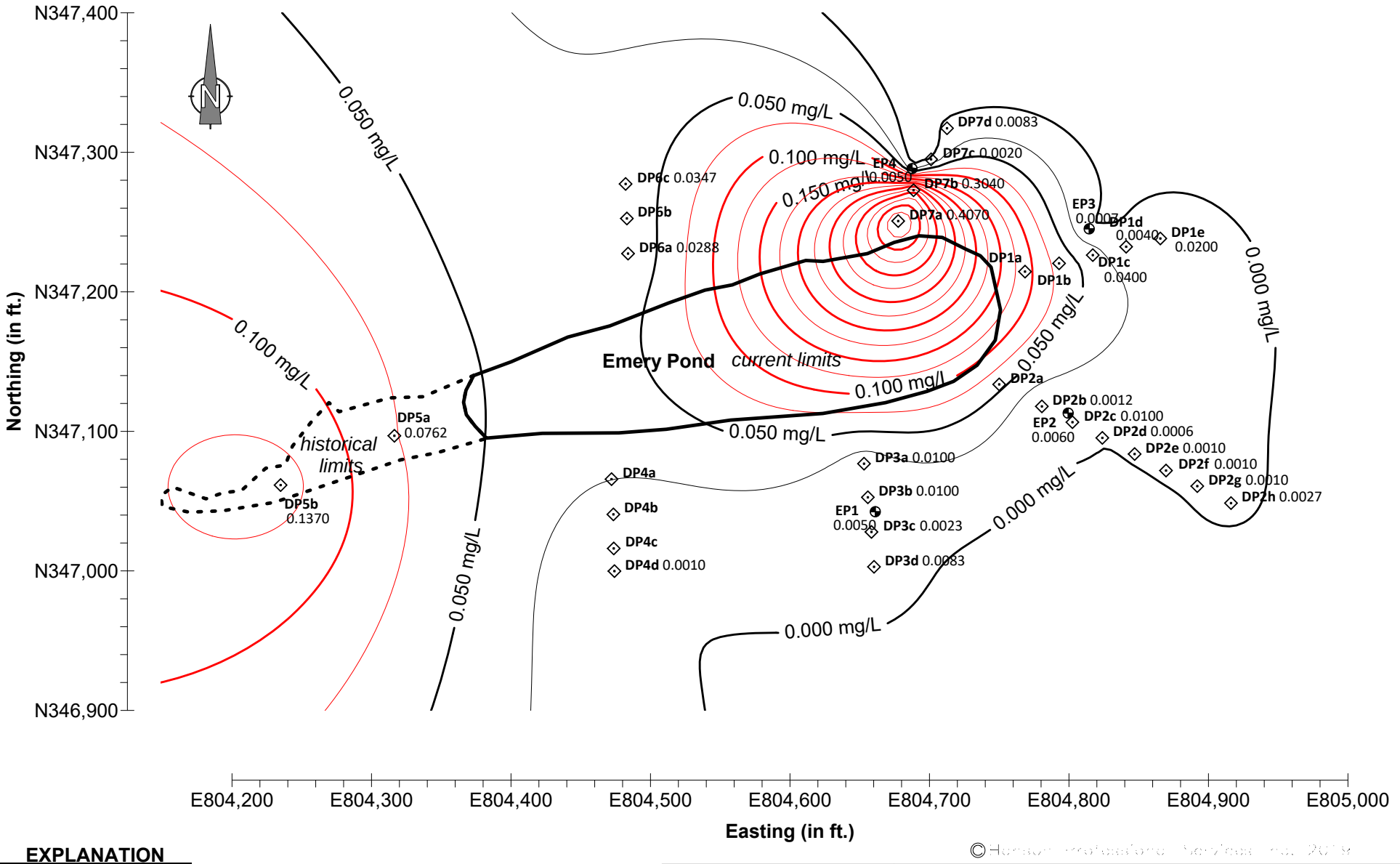
0 ft. 100 ft. 200 ft. 300 ft.

HANSON
Hanson Professional Services Inc.

pH Concentration Isopleth Map

EMERY POND
MARION POWER PLANT
WILLIAMSON CO., ILLINOIS

HANSON NO. 18E0022A FIGURE C-9



EXPLANATION

- Monitoring Well
- Direct Push Boring
- Bedrock Boring

NOTE: Red contours above Class II GW Std. (0.05 mg/L)

Contour Interval = 0.025 mg/L
SCALE: 1 inch equals 100 feet

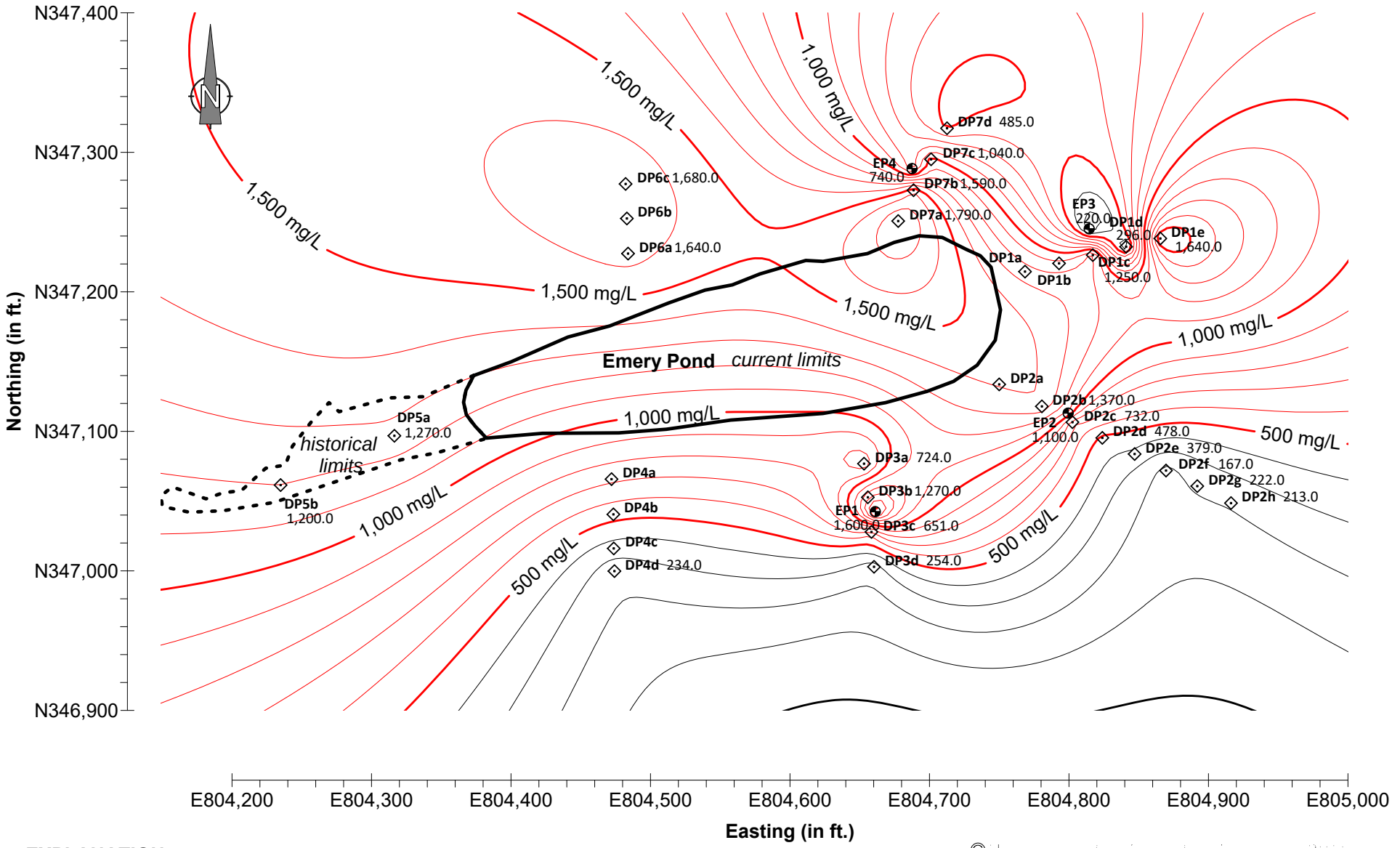
0 ft. 100 ft. 200 ft. 300 ft.

HANSON
Hanson Professional Services Inc.

Selenium Concentration Isopleth Map

EMERY POND
MARION POWER PLANT
WILLIAMSON CO., ILLINOIS

HANSON NO. 18E0022A FIGURE C-10



EXPLANATION

- Monitoring Well
- Direct Push Boring
- Bedrock Boring

NOTE: Red contours above Class II GW Std. (400 mg/L)

Contour Interval = 100 mg/L
SCALE: 1 inch equals 100 feet

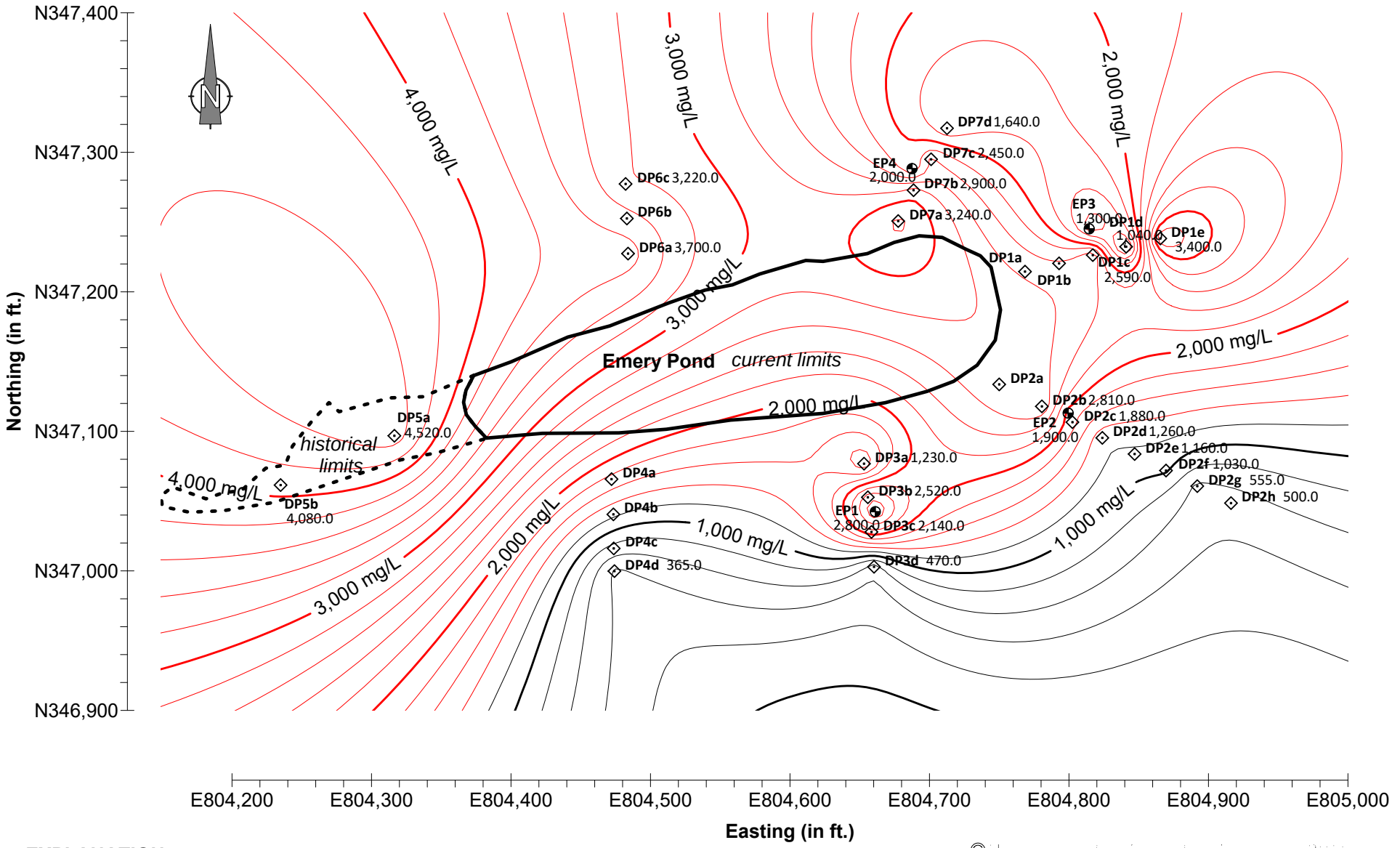
0 ft. 100 ft. 200 ft. 300 ft.

HANSON
Hanson Professional Services Inc.

Sulfate Concentration Isopleth Map

EMERY POND
MARION POWER PLANT
WILLIAMSON CO., ILLINOIS

HANSON NO. 18E0022A FIGURE C-11



EXPLANATION

- Monitoring Well
- Direct Push Boring
- Bedrock Boring

Contour Interval = 200 mg/L
SCALE: 1 inch equals 100 feet

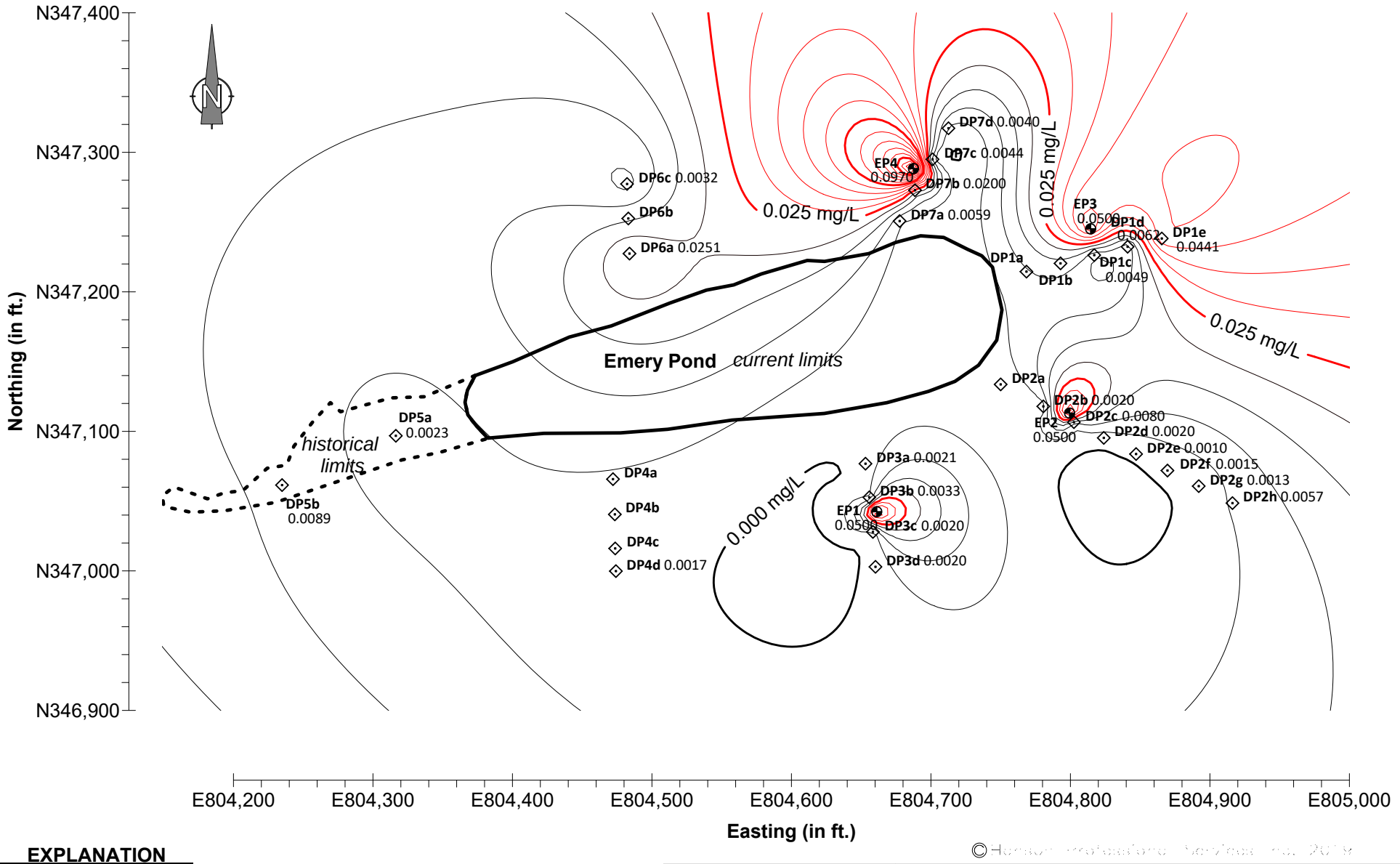
0 ft. 100 ft. 200 ft. 300 ft.

HANSON
Hanson Professional Services Inc.

Total Dissolved Solids Concentration Isopleth Map

EMERY POND
MARION POWER PLANT
WILLIAMSON CO., ILLINOIS

HANSON NO. 18E0022A FIGURE C-12



EXPLANATION

- Monitoring Well
- Direct Push Boring
- Bedrock Boring

NOTE: Red contours above Class II GW Std. (0.02 mg/L)
Microbac Laboratory detection limit was 0.05 mg/L.

Contour Interval = 0.005 mg/L
SCALE: 1 inch equals 100 feet

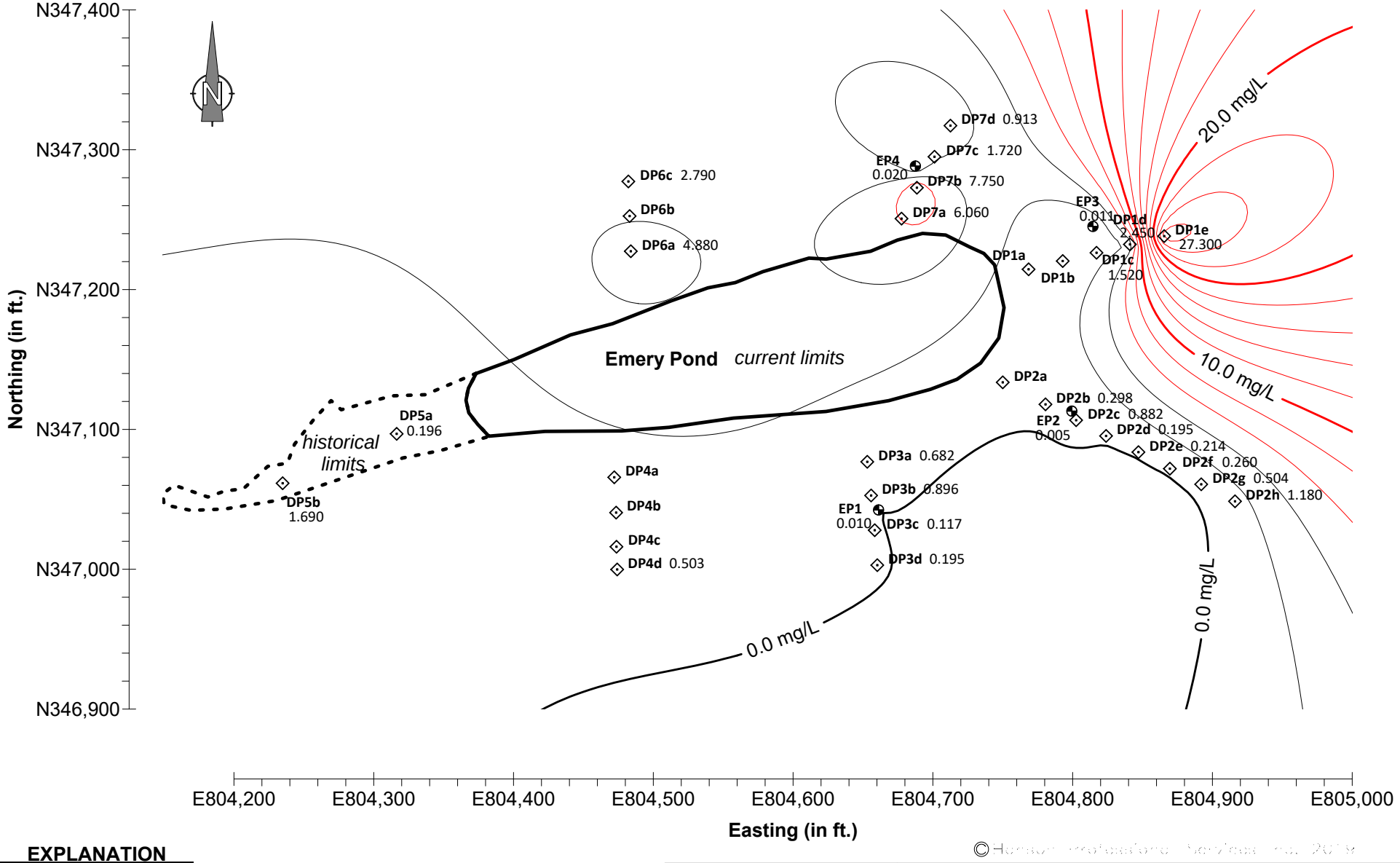
0 ft. 100 ft. 200 ft. 300 ft.

HANSON
Hanson Professional Services Inc.

Thallium Concentration Isopleth Map

EMERY POND
MARION POWER PLANT
WILLIAMSON CO., ILLINOIS

HANSON NO. 18E0022A FIGURE C-13



EXPLANATION

- Monitoring Well
- Direct Push Boring
- Bedrock Boring

NOTE: Red contours above Class II GW Std. (5.0 mg/L)

Contour Interval = 1 mg/L
SCALE: 1 inch equals 100 feet

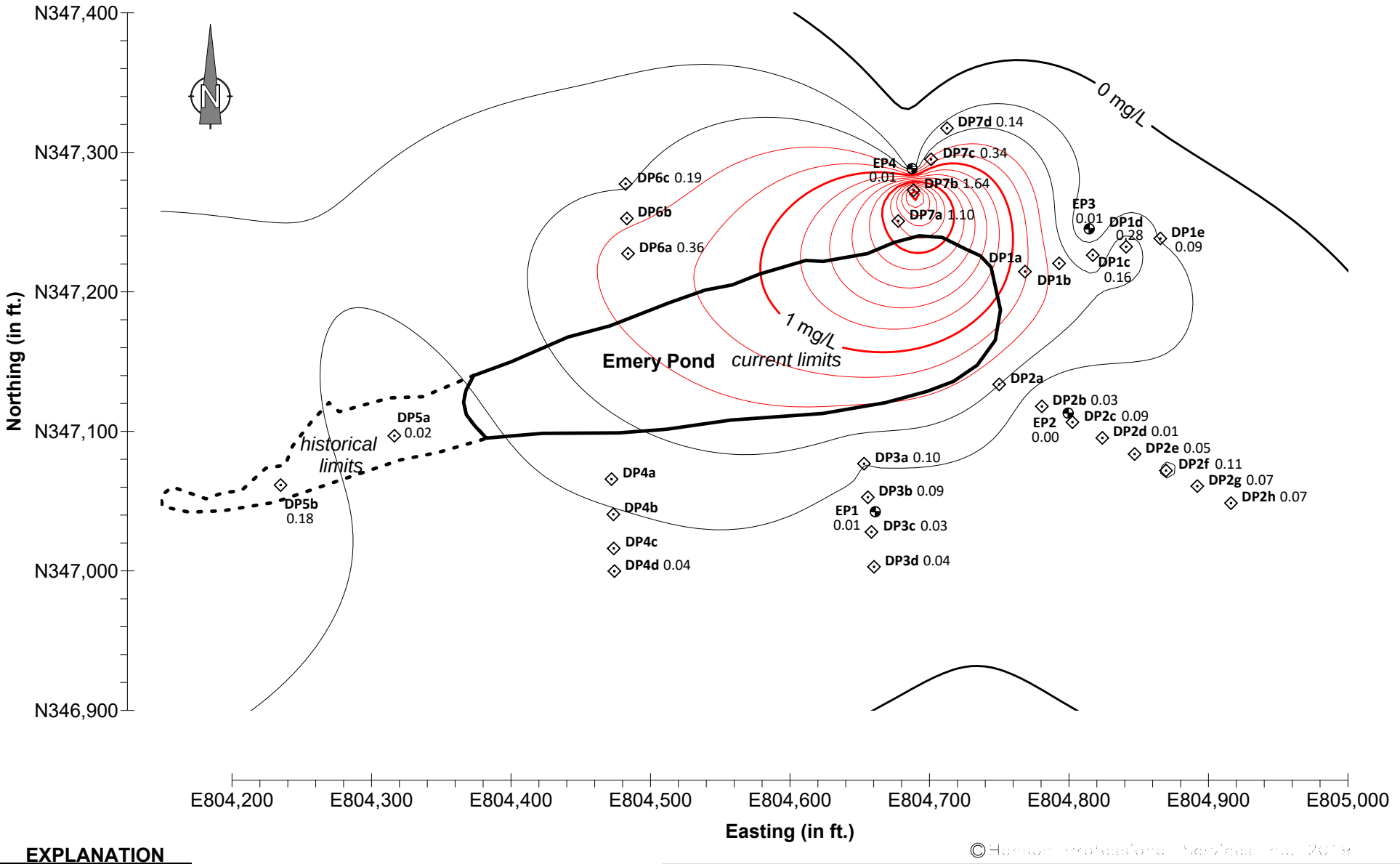
0 ft. 100 ft. 200 ft. 300 ft.

HANSON
Hanson Professional Services Inc.

Zinc Concentration Isopleth Map

EMERY POND
MARION POWER PLANT
WILLIAMSON CO., ILLINOIS

HANSON NO. 18E0022A FIGURE C-14



EXPLANATION

- Monitoring Well
- Direct Push Boring
- Bedrock Boring

NOTE: Red contours above Class II GW Std. (0.2 mg/L)

Contour Interval = 1 mg/L
SCALE: 1 inch equals 100 feet

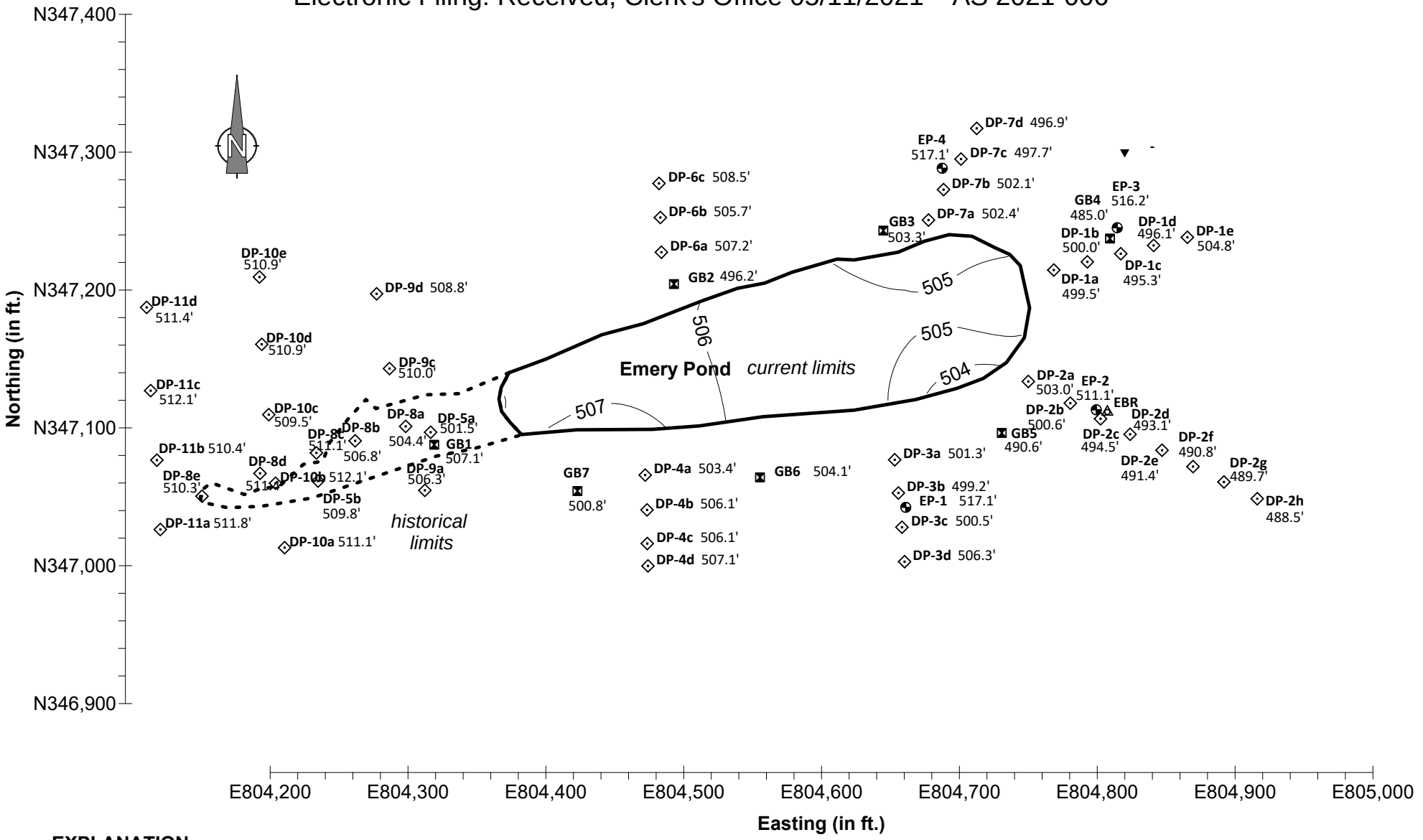
0 ft. 100 ft. 200 ft. 300 ft.

HANSON
Hanson Professional Services Inc.

Arsenic Concentration Isopleth Map

EMERY POND
MARION POWER PLANT
WILLIAMSON CO., ILLINOIS

HANSON NO. 18E0022A FIGURE C-15



EXPLANATION

- Monitoring Well
- Direct Push Boring
- Bedrock Boring

Contour Interval = 1 foot

SCALE: 1 inch equals 100 feet

0 ft. 30 ft. 61 ft. 91 ft.

HANSON
Hanson Professional Services Inc.

Borehole Bottom Relative to Emery Pond Bottom

EMERY POND
MARION POWER PLANT
WILLIAMSON CO., ILLINOIS

HANSON NO. 18E0022A FIGURE C-16

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Appendix D

Groundwater Management Zone Plat and Description

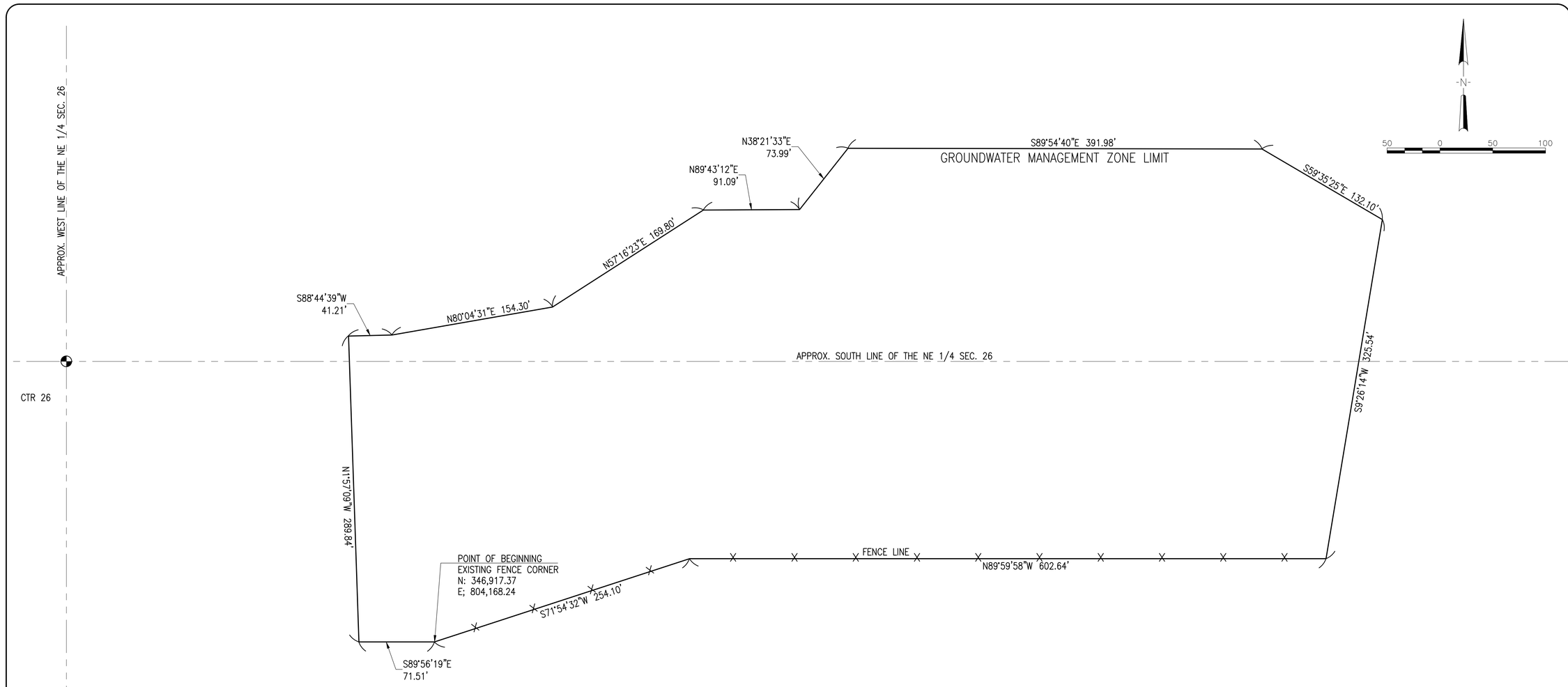
Groundwater Management Zone (GMZ) Limit

LEGAL DESCRIPTION

Part of Parcel 10-2 “A” of the Southern Illinois Power Co-Operative Lake of Egypt area property boundary, being part of the East Half of Section 26, Township 10 South, Range 2 East, Third Principal Meridian, Williamson County, Illinois, more particularly described as follows:

Beginning at a fence corner having an Illinois State Plane Coordinate of Northing 346,917.37 and Easting 804,168.24 (North American Datum of 1983, East Zone), thence on a grid bearing of N 89°-56'-19" W a distance of 71.51 feet; thence N 01°-57'-09" W a distance of 289.84; thence N 88°-44'-39" E a distance of 41.21 feet; thence N 80°-04'-31" E a distance of 154.30 feet; thence N 57°-16'-23" E a distance of 169.80 feet; thence N 89°-43'-12" E a distance of 91.09 feet; thence N 38°-21'-33" E a distance of 73.99 feet; thence S 89°-54'-40" E a distance of 391.98 feet; thence S 59°-35'-25" E a distance of 132.10 feet; thence S 09°-26'-14" W a distance of 325.54 feet; thence N 89°-59'-58" W a distance of 602.64 feet; thence S 71°-54'-32" W a distance of 254.10 feet to the POINT OF BEGINNING.

Containing 7.545 Acres, more or less.



LEGEND

——— – PARCEL LINE
— _ — – SECTION LINE
——X——– FENCE LINE

State of Illinois)
SS
County of Williamson)

We, Hanson Professional Services Inc., Professional Design Firm No. 184–001084, do hereby certify that this is a true and correct representation of an exhibit made for the Southern Illinois Power Co–operative.

Dated, this 26 day of March, 2019.

By: Gary C. Rogers

Gary C. Rogers
Illinois Professional Land Surveyor No. 2957
License Expires 11–30–2020

GARY C. ROGERS
035–2957
PROFESSIONAL
LAND
SURVEYOR
STATE OF
ILLINOIS
SPRINGFIELD

NOTE:
BASIS OF BEARING ILLINOIS STATE PLANE NORTH AMERICAN DATUM OF 1983, EAST ZONE.

LEGAL DESCRIPTION

Part of Parcel 10–2 "A" of the Southern Illinois Power Co–Operative Lake of Egypt area property boundary, being part of the East Half of Section 26, Township 10 South, Range 2 East, Third Principal Meridian, Williamson County, Illinois, more particularly described as follows:

Beginning at a fence corner having an Illinois State Plane Coordinate of Northing 346,917.37 and Easting 804,168.24 (North American Datum of 1983, East Zone), thence on a grid bearing of N 89°–56'–19" W a distance of 71.51 feet; thence N 01°–57'–09" W a distance of 289.84; thence N 88°–44'–39" E a distance of 41.21 feet; thence N 80°–04'–31" E a distance of 154.30 feet; thence N 57°–16'–23" E a distance of 169.80 feet; thence N 89°–43'–12" E a distance of 91.09 feet; thence N 38°–21'–33" E a distance of 73.99 feet; thence S 89°–54'–40" E a distance of 391.98 feet; thence S 59°–35'–25" E a distance of 132.10 feet; thence S 09°–26'–14" W a distance of 325.54 feet; thence N 89°–59'–58" W a distance of 602.64 feet; thence S 71°–54'–32" W a distance of 254.10 feet to the POINT OF BEGINNING.

Containing 7.545 Acres, more or less.

REVISION | DATE

Hanson No. 18E0022A
Filename C–PROP.DWG
Scale 1"=50'
Date 03/26/2019

LAYOUT	GCR	03/26/2019
DRAWN	WTP	03/26/2019
REVIEWED	GCR	03/26/2019

Phone: (217) 788-2450
Fax: (217) 788-2503
www.hanson-inc.com
Offices Nationwide

HANSON

Hanson Professional Services Inc.
7625 N University St., Suite 200
Peoria, IL 61614
Illinois Licensed Professional Design Firm #184–001084

GROUNDWATER MANAGEMENT ZONE (GMZ) BOUNDARY EXHIBIT

SOUTHERN ILLINOIS
POWER CO-OPERATIVE

C1

1 of 1 sheets

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Appendix E

Confirmation of an Adequate Corrective Action Forms

Title 35, Illinois Admin. Code, Part 620 – APPENDIX D
Confirmation of an Adequate Corrective Action Pursuant to 35 Ill. Adm. Code 620.250(a)(2)

Pursuant to 35 Ill. Adm. Code 620.250(a) if an owner or operator provides a written confirmation to the Agency that an adequate corrective action, equivalent to a corrective action process approved by the Agency, is being undertaken in a timely and appropriate manner, then a groundwater management zone may be established as a three-dimensional region containing groundwater being managed to mitigate impairment caused by the release of contaminants from a site. This document provides the form in which the written confirmation is to be submitted to the Agency.

Note 1. Parts I and II are to be submitted to IEPA at the time that the facility claims the alternative groundwater standards. Part III is to be submitted at the completion of the site investigation. At the completion of the corrective process, a final report is to be filed which includes the confirmation statement included in Part IV.

Note 2. The issuance of a permit by IEPA's Division of Air Pollution Control or Water Pollution Control for a treatment system does not imply that the Agency has approved the corrective action process.

Note 3. If the facility is conducting a cleanup of a unit which is subject to the requirements of the Resource Conservation and Recovery Act (RCRA) or the 35 Ill. Adm. Code 731 regulations for Underground Storage Tanks, this confirmation process is not applicable and cannot be used.

Note 4. If the answers to any of these questions require explanation or clarification, provide such in an attachment to this document.

Part I. Facility Information

Facility Name	***Southern Illinois Power Cooperative Marion Power Plant***
Facility Address	***11543 Lake Egypt Road, Marion, IL 62959***
County	***Williamson***
Standard Industrial Code (SIC)	***4911***

1. Provide a general description of the type of industry, products manufactured, raw materials used, location and size of the facility.

   Electric power generation and coal combustion residual (CCR) handling. The Emery Pond is an approx. 1-acre CCR Impoundment located within the Marion Power Plant which encompasses approximately 350 acres at the northwest shore of Lake of Egypt.

2. What specific units (operating or closed) are present at the facility which are or were used to manage waste, hazardous waste, hazardous substances, or petroleum?

	YES	NO
Landfill	X	
Surface Impoundment	X	
Land Treatment		X
Spray Irrigation		X
Waste Pile		X
Incinerator		X
Storage Tank (above ground)	X	
Storage Tank (underground)		X
Container Storage Area		X
Injection Well		X
Water Treatment Units	X	
Septic Tanks		X
French Drains		X
Transfer Station		X
Other Units (please describe)		

2. Provide an extract from a USGS topographic or county map showing the location of the site and a more detailed scaled map of the facility with each waste management unit identified in Question 2 or known/suspected source clearly identified. Map scale must be specified, and the location of the facility must be provided with respect to Township, Range and Section.

   The Plant is in the north half of Section 26, Tier 10 South, Range 2 East, of the 3rd PM. Figure 1 has the facility located on a USGS topographic map (7½ minute). Figure 2 shows a scaled map of the Site.

4. Has the facility ever conducted operations which involved the generation, manufacture, processing, transportation, treatment, storage, or handling of "hazardous substances" as defined by the Illinois Environmental Protection Act? Yes ☒ No ☐
   If the answer to this question is "yes" generally describe these operations.

   Chlorine – prior to 1/1/2015, SIPC utilized Liquefied Chlorine Gas to control biofouling in its plant condenser circulating cooling water. Since 1/1/2015, SIPC has used Sodium Hypochlorite Solution (Bleach) to control biofouling.

   Ammonia – Anhydrous Ammonia is utilized on Units 123 and 4 for NOx emission control.

5. Has the facility generated, stored, or treated hazardous waste as defined by the Resource Conservation and Recovery Act? Yes ☐ No ☒
   If the answer to this question is "yes" generally describe these operations.

   SIPC does not generate, store, or treat hazardous wastes. Solid waste generator numbers are listed in Part I. 7., below.

6. Has the facility conducted operations which involved the processing, storage, or handling of petroleum? Yes ☒ No ☐
   If the answer to this question is "yes" generally describe these operations.

   #2 fuel oil is used for coal handling equipment operations and boiler startup fuel for Units 123 & 4.

7. Has the facility ever held any of the following permits?

   a. Permits for any waste storage, waste treatment or waste disposal operation. Yes ☒ No ☐
      If the answer to this question is "yes", identify the IEPA permit numbers.

      Illinois EPA Land (Solid Waste Generator) – 1990555005

      US EPA Land (Solid Waste Generator) – ILD 007813900

      Illinois EPA Water (Construct/Operate) – 2020-EA-65428

   b. Interim Status under the Resources Conservation and Recovery Act (filing of a RCRA Part A application). Yes ☐ No ☒
      If the answer to this question is "yes", attach a copy of the last approved Part A application.

   c. RCRA Part B Permits. Yes ☐ No ☒
      If the answer to this question is "yes", identify the permit log number.

8. Has the facility ever conducted the closure of a RCRA hazardous waste management unit? Yes ☐ No ☒

9. Have any of the following State or federal government actions taken place for a release at the facility?

   a. Written notification regarding known, suspected, or alleged contamination on or emanating from the property (e.g., a Notice pursuant to Section 4(q) of the Environment Protection Act)? Yes ☒ No ☐
      If the to this question is "yes", identify the caption and date of issuance.

      Illinois EPA issued Violation Notice No. W-2018-00041 (ID No. 6364) on July 3, 2018.

c. If either of Items a. or b. were answered by checking "yes", is the notice, order, or decree still in effect? Yes ☒ No ☐

10. What groundwater classification will the facility be subject to at the completion of the remediation?

Class I ☒ Class II ☒ Class III ☐ Class IV ☐
If more than one Class applies, please explain.

Class II groundwater in the Unlithified Unit and upper Bedrock Unit (to a depth of approx. 21.5 ft. BGS at EBR or approx. elevation of 489 ft.) and Class I groundwater in the remaining (identified) Bedrock Unit (where sandstone is thicker than 10 ft.).

11. Describe the circumstances which the release to groundwater was identified.

Through the monitoring well installation and water sampling guidelines listed in 40 CFR 257.90 Subpart (e).

Based on my inquiry of those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true and accurate.

Marion Power Station	Donald R Gilley
Facility Name	Signature of Owner/Operator
11543 Lake Egypt Road, Marion, IL 62959	***Southern Illinois Power Cooperative***
Location of Facility	Name of Owner/Operator
1990555005	***July 24, 2020***
Illinois EPA Identification Number	Date

PART II: Release Information

1. Identify the chemical constituents release to the groundwater. Attach additional documents, as necessary.

Chemical Description	Chemical Abstract No.
Arsenic	***7440-38-2***
Boron	***7440-42-8***
Calcium	***14808-79-8***
Chloride	***7782-50-5***
Cobalt	***7440-48-4***
Iron	***7439-89-6***
Lead	***7439-92-1***
Manganese	***7439-96-5***
pH	***13967-14-1***
Selenium	***7782-49-2***
Sulfate	***14808-79-8***
Thallium	***7440-28-0***
Total Dissolved Solids	***10-05-2***
Zinc	***7440-66-6***

1. Describe how the site will be investigated to determine the source or sources of the release.

   The Emery Pond has been investigated as described in the Hydrogeologic Investigation Report (Hanson, 2019a) and subsequent Hydrogeologic Investigation Addendum (Hanson, 2019b).

2. Describe how the site will be investigated to determine the source or sources of the release.

   The investigation is documented in the Hydrogeologic Investigation Report (Hanson, 2019a).

3. Describe how groundwater will be monitored to determine the rate and extent of the release.

   A study of the extent of contamination is included as part of the Hydrogeologic Investigation Report (Hanson, 2019a) and this Corrective Action and Selected Remedy Plan. The monitoring network to monitor the rate and extent of the release is described in the Groundwater Monitoring Plan (Hanson, 2020c).

4. Has the release been contained on-site at the facility?

   Migration of CCR constituents is limited by Lake of Egypt, which acts as a groundwater discharge area and hydraulic barrier.

5. Describe the groundwater monitoring network and groundwater and soil sampling protocols in place at the facility.

   The groundwater monitoring network and sampling protocols are described in the Groundwater Monitoring Plan (Hanson, 2020c).

6. Provide the schedule for investigation and monitoring.

   The site investigation is complete and groundwater monitoring will continue for the regulatory/permitted frequency and monitoring period as described in the Groundwater Monitoring Plan Section 4.2: Sampling Schedule (Hanson, 2020c).

7. Describe the laboratory quality assurance program utilized for the investigation.

   All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with the National Environmental Laboratory Accreditation Program (NELAP) unless noted.

8. Provide a summary of the results of available soil testing and groundwater monitoring associated with the release at the facility. The summary or results should provide the following information: dates of sampling; types of samples taken (soil or water); locations and depths of samples; sampling and analytical methods; analytical laboratories used; chemical constituents for which analyses were performed; analytical detection limits; and concentrations of chemical constituents in ppm (levels below detection should be identified as "ND").

   A narrative summary of the results of groundwater monitoring is discussed in Section 2.1: Groundwater Monitoring History of this report. Analytical data summary tables are available in Appendix A of this report and graphs are available in Appendix B of this report.

Based on my inquiry of those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of knowledge and belief, true and accurate and confirm that the actions identified herein will be undertaken in accordance with the schedule set forth herein.

Marion Power Station	Donald L Gulley
Facility Name	Signature of Owner/Operator
11543 Lake Egypt Road, Marion, IL 62959	***Southern Illinois Power Cooperative***
Location of Facility	Name of Owner/Operator
1990555005	***July 24, 2020***
Illinois EPA Identification Number	Date

Part III: Remedy Selection Information

1. Describe the selected remedy.

   The selected remedy consists of:

   1. ***clean close the current Emery Pond,***
   2. ***clean close the Gypsum Loadout Area and historical portion of the Emery Pond***
   3. ***backfill the Gypsum Loadout Area with clean soil,***
   4. ***construct a new, storm water basin with a CCR compliant composite liner,***
   5. ***add a perimeter drain beneath the outboard toe of the liner for liner protection and to augment groundwater collection, and***
   6. ***use a Groundwater Management Zone (GMZ) during the return to compliance.***

2. Describe other remedies which were considered and why they were rejected.

   Additional mitigation for major cation/anion contaminants is difficult and expensive. Secondary containments (such as slurry walls) are also expensive.

3. Will waste, contaminated soil, or contaminated groundwater be removed from the site in the course of this remediation? Yes ☒ No ☐
   If the answer to this question is "yes", where will the contaminated material be taken?

   Any material removed during the clean closure activities will be taken to a permitted disposal facility (Illinois EPA or DNR Permit) after any needed pre-disposal testing.

4. Describe how the selected remedy will accomplish the maximum practical restoration of beneficial use of groundwater.

   A new, composite liner system (recompacted soil with HDPE) will limit contaminant migration from the new pond and the perimeter drain will aid in collecting impacted groundwater. Groundwater quality will improve over time as identified in the Groundwater Protection Evaluation (Hanson, 2020a).

5. Describe how the selected remedy will minimize any threat to public health or the environment.

   Clean closure of the Emery Pond and Gypsum *Loadout* Area will limit any new or continuing groundwater impacts. The perimeter toe drain will assist with removal of currently impacted groundwater.

6. Describe how the selected remedy will result in compliance with the applicable groundwater standards.

   The* Groundwater Protection Evaluation (Hanson, 2020a) indicates that water quality will meet the Class I: Potable Resource groundwater standard in approximately 8 years after *the clean closure is completed. The 8-year period is needed for total Arsenic to reach 0.01 mg/L at the downgradient edge of the former CCR impoundment.

7. Provide a schedule for design, construction, and operation of the remedy, including dates for the start and completion.

   A schedule for the remedies is included in Appendix C of the Closure Plan (Hanson, 2020b).

8. Describe how the remedy will be operated and maintained.

   The new pond liner and cover systems will be installed using a quality assurance (QA) program. The pond will be operated in such a way as to reduce the likelihood of any liner damage.

9. Have any of the following permits been issued for the remediation?

   a. Construction or Operating permit from the Division of Water Pollution Control. Yes ☐ No ☒

      But a construction/operating permit application is currently under review with Illinois EPA Bureau of Water.

   b. Land treatment permit from the Division of Water Pollution Control. Yes ☐ No ☒
      If the answer to this question is "yes", identify the permit number.

   c. Construction or Operating permit from the Division of Air Pollution Control. Yes ☐ No ☒
      If the answer to this question is "yes", identify the permit number.

10. How will groundwater at the facility be monitored following completion of the remedy to ensure that the groundwater standards have been attained?

    Quarterly monitoring of the 40 CFR 257 Appendix III and Appendix IV parameter will help determine compliance over time. Assessment monitoring under 40 CFR 257 will also continue.

Based on my inquiry of those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true and accurate and confirm that the actions identified herein will be undertaken in accordance with the schedule set forth herein.

Marion Power Station	Donald R Crilley
Facility Name	Signature of Owner/Operator
11543 Lake Egypt Road, Marion, IL 62959	***Southern Illinois Power Cooperative***
Location of Facility	Name of Owner/Operator
1990555005	***July 24, 2020***
Illinois EPA Identification Number	Date

EXHIBIT 12

RUS-18-89

END

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
WATER POLLUTION CONTROL PERMIT

LOG NUMBERS: 3064-89

PERMIT NO.: 1989-EN-3064

FINAL PLANS, SPECIFICATIONS, APPLICATION AND SUPPORTING DOCUMENTS
PREPARED BY: Clarida Engineering Company

DATE ISSUED: May 17, 1989

SUBJECT: SOUTHERN ILLINOIS POWER COOPERATIVE, INC. - Marion Generating Station - South Fly Ash Pond

PERMITTEE TO CONSTRUCT
Southern Illinois Power Co-Operative, Inc.
Rural Route 4
Marion, Illinois 62959

Permit is hereby granted to the above designated permittee to construct water pollution control facilities described as follows:

Construction of three earthen dams on an existing drainage way to impound 15.3 surface acres with a capacity of 117 acre-feet to form a new south fly ash pond. The dams will be constructed of compacted earthen fill to elevation 543.0, and riprapped at elevations 539.0 - 542.0. The water level will be at elevation 540.0, with discharge via a 48 inch CMP riser and 230 linear feet of 42 inch CMP and one effluent manhole. A flap gate will be provided at the effluent manhole to enable complete shut off of the pond discharge. There will be an emergency spillway to protect the dam structures.

Additional items include one upgradient and two downgradient performance monitoring wells as shown on the plan drawings for the project.

Design flows are 1.0 MGD design average flow, 1.0 MGD design maximum flow.

This Permit is issued subject to the following Special Condition(s). If such Special Condition(s) require(s) additional or revised facilities, satisfactory engineering plan documents must be submitted to this Agency for review and approval for issuance of a Supplement Permit.

SPECIAL CONDITION 1: The operational portion of this permit shall be governed by NPDES Permit No. IL0004316.

Continued on Page 2

THE STANDARD CONDITIONS OF ISSUANCE INDICATED ON THE REVERSE SIDE MUST BE COMPLIED WITH IN FULL. READ ALL CONDITIONS CAREFULLY.

TGM:dls/1789k,40-41
cc: EPA - Marion Region
Clarida Engineering Company
Record
Binds

DIVISION OF WATER POLLUTION CONTROL

Thomas G. McSwiggin, P.E.
Manager, Permit Section

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
WATER POLLUTION CONTROL PERMIT

LOG NUMBERS: 3064-89 PERMIT NO.: 1989-EN-3064

FINAL PLANS, SPECIFICATIONS, APPLICATION AND SUPPORTING DOCUMENTS
PREPARED BY: Clarida Engineering Company

DATE ISSUED: May 17, 1989

SUBJECT: SOUTHERN ILLINOIS POWER COOPERATIVE, INC. - Marion Generating Station - South Fly Ash Pond

SPECIAL CONDITION 2: The permittee shall provide a pond seal for the entire pond area both bottom and side slopes consisting of a minimum of 3 feet of compacted clay or in situ clay soils exhibiting a maximum permeability of 1×10^{-7} cm/sec. All unsuitable material shall be excavated and removed and replaced with compacted clay seal. Clay soils shall be placed in maximum nine inch lifts and compacted to at least 95% of maximum dry density in accordance with ASTM D698.

SPECIAL CONDITION 3: The areas of pond shoreline not provided with riprap shall be seeded and covered with a soil erosion control fabric.

SPECIAL CONDITION 4: The upgradient performance monitoring well No. 3 shall be relocated if necessary to ensure that the well will not be contaminated by the permitted facilities.

SPECIAL CONDITION 5: This permit does not take into consideration the structural stability of any part of the project.

SPECIAL CONDITION 6: The permittee shall sample the performance monitoring wells on a semi-annual basis during the months of June and December for the following parameters using analytical test methods promulgated in 40 CFR 136 or other approved methods.

PARAMETER
Iron
Boron
Cadmium
Zinc
pH

Sample results shall be reported in units of mg/l down to analytical detection limits which shall be comparable with the method detection limits in the 40 CFR 136 regulations. The results shall be submitted to the Agency on an annual basis by March 31, to the following address:

Illinois Environmental Protection Agency
Division of Water Pollution Control, Permit Section
2200 Churchill Road
Post Office Box 19276
Springfield, Illinois 62794-9276

READ ALL CONDITIONS CAREFULLY:
STANDARD CONDITIONS

The Illinois Environmental Protection Act (Illinois Revised Statutes, Chapter 111-1/2, Section 1039) grants the Environmental Protection Agency authority to impose conditions on permits which it issues.

1. Unless the construction for which this permit is issued has been completed, this permit will expire (1) two years after the date of issuance for permits to construct sewers or wastewater sources or (2) three years after the date of issuance for permits to construct treatment works or pretreatment works.

2. The construction or development of facilities covered by this permit shall be done in compliance with applicable provisions of Federal laws and regulations, the Illinois Environmental Protection Act, and Rules and Regulations adopted by the Illinois Pollution Control Board.

3. There shall be no deviations from the approved plans and specifications unless a written request for modification of the project, along with plans and specifications as required, shall have been submitted to the Agency and a supplemental written permit issued.

4. The permittee shall allow any agent duly authorized by the Agency upon the presentation of credentials:

   a. to enter at reasonable times, the permittee's premises where actual or potential effluent, emission or noise sources are located or where any activity is to be conducted pursuant to this permit.

   b. to have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit.

   c. to inspect at reasonable times, including during any hours of operation of equipment constructed or operated under this permit, such equipment or monitoring methodology or equipment required to be kept, used, operated, calibrated and maintained under this permit.

   d. to obtain and remove at reasonable times samples of any discharge or emission of pollutants.

   e. to enter at reasonable times and utilize any photographic, recording, testing, monitoring or other equipment for the purpose of preserving, testing, monitoring, or recording any activity, discharge, or emission authorized by this permit.

5. The issuance of this permit:

   a. shall not be considered as in any manner affecting the title of the premises upon which the permitted facilities are to be located;

   b. does not release the permittee from any liability for damage to person or property caused by or resulting from the construction, maintenance, or operation of the proposed facilities;

   c. does not release the permittee from compliance with other applicable statutes and regulations of the United States, of the State of Illinois, or with applicable local laws, ordinances and regulations;

   d. does not take into consideration or attest to the structural stability of any units or parts of the project;

   e. in no manner implies or suggests that the Agency (or its officers, agents or employees) assumes any liability, directly or indirectly, for any loss due to damage, installation, maintenance, or operation of the proposed equipment or facility.

6. Unless a joint construction/operation permit has been issued, a permit for operating shall be obtained from the Agency before the facility or equipment covered by this permit is placed into operation.

7. These standard conditions shall prevail unless modified by special conditions.

8. The Agency may file a complaint with the Board for suspension or revocation of a permit:

   a. upon discovery that the permit application contained misrepresentations, misinformation or false statements or that all relevant facts were not disclosed; or

   b. upon finding that any standard or special conditions have been violated; or

   c. upon any violation of the Environmental Protection Act or any Rule or Regulation effective thereunder as a result of the construction or development authorized by this permit.

DISCLOSURE STATEMENT (Illinois Revised Statutes, 1979, Chapter 111½, Section 1039. Disclosure of this information is required under that Section. Failure to do so may prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center

FOR IEPA USE:
LOG NO. 2378-88
DATE RECEIVED:

RECEIVED
NOV 30 1988
Environmental Protection Agency
WPC—Permit Log In

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF WATER POLLUTION CONTROL
PERMIT SECTION
Springfield, Illinois 62706

APPLICATION FOR PERMIT OR CONSTRUCTION APPROVAL

WPC-PS-1

1. **NAME AND LOCATION:**

Name of project: Southern Illinois Power Co-operative - South Fly-ash Pond
SOUTHERN PREC.
Municipality or Township: R.R. 4, Marion, IL. County: Williamson

2. **BRIEF DESCRIPTION OF PROJECT:** Construction of Fly-ash settling pond for an electrical generator

3. **DOCUMENTS BEING SUBMITTED:** If the project involves any of the items listed below, submit the corresponding schedule, and check the appropriate spaces.

PROJECT

Private Sewer Connection	A	Spray Irrigation	H
Public Sewer Extension	B	Septic Tanks	I
Sewer Extension Construct Only	C	Industrial Treatment or Pretreatment	J X
Sewage Treatment Works	D		
Excess Flow Treatment	E	Cyanide Acceptance	L
Lift Station/Force Main	F	Updating Cyanide Acceptance Form	M
Sludge Disposal	G	Waste Characteristics	N

LAND TRUST: Is the project identified in item number 1 herein, for which a permit is requested, to be constructed on land which is the subject of a trust? ☐ Yes ☒ No
If yes, item number 6.1.1 herein must be signed by a beneficiary, trustee or trust officer, and a trust disclosure must be submitted (see instructions, item 3).

Plans: Title Southern Illinois Power Co-Op, South Flyash Pond
Number of Pages: 17
Specifications: Title
Number of Books/Pages: 6
Other Documents (Please Specify)

4. **THIS IS AN APPLICATION FOR (CHECK):**

X A. Joint Construction And Operating Permit
B. Authorization To Construct (See Instructions) NPDES Permit No. IL00 Issue Date
C. Construct Only Permit (Does Not Include Operations)
D. Operate Only Permit (Does Not Include Construction)

5. **CERTIFICATIONS AND APPROVAL:**

5.1 **Certificate by Design Engineer**
I hereby certify that I am familiar with the information contained in this application, including the attached schedules indicated above, and that to the best of my knowledge and belief such information is true, complete and accurate. The plans and specifications (and specifications other than Standard Specifications or local specifications on file with this Agency) as described above were prepared by me or under my direction.

ENGINEER Eugene F. Eisenhauer (NAME) 024491 (REGISTRATION NUMBER)
FIRM: Clarida Engineering Co.
ADDRESS: 308 S. Court St.
Marion, IL. PHONE NUMBER 618-993-6411
SIGNATURE Eugene F. Eisenhauer

EUGENE F. EISENHAUER 024491 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS SEAL

6. **CERTIFICATIONS AND APPROVALS FOR PERMITS:**

6.1 **Certificate by Applicant(s)**
I/We hereby certify that I/we have read and thoroughly understand the conditions and requirements of this Application, and am/are authorized to sign this application in accordance with the Rules and Regulations of the Illinois Pollution Control Board.
I/We hereby agree to conform with the Standard Conditions and with any other Special Conditions made part of this Permit.

6.1.1 **NAME OF APPLICANT FOR PERMIT OR AUTHORIZATION TO CONSTRUCT** Southern Illinois Power Co-Op

R.R. #4	Marion	Illinois	62959
STREET	CITY	STATE	ZIP CODE

SIGNATURE Richard D Wyatt
TITLE Support Systems Department Manager ORGANIZATION S.I.P.C.

IL 532-0010
WPC 150 Rev. 2/83

6.1.2 NAME OF APPLICANT FOR PERMIT TO OWN AND OPERATE Southern Illinois Power Co-Operative

R.R. #4 | Marion | Illinois | 62959

STREET | CITY | STATE | ZIP CODE

SIGNATURE Richard D Mydtt

TITLE Support Systems Department Manager

6.2 Attested (Units of Government) N/A

DATE _____ SIGNATURE _____ TITLE _____
(CITY CLERK, VILLAGE CLERK, SANITARY DISTRICT CLERK, ETC.)

6.3 Applications from non-governmental applicants which are not signed by the owner, must be signed by a principal executive officer of at least the level of vice president, or his duly authorized representative.

6.4 CERTIFICATE BY INTERMEDIATE SEWER OWNER

I hereby certify that (Please check one): N/A

_____ 1. The sewers to which this project will be tributary have adequate reserve capacity to transport the wastewater that will be added by this project without causing a violation of the Environmental Protection Act or Subtitle C, Chapter I, or

_____ 2. The Illinois Pollution Control Board, in PCB _____ dated _____ granted a variance from Subtitle C, Chapter I to allow construction and operation of the facilities that are the subject of this application.

Name and location of sewer system to which this project will be tributary:

SEWER SYSTEM OWNER _____

STREET | CITY | STATE | ZIP CODE

SIGNATURE _____ DATE _____ TITLE _____

6.4.1 ADDITIONAL CERTIFICATE BY INTERMEDIATE SEWER OWNER N/A

I hereby certify that (Please check one):

_____ 1. The sewers to which this project will be tributary have adequate reserve capacity to transport the wastewater that will be added by this project without causing a violation of the Environmental Protection Act or Subtitle C, Chapter I, or

_____ 2. The Illinois Pollution Control Board, in PCB _____ dated _____ granted a variance from Subtitle C, Chapter I to allow construction and operation of the facilities that are the subject of this application.

Name and location of sewer system to which this project will be tributary:

SEWER SYSTEM OWNER _____

STREET | CITY | STATE | ZIP CODE

SIGNATURE _____ DATE _____ TITLE _____

6.5 CERTIFICATE BY WASTE TREATMENT WORKS OWNER N/A

I hereby certify that (Please check one):

_____ 1. The waste treatment plant to which this project will be tributary has adequate reserve capacity to treat the wastewater that will be added by this project without causing a violation of the Environmental Protection Act or Subtitle C, Chapter I, or

_____ 2. The Illinois Pollution Control Board, in PCB _____ dated _____ granted a variance from Subtitle C, Chapter I to allow construction and operation of the facilities that are the subject of this application.

I also certify that the industrial waste discharges described in the application is capable of being treated by the treatment works, and such waste discharges will be in compliance with all currently applicable local, state or federal pretreatment requirements.

Name and location of waste treatment works to which this project will be tributary:

TREATMENT WORKS OWNER Southern Illinois Power Co-Op

R.R. #4 | Marion | Illinois | 62959

STREET | CITY | STATE | ZIP CODE

SIGNATURE Richard D Mydtt DATE 11/15/89 TITLE Support Systems Department Manager

JG:6452C
WPC 150
(Rev 2/83)

FOR IEPA USE ONLY
DATE RECEIVED: 83 78-88

RECEIVED
NOV 30 1988
Environmental Protection Agency
WPC—Permit Log In

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF WATER POLLUTION CONTROL
PERMIT SECTION
Springfield, Illinois 62706

SCHEDULE J INDUSTRIAL TREATMENT WORKS CONSTRUCTION OR PRETREATMENT WORKS

1. NAME AND LOCATION:

1.1 Name of project Southern Illinois Power Co-Operative - South Flyash Pond

1.2 Plant Location

1.2.1	SW¼	26	10S	2E	3rd
	Quarter Section	Section	Township	Range	P.M.

1.2.2 Latitude 37 ° 36 ' 43 "North
Longitude 88 ° 57 ' 30 "West

1.2.3 Name of USGS Quadrangle Map (7.5 ~~or 15 Minutes~~) Goreville

2. NARRATIVE DESCRIPTION AND SCHEMATIC WASTE FLOW DIAGRAM: (see instructions)

This project consists of the construction of an additional flyash settling pond at the above electrical generating plant. The flow will be thru this pond and then thru several other ponds. A flow schematic has been attached.

2.1 PRINCIPAL PRODUCTS: Fly-ash from electrical generating plant.

2.2 PRINCIPAL RAW MATERIALS:

3. DESCRIPTION OF TREATMENT FACILITIES:

3.1 Submit a flow diagram through all treatment units showing size, volumes, detention times, organic loadings, surface settling rate, weir overflow rate, and other pertinent design data. Include hydraulic profiles and description of monitoring systems.

3.2 Waste Treatment Works is: Batch ____, Continuous X; No. of Batches/day ____, No. of Shifts/day ____

3.3 Submit plans and specifications for proposed construction.

3.4 Discharge is: Existing (1); Will begin on (1).

4. DIRECT DISCHARGE IS TO: Receiving Stream X Municipal Sanitary Sewer ____, Municipal storm or municipal combined sewer ____. If receiving stream or storm sewer indicated complete the following:

Name of receiving stream Little Saline Creek; tributary to South Fork Saline River;
tributary to ____; tributary to ____.

5. Is the treatment works subject to flooding? If so, what is the maximum flood elevation of record (in reference to the treatment works datum) and what provisions have been made to eliminate the flooding hazard? No

6. APPROXIMATE TIME SCHEDULE: Estimated construction schedule:

Start of Construction Mar. 1, 1989; Date of Completion September 1, 1989
Operation Schedule Nov. 1, 1989; Date Operation Begins ____
100% design load to be reached by year Nov. 1, 1995.

(1) Present discharge is from another pond but will be switched to this pond when other pond is filled with settled flyash. Discharge point into Little Saline Creek will remain the same.

7. DESIGN LOADINGS

7.1 Design population equivalent (one population equivalent is 100 gallons of wastewater per day, containing 0.17 pounds of BOD_5 and 0.20 pounds of suspended solids; N/A

BOD_____; Suspended Solids_____; Flow_____.

7.2 Design Average Flow Rate_____MGD.

7.3 Design Maximum Flow Rate 1.0(2) MGD.

7.4 Design Minimum Flow Rate_____MGD.

7.5 Minimum 7-day, 10-year low flow_____cfs_____MGD.

Minimum 7-day, 10-year flow obtained from_____.

7.6 Dilution Ratio_____;_____.

(2) Flow from generating plant will not vary to a great extent.

8. FLOW TO TREATMENT WORKS (if existing):

8.1 Flow (last 12 months)

8.1.1 Average Flow 1.0* MGD

8.1.2 Maximum Flow 1.0 MGD

8.2 Equipment used in determing above flows Electronic flow meters.

9. Has a preliminary engineering report for this project been submitted to this Agency for Approval?

YES X NO___. If so, when was it submitted and approved. Date Submitted July 20, 1988

Certification#_____

Dated_____

10. List Permits previously issued for the facility: N.P.D.E.S. Permit #0004316

11. Describe provisions for operation during contingencies such as power failures, flooding, peak loads, equipment failure, maintenances shut-downs and other emergencies. N/A

12. Complete and submit Schedule G if sludge disposal will be required by this facility. N/A

13. WASTE CHARACTERISTICS: Schedule N must be submitted.

14. TREATMENT WORKS OPERATOR CERTIFICATION: List names and certification numbers of certified operators:

Richard G. Myott - (certificate attached)

Permeability Data Sheets

Proposed Flyash Pond

Southern Illinois Power Co-Op

Test No.	1	2
Boring	4A	6A
Depth (ft)	1.0-4.0	4.27-4.73
Sample Diameter(cm)	7.29	6.53
Sample Height (cm)	13.54	14.10
Moisture Content (%)	13.9	20.8
Dry Unit Weight (PCF)	108.8	104.7
Soil Classification	Silty Clay	Silty Clay
Backsaturation Pressure (cm)	95	95
Cell Pressure (cm)	98	98
Driving Pressure (cm)	80	80
Tailwater Pressure (cm)	0	0
Hydraulic Gradient	5.91	5.67
Permeant Liquid	Tap Water	Tap Water
Test Length (Hrs)	12.52	9.53
Permeability (cm/sec)	6.19×10^{-8}	3.54×10^{-8}

2. Pond Elevation Capacity Data

Elevation	Area(SF)	Incremental Vol. (Acre-Feet)	Total Vol. (Acre-Feet)
519	0	0	0
520	2270	0.03	0.03
525	58628	3.5	3.53
530	207,487	15.27	18.80
535	417,002	35.84	54.64
540	667,218=15.3A.	62.23	116.87
543	732,861	48.21	165.08

The information was calculated by myself during preparation of the HEC-1 Program. Should you have any questions, please feel free to contact us at your convenience.

Sincerely,

HOLCOMB FOUNDATION ENGINEERING

Timothy J. Holcomb, P.E.

TJH/jg

ATTACHMENT #1

Environmental Protection Agency
State of Illinois

RICHARD G. MYOTT

having fulfilled the requirements therefore, is hereby awarded this

Certificate of Competency
as an

Industrial
Wastewater Treatment Works Operator

Southern Illinois Power Co-Op

Issued this 6th day of September A.D. 1988

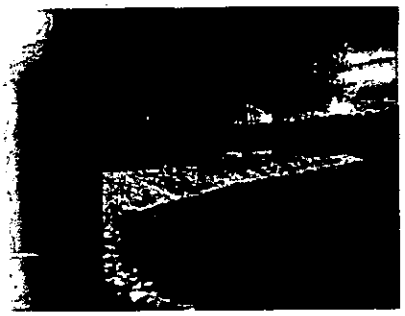
Bernard P. Killian
Director

Erosion Control Blankets

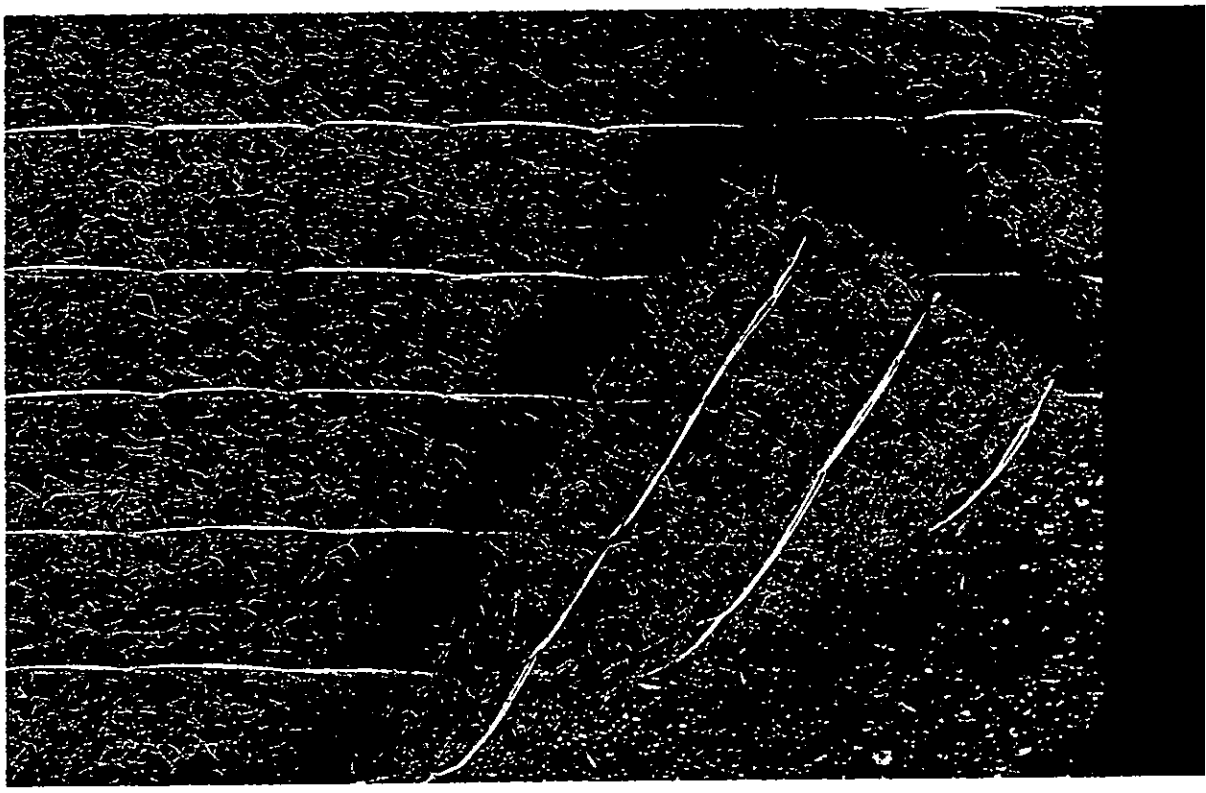
P300

P300 consists of 100% man-made synthetic fibers, heavy netting and is sewn together for added stability. This blanket is a cost-effective non-degradable alternative to rip-rap along shorelines. It is also an excellent ditch liner where attempts to establish vegetation have failed.

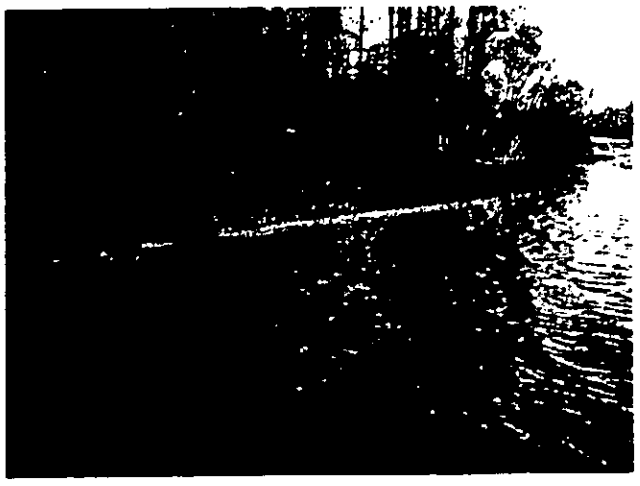
Bank cutting from wave action-Lake Barkley, Kentucky



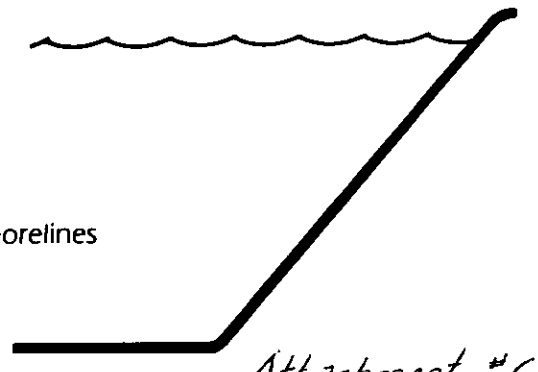
Shoreline graded and seeded. North American Green P300 installed above and below projected high water line.



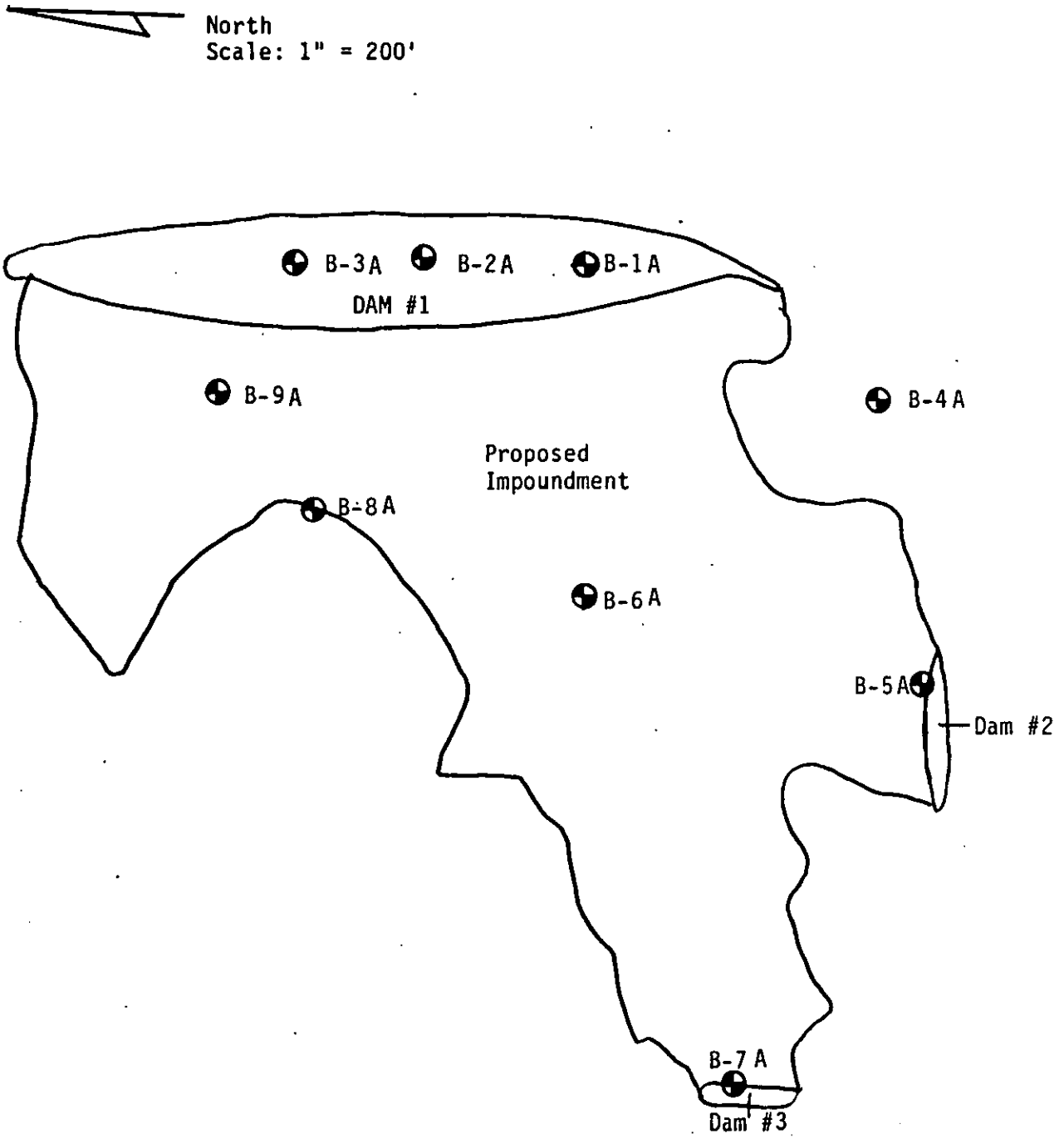
P300



The combination of North American Green P300 and selected vegetation has stabilized the shoreline.



Attachment #6

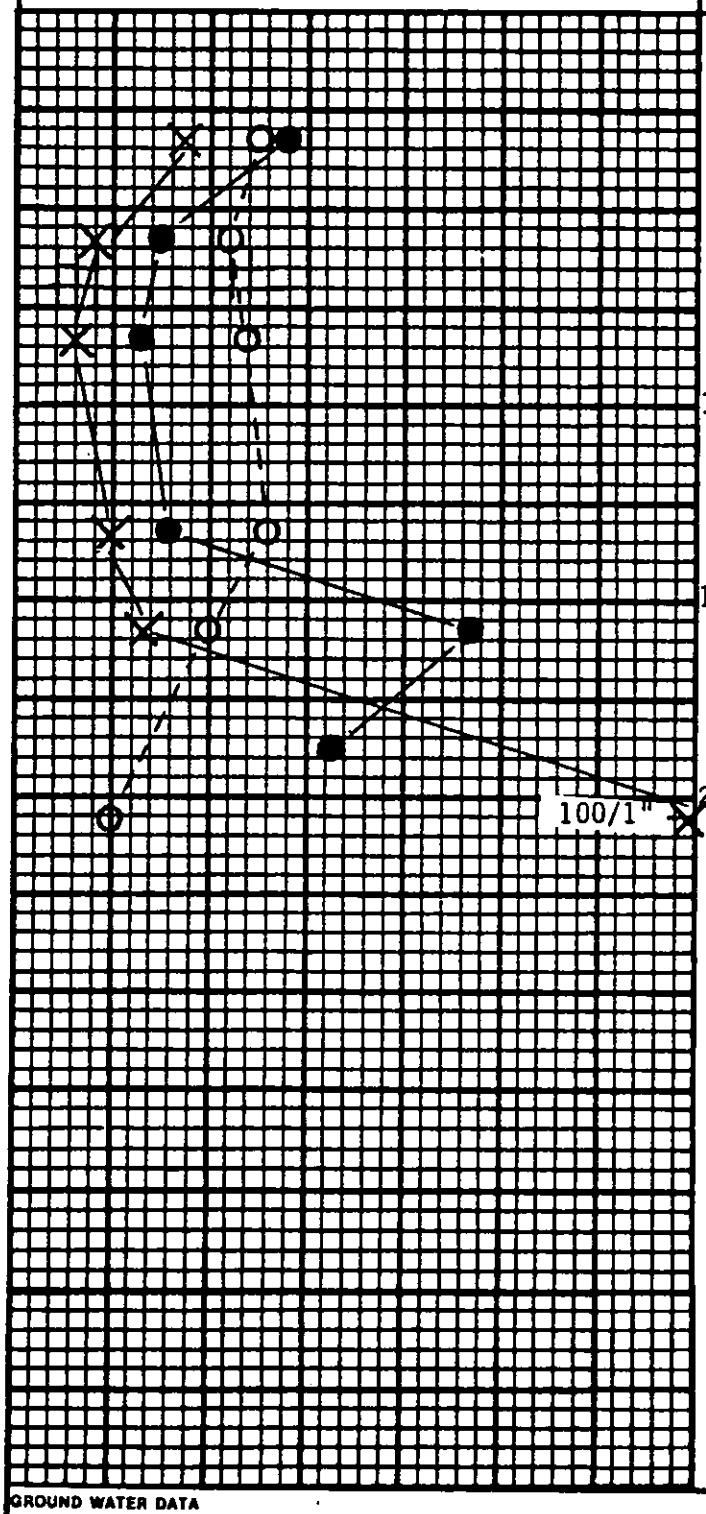


Boring Location Diagram

Attachment #2

Project:	Client:	Date:
Proposed S Flyash Pond Southern IL Power Co-op	Clarida Engineering Marion, Illinois	05-02-88
		Project No: H-88040

LOG OF BORING 1A



DEPTH IN FEET	SAMPLE NO.	TYPE SAMPLE	SAMPLE DISTANCE	DESCRIPTION OF MATERIAL
				SURFACE ELEVATION 529.5
				Dark Brown TOPSOIL
				Brown Silty Clay (CL) Glacial Till
	1	ss		
5	2	ss		
	3	ss		
10	4	st		
	5	ss		
15	6	ss		
	7	st		Weathered SANDSTONE
20	8	ss		
				End of Boring @ -21'

GROUND WATER DATA

No ground water encountered during drilling.

Water @ -17' after 6.5 hours.

PROJECT
Proposed South Flyash Pond
Southern Illinois Power Co-op

DATE OF BORING
04-15-88

CLIENT
Clarida Engineering
Marion, Illinois

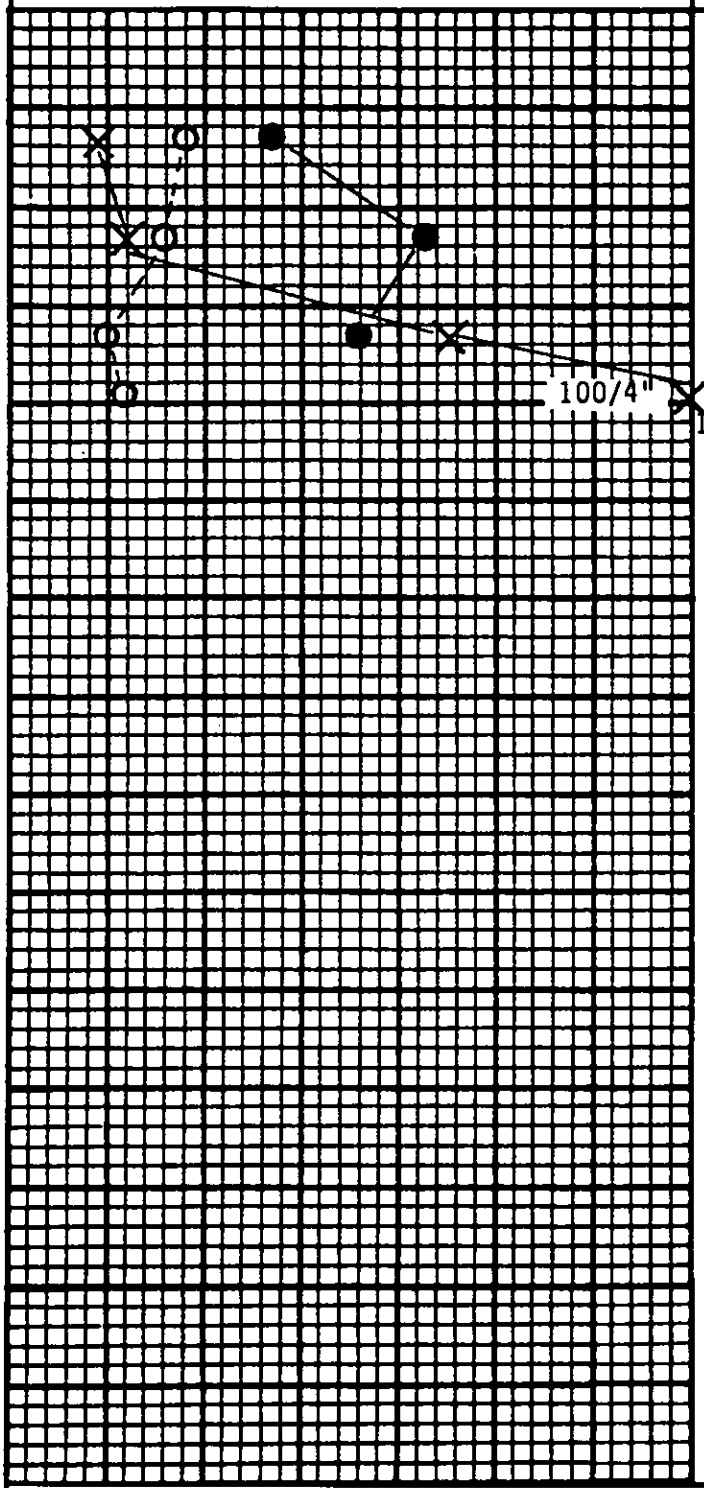
PROJECT NO.
H-88040

LOG OF BORING 2 A

UNCONFINED COMPRESSIVE STRENGTH, TONS/FT²
1 2 3 4 5 6

PLASTIC LIMIT % □ — WATER CONTENT % ○ — LIQUID LIMIT % △

STANDARD "N" PENETRATION, BLOWS/FT
10 20 30 X 40 50 60



DEPTH IN FEET	SAMPLE NO.	TYPE SAMPLE	SAMPLE DISTANCE	DESCRIPTION OF MATERIAL
				SURFACE ELEVATION 519.7
				TOPSOIL
				Brown Mottled Gray Clayey SILT (ML) Alluvium
	1	ss		Brown Mottled Gray Silty CLAY (CL) with Sandstone Fragments
5	2	ss		
	3	ss		Highly Weathered SHALE
	4	ss		
10				End of Boring @ -10½'

GROUND WATER DATA
Ground water encountered @ -7' during drilling.

Water @ -4.5' after 5 hours. Plugged @ -8'.

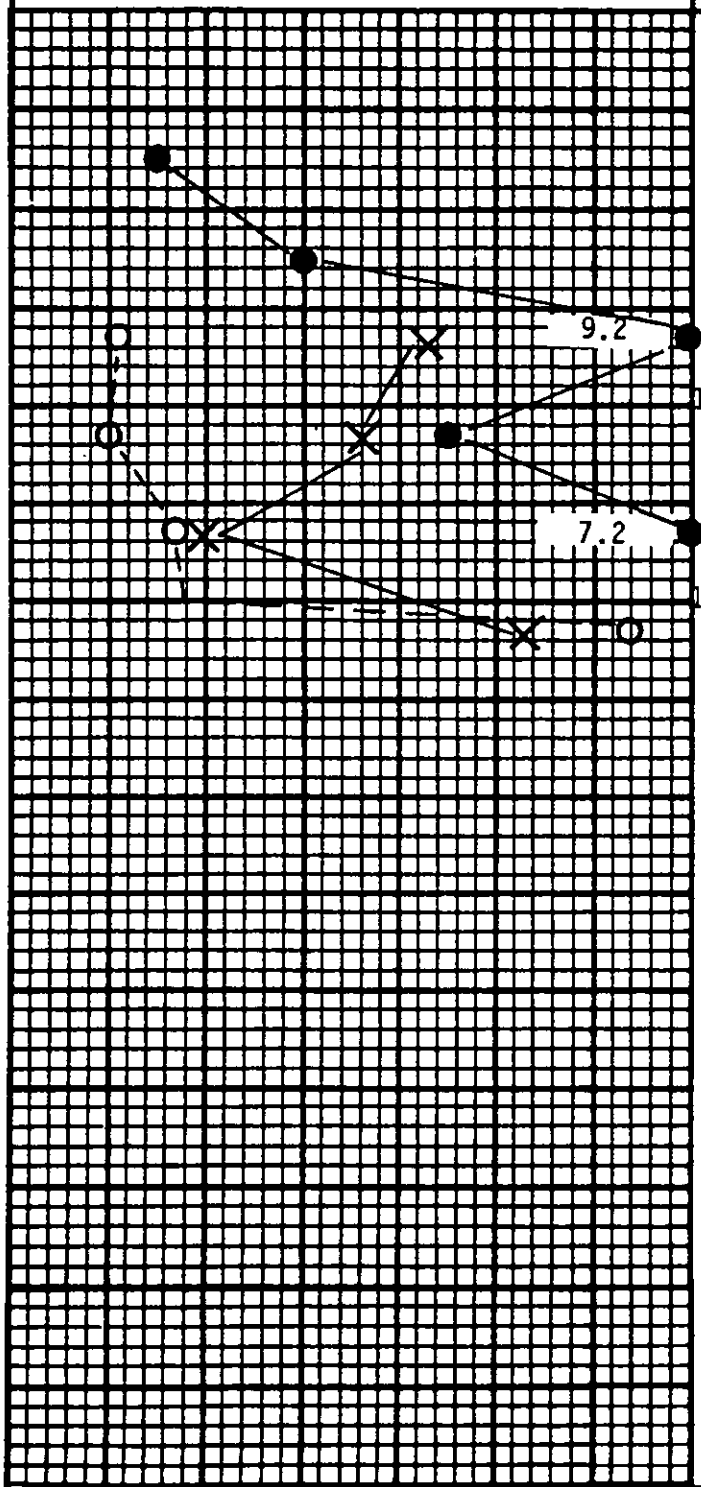
PROJECT: Proposed South Flyash Pond
Southern Illinois Power Co-op

DATE OF BORING: 04-15-88

CLIENT: Clarida Engineering
Marion, Illinois

PROJECT NO.: H-88040

UNCONFINED COMPRESSIVE STRENGTH, TONS/FT²
1 2 3 4 5 6
PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT %
STANDARD "N" PENETRATION, BLOWS/FT
10 20 30 40 50 60



DEPTH IN FEET	SAMPLE NO.	TYPE SAMPLE	SAMPLE DISTANCE	DESCRIPTION OF MATERIAL
				SURFACE ELEVATION 521.3
				TOPSOIL
				Brown Mottled Gray Sandy CLAY (CL)
	1	st		
5	2	st		
	3	ss		Highly Weathered SANDSTONE
10	4	ss		
	5	ss		
15	6	ss		
				Black COAL
				End of Boring @ -16½'

GROUND WATER DATA
Ground water encountered @ -15' during drilling.
Water @ -11' after 3.5 hours.
Plugged @ -12½'

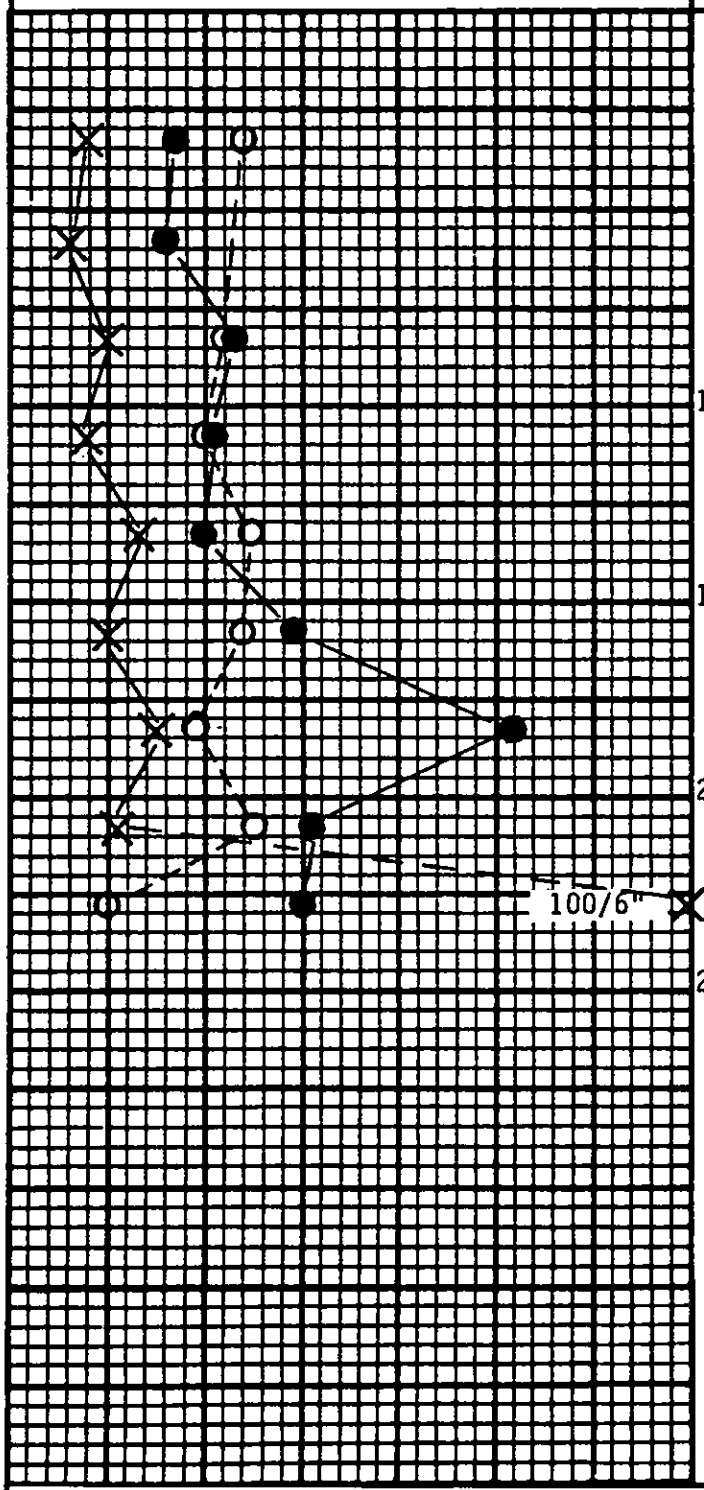
PROJECT
Proposed South Flyash Pond
Southern Illinois Power Co-op

DATE OF BORING
04-15-88

CLIENT
Clarida Engineering
Marion, Illinois

PROJECT NO.
H-88040

LOG OF BORING 4 A



DEPTH IN FEET	SAMPLE NO.	TYPE SAMPLE	SAMPLE DISTANCE	DESCRIPTION OF MATERIAL
				SURFACE ELEVATION 547.4
				TOPSOIL
				Brown Mottled Gray Silty CLAY (CL)
	1	ss		
5	2	ss		
	3	ss		
10	4	ss		
				Brown Mottled Gray Silty CLAY (CL) with Pebbles
	5	ss		
15	6	ss		
	7	ss		
20	8	ss		
				Weathered SANDSTONE
	9	ss		Hard SANDSTONE
25				End of Boring @ -23'

GROUND WATER DATA
No ground water encountered during drilling.

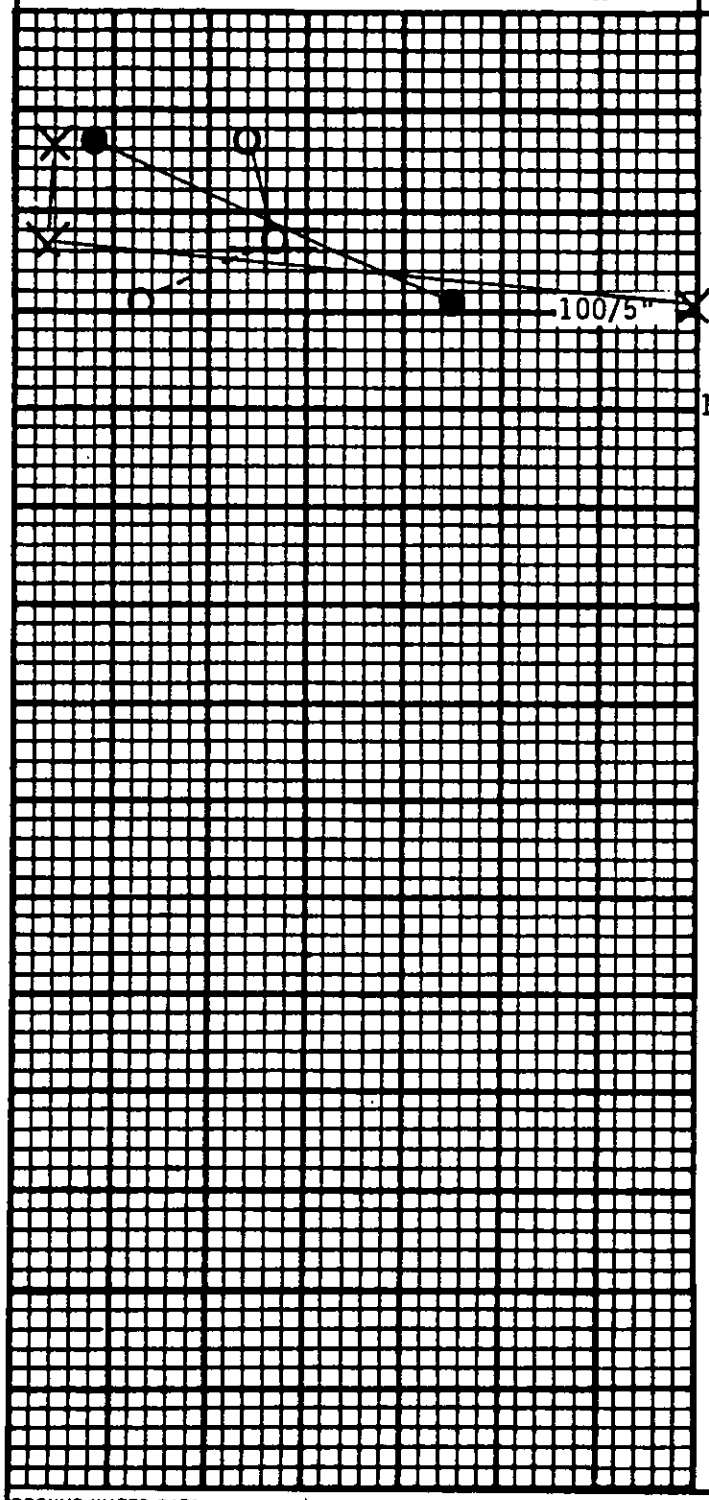
PROJECT
Proposed South Flyash Pond
Southern Illinois Power Co-op

DATE OF BORING
04-15-88

CLIENT
Clarida Engineering
Marion, Illinois

PROJECT NO.
H-88040

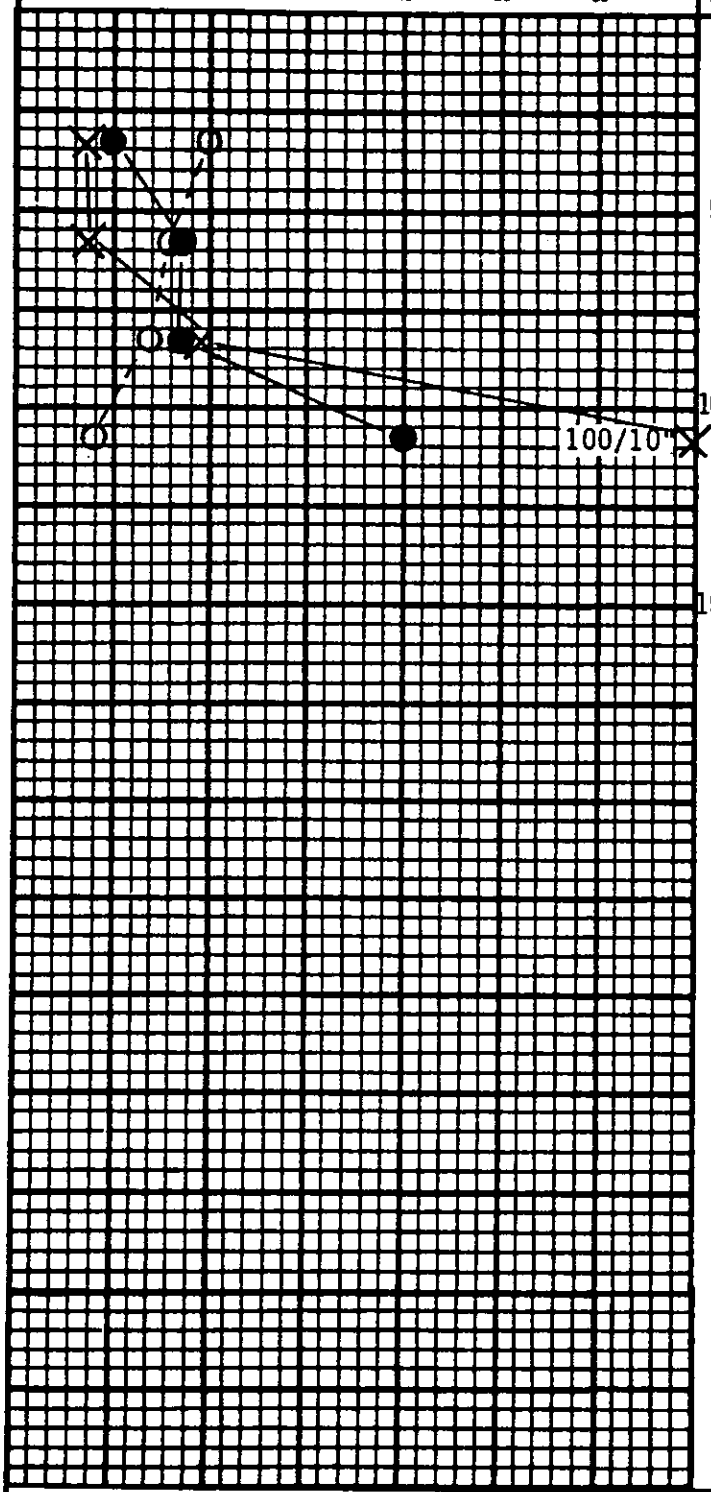
LOG OF BORING



DEPTH IN FEET	SAMPLE NO.	TYPE SAMPLE	SAMPLE DISTANCE	DESCRIPTION OF MATERIAL
				SURFACE ELEVATION 537.7
				TOPSOIL
	1	ss		Gray Mottled Brown Silty CLAY (CL) Alluvium
5	2	ss		
	3	ss		Highly Weathered SANDSTONE
				Hard SANDSTONE
10				End of Boring @ -7½' Auger Refusal

GROUND WATER DATA Ground water encountered @ -4' during drilling	Plugged @ -3½' upon completion. Water @ -3' after 5.5 hours.
PROJECT Proposed South Flyash Pond Southern Illinois Power Co-op	DATE OF BORING 04-15-88
CLIENT Clarida Engineering Marion, Illinois	PROJECT NO. H-88040

LOG OF BORING 6A



DEPTH IN FEET	SAMPLE NO.	TYPE SAMPLE	SAMPLE DISTANCE	DESCRIPTION OF MATERIAL
				SURFACE ELEVATION 527.2
				TOPSOIL
				Brown Mottled Gray Silty CLAY (CL)
	1	ss		
5				
	2	ss		Weathered SANDSTONE
	3	ss		
10				
	4	ss		Hard SANDSTONE
				End of Boring @ -11½'
15				

GROUND WATER DATA
No ground water encountered during drilling.

Plugged @ -8½'

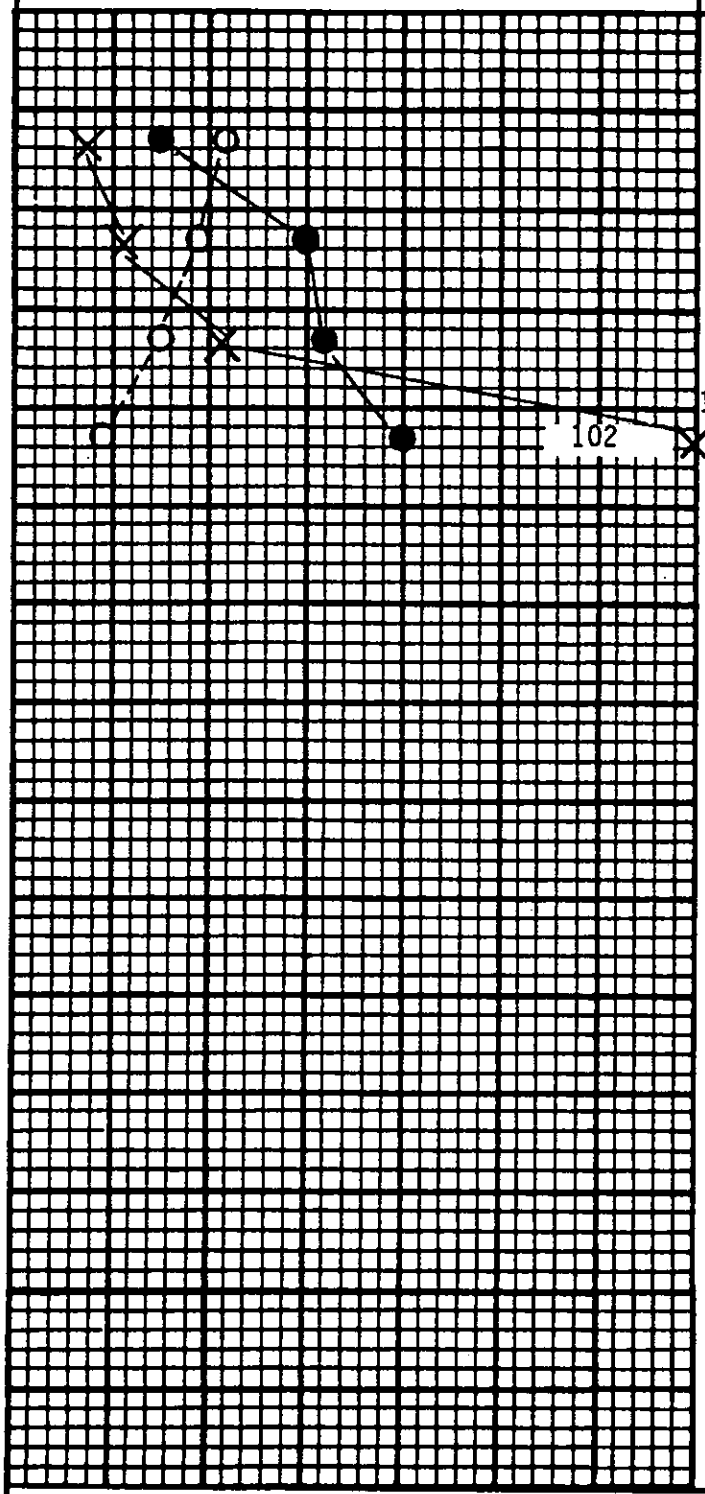
PROJECT
Proposed South Flyash Pond
Southern Illinois Power Co-op

DATE OF BORING
04-15-88

CLIENT
Clarida Engineering
Marion, Illinois

PROJECT NO.
H-88040

LOG OF BORING 7 A



DEPTH IN FEET	SAMPLE NO.	TYPE SAMPLE	SAMPLE DISTANCE	DESCRIPTION OF MATERIAL
				SURFACE ELEVATION 534.0
				TOPSOIL
				Brown Mottled Gray Silty CLAY (CL)
	1	ss		
5				
	2	ss		Weathered SANDSTONE
	3	ss		
10				
	4	ss		Hard SANDSTONE
				End of Boring @ -11½'

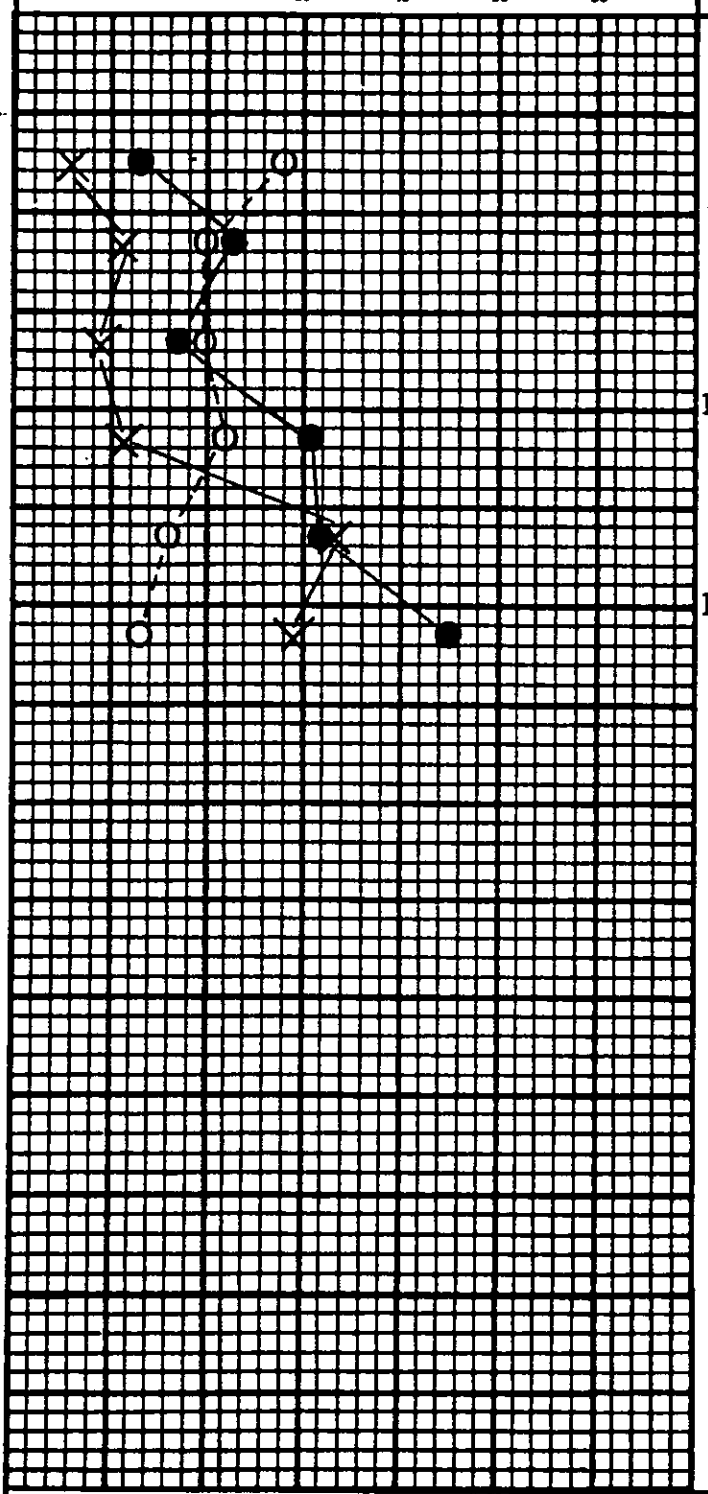
GROUND WATER DATA
No ground water encountered during drilling.

PROJECT
Proposed South Flyash Pond
Southern Illinois Power Co-op

DATE OF BORING
04-15-88

CLIENT
Clarida Engineering
Marion, Illinois

PROJECT NO.
H-88040



DEPTH IN FEET	SAMPLE NO.	TYPE SAMPLE	SAMPLE DISTANCE	DESCRIPTION OF MATERIAL
				SURFACE ELEVATION 537.8
				TOPSOIL
				Brown Mottled Gray Silty CLAY (CL)
	1	ss		
5	2	ss		
	3	ss		
10	4	ss		
	5	ss		Weathered SANDSTONE
15	6	ss		
				Hard SANDSTONE
				End of Boring @ -16½'

GROUND WATER DATA
No ground water encountered during drilling.

Plugged @ -11'

PROJECT
Proposed South Flyash Pond
Southern Illinois Power Co-op

DATE OF BORING
04-15-88

CLIENT
Clarida Engineering
Marion, Illinois

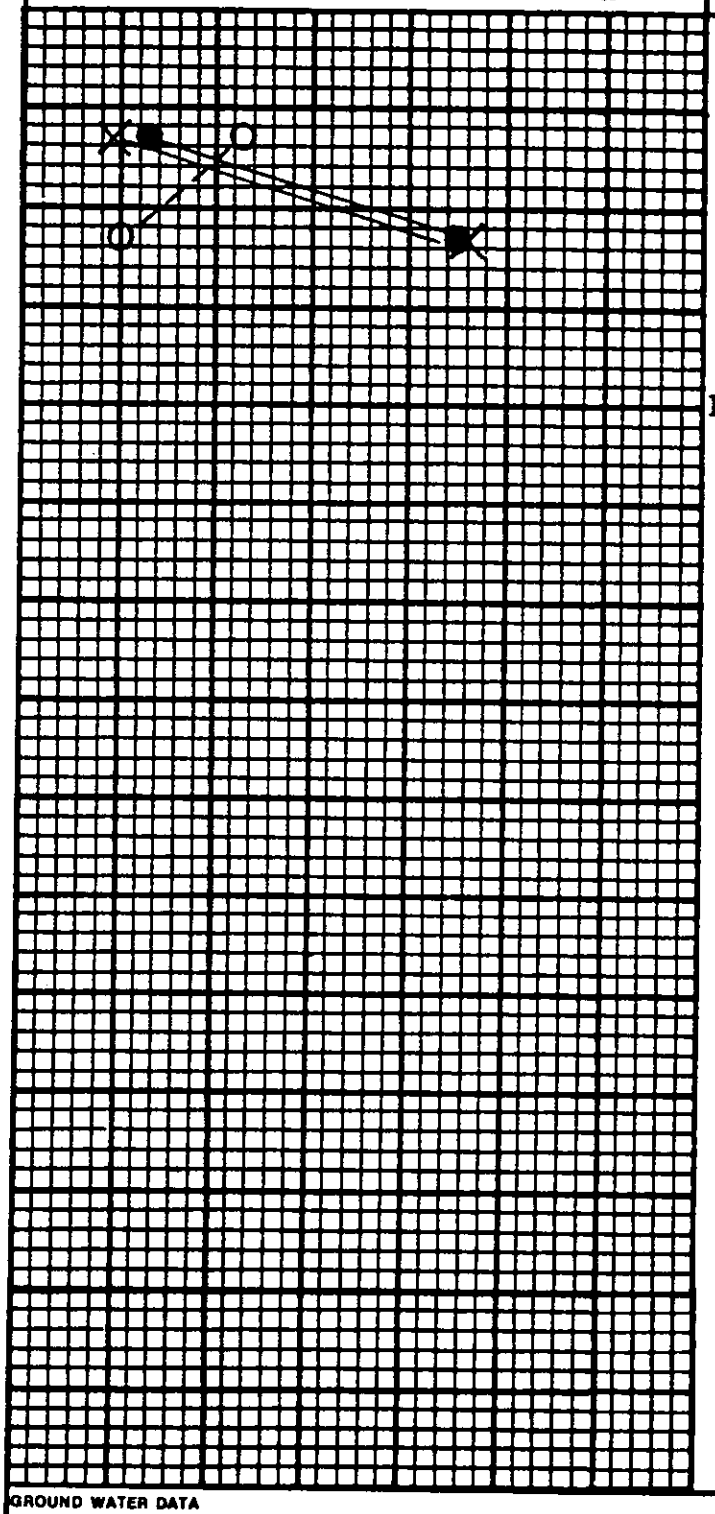
PROJECT NO.
H-88040

LOG OF BORING 9 A

UNCONFINED COMPRESSIVE STRENGTH, TONS/FT.
1 2 3 4 5 6

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT %

STANDARD "N" PENETRATION, BLOWS/FT
10 20 30 40 50 60



DEPTH IN FEET	SAMPLE NO.	TYPE SAMPLE	SAMPLE DISTANCE	DESCRIPTION OF MATERIAL
				SURFACE ELEVATION 526.0
				TOPSOIL
				Brown Mottled Gray Silty CLAY (CL)
	1	ss		Gray Mottled Brown Weathered SANDSTONE
5				
	2	ss		Gray Mottled Brown Weathered SHALE/SANDSTONE
				End of Boring @ -6½'
10				

GROUND WATER DATA
No ground water encountered during drilling.

PROJECT Proposed South Flyash Pond
Southern Illinois Power Co-op

DATE OF BORING 04-15-88

CLIENT Clarida Engineering
Marion, Illinois

PROJECT NO. H-88040

HOLCOMB FOUNDATION ENGINEERING CO.

SOILS - BITUMINOUS - CONCRETE - INVESTIGATIONS AND TESTING

WOOD ROAD | P.O. BOX 3344, CARBONDALE, ILLINOIS 62902 | 618-457-8991, 618-529-5262

CC / 62 /

3064-89

March 10, 1989

Clarida Engineering Co.
PO Box 937
Marion IL 62959

Attn: Mr. Gene Eisenhauer, P.E.

Re: Permeability Tests
Proposed South Flyash Pond
Southern Illinois Power Co-Op
Marion, Illinois
File H - 88040

Dear Sir:

In response to your request, we have performed the permeability tests for the above referenced project.

On March 1, 1989 we sampled the subsoils in the vicinity of Borings 6A and 4A at the site which were drilled in April of 1988. Boring 4A soils were sampled to a depth of 4 feet using a hand auger. Boring 6A subsoils were sampled with a three inch diameter Shelby tube.

The subsoils sampled in Boring 4A were remolded in the laboratory at 92.5 percent of their maximum standard laboratory density (108.8 pounds per cubic foot at 13.9 percent moisture content). The moisture-density relationship test was submitted in our Soil Exploration and Recommendations report dated May 24, 1988. The remolded sample was then backsaturated in a triaxial chamber. The result of the permeability test is 6.19×10^{-8} centimeters per second, indicating an acceptably low permeability for the proposed liner borrow soils.

The in-situ soils sampled in the Shelby tube at the approximate bottom of pond elevation were subjected to the same permeability test. The result of this test is a permeability of 3.54×10^{-8} centimeters per second.

Attachment #1

These tests indicate that in order to properly seal the bottom of the pond, any areas which currently have three feet of in-situ clayey soils overlying the sandstone bedrock will suffice as a liner material with no modification or additional compaction necessary. Areas which have sand or sandstone present in the upper three feet will have to be filled with additional compacted borrow soils to achieve the required liner thickness.

Please find enclosed results of the permeability tests. Should you have any questions, feel free to contact us at your convenience.

Sincerely,

HOLCOMB FOUNDATION ENGINEERING

Timothy J. Holcomb

Timothy J. Holcomb, P.E.

TJH/jg

Enclosure

CLARIDA ENGINEERING CO.
308 South Court Street / P.O. Box 937 / Marion, Illinois 62959 / Telephone (618) 993-6411

March 21, 1989

3064-89

State of Illinois
Environmental Protection Agency
Division of Water Pollution Control
Permit Section
2200 Churchill Road
Springfield, IL. 62706

Attention: Sandra Bron

Re: Log No. 2378-88
Southern Illinois Power Co-Op

Dear Sandra:

In response to your letter dated February 17, 1989, we offer you the following on the above referenced project.

Item 1 - Surface area of the pond = 15.3 acres
Volumetric storage capacity = 117 acre-feet
(See Attachment #1)

Item 2 - Results of test borings and subsurface conditions are attached.
(See Attachment #2)

Item 3 - The effluent from the new south fly-ash pond will run in a northerly direction thru an I.E.P.A. permitted coal catch basin. It will then run from this basin under a road, which is commonly referred to as the dam road into the I.E.P.A. permitted workings known as Pond #4. The effluent then runs through a pipe and is discharged thru an I.E.P.A. permitted sampling point and flow monitor into South Fork of the Saline River. This has been shown in red on the attached drawing. (Attached #3)

Item 4 - Alternate #1 and Alternate #2 referred to different studies made on rerouting the surface water away from the proposed fly-ash pond. These desigations do not show up in the final plans.

Item 5 - a. Pond seal - Enclosed please find correspondence and results of permeability tests performed in the pond area by Holcomb Foundation Engineering. We have also revised the specifications to require a pond seal liner. The new specifications are attached. (Attachment #4)

b. See new specifications attached. (Attachment #5)

c. See new specifications attached. (Attachment #5)

d. The areas of the shore line not rip-rapped will be seeded and covered with a soil erosion control fabric. Literature on this fabric is enclosed. (Attachment #6)

e. Performance monitoring wells - monitoring wells will be placed as shown on the plans. A detail of the wells is also shown. (Attachment #7)

f. A drainage gate will be installed inside the effluent manhole. This will be controlled from the top of the manhole. This gate will also be used for flow control of the effluent and also used to completely cut off the flow from the pond. Details of this have been shown on plan sheet #5 attached. (Attachment #8)

Hopefully this will be enough information to complete your review.

This project was originally submitted to your agency on July 20, 1988. We had heard nothing until I called your agency on November 17, 1988 and nothing had been done on the review. We submitted more material to your agency and did not hear again until we received a letter dated February 17, 1989. Since several months have elapsed since we first submitted this project to your Agency, we ask that you expedite your review.

Our permits for construction from IDOT, Division of Water Resources & Corps of Engineers were issued in 1988. It is our desire to construct this pond during this construction season.

If you have any questions, please contact me.

Very truly yours,

Gene Eisenhauer

GE:me
Enclosures
cc: Dick Myott, SIPC
Bryon Martindale, IDOT/DWR

EXHIBIT 13

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 – (217) 782-3397
JAMES R. THOMPSON CENTER, 100 WEST RANDOLPH, SUITE 11-300, CHICAGO, IL 60601 – (312) 814-6026

ROD R. BLAGOJEVICH, GOVERNOR DOUGLAS P. SCOTT, DIRECTOR

217/782-0610

February 1, 2007

Southern Illinois Power Cooperative
11543 Lake of Egypt Road
Marion, Illinois 62959

Re: Southern Illinois Power Cooperative - Marion Station
NPDES Permit No. IL0004316
Final Permit

Gentlemen:

Attached is the final NPDES Permit for your discharge. The Permit as issued covers discharge limitations, monitoring, and reporting requirements. Failure to meet any portion of the Permit could result in civil and/or criminal penalties. The Illinois Environmental Protection Agency is ready and willing to assist you in interpreting any of the conditions of the Permit as they relate specifically to your discharge.

The Agency has begun a program allowing the submittal of electronic Discharge Monitoring Reports (eDMRs) instead of paper Discharge Monitoring Reports (DMRs). If you are interested in eDMRs, more information can be found on the Agency website, http://epa.state.il.us/water/edmr/index.html. If your facility is not registered in the eDMR program, a supply of preprinted paper DMR Forms for your facility will be sent to you prior to the initiation of DMR reporting under the reissued permit. Additional information and instructions will accompany the preprinted DMRs upon their arrival.

The Permit as issued is effective as of the date indicated on the first page of the Permit. You have the right to appeal any condition of the Permit to the Illinois Pollution Control Board within a 35 day period following the issuance date.

Should you have questions concerning the Permit, please contact Blaine Kinsley at the telephone number indicated above.

Sincerely,

Alan Keller

Alan Keller, P.E.
Manager, Permit Section
Division of Water Pollution Control

SAK:BAK:JMC:04110101.jmc

Attachment: Final Permit

cc: Records
Compliance Assurance Section
Marion Region
USEPA
Facility

NPDES Permit No. IL0004316

Illinois Environmental Protection Agency

Division of Water Pollution Control

1021 North Grand Avenue East

Post Office Box 19276

Springfield, Illinois 62794-9276

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

Reissued (NPDES) Permit

Expiration Date: February 29, 2012

Issue Date: February 1, 2007
Effective Date: March 1, 2007

Name and Address of Permittee:

Southern Illinois Power Cooperative
11543 Lake of Egypt Road
Marion, Illinois 62959

Facility Name and Address:

Southern Illinois Power Cooperative - Marion Station
10825 Lake of Egypt Road
Marion, Illinois 62959
(Williamson County)

Discharge Number and Name:		Receiving Waters:
002	Ash Pond No. 4 Effluent	Little Saline Creek
A02	Chemical Metal Cleaning Wastewater	Little Saline Creek
003	Condenser Cooling Water	Lake of Egypt
004	Intake Screen Backwash	Lake of Egypt
005	Fly Ash and Scrubber Sludge Disposal Pond B-3	Little Saline Creek
A05	Chemical Metal Cleaning Wastewater	Little Saline Creek
006	Storm Water Associated with Industrial Activity	Lake of Egypt

In compliance with the provisions of the Illinois Environmental Protection Act, Title 35 of Ill. Adm. Code, Subtitle C and/or Subtitle D, Chapter 1, and the Clean Water Act (CWA), the above-named permittee is hereby authorized to discharge at the above location to the above-named receiving stream in accordance with the standard conditions and attachments herein.

Permittee is not authorized to discharge after the above expiration date. In order to receive authorization to discharge beyond the expiration date, the permittee shall submit the proper application as required by the Illinois Environmental Protection Agency (IEPA) not later than 180 days prior to the expiration date.

Alan Keller

Alan Keller, P.E.
Manager, Permit Section
Division of Water Pollution Control

SAK:JMC:04110101.jmc

NPDES Permit No. IL0004316

Effluent Limitations and Monitoring

PARAMETER	LOAD LIMITS lbs/day DAF (DMF) 30 DAY AVERAGE	LOAD LIMITS lbs/day DAF (DMF) DAILY MAXIMUM	CONCENTRATION LIMITS mg/l 30 DAY AVERAGE	CONCENTRATION LIMITS mg/l DAILY MAXIMUM	SAMPLE FREQUENCY	SAMPLE TYPE

1. From the effective date of this permit until the expiration date, the effluent of the following discharge(s) shall be monitored and limited at all times as follows:

Outfall: 002 Ash Pond No. 4 Effluent*

This discharge consists of:	Approximate Flow
1. Process wastewater	2.0 MGD
2. Boiler evaporation and blowdown	0.1 MGD
3. Bottom ash slurry	2.5 MGD
4. Coal pile runoff	Intermittent
5. Yard drains	0.005 MGD
6. Floor drains and equipment drains	0.002 MGD
7. Slag storage pile runoff	Intermittent
8. Scrubber sludge slurry water	0.05 MGD
9. Scrubber sludge disposal area runoff	Intermittent

Flow (MGD)	See Special Condition 1				1/Week	Continuous
pH	See Special Condition 2				1/Week	Grab
Oil and Grease			15	20	2/Month	Grab
Total Suspended Solids			15	30	1/Week	8-Hour Composite
Total Dissolved Solids				1000	1/Month	8-Hour Composite
Iron (total)			2	4	1/Month	8-Hour Composite
Boron				**	1/Month	8-Hour Composite
Fluoride			1.4		1/Month	8-Hour Composite
Copper***			0.023	0.037	1/Month	8-Hour Composite
Mercury****					1/Month	8-Hour Composite

*See Special Condition 13
**See Special Condition 16
***See Special Condition 17
****See Special Condition 19

NPDES Permit No. IL0004316

Effluent Limitations and Monitoring

PARAMETER	LOAD LIMITS lbs/day DAF (DMF) 30 DAY AVERAGE	LOAD LIMITS lbs/day DAF (DMF) DAILY MAXIMUM	CONCENTRATION LIMITS mg/l 30 DAY AVERAGE	CONCENTRATION LIMITS mg/l DAILY MAXIMUM	SAMPLE FREQUENCY	SAMPLE TYPE

1. From the effective date of this permit until the expiration date, the effluent of the following discharge(s) shall be monitored and limited at all times as follows:

Outfall: 003 Condenser Cooling Water*

This discharge consists of: Approximate Flow

1. Condenser cooling water 229 MGD
2. Auxiliary cooling water 0.4 MGD
3. HVAC system discharge 0.4 MGD

Flow (MGD)	See Special Condition 1			Daily	Continuous
Temperature	See Special Condition 4			Daily	Continuous
Total Residual Chlorine	See Special Condition 5		0.2	1/Week	Grab

*See Special Condition 7 and 8 concerning additional thermal discharge requirements.

Outfall: 004 Intake Screen Backwash

See Special Condition 10

NPDES Permit No. IL0004316

Effluent Limitations and Monitoring

PARAMETER	LOAD LIMITS lbs/day DAF (DMF) 30 DAY AVERAGE	LOAD LIMITS lbs/day DAF (DMF) DAILY MAXIMUM	CONCENTRATION LIMITS mg/l 30 DAY AVERAGE	CONCENTRATION LIMITS mg/l DAILY MAXIMUM	SAMPLE FREQUENCY	SAMPLE TYPE

1. From the effective date of this permit until the expiration date, the effluent of the following discharge(s) shall be monitored and limited at all times as follows:

Outfall: 005 Fly Ash and Scrubber Sludge Disposal Pond B-3*

This discharge consists of:	Approximate Flow
1. Fly ash sluice water	Intermittent
2. Scrubber sludge slurry water	Intermittent
3. Floor and equipment drains	Intermittent
4. Yard drains	Intermittent
5. Miscellaneous plant blowdowns	Intermittent
6. Coal Pile Runoff	Intermittent

Flow (MGD)	See Special Condition 1			Daily When Discharging	Continuous
pH	See Special Condition 2			Daily When Discharging	Grab
Oil and Grease		15	20	1/Month	Grab
Total Suspended Solids		15	30	Daily When Discharging	Grab
Total Dissolved Solids			1000	1/Month	Grab
Iron (total)		2	4	1/Month	Grab
Boron			9.0**	1/Month	Grab
Zinc***				1/Month	Grab
Mercury****				1/Month	8-Hour Composite

*See Special Condition 13
**See Special Condition 16
***See Special Condition 11
****See Special Condition 19

NPDES Permit No. IL0004316

Effluent Limitations and Monitoring

PARAMETER	LOAD LIMITS lbs/day DAF (DMF) 30 DAY AVERAGE	LOAD LIMITS lbs/day DAF (DMF) DAILY MAXIMUM	CONCENTRATION LIMITS mg/l 30 DAY AVERAGE	CONCENTRATION LIMITS mg/l DAILY MAXIMUM	SAMPLE FREQUENCY	SAMPLE TYPE
1. From the effective date of this permit until the expiration date, the effluent of the following discharge(s) shall be monitored and limited at all times as follows:						
Outfalls: A02 and A05 Chemical Metal Cleaning Wastewater						
Flow (MGD)					*	Measurement
Iron (total)			1.0	1.0	*	8-Hour Composite
Copper (total)			1.0	1.0	*	8-Hour Composite

*See Special Condition 19

Outfall: 006 Storm Water Associated with Industrial Activity

See Special Condition 15

NPDES Permit No. IL0004316

Special Conditions

SPECIAL CONDITION 1. Flow shall be recorded as a monthly average and daily maximum and shall be reported as such on the DMR form.

SPECIAL CONDITION 2. The pH shall be in the range 6.0 to 9.0. The monthly minimum and monthly maximum values shall be reported on the DMR form.

SPECIAL CONDITION 3. Samples taken in compliance with the effluent monitoring requirements shall be taken at a point representative of the discharge, but prior to entry into the receiving stream. For internal Outfalls A02 and A05, samples shall be taken at a point representative of the discharge, but prior to mixture with other wastestreams. If chemical metal cleaning wastewater is used as scrubber make-up water, samples shall be taken prior to use as make-up water.

SPECIAL CONDITION 4. Discharge of wastewater from this facility must not alone or in combination with other sources cause the receiving stream to violate the following thermal limitations at the edge of the mixing zone which is defined by Section 302.211, Illinois Administration Code, Title 35, Chapter 1, Subtitle C, as amended:

A. Maximum temperature rise above natural temperature must not exceed 5 F (2.8 C).

B. Water temperature at representative locations in the lake shall not exceed the maximum limits in the following table during more than one (1) percent of the hours in the 12-month period ending with any month. Moreover, at no time shall the water temperature at such locations exceed the maximum limits in the following table by more than 3 F (1.7 C).

Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
60	60	60	90	90	90	90	90	90	90	90	60
16	16	16	32	32	32	32	32	32	32	32	16

C. The monthly maximum value shall be reported on the DMR form.

D. The computer model, PDS program, shall be used to predict plume trajectory and the area enclosed by the surface isotherms to determine compliance with the above temperature limitations.

SPECIAL CONDITION 5. Total residual chlorine limit is an instantaneous maximum limit which shall not be exceeded at any time. The maximum weekly value shall be reported on the DMR form.

Results of all weekly grab samples shall be submitted with the monthly DMR form if maximum limit is exceeded during any week.

Chlorine may not be discharged from each units main cooling condenser for more than two hours in any one day.

SPECIAL CONDITION 6. There shall be no discharge of polychlorinated biphenyl compounds.

SPECIAL CONDITION 7 Due to increase in thermal discharge volume Southern Illinois Power Cooperative shall comply with Section 302.211f of Title 35, Chapter 1, Subtitle C: Water Pollution Regulations and Section 316(a) of the CWA by demonstrating that thermal discharge from Marion Generating Station will not cause and cannot reasonably be expected to cause significant ecological damage to Lake of Egypt. Pursuant to 35 Ill. Adm. Code 302.211g no additional monitoring or modification is being required for reissuance of this NPDES Permit.

SPECIAL CONDITION 8. The Permittee's facility has been deemed to meet the criteria as a Phase II existing facility (under section 316(b) of the Clean Water Act) pursuant to 40 CFR 125.91. Therefore, the permittee must fulfill the applicable requirements of 40 CFR 125 subpart J, and 40 CFR 122(r)(2), (3) and (5). The regulation at 40 CFR 125.95 requires submittal of a Proposal for Information Collection (PIC) to support the development of a Comprehensive Demonstration Study (CDS) for the herein permitted facility. The PIC will be reviewed by the Agency and a response will be provided. An extension of time to submit the CDS has been granted. Therefore, you must submit your CDS on or before January 7, 2008. Once the CDS has been reviewed by the Agency and a compliance strategy has been approved, this permit will be modified to include implementation, monitoring, and reporting requirements pursuant to 40 CFR 125.98.

NPDES Permit No. IL0004316

Special Conditions

SPECIAL CONDITION 9. The Permittee shall record monitoring results on Discharge Monitoring Report (DMR) Forms using one such form for each outfall each month.

In the event that an outfall does not discharge during a monthly reporting period, the DMR Form shall be submitted with no discharge indicated.

The Permittee may choose to submit electronic DMRs (eDMRs) instead of mailing paper DMRs to the IEPA. More information, including registration information for the eDMR program, can be obtained on the IEPA website, http://www.epa.state.il.us/water/edmr/index.html.

The completed Discharge Monitoring Report forms shall be submitted to IEPA no later than the last calender day of the following month, unless otherwise specified by the permitting authority.

Permittees not using eDMRs shall mail Discharge Monitoring Reports with an original signature to the IEPA at the following address:

Illinois Environmental Protection Agency
Division of Water Pollution Control
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

Attention: Compliance Assurance Section, Mail Code # 19

SPECIAL CONDITION 10. There shall be no discharge of collected debris from Outfall 004 Intake Screen Backwash.

SPECIAL CONDITION 11. Sample frequency for zinc at outfall 005 shall be once a month until six samples have been collected; after which and upon written notification to the Agency, the sampling may cease, unless the Agency modifies the permit to require continued sampling at some frequency.

SPECIAL CONDITION 12. For the purpose of this permit, Outfall 003 is limited to non-contact cooling water, free from additives other than chlorine. If the permittee wishes to use cooling water additives, the following information must be submitted to the Agency for review:

a. Brand name;

b. List of active and inactive ingredients expressed as a percentage of the total product;

c. Feed rate and expected discharge concentration;

d. Aquatic toxicity results.

The additive(s) shall not be used until Agency approval has been given.

SPECIAL CONDITION 13. The Permittee shall conduct biomonitoring of the effluent from Outfall 002 and 005. The Permittee shall conduct biomonitoring of the effluent discharge no earlier than one (1) year prior to the expiration date of this Permit. The results shall be submitted with the Permit renewal application.

Biomonitoring

1. Acute Toxicity - Standard definitive acute toxicity tests shall be run on at least two trophic levels of aquatic species (fish, invertebrate) representative of the aquatic community of the receiving stream. Except as noted here and in the IEPA document "Effluent Biomonitoring and Toxicity Assessment", testing must be consistent with Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (Fourth Ed.) EPA-600/4-90-027. Unless substitute tests are pre-approved; the following tests are required:

   a. Fish - 96 hour static LC_{50} Bioassay using one to two week old fathead minnows (Pimephales promelas).

   b. Invertebrate 48-hour static LC_{50} Bioassay using Ceriodaphnia.

NPDES Permit No. IL0004316

Special Conditions

2. Testing Frequency - The above tests shall be conducted on a one time basis using 24-hour composite effluent samples unless otherwise authorized by the IEPA. Results shall be reported according to EPA/600/4-90/027, Section 12, Report Preparation, and shall be submitted to IEPA with the renewal application.

3. Toxicity Assessment - Should the review of the results of the biomonitoring program identify toxicity, the Agency may require that the permittee prepare a plan for toxicity reduction evaluation and identification. This plan shall include an evaluation to determine which chemicals have a potential for being discharged in the plant wastewater, a monitoring program to determine their presence or absence and to identify other compounds which are not being removed by treatment, and other measures as appropriate.

   The Agency may modify this permit during its term to incorporate additional requirements or limitations based on the results of any biomonitoring. In addition, after review of the monitoring results, the Agency may modify this permit to include numerical limitations for specific toxic pollutants. Modifications under this condition shall follow public notice and opportunity for hearing.

SPECIAL CONDITION 14. The Agency has determined that the effluent limitations at outfall 002 and 005 constitute BAT/BCT for storm water which is treated in the existing treatment facilities for purposes of this permit reissuance, and no pollution prevention plan will be required for such storm water. In addition to the chemical specific monitoring required elsewhere in this permit, the permittee shall conduct an annual inspection of the facility site to identify areas contributing to a storm water discharge associated with industrial activity, and determine whether any facility modifications have occurred which result in previously-treated storm water discharges no longer receiving treatment. If any such discharges are identified the permittee shall request a modification of this permit within 30 days after the inspection. Records of the annual inspection shall be retained by the permittee for the term of this permit and be made available to the Agency on request.

SPECIAL CONDITION 15.

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

A. A storm water pollution prevention plan shall be developed by the permittee for the storm water associated with industrial activity at Outfall 006. The plan shall identify potential sources of pollution which may be expected to affect the quality of storm water discharges associated with the industrial activity at the facility. In addition, the plan shall describe and ensure the implementation of practices which are to be used to reduce the pollutants in storm water discharges associated with industrial activity at the facility and to assure compliance with the terms and conditions of this permit.

B. The plan shall be completed within 180 days of the effective date of this permit. Plans shall provide for compliance with the terms of the plan within 365 days of the effective date of this permit. The owner or operator of the facility shall make a copy of the plan available to the Agency at any reasonable time upon request. [Note: If the plan has already been developed and implemented it shall be maintained in accordance with all requirements of this special condition.]

C. The permittee may be notified by the Agency at any time that the plan does not meet the requirements of this condition. After such notification, the permittee shall make changes to the plan and shall submit a written certification that the requested changes have been made. Unless otherwise provided, the permittee shall have 30 days after such notification to make the changes.

D. The discharger shall amend the plan whenever there is a change in construction, operation, or maintenance which may affect the discharge of significant quantities of pollutants to the waters of the State or if a facility inspection required by paragraph G of this condition indicates that an amendment is needed. The plan should also be amended if the discharger is in violation of any conditions of this permit, or has not achieved the general objective of controlling pollutants in storm water discharges. Amendments to the plan shall be made within the shortest reasonable period of time, and shall be provided to the Agency for review upon request.

E. The plan shall provide a description of potential sources which may be expected to add significant quantities of pollutants to storm water discharges, or which may result in non-storm water discharges from storm water outfalls at the facility. The plan shall include, at a minimum, the following items:

   1. A topographic map extending one-quarter mile beyond the property boundaries of the facility, showing: the facility, surface water bodies, wells (including injection wells), seepage pits, infiltration ponds, and the discharge points where the facility's storm water discharges to a municipal storm drain system or other water body. The requirements of this paragraph may be included on the site map if appropriate.

2. A site map showing:

   i. The storm water conveyance and discharge structures;

   ii. An outline of the storm water drainage areas for each storm water discharge point;

   iii. Paved areas and buildings;

   iv. Areas used for outdoor manufacturing, storage, or disposal of significant materials, including activities that generate significant quantities of dust or particulates.

   v. Location of existing storm water structural control measures (dikes, coverings, detention facilities, etc.);

   vi. Surface water locations and/or municipal storm drain locations

   vii. Areas of existing and potential soil erosion;

   viii. Vehicle service areas;

   ix. Material loading, unloading, and access areas.

3. A narrative description of the following:

   i. The nature of the industrial activities conducted at the site, including a description of significant materials that are treated, stored or disposed of in a manner to allow exposure to storm water;

   ii. Materials, equipment, and vehicle management practices employed to minimize contact of significant materials with storm water discharges;

   iii. Existing structural and non-structural control measures to reduce pollutants in storm water discharges;

   iv. Industrial storm water discharge treatment facilities;

   v. Methods of onsite storage and disposal of significant materials;

4. A list of the types of pollutants that have a reasonable potential to be present in storm water discharges in significant quantities.

5. An estimate of the size of the facility in acres or square feet, and the percent of the facility that has impervious areas such as pavement or buildings.

6. A summary of existing sampling data describing pollutants in storm water discharges.

F. The plan shall describe the storm water management controls which will be implemented by the facility. The appropriate controls shall reflect identified existing and potential sources of pollutants at the facility. The description of the storm water management controls shall include:

1. Storm Water Pollution Prevention Personnel - Identification by job titles of the individuals who are responsible for developing, implementing, and revising the plan.

2. Preventive Maintenance - Procedures for inspection and maintenance of storm water conveyance system devices such as oil/water separators, catch basins, etc., and inspection and testing of plant equipment and systems that could fail and result in discharges of pollutants to storm water.

3. Good Housekeeping - Good housekeeping requires the maintenance of clean, orderly facility areas that discharge storm water. Material handling areas shall be inspected and cleaned to reduce the potential for pollutants to enter the storm water conveyance system.

4. Spill Prevention and Response - Identification of areas where significant materials can spill into or otherwise enter the storm water conveyance systems and their accompanying drainage points. Specific material handling procedures, storage requirements, spill clean up equipment and procedures should be identified, as appropriate. Internal notification procedures for spills of significant materials should be established.

5. Storm Water Management Practices - Storm water management practices are practices other than those which control the source of pollutants. They include measures such as installing oil and grit separators, diverting storm water into retention basins, etc. Based on assessment of the potential of various sources to contribute pollutants, measures to remove pollutants from storm water discharge shall be implemented. In developing the plan, the following management practices shall be considered:

   i. Containment - Storage within berms or other secondary containment devices to prevent leaks and spills from entering storm water runoff;

   ii. Oil & Grease Separation - Oil/water separators, booms, skimmers or other methods to minimize oil contaminated storm water discharges;

   iii. Debris & Sediment Control - Screens, booms, sediment ponds or other methods to reduce debris and sediment in storm water discharges;

   iv. Waste Chemical Disposal - Waste chemicals such as antifreeze, degreasers and used oils shall be recycled or disposed of in an approved manner and in a way which prevents them from entering storm water discharges.

   v. Storm Water Diversion - Storm water diversion away from materials manufacturing, storage and other areas of potential storm water contamination;

   vi. Covered Storage or Manufacturing Areas - Covered fueling operations, materials manufacturing and storage areas to prevent contact with storm water.

6. Sediment and Erosion Prevention - The plan shall identify areas which due to topography, activities, or other factors, have a high potential for significant soil erosion and describe measures to limit erosion.

7. Employee Training - Employee training programs shall inform personnel at all levels of responsibility of the components and goals of the storm water pollution control plan. Training should address topics such as spill response, good housekeeping and material management practices. The plan shall identify periodic dates for such training.

8. Inspection Procedures - Qualified plant personnel shall be identified to inspect designated equipment and plant areas. A tracking or follow-up procedure shall be used to ensure appropriate response has been taken in response to an inspection. Inspections and maintenance activities shall be documented and recorded.

G. The permittee shall conduct an annual facility inspection to verify that all elements of the plan, including the site map, potential pollutant sources, and structural and non-structural controls to reduce pollutants in industrial storm water discharges are accurate. Observations that require a response and the appropriate response to the observation shall be retained as part of the plan. Records documenting significant observations made during the site inspection shall be submitted to the Agency in accordance with the reporting requirements of this permit.

H. This plan should briefly describe the appropriate elements of other program requirements, including Spill Prevention Control and Countermeasures (SPCC) plans required under Section 311 of the CWA and the regulations promulgated thereunder, and Best Management Programs under 40 CFR 125.100.

I. The plan is considered a report that shall be available to the public under Section 308(b) of the CWA. The permittee may claim portions of the plan as confidential business information, including any portion describing facility security measures.

J. The plan shall include the signature and title of the person responsible for preparation of the plan and include the date of initial preparation and each amendment thereto.

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Special Conditions

Construction Authorization

K. Authorization is hereby granted to construct treatment works and related equipment that may be required by the Storm Water Pollution Prevention developed pursuant to this permit.

This Authorization is issued subject to the following condition(s).

1. If any statement or representation is found to be incorrect, this authorization may be revoked and the permittee there upon waives all rights thereunder.

2. The issuance of this authorization (a) does not release the permittee from any liability for damage to persons or property caused by or resulting from the installation, maintenance or operation of the proposed facilities; (b) does not take into consideration the structural stability of any units or part of this project; and (c) does not release the permittee from compliance with other applicable statutes of the State of Illinois, or other applicable local law, regulations or ordinances.

3. Plans and specifications of all treatment equipment being included as part of the storm water management practice shall be included in the SWPPP.

4. Construction activities which result from treatment equipment installation, including clearing, grading and excavation activities which result in the disturbance of one acre or more of land area, are not covered by this authorization. The permittee shall contact the IEPA regarding the required permit(s).

REPORTING

L. The facility shall submit an annual inspection report to the Illinois Environmental Protection Agency. The report shall include results of the annual facility inspection which is required by Part G of the Storm Water Pollution Prevention Plan of this permit. The report shall also include documentation of any event (spill, treatment unit malfunction, etc.) which would require an inspection, results of the inspection, and any subsequent corrective maintenance activity. The report shall be completed and signed by the authorized facility employee(s) who conducted the inspection(s).

M. The first report shall contain information gathered during the one year time period beginning with the effective date of coverage under this permit and shall be submitted no later than 60 days after this one year period has expired. Each subsequent report shall contain the previous year's information and shall be submitted no later than one year after the previous year's report was due.

N. Annual inspection reports shall be mailed to the following address:

Illinois Environmental Protection Agency
Bureau of Water
Compliance Assurance Section
Annual Inspection Report
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

O. If the facility performs inspections more frequently than required by this permit, the results shall be included as additional information in the annual report.

SPECIAL CONDITION 16. Once per month, an eight hour composite sample shall be collected at outfalls 002 and 005 for boron. Flow shall be measured at each outfall during this eight hour period.

The daily maximum effluent limitation for boron at outfall 005 is 9.0 mg/l. The daily maximum effluent limitation for boron at outfall 002 shall be calculated utilizing the following formula:

$$\text{Limit 002:} \quad \frac{(9.0\ \text{mg/l}\ (\text{Flow 005} + \text{Flow 002})) - (\text{Flow 005})(\text{Conc. 005})}{\text{Flow 002}}$$

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Where:	Limit 002:	Calculated daily maximum effluent limitation for boron at outfall 002
	Flow 002:	Measured effluent flow rate at outfall 002 during 8 hour composite sample period
	Conc. 005:	Measured boron effluent concentration at outfall 005 from 8 hour composite sample period
	Flow 005:	Measured effluent flow rate at outfall 005 during 8 hour composite sample period
	9.0 mg/l:	Stream standard for boron set forth in Illinois Pollution Control Board Adjusted Standard (AS 92 - 10) dated July 1, 1993

Measured boron effluent concentrations at both outfalls from the eight hour composite sample shall be reported on the DMR form. Calculations for the effluent limitation for boron at outfall 002 shall be attached to the DMR form.

SPECIAL CONDITION 17. Pursuant to provisions of 35 IAC Section 309.157, the Permittee may gather data in support of determining a site-specific copper translator. Should the Permittee choose to gather such data, a minimum of twelve (12) effluent and twelve (12) downstream samples shall be taken within a minimum of one week in between samples. Such samples shall be consistent with "The Metals Translator: Calculating a Total Recoverable Permit Limit for Dissolved Criterion."

The IEPA may modify the Permit to include the revised copper limits only if such permit modification is consistent with 35 IAC Section 309.157 and with 40 CFR 122.44(l).

SPECIAL CONDITION 18. Daily Outfall sampling of 002 and 005 (if flowing) for iron and copper shall commence from the first day of use of boiler clean wastewater in the scrubber, and shall continue for seven days following the conclusion of the use of boiler clean wastewater in the scrubber. These sampling results shall be reported in the monthly reports. The applicant shall derive limits using the formula defined in 40 CFR 403.6(l) for the discharges from the outfalls during this period. The calculation used to derive limits shall be submitted with DMR form.

SPECIAL CONDITION 19. Sample frequency for Mercury at outfall(s) 002 and 005 shall be once a month until twelve samples have been collected; after which and upon written notification to the Agency, the sampling may cease, unless the Agency modifies the permit to require continued sampling at some frequency. Monitoring shall be performed using USEPA analytical test method 1631 or equivalent.

Attachment 1

Standard Conditions

Definitions

Act means the Illinois Environmental Protection Act, 415 ILCS 5 as Amended.

Agency means the Illinois Environmental Protection Agency.

Board means the Illinois Pollution Control Board.

Clean Water Act (formerly referred to as the Federal Water Pollution Control Act) means Pub. L 92-500, as amended. 33 U.S.C. 1251 et seq.

NPDES (National Pollutant Discharge Elimination System) means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 402, 318 and 405 of the Clean Water Act.

USEPA means the United States Environmental Protection Agency.

Daily Discharge means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurements, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

Maximum Daily Discharge Limitation (daily maximum) means the highest allowable daily discharge.

Average Monthly Discharge Limitation (30 day average) means the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Discharge Limitation (7 day average) means the highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Best Management Practices (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Aliquot means a sample of specified volume used to make up a total composite sample.

Grab Sample means an individual sample of at least 100 milliliters collected at a randomly-selected time over a period not exceeding 15 minutes.

24 Hour Composite Sample means a combination of at least 8 sample aliquots of at least 100 milliliters, collected at periodic intervals during the operating hours of a facility over a 24-hour period.

8 Hour Composite Sample means a combination of at least 3 sample aliquots of at least 100 milliliters, collected at periodic intervals during the operating hours of a facility over an 8-hour period.

Flow Proportional Composite Sample means a combination of sample aliquots of at least 100 milliliters collected at periodic intervals such that either the time interval between each aliquot or the volume of each aliquot is proportional to either the stream flow at the time of sampling or the total stream flow since the collection of the previous aliquot.

(1) Duty to comply. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or for denial of a permit renewal application. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

(2) Duty to reapply. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. If the permittee submits a proper application as required by the Agency no later than 180 days prior to the expiration date, this permit shall continue in full force and effect until the final Agency decision on the application has been made.

(3) Need to halt or reduce activity not a defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

(4) Duty to mitigate. The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

(5) Proper operation and maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up, or auxiliary facilities, or similar systems only when necessary to achieve compliance with the conditions of the permit.

(6) Permit actions. This permit may be modified, revoked and reissued, or terminated for cause by the Agency pursuant to 40 CFR 122.62. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or notification of planned changes or anticipated noncompliance, does not stay any permit condition.

(7) Property rights. This permit does not convey any property rights of any sort, or any exclusive privilege.

(8) Duty to provide information. The permittee shall furnish to the Agency within a reasonable time, any information which the Agency may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with the permit. The permittee shall also furnish to the Agency upon request, copies of records required to be kept by this permit.

(9) Inspection and entry. The permittee shall allow an authorized representative of the Agency, upon the presentation of credentials and other documents as may be required by law, to:

(a) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

(b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

(c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

(d) Sample or monitor at reasonable times, for the purpose of assuring permit compliance, or as otherwise authorized by the Act, any substances or parameters at any location.

(10) Monitoring and records.

(a) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

(b) The permittee shall retain records of all monitoring information, including all calibration and maintenance records, and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of this permit, measurement, report or application. This period may be extended by request of the Agency at any time.

(c) Records of monitoring information shall include:

(1) The date, exact place, and time of sampling or measurements;

(2) The individual(s) who performed the sampling or measurements;

(3) The date(s) analyses were performed;

(4) The individual(s) who performed the analyses;

(5) The analytical techniques or methods used; and

(6) The results of such analyses.

(d) Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit. Where no test procedure under 40 CFR Part 136 has been approved, the permittee must submit to the Agency a test method for approval. The permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals to ensure accuracy of measurements.

(11) Signatory requirement. All applications, reports or information submitted to the Agency shall be signed and certified.

(a) Application. All permit applications shall be signed as follows:

(1) For a corporation: by a principal executive officer of at least the level of vice president or a person or position having overall responsibility for environmental matters for the corporation;

(2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

(3) For a municipality, State, Federal, or other public agency: by either a principal executive officer or ranking elected official.

(b) Reports. All reports required by permits, or other information requested by the Agency shall be signed by a person described in paragraph (a) or by a duly authorized representative of that person. A person is a duly authorized representative only if:

(1) The authorization is made in writing by a person described in paragraph (a); and

(2) The authorization specifies either an individual or a position responsible for the overall operation of the facility, from which the discharge originates, such as a plant manager, superintendent or person of equivalent responsibility; and

(3) The written authorization is submitted to the Agency.

(c) Changes of Authorization. If an authorization under (b) is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of (b) must be submitted to the Agency prior to or together with any reports, information, or applications to be signed by an authorized representative.

(12) Reporting requirements.

(a) Planned changes. The permittee shall give notice to the Agency as soon as possible of any planned physical alterations or additions to the permitted facility.

(b) Anticipated noncompliance. The permittee shall give advance notice to the Agency of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

(c) Compliance schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

(d) Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(1) Monitoring results must be reported on a Discharge Monitoring Report (DMR).

(2) If the permittee monitors any pollutant more frequently than required by the permit, using test procedures approved under 40 CFR 136 or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR.

(3) Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Agency in the permit.

(e) Twenty-four hour reporting. The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and time; and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. The following shall be included as information which must be reported within 24 hours:

(1) Any unanticipated bypass which exceeds any effluent limitation in the permit;

(2) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Agency in the permit to be reported within 24 hours.

The Agency may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

(f) Other noncompliance. The permittee shall report all instances of noncompliance not reported under paragraphs (12)(c), (d), or (e), at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph (12)(e).

(g) Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application, or in any report to the Agency, it shall promptly submit such facts or information.

(13) Transfer of permits. A permit may be automatically transferred to a new permittee if:

(a) The current permittee notifies the Agency at least 30 days in advance of the proposed transfer date;

(b) The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage and liability between the current and new permittees; and

(c) The Agency does not notify the existing permittee and the proposed new permittee of its intent to modify or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement.

(14) All manufacturing, commercial, mining, and silvicultural dischargers must notify the Agency as soon as they know or have reason to believe:

(a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant identified under Section 307 of the Clean Water Act which is not limited in the permit, if that discharge will exceed the highest of the following notification levels:

(1) One hundred micrograms per liter (100 ug/l);

(2) Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/l) for 2,4-dinitrophenol and for 2-methyl-4,6 dinitrophenol; and one milligram per liter (1 mg/l) for antimony.

(3) Five (5) times the maximum concentration value reported for that pollutant in the NPDES permit application; or

(4) [illegible]

(b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which was not reported in the NPDES permit application.

(15) All Publicly Owned Treatment Works (POTWs) must provide adequate notice to the Agency of the following:

(a) Any new introduction of pollutants into that POTW from an indirect discharger which would be subject to Sections 301 or 306 of the Clean Water Act if it were directly discharging those pollutants; and

(b) Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.

(c) For purposes of this paragraph, adequate notice shall include information on (i) the quality and quantity of effluent introduced into the POTW, and (ii) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

(16) If the permit is issued to a publicly owned or publicly regulated treatment works, the permittee shall require any industrial user of such treatment works to comply with federal requirements concerning:

(a) User charges pursuant to Section 204(b) of the Clean Water Act, and applicable regulations appearing in 40 CFR 35;

(b) Toxic pollutant effluent standards and pretreatment standards pursuant to Section 307 of the Clean Water Act; and

(c) Inspection, monitoring and entry pursuant to Section 308 of the Clean Water Act.

(17) If an applicable standard or limitation is promulgated under Section 301(b)(2)(C) and (D), 304(b)(2), or 307(a)(2) and that effluent standard or limitation is more stringent than any effluent limitation in the permit, or controls a pollutant not limited in the permit, the permit shall be promptly modified or revoked, and reissued to conform to that effluent standard or limitation.

(18) Any authorization to construct issued to the permittee pursuant to 35 Ill. Adm. Code 309.154 is hereby incorporated by reference as a condition of this permit.

(19) The permittee shall not make any false statement, representation or certification in any application, record, report, plan or other document submitted to the Agency or the USEPA, or required to be maintained under this permit.

(20) The Clean Water Act provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Clean Water Act is subject to a civil penalty not to exceed $10,000 per day of such violation. Any person who willfully or negligently violates permit conditions implementing Sections 301, 302, 306, 307, or 308 of the Clean Water Act is subject to a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than one year, or both.

(21) The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under permit shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

(22) The Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit shall, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

(23) Collected screening, slurries, sludges, and other solids shall be disposed of in such a manner as to prevent entry of those wastes (or runoff from the wastes) into waters of the State. The proper authorization for such disposal shall be obtained from the Agency and is incorporated as part hereof by reference.

(24) In case of conflict between these standard conditions and any other condition(s) included in this permit, the other condition(s) shall govern.

(25) The permittee shall comply with, in addition to the requirements of the permit, all applicable provisions of 35 Ill. Adm. Code, Subtitle C, Subtitle D, Subtitle E, and all applicable orders of the Board.

(26) The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit is held invalid, the remaining provisions of this permit shall continue in full force and effect.

(Rev. 3-13-98)

Standard Conditions

Definitions

Act means the Illinois Environmental Protection Act, 415 ILCS 5 as Amended.

Agency means the Illinois Environmental Protection Agency.

Board means the Illinois Pollution Control Board.

Clean Water Act (formerly referred to as the Federal Water Pollution Control Act) means Pub. L 92-500, as amended. 33 U.S.C. 1251 et seq.

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Daily Discharge means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurements, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

Maximum Daily Discharge Limitation (daily maximum) means the highest allowable daily discharge.

Average Monthly Discharge Limitation (30 day average) means the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Discharge Limitation (7 day average) means the highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Best Management Practices (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Aliquot means a sample of specified volume used to make up a total composite sample.

Grab Sample means an individual sample of at least 100 milliliters collected at a randomly-selected time over a period not exceeding 15 minutes.

24 Hour Composite Sample means a combination of at least 8 sample aliquots of at least 100 milliliters, collected at periodic intervals during the operating hours of a facility over a 24-hour period.

8 Hour Composite Sample means a combination of at least 3 sample aliquots of at least 100 milliliters, collected at periodic intervals during the operating hours of a facility over an 8-hour period.

Flow Proportional Composite Sample means a combination of sample aliquots of at least 100 milliliters collected at periodic intervals such that either the time interval between each aliquot or the volume of each aliquot is proportional to either the stream flow at the time of sampling or the total stream flow since the collection of the previous aliquot.

(1) **Duty to comply.** The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or for denial of a permit renewal application. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

(2) **Duty to reapply.** If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. If the permittee submits a proper application as required by the Agency no later than 180 days prior to the expiration date, this permit shall continue in full force and effect until the final Agency decision on the application has been made.

(3) **Need to halt or reduce activity not a defense.** It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

(4) **Duty to mitigate.** The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

(5) **Proper operation and maintenance.** The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up, or auxiliary facilities, or similar systems only when necessary to achieve compliance with the conditions of the permit.

(6) **Duty to provide information.** The permittee shall furnish to the Agency within a reasonable time, any information which the Agency may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with the permit. The permittee shall also furnish to the Agency, upon request, copies of records required to be kept by this permit.

(7) **Property rights.** This permit does not convey any property rights of any sort, or any exclusive privilege.

(8) **Duty to provide information.** The permittee shall furnish to the Agency within a reasonable time, any information which the Agency may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with the permit. The permittee shall also furnish to the Agency, upon request, copies of records required to be kept by this permit.

(9) **Inspection and entry.** The permittee shall allow an authorized representative of the Agency, upon the presentation of credentials and other documents as may be required by law, to:

(a) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

(b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

(c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

(d) Sample or monitor at reasonable times, for the purpose of assuring permit compliance, or as otherwise authorized by the Act, any substances or parameters at any location.

(10) **Monitoring and records.**

(a) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

(b) The permittee shall retain records of all monitoring information, including all calibration and maintenance records, and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of this permit, measurement, report or application. This period may be extended by request of the Agency at any time.

(c) Records of monitoring information shall include:

(1) The date, exact place, and time of sampling or measurements;

(2) The individual(s) who performed the sampling or measurements;

(3) The date(s) analyses were performed;

(4) The individual(s) who performed the analyses;

(5) The analytical techniques or methods used; and

(6) The results of such analyses.

(d) Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit. Where no test procedure under 40 CFR Part 136 has been approved, the permittee must submit to the Agency a test method for approval. The permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals to ensure accuracy of measurements.

(11) **Signatory requirement.** All applications, reports or information submitted to the Agency shall be signed and certified.

(a) **Application.** All permit applications shall be signed as follows:

(1) **For a corporation:** by a principal executive officer of at least the level of vice president or a person or position having overall responsibility for environmental matters for the corporation;

(2) **For a partnership or sole proprietorship:** by a general partner or the proprietor, respectively; or

(3) **For a municipality, State, Federal, or other public agency:** by either a principal executive officer or ranking elected official.

(b) **Reports.** All reports required by permits, or other information requested by the Agency shall be signed by a person described in paragraph (a) or by a duly authorized representative of that person. A person is a duly authorized representative only if:

(1) The authorization is made in writing by a person described in paragraph (a); and

(2) The authorization specifies either an individual or a position responsible for the overall operation of the facility, from which the discharge originates, such as a plant manager, superintendent or person of equivalent responsibility; and

(3) The written authorization is submitted to the Agency.

(12) **Duty to provide information.** The permittee shall furnish to the Agency within a reasonable time, any information which the Agency may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with the permit. The permittee shall also furnish to the Agency, upon request, copies of records required to be kept by this permit.

(13) **Duty to provide information.** The permittee shall furnish to the Agency within a reasonable time, any information which the Agency may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with the permit. The permittee shall also furnish to the Agency, upon request, copies of records required to be kept by this permit.

(14) **Duty to provide information.** The permittee shall furnish to the Agency within a reasonable time, any information which the Agency may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with the permit. The permittee shall also furnish to the Agency, upon request, copies of records required to be kept by this permit.

(15) **Duty to provide information.** The permittee shall furnish to the Agency within a reasonable time, any information which the Agency may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with the permit. The permittee shall also furnish to the Agency, upon request, copies of records required to be kept by this permit.

(16) **Duty to provide information.** The permittee shall furnish to the Agency within a reasonable time, any information which the Agency may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with the permit. The permittee shall also furnish to the Agency, upon request, copies of records required to be kept by this permit.

(17) **Duty to provide information.** The permittee shall furnish to the Agency within a reasonable time, any information which the Agency may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with the permit. The permittee shall also furnish to the Agency, upon request, copies of records required to be kept by this permit.

(18) **Duty to provide information.** The permittee shall furnish to the Agency within a reasonable time, any information which the Agency may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with the permit. The permittee shall also furnish to the Agency, upon request, copies of records required to be kept by this permit.

(19) **Duty to provide information.** The permittee shall furnish to the Agency within a reasonable time, any information which the Agency may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with the permit. The permittee shall also furnish to the Agency, upon request, copies of records required to be kept by this permit.

(20) **Duty to provide information.** The permittee shall furnish to the Agency within a reasonable time, any information which the Agency may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with the permit. The permittee shall also furnish to the Agency, upon request, copies of records required to be kept by this permit.


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SLUDGE
3A
CLARIFIER
SP 1
#4
#2
#1
B3
A
A1
B3

EXHIBIT 14

1973ED1343

microfiche - Disc COL 03

PERMIT NUMBER: 1973-EM-1343-OP

DATE ISSUED:

PROJECT LOG NUMBERS:

SUBJECT: SOUTHERN ILLINOIS POWER CO-OP - (Williamson Co.)
Pond #3 Discharge 001

TO OPERATE: Southern Illinois Power Co-Op
P.O. Box 143
Marion, Illinois 62959

Permit is hereby granted to the above designated permittee to discharge wastewater described as follows:

Ash pond receiving waste from facilities issued Permit #1969-EB-707 tributary to the Little Saline Creek on a periodic basis with a total [illegible],000,000 gallons per year discharge.

The [illegible], specifications and supporting documents approved by this permit were prepared by Southern Illinois Power CO-OP and are identified in the records of the Illinois Environmental Protection Agency, Division of Water Pollution Contol, Permit Section, by the log numbers designated in the subject heading above.

The Standard Conditions of issuance of this permit are itemized below.

READ ALL CONDITIONS CAREFULLY:

STANDARD CONDITIONS

Pertaining to both construction and operation permits.

1. If any statement or representation is found to be incorrect this permit may be revoked and the permittee thereupon waives all rights thereunder.

2. During or after the construction or the installation of the sewage works any agent duly authorized by the Environmental Protection Agency shall have the right to inspect such work and its operation.

3. The issuance of this permit (a) shall not be considered as in any manner affecting the title of the premises upon which the sewage works are to be located; (b) does not release the permittee from any liability for damage to person or property caused by or resulting from the installation, maintenance or operation of the proposed sewage works, (c) does not take into consideration the structural stability of any units or parts or the project; and (d) does not release the permittee from compliance with other applicable statutes of the State of Illinois, or with applicable local laws, regulations or ordinances.

4. Treatment works will be operated or supervised by a duly qualified sewage works operator certified under the Regulations of the Environmental Protection Agency.

5. The treatment works or wastewater source covered by this permit shall be constructed and operated in compliance with the provision of the Environmental Protection Act and Chapter 3 of the Rules and Regulations as adopted by the Illinois Pollution Control Board.

6. Plans, specifications and other documentation submitted shall constitute a part of the application and when approved shall constitute part of the permit.

7. This Permit may not be assigned or transferred without a new permit from the Illinois Environmental Protection Agency.

Pertaining only to construction permits.

1. There shall be no deviations from the approved plans and specifications unless revised plans, specifications, and application shall first have been submitted to the Environmental Protection Agency and a supplemental written permit issued.

2. The installation shall be made under the supervision of an inspector, who is familiar with the approved plans and specifications provided by and approved by the owner, and said inspector shall require that construction is compliance with the plans and specifications approved by this Agency.

3. Unless otherwise stated by Special Condition, construction must be completed in three years for treatment works and two years for sewers and wastewater sources.

4. Unless otherwise stated by Special Condition, the issuance of this permit shall be a joint construction and operation permit provided that:

a) All standard and Special Conditions, are complied with,

b) This Agency is notified within ten (10) days, respectively, of the start of construction and the date of testing and start-up of full operation.

c) The submission of operating reports of the treatment works covered under this permit shall be at a frequency specified by this Agency.

d) The operation permit shall expire one year from the date of start-up of operation.

e) At least 90 days prior to the expiration date of the operation permit, the permittee shall apply for a renewal of the operation permit.

This permit is issued in accordance with the Illinois Environmental Protection Act of 1970 and the Chapter III Water Pollution Regulations adopted by the Illinois Pollution Control Board in March of 1972.

TRM/RRF/ik

cc: Standards Section
EPA-Collinsville Surveillance Office
Div. of Water Resource Management

DIVISION OF WATER POLLUTION CONTROL

William A. [illegible]

USE: Log # Received Permit Number Date

File Subject

B. Ogilvie
vernor

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY
Division of Water Pollution Control
Permit Section
Springfield, Illinois 62706

William L. Blaser
Director

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1625-73

APPLICATION FOR PERMIT
FOR
TREATMENT WORKS OR WASTEWATER SOURCES

(Read Instruction Booklet Before Completing)

I - APPLICATION FOR OPERATING PERMIT

ON I - General Information

Name of Facility Pond #3 Discharge 001

Owner's Name and Address Southern Illinois Power Cooperative (Name)

P. O. Box 143 (Street) Marion (City) Illinois (State) 62959 (Zip Code)

Plant Mailing Address Same as Above (Street) (City) (State) (Zip Code)

County Williamson

Engineer Harold G. Clarida (Name) 24022 (Illinois Registration Number)

Firm Clarida Engineering

Address 308 South Court (Street) Marion (City) Illinois (State) 62959 (Zip Code)

Telephone 618 (Area Code) 993-6411 (Number)

CTION III - Non-contact Cooling Water

1. Source of Water Intake Lake of Egypt & Area Run-off from Ash disposal area.

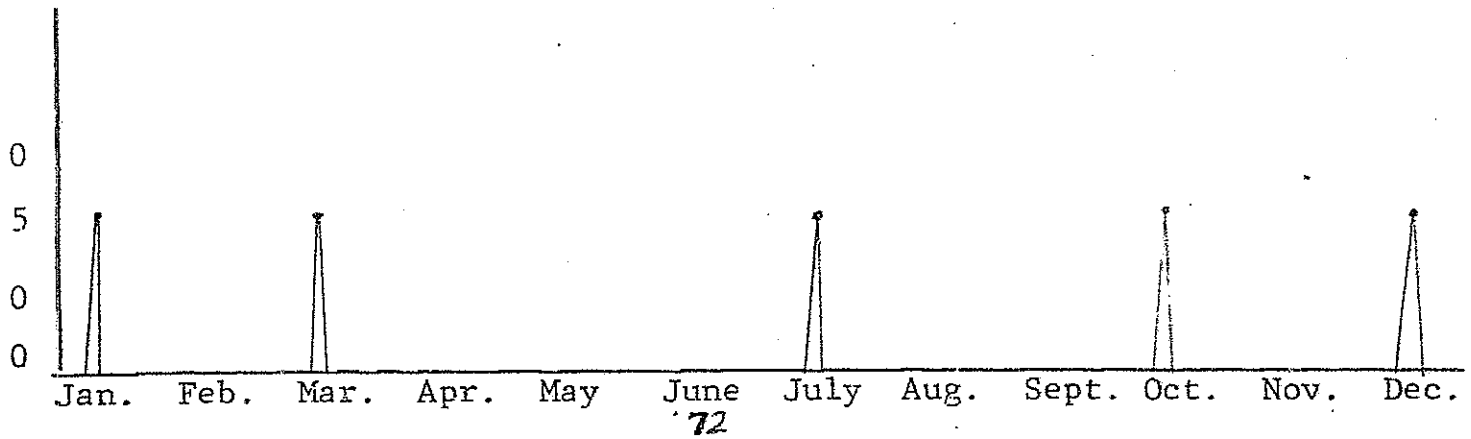
2. Discharge Quantities (Average of Last Year)

	Minimum	Average	Maximum
Flow (MGD)	0.001	0.082	1.67
Intake Temperature(°F)	43	60	77.0
Discharge Temperature (°F	44	61	78.0

3. Does maximum discharge temperature normally occur at times of maximum discharge flow?
Yes (No) (Circle) If no, explain.

This facility is used to trap rain water run-off from ash disposal area us blowdown from water plant plus sink drain from plant laboratory. Facility ll hold approximately 10,000,000 gallons. Treatment with lime is begun when nd is 60% full. Approx. 5 of this 6 million gallons is then discharged quiring 3 days time.

The facility is drained through a 4" diameter siphon only when water meets rrent water quality standards. Flow from this facility will be approx. 1.67mg en discharging. This pond was discharged 5 times last year (1972) proximately 30,000,000 gallons.



.001905 x 8.34 x 5
= 15.86 #BOD_5/day

$$BOD_5 \text{ loading} = \left(\frac{15.86 \#BOD_5/day}{1014.0 \text{ ft}^3}\right) 1000 = 15.64 \frac{\#BOD_5}{1000 \text{ ft}^3}$$

of filter media/day.

The system has been in operation for 15 months and produces effluents having an average pH of 7.0 suspended solids of 10 ppm, five day BOD of 6 ppm, and dissolved oxygen of 2 - 5 ppm. The wastes treated by the system are almost [illegible] domestic with only a small amount of oil coming from the mechanics carts and bodies. Oil in the turbine generators is centrifuged, filtered and recycled. Oil in the machine shop is also filtered and recycled.

Routinely the sewage plant is checked daily to insure an adequate supply of hypochlorite solution and the free operation of the dosing pump switch. Since the sewage enters the secondary sedimentation chamber in a septic condition, malfunctioning of the pump switch causes the whole system to "go septic" in 24 hours or less depending on the ambient temperature. The filter bed is levelled, aerated, and weeded as required. The percent settleable solids in the influent and effluent of the system is checked twice weekly. The pH, conductivity, suspended solids, and [illegible] color of the effluent are checked daily. One [illegible] sample is taken weekly from the effluent of the sand filter, which has produced effluents from 1 - 9 ppm of BOD_5.

The holding ponds 1 & 2 take only ash slurry from the power plant (see sketch B-36). Their only function is to provide the necessary retention time to precipitate the ashes from the water. The over flow from these two ponds flows to pond #4. Only one pond is in use at a time, while the other is being cleaned of its ashes.

Pond #3 receives only the run-off from the ash storage area plus a small amount of precipitated solids from the small (350 gpm) package water plant plus the sink drain from the plant laboratory. The holding capacity of #3 pond is approximately 6 million gallons. The water will invariably be acid and have an average pH of 4.0. Treatment consists of inducing hydrated lime slurry to the water through a special lime feeder designed solely for this purpose (see attached pictures). Of the several compounds available for neutralization of acid water and the precipitation of any associated iron, lime was chosen because of its ready availability, safety in handling, and cost. Theoretically, it requires approximately .65 pound of hydrated lime of 95% available calcium hydroxide to neutralize 1,000 gallons of water containing 100 ppm acid. Because the coal used as fuel originally contained iron pyrite in varying amounts and because of other factors involved, it will usually require approximately 1 pound of commercial hydrated lime to neutralize 1,000 gallons of acid water of 100 ppm acid content.

EXHIBIT 15

1990555005
WILLIAMSON

SOUTHERN ILLINOIS POWER CO-OPERATIVE

Route 4 • Box 607
Marion, Illinois 62959

Telephone
(618) 964-1448

PERMIT

September 18, 1992

Illinois Environmental Protection Agency
Bureau of Land, Environmental Information Support Unit
P.O. Box 19276
Springfield, IL 67294-9276

Gentlemen:

Southern Illinois Power Cooperative (SIPC) operates a flue gas desulfurization unit on its Unit #4 located at Marion, Illinois. This waste, which is 90% calcium sulfide and 10% calcium sulfate, is mixed with fly ash and disposed in an adjacent storage area. All transfer is by conveyor.

The storage area started out with a projected capacity of 2,274,407 cubic yards. At present (October of 1991), 1,137,359 cubic yards of material has been placed levaing SIPC with 1,137,048 cubic yards of remaining capacity. Over the last two years SIPC has added about 56,250 cubic yards to storage each year. Since the storage area is designed to be utilized by increasing its height, no cover is being used. SIPC is not aware of any environmental problems, such as fugitive dust, that this mode of operation has caused.

Very truly yours,

Todd Gallenbach

Todd Gallenbach
Results Supervisor

TG/ms

Enclosures

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SEP 22 1992
IEPA/DLPC

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

INITIAL FACILITY REPORT - FOR ON-SITE FACILITIES

35 Illinois Administrative Code Section 815

1990555005
SOUTHERN ILLINOIS POWER COOP
ROUTE 4
MARION, IL 62959

All landfills exempt from permits pursuant to Section 21(d) of the Environmental Protection Act and which received waste after September 18, 1990 are required to submit an Initial Facility Report to the Illinois Environmental Protection Agency. It must be filed with the IEPA by September 18, 1992. New facilities must submit this report before any waste is accepted.

The below information is required by 35 IAC Section 815 to be submitted to IEPA. If you are initiating closure prior to September 18, 1992, the information required to be submitted need only demonstrate compliance with 35 Ill. Adm. Code Section 814.502. If you have any questions, please contact the Permit Section's, Solid Waste Unit at 217/524-3300.

A. WASTE VOLUME SUMMARY

1. Total amount of solid waste disposed on-site to date: 1,137,359 (in place cubic yards)
   If there is more than one type of waste, please attach a summary of waste types and their amounts.

2. Current yearly rate of disposal: 56,250 (in place cubic yards)

3. Remaining capacity in existing units at the facility: 1,137,048 (in place cubic yards)

B. PROPOSED ACTIVITIES

1. Expected amount of waste to be disposed on-site October 1, 1992 thru September 30, 1993: 56,250 (in place cubic yards)

C. OTHER INFORMATION TO BE SUBMITTED

Please attach the following required information. Please indicate attachment number/letter in the blank provided.

attachment

1. _____ Certification by Professional Engineer (Section 812.102)

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2. I — Site Location Map - (Section 812.106)

3. II, IV — Site plan Map - (Section 812.107)

4. III — Narrative Description of the Facility - (Section 812.108)

5. _____ — Location Standards - (Section 812.109)

6. II — Surface Water Control - (Section 812.110)

7. _____ — Daily Cover - (Section 812.111)

8. _____ — Legal Description - (Section 812.112)

9. _____ — Proof of Property Ownership and Certification - (Section 812.113)

10. _____ — Closure Plans - (Section 812.114)

11. _____ — Postclosure Plans - (Section 812.115)

12. _____ — Copies of all reports required under 35 Ill. Adm. Code Section 812, Subpart B - Inert Waste Landfills

13. _____ — Copies of all reports required under 35 Ill. Adm. Code Section 812, Subpart C - Putrescible and Chemical Waste Landfills

D. SIGNATURE

"All initial facility reports shall be signed by a duly authorized agent and shall be accompanied by evidence of authority to sign the report and shall be notarized."

TODD GALLENBACH — Name (print/type)

Todd Gallenbach — Signature

Phone: (618) 964-1418

Please mail this form and attachments to the following address:

Illinois Environmental Protection Agency
Bureau of Land
Environmental Information Support Unit
P.O. Box 19276
Springfield, Illinois 67294-9276

If your address is shown incorrectly on the front of this form, please indicate your correct address.

Company Name_____ Street_____

City_____ State_____ Zip Code_____

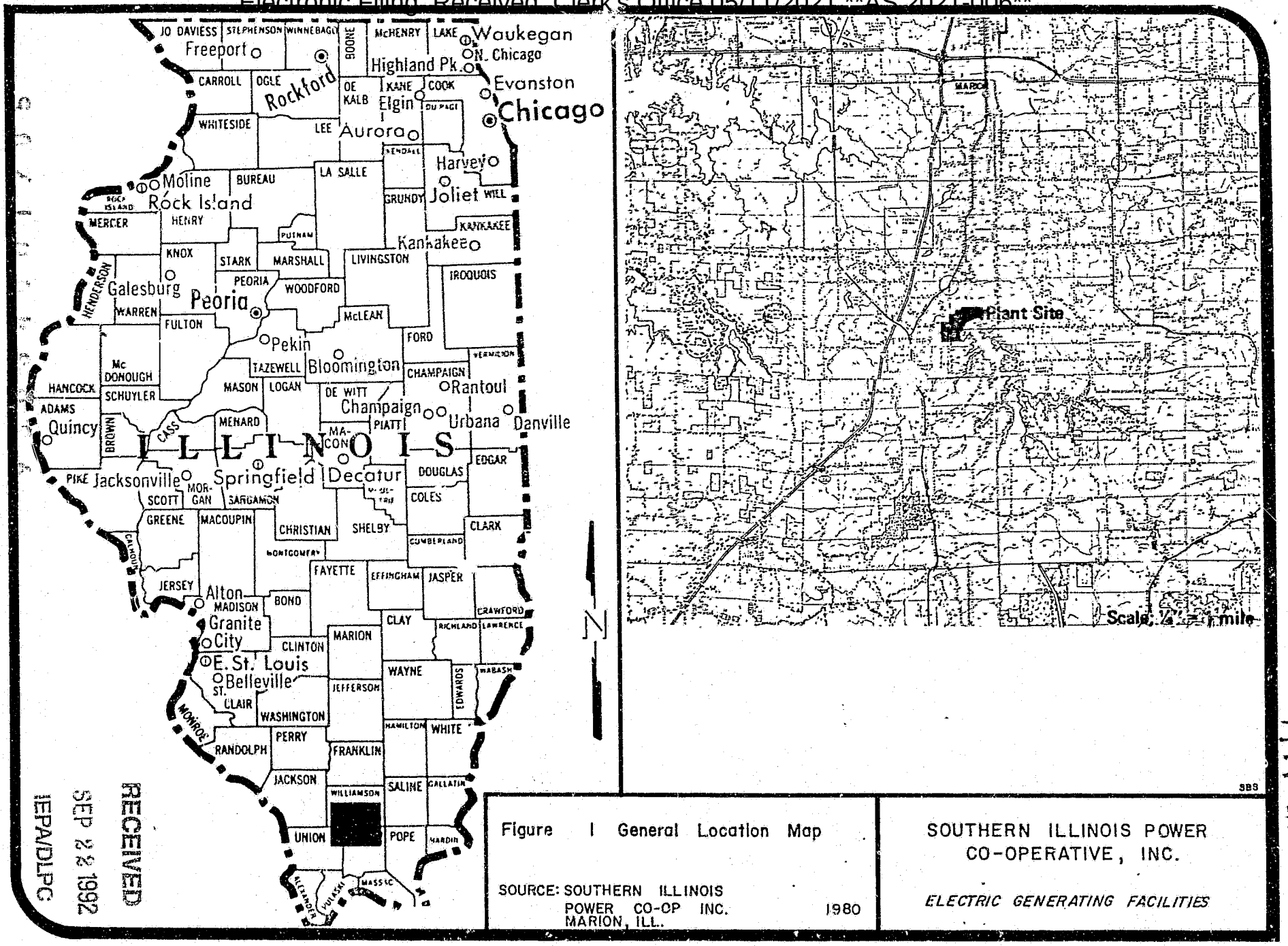


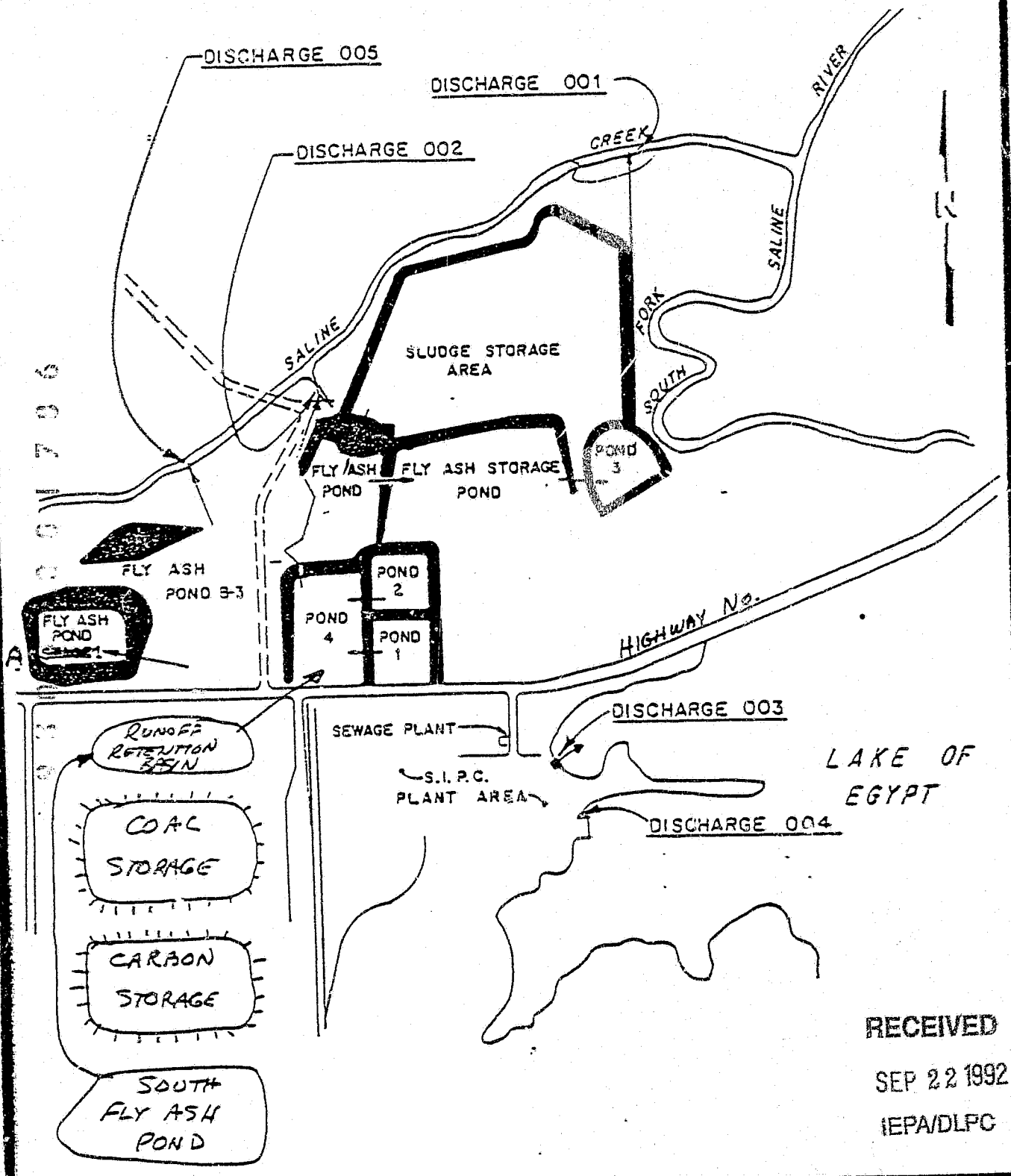
Figure 1 General Location Map

SOURCE: SOUTHERN ILLINOIS POWER CO-OP INC. MARION, ILL. 1980

SOUTHERN ILLINOIS POWER CO-OPERATIVE, INC.

ELECTRIC GENERATING FACILITIES

PTT 1



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SEP 22 1992
IEPA/DLPC

MAP SHOWING OUTFALLS - MARION STATION

SOURCE: SOUTHERN ILLINOIS POWER CO-OP INC. 1989
MARION, ILL.

SOUTHERN ILLINOIS POWER CO-OPERATIVE, INC.
NPDES PERMIT
IL0004316

SECTION 2

Introduction

Site Facilities and Systems

Southern Illinois Power Cooperative (SIPC) operates the Marion Power Station approximately 8 miles south of Marion, Williamson County, Illinois. The Marion Power Station is comprised of four (4) coal-fired units (Units 1, 2, 3 and 4), and has an electric generating capacity of 272 mw (Units 1, 2 and 3 rated at 33 mw and Unit 4 rated at 173 mw). Each unit consists of a cyclone furnace which provides steam to turbine generators. Presently, the facility burns coal obtained from the Southern Illinois coal fields and mine wastes or "carbon" which are also from Southern Illinois. The issuance of Joint Construction and Operating Permit No. 199856AAC by the Illinois Environmental Protection Agency (IEPA) for Unit 4 at the facility was contingent upon the use of at least a 25% carbon content in the fuel blend in the unit. By-products from the generating process include bottom ash, fly ash and scrubber sludge.

When coal is burned, the chemical constituent boron is concentrated in the bottom ash and fly ash. Since SIPC's generating units are cyclone furnaces, most coal ash exits the boilers as bottom ash. Units 1, 2 and 3 operate with about a 60/40 ratio of bottom ash to fly ash, and Unit 4 operates at a 70/30 ratio. The production of ash becomes important in terms of boron concentration and leachability. Due to the concentration of boron in the ash, water contact results in the leaching of boron, with the degree of leachability varying with the type of coal burned and method of burning. (Muchmore, 1977). Approximately fifty percent (50%) of the boron concentration in fly ash produced from Illinois coal is readily leachable by water contact (Muchmore, 1977).

Bottom ash from Units 1, 2, 3 and 4 is sluiced to Ponds 1 and 2. A site plan identifying the location of all facility systems is provided as Figure 1. Ash is collected and held in Ponds 1 and 2 until it is later removed by contractors and hauled off-site. The sluice water produced by water contact with the ash is collected in Pond 4 and discharged through Wastewater Discharge Outfall 002.

Fly ash produced in Units 1, 2 and 3 is sluiced to either Ponds A-1 or B-3. The sluice water collected in Pond A-1 drains to Pond B-3, and is discharged through Wastewater Discharge Outfall 005.

The Fly ash produced in Unit 4 is normally removed in a dry condition (vacuum system) and held in a storage silo for mixing with scrubber sludge. Scrubber sludge, produced through the use of a wet limestone flue gas scrubber for SO_2 Control, and the fly ash, are mixed and transported by conveyor belt to the sludge storage area. The motive force for the vacuum system is sluice water with the vacuum being created by ejectors. Utilization of this system results in only minimal contact between sluice water and fly ash. The sluice water produced is then discharged to either Pond A-1 or Pond B-3. Occasionally, due to equipment failure, the fly ash from Unit 4 is sluiced wet to either Pond A-1 or Pond B-3. During these periods, scrubber sludge is pumped to a small retention pond in the sludge storage area. See Figure 1. It is important to note that all of the ash removal systems described herein operate intermittently depending upon generating load and the amount of ash in the fuel blend.

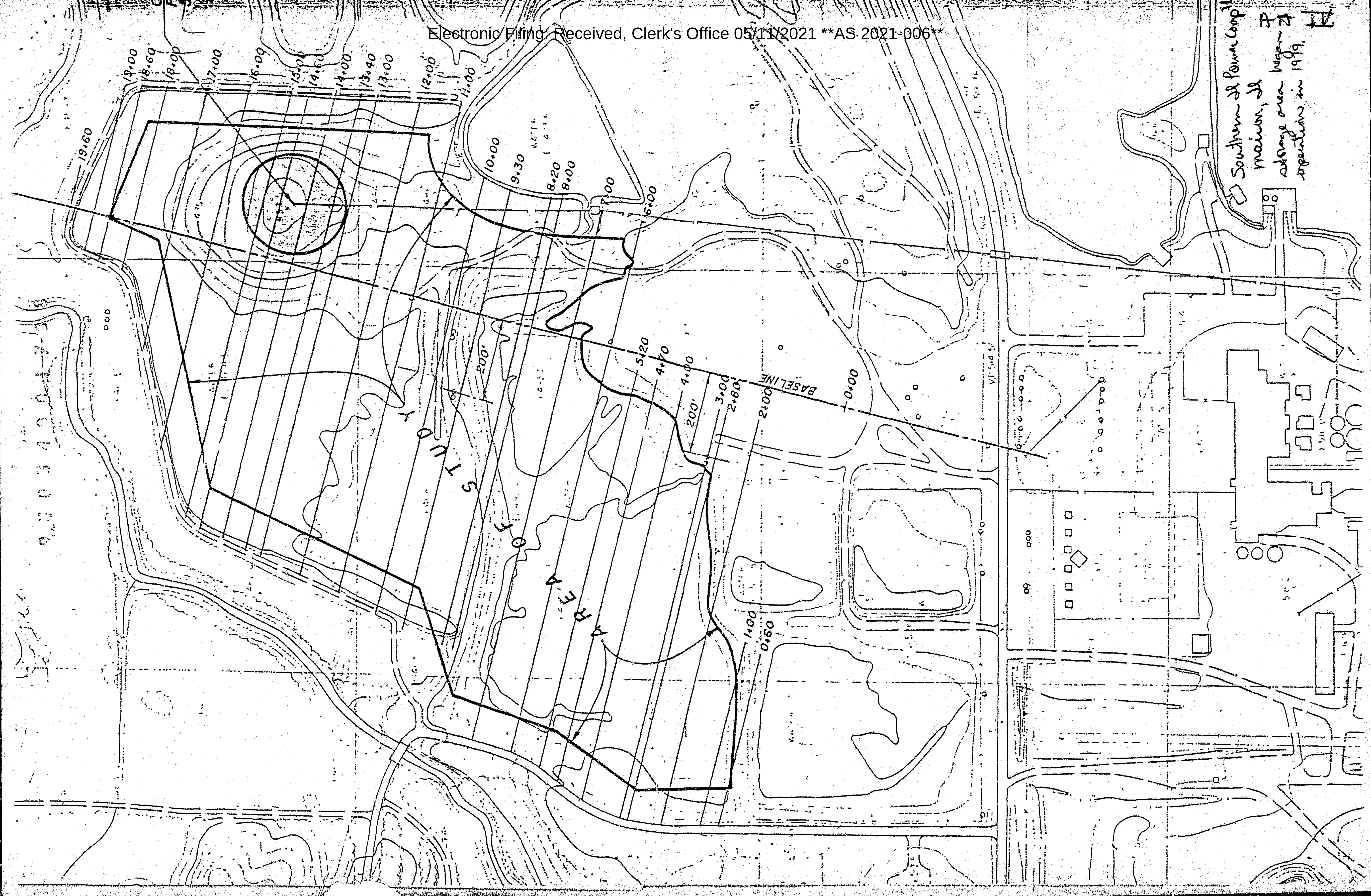


EXHIBIT 16

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 · (217) 782-3397
JB PRITZKER, GOVERNOR JOHN J. KIM, DIRECTOR

(217)524-3300
TDD 217/782-9143

March 20, 2020

Southern Illinois Power Cooperative
Wendell Watson - Environmental Manager
11543 Lake of Egypt Road
Marion, Illinois 62959

CERTIFIED MAIL #70150640000269449810
RETURN RECEIPT REQUESTED

Re: **Violation Notice L-2020-00035**
LPC #1990555005 - Williamson County
Marion/Southern Illinois Power Coop
Compliance File

Dear Mr. Watson:

This constitutes a Violation Notice pursuant to Section 31(a)(1) of the Illinois Environmental Protection Act, 415 ILCS 5/31(a)(1), and is based on inspections completed on September 27, 2019 and January 7, 2020 by representatives of the Illinois Environmental Protection Agency ("Illinois EPA").

The Illinois EPA hereby provides notice of alleged violations of environmental laws, regulations, or permits as set forth in the attachment to this notice. The attachment includes an explanation of the activities that the Illinois EPA believes may resolve the specified alleged violations, including an estimate of a reasonable time period to complete the necessary activities. Due to the nature and seriousness of the alleged violations, please be advised that resolution of the violations may also require the involvement of a prosecutorial authority for purposes that may include, among others, the imposition of statutory penalties.

A written response, which may include a request for a meeting with representatives of the Illinois EPA, must be submitted via certified mail to the Illinois EPA within 45 days of receipt of this notice. If a meeting is requested, it shall be held within 60 days of receipt of this notice. The response must include information in rebuttal, explanation, or justification of each alleged violation and a statement indicating whether you wish to enter into a Compliance Commitment Agreement ("CCA") pursuant to Section 31(a) of the Act. If you wish to enter into a CCA, the written response must also include proposed terms for the CCA, including dates for achieving each commitment, and may include a statement that compliance has been achieved for some or all of the alleged violations. The proposed terms of the CCA should contain sufficient detail and must include steps to be taken to achieve compliance and the necessary dates by which compliance will be achieved.

The Illinois EPA will review the proposed terms for a CCA provided by you and, within 30 days of receipt, will respond with either a proposed CCA or a notice that no CCA will be issued by the Illinois EPA. If the Illinois EPA sends a proposed CCA, you must respond in writing either by

agreeing to and signing the proposed CCA or by notifying the Illinois EPA that you reject the terms of the proposed CCA.

If a timely written response to this Violation Notice is not provided, it shall be considered a waiver of the opportunity to respond and meet, and the Illinois EPA may proceed with referral to a prosecutorial authority.

Written communications should be directed to:

Illinois Environmental Protection Agency
Attn: Ukanno Foxworth
Bureau of Land # 24
1021 North Grand Ave. East
Springfield, Illinois 62794

Please include the Violation Notice Number L-2020-00035 and the Site Identification Number 1990555005 on all written communications and supporting documents.

The complete requirements of the Illinois Environmental Protection Act and any Illinois Pollution Control Board regulations cited herein or in the inspection report can be viewed at:

http://www.ipcb.state.il.us/SLR/TheEnvironmentalProtectionAct.asp
and
http://www.ipcb.state.il.us/SLR/IPCBandIEPAEnvironmentalRegulations-Title35.asp

If you have questions regarding this matter, please contact Sheila Williams at Shelia.R.Williams@Illinois.gov or at (618)993-7252

Sincerely,

Ukanno Foxworth, Unit Manager
Compliance & Reporting Unit
Bureau of Land
Illinois Environmental Protection Agency

Enclosure: Violation Notice Attachment

LPC #1990555005 – Williamson County
Marion / Southern Illinois Power Cooperative

VIOLATION NOTICE ATTACHMENT

Southern Illinois Power Cooperative ("Respondent") is an electric utility company that owns an onsite landfill located at 11543 Lake of Egypt Road in Marion, Illinois ("the subject property"). On October 13, 2015, Respondent stated no additional waste would be added to the landfill and mentioned it would begin the closure of the landfill. On September 27, 2019, the Illinois EPA inspected the subject property. Then, on January 7, 2020, the Illinois EPA had conducted a record review of groundwater data from the subject property. During the inspection and record review, apparent violations of the Illinois Environmental Protection Act and Illinois Pollution Control Board ("Board") regulations were observed. These apparent violations are discussed in further detail below.

Alleged Violations

1. Intermediate Cover Issue

   The Illinois EPA determined that Respondent did not apply intermediate cover that was the equivalent of 0.30 meter (or one foot) of compacted clean soil material, which violates Illinois law and Board regulations. *See* 415 ILCS 5/21(e); 35 Ill. Adm. Code 811.313(a).

2. Issues Related to Final Cover System

   a) Respondent did not utilize a final cover consisting of a low permeability layer overlain by a final protection layer constructed in accordance to Board regulations, which violates Illinois law and Board regulations. *See* 415 ILCS 5/21(e); 35 Ill. Adm. Code 811.314(a).

   b) Respondent had not constructed a low permeability layer consisting of a compacted earth layer, or geomembrane, or any other low permeability layer meeting the standards outlined in 35 Ill. Adm. Code 811.314, which violates Illinois law and Board regulations. *See* 415 ILCS 5/21(e); 35 Ill. Adm. Code 811.314(b).

   c) Respondent did not implement the standards for the final protective layer to cover the entire low permeability layer, ensure sufficient thickness of the final protective layer, consist of soil material capable of supporting vegetation, and quickly place after the installment and placement of low permeability layer to prevent any further damage, which violates Illinois law and Board regulations. *See* 415 ILCS 5/21(e); 35 Ill. Adm. Code 811.314(c).

3. Issues Related to Final Slope and Stabilization

Illinois EPA inspector observed several areas of the landfill that were devoid of vegetation, which violates Illinois law and Board regulations. *See* 415 ILCS 5/21(e); 35 Ill. Adm. Code 811.322(a); 35 Ill. Adm. Code 811.322(c).

4. Inadequate Initial Facility Report

Illinois EPA inspectors determined the Initial Facility Report ("IFR") did not include information required by 35 Ill. Adm. Code 812, which violates Illinois law and Board regulations. *See* 415 ILCS 5/21(e); 35 Ill. Adm. Code 815.203(b).

5. Issues Related to the Operation of Groundwater Monitoring System

a) Respondent has not conducted the appropriate methods and analytical procedures as used in the groundwater impact assessment to establish the predicted values of the maximum allowable predicted concentrations ("MAPC") at each monitoring point located at the subject property, which violates Illinois law and Board regulations. *See* 415 ILCS 5/21(e); 35 Ill. Adm. Code 811.318(c).

b) Respondent did not utilize the correct groundwater monitoring analytical procedures, which violates Illinois law and Board regulations. *See* 415 ILCS 5/21(e); 35 Ill. Adm. Code 811.318(e).

6. Detection Monitoring Program for Groundwater

a) Respondent has not chosen the constituents for groundwater monitoring criteria, which violates Illinois law and Board regulations. *See* 415 ILCS 5/21(e); 35 Ill. Adm. Code 811.319(a)(2).

b) Respondent has not conducted the monitoring of organic chemicals in each existing monitoring well located at the subject property, which violates Illinois law and Board regulations. *See* 415 ILCS 5/21(e); 35 Ill. Adm. Code 811.319(a)(3).

7. Inadequate Reporting of Groundwater Quality Standards

a) Respondent submitted incomplete groundwater data report that did not include all parameter lists for Class II groundwater, which violates Illinois law and Board regulations. *See* 415 ILCS 5/21(e); 35 Ill. Adm. Code 620.115; 35 Ill. Adm. Code 620.420(a); 35 Ill. Adm. Code 620.420(b); 35 Ill. Adm. Code 620.420(c).

b) Respondent did not evaluate for all of the parameters for Class II groundwater, which violates and Board regulations. *See* 415 ILCS 5/21(e); 35 Ill. Adm. Code 620.115; 35 Ill. Adm. Code 620.420(a); 35 Ill. Adm. Code 811.320(d).

Suggested Resolutions

Respondent should take necessary remedial action to resolve the above-referenced alleged violations, including the following:

1. Landfill Design Period. **Within 90 calendar days of receipt of this Violation Notice ("VN"):**

   a) Need to establish a design period for the onsite landfill in accordance with the Board regulations.

   b) Collect all supportive documentation to determine the design period.

   c) Provide a completed copy of the final design period report including but not limited to site location map, site plan map, and narrative description to the Illinois EPA.

   d) Include details on what steps have been or will be taken to comply with the closure requirements.

2. Final Slope and Stabilization Plan. **Within 180 calendar days of receipt of this VN:**

   a) Apply a low permeability layer to the unit in accordance with 35 Ill. Adm. Code 811.314(b).

   b) Apply the final protective layer over the entire low permeability layer in accordance with 35 Ill. Adm. Code 811.314(c).

   c) Check the final protective layer is free of desiccation, cracks, and damage.

   d) Seed the final protective layer to ensure uniform vegetative growth.

3. Initial Facility Report. **Within 45 calendar days of receipt of this VN,** amend the IFR to include the following items:

   a) Include all information relating to closure plans and post-closure plans, as required in 35 Ill. Adm. Code 812.114 and 812.115.

b) Conduct a groundwater class determination as described in 35 Ill. Adm. Code Part 620:Subpart B.

c) Establish a written groundwater monitoring program to include complete sampling and analysis procedures, in accordance with Board regulations.

d) Calculate MAPCs values.

e) Determine Applicable Groundwater Quality Standards, as outlined in 35 Ill. Adm. Code 811.320.

4. Groundwater Monitoring Sampling Plan. **Within 90 calendar days of receipt of this VN,** conduct sampling on all groundwater parameter lists outlined in Parts 620 and 811 of Title 35 Illinois Administrative Code for these nine groundwater monitoring wells.

5. Groundwater Analytical Data. **Within 45 calendar days of receipt of this VN,** submit an electronic copy of the groundwater analytical data (last four years of data) to Connie Letsky at Connie.Letsky@Illinois.gov.

6. Recordkeeping. **Within 90 calendar days of receipt of this VN and continuing monthly thereafter until compliance is achieved,** submit copies of all records that reflect remedial activities undertaken to address violations alleged in this VN to:

Illinois EPA Marion Regional Office
Attn: Sheila Williams
2309 West Main Street, Suite 116
Marion, Illinois 62959

Bureau of Land – Field Operations Section
Evaluation Report

General Facility Information			
BOL ID:	1990555005	**Region:**	Marion
USEPA ID:	ILD007813900	**County:**	Williamson
Site Name:	Southern Illinois Power Cooperative	**Phone:**	618-964-1448
Address:	11543 Lake of Egypt Road	**Latitude:**	37.61968
City/State/Zip:	Marion, IL 62959	**Longitude:**	-88.95308
Permit No(s):	None		

Owner	Operator
Southern Illinois Power Cooperative Attn: Wendell Watson 11543 Lake of Egypt Road Marion, IL 62959	Southern Illinois Power Cooperative Attn: Wendell Watson 11543 Lake of Egypt Road Marion, IL 62959

Evaluation Details	
Evaluation Type	Part 815 Landfill Inspection
Evaluation Date	9/27/2019
Inspector(s)	Sheila Williams
Person(s) Interviewed	Wendell Watson, Environmental Manager; Todd Gallenbach, Power Production Vice President; Jason Laurin, Environmental Coordinator
Previous Inspection Date	5/14/2018

Observations	
Time	13:35 - 15:17
Weather Conditions (Description)	sunny
Temperature (°F)	85° F.
Photos Taken (Yes/No)	yes

Executive Summary

On September 27, 2019, an inspection was conducted at the Southern Illinois Power Cooperative's (SIPC) onsite landfill. The landfill is regulated under 35 Illinois Administrative Code 815. I met with Jason McLaurin, Environmental Coordinator; Wendell Watson, Environmental Manager; and Todd Gallenbach, Power Production Vice President. I was accompanied by all three gentlemen throughout the inspection. Apparent violations were observed during this inspection.

Evaluation Narrative

Southern Illinois Power Cooperative is located along the northwestern shore of the Lake of Egypt, south of Marion, Illinois. This power plant began operations in the early 1960's. The facility uses two coal fired boilers and two combustion turbines to generate electric power. Bottom ash, fly ash, and scrubber sludge are byproducts of this process. Currently, bottom ash is sold as a product to be used for sandblasting and shingle grit. Some of the scrubber sludge is force oxidized to generate gypsum which is

sold to a cement plant in Cape Girardeau, Missouri. If the fly ash and scrubber sludge pass the leachate test for Class I drinking water standards, they are transported to an IDNR mine reclamation project northwest of Marion. If either of these waste streams do not pass the leachate test, they are taken to Perry Ridge Landfill.

The onsite landfill is situated on the north side of Lake of Egypt Road. I was informed landfill operations began about 1978. The landfill is approximately 50 acres in size. It was used for the deposition of mostly scrubber sludge as well as some fly ash. Vegetation is sparse in some areas (photos 1-3) and more consistent in other areas (photos 5-7). I was informed the deposited waste is very hard and is set up like concrete. No rills were observed to suggest the erosion of the material (photos 1-3). Photo 4 was taken of a berm built along a portion of the northwest perimeter of the landfill. A stormwater ditch (photo 7), referred to as the "moat" by facility personnel, is present along the east, north, and west sides of the landfill. Facility representatives said the top of the landfill has been sloped to promote surficial flow toward the eastern portion of the moat. Water is pumped on a daily basis from the southwestern area of the moat into a settling pond. The facility has a National Pollutant Discharge Elimination System (NPDES) permit for the moat and settling pond.

A review of Agency records shows the facility routinely submits the On-Site Permit Exempt "815" Facility Annual Report. The annual reports for 2015 and 2016 were not in the Agency's records, but SIPC provided copies of the reports. The reports include quarterly sampling results for nine wells. These wells are designated as C-1, C-2, C-3, S-1 Swamp, S-2, S-3, S-4, S-5, and S-6. The annual reports indicate the wells are sampled for sulfate, boron, cadmium, and iron. It does not appear the facility is sampling for all of the required parameters. The Illinois EPA will conduct a review of the groundwater data at a later date.

Recent On-Site Permit Exempt "815" Facility Annual Reports state no amount of waste is expected to be disposed in the landfill for the following year. I was told the deposition of waste into the landfill slowed down in 2008 because that was the time the facility started generating gypsum. SIPC sent a letter to the Agency stating that as of October 13, 2015, no additional waste would be added to the landfill. The reason given was to prevent the landfill from having to meet the new requirements of Subpart D Part 257. The letter also indicates that SIPC will begin planning the closure of the landfill.

SIPC's "Initial Facility Report – For On-Site Facilities" was received by the Agency on September 22, 1992. However, it did not contain information regarding the closure or postclosure of the on-site landfill. No closure plan was found during a review of Agency records. I was informed steps have not been taken to close the landfill including the application of a cap. None of the interviewees seemed to think a closure plan had been developed. Facility representatives mentioned some areas had been "dressed" by smoothing and sloping some of the surfaces, but no cover has been applied. Mr. Gallenbach expressed that they are willing to do what they need to at the landfill but, hesitates closing the landfill for a couple of reasons. He expressed concern that if they close the landfill without initially having clear direction from the Agency, the Agency could come back and tell them of things that were done incorrectly and require them to make changes. Also, SIPC has been approached by several companies about the possibility of harvesting the landfilled materials. It would not be beneficial for SIPC to apply cover if the harvesting takes place.

35 Ill. Adm. Code Part 814 which became effective January 13, 1994 provides standards for existing landfills. This part applies to SIPC's onsite landfill since it began operations prior to 1994. With a few exceptions, Part 814.302(a) states 35 Ill. Adm. Code 811 applies to units regulated under Part 814. Part 811.303(a) states the design period shall be the estimated operating life plus a postclosure care period of 30 years. Based on conversations with facility representatives and a review of records, it does not

appear a design period has been established, nor have closure operations begun. Closure activities are to include the application of intermediate cover per Part 811.313, final cover per Part 811.314, and final slope and stabilization per Part 811.322.

Summary of Apparent Violation(s)			
Status	Date Cited	Violation	Narrative
New	9/27/2019	21(e)	Dispose, treat, store, abandon any waste, or transport any waste into Illinois at or to sites not meeting requirements of the Act and regulations and standards
New	9/27/2019	811.313(a)	All waste not to be covered within 60 days by another lift of waste or final cover must have cover equivalent to 0.30 m (1') compacted clean soil material
New	9/27/2019	811.314(a)	Unit covered by final cover consisting of low permeability layer overlain by final protective layer constructed per §811.314 unless Agency RD&D permit allows use of innovative final cover technology per adjusted standard and permit is in effect
New	9/27/2019	811.314(b)	Low permeability layer constructed within 60 days after final waste lift placement; low permeability layer covers entire unit and connects with liner system; consists of compacted earth layer constructed with minimum allowable thickness of 0.91 m (3') and compacted to minimize void spaces and achieve permeability of 1 x 10-7 cm/sec, geomembrane constructed to provide performance equal or superior to compacted earth layer of (b)(3)(A) with strength to withstand normal stresses imposed by waste stabilization and placed over prepared base free from sharp objects and other materials that may cause damage, or any other low permeability layer construction techniques or materials providing equivalent or superior performance to above; for MSWLFs, if bottom liner permeability is <1 x 10-7 cm/sec, permeability of final cover low permeability layer must be less than or equal to the permeability of bottom liner system
New	9/27/2019	811.314(c)	Final protective layer must cover entire low permeability layer; thickness of final protective layer sufficient to protect low permeability layer from freezing and minimize root penetration, and at least 0.91 m (3') thick; final protective layer consists of soil material capable of supporting vegetation; final protective layer placed as soon as possible after placement of low permeability layer to prevent desiccation, cracking, freezing, or other damage to low permeability layer
New	9/27/2019	811.322(a)	Final slopes designed and constructed to support vegetation and minimize erosion
New	9/27/2019	811.322(c)	Vegetation promoted on all reconstructed surfaces to minimize erosion of final protective cover; vegetation compatible with climatic conditions; vegetation requires little maintenance; vegetation consists of diverse mix of native and introduced species consistent with postclosure land use; vegetation tolerant of landfill gas; root depth does not exceed depth of final

			protective cover; and temporary erosion control measures undertaken while vegetation is being established
New	9/27/2019	815.203(b)	Initial facility report contents

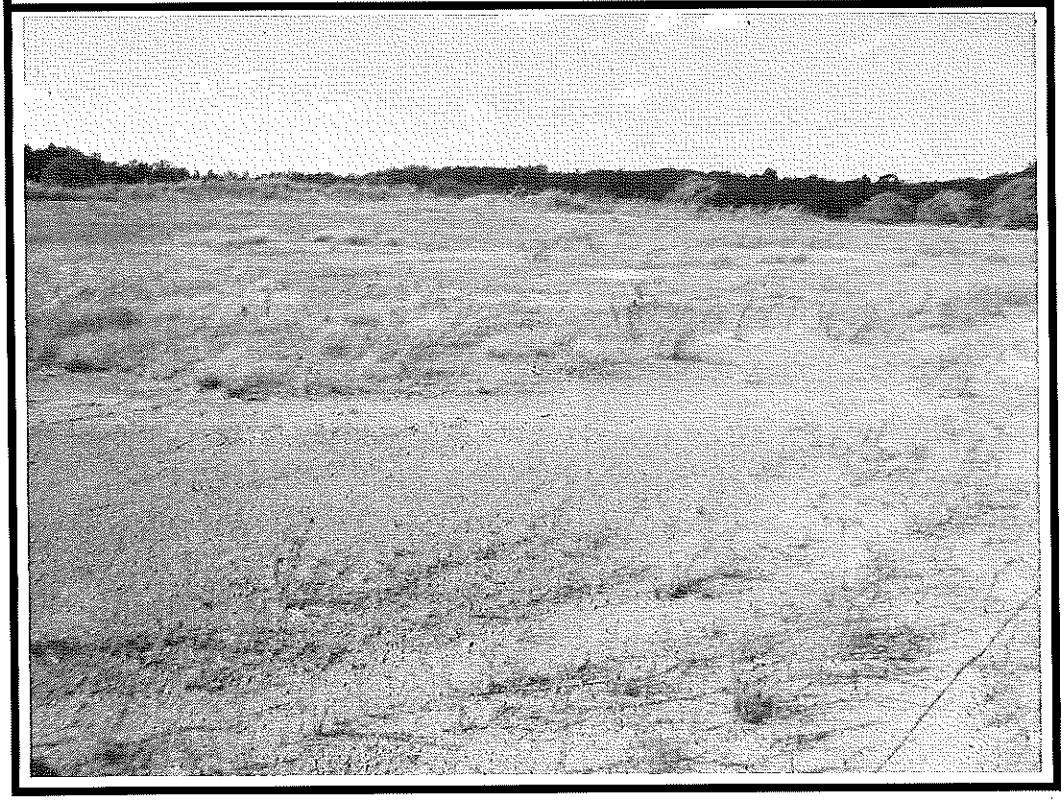
Attachment Listing		
ID	Type	Description
No Attachments		

Digital Photographs

Site: Southern Illinois Power Cooperative (1990555005)
Williamson County

Photo ID: 1
Photo Date: 9/27/2019
Photo Time: 14:30:22
Direction: SE
Taken By: Sheila Williams

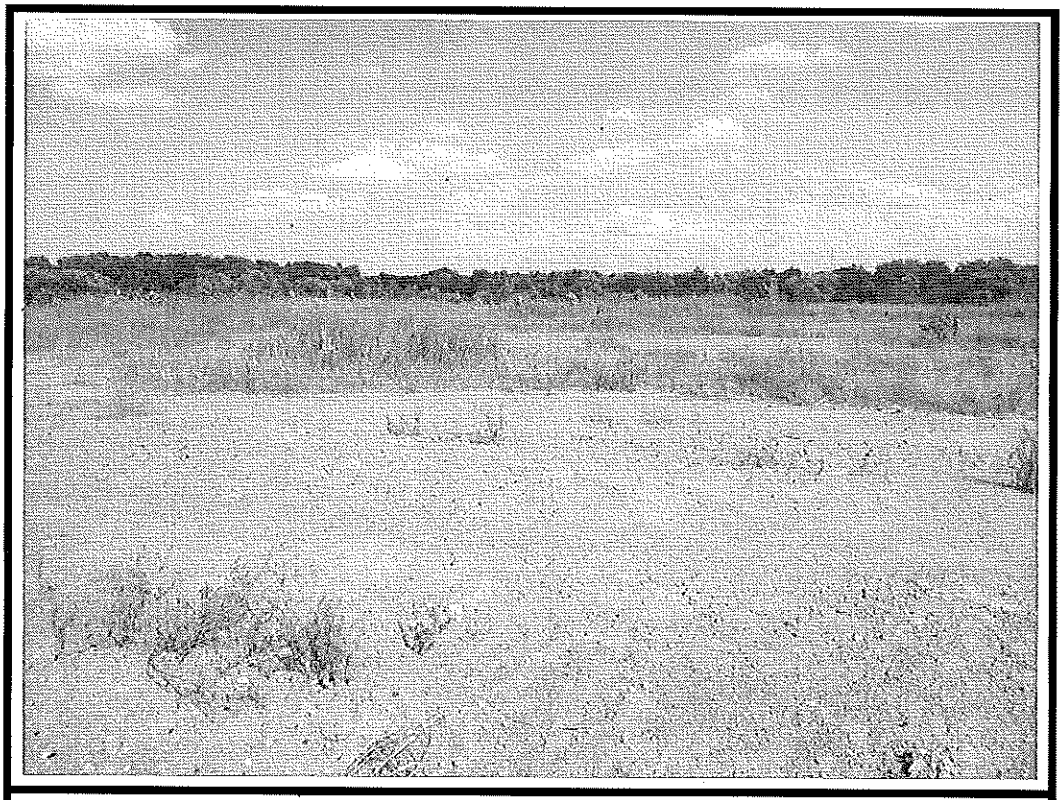
fill area looking to the southeast waste boundary



Site: Southern Illinois Power Cooperative (1990555005)
Williamson County

Photo ID: 2
Photo Date: 9/27/2019
Photo Time: 14:34:58
Direction: NW
Taken By: Sheila Williams

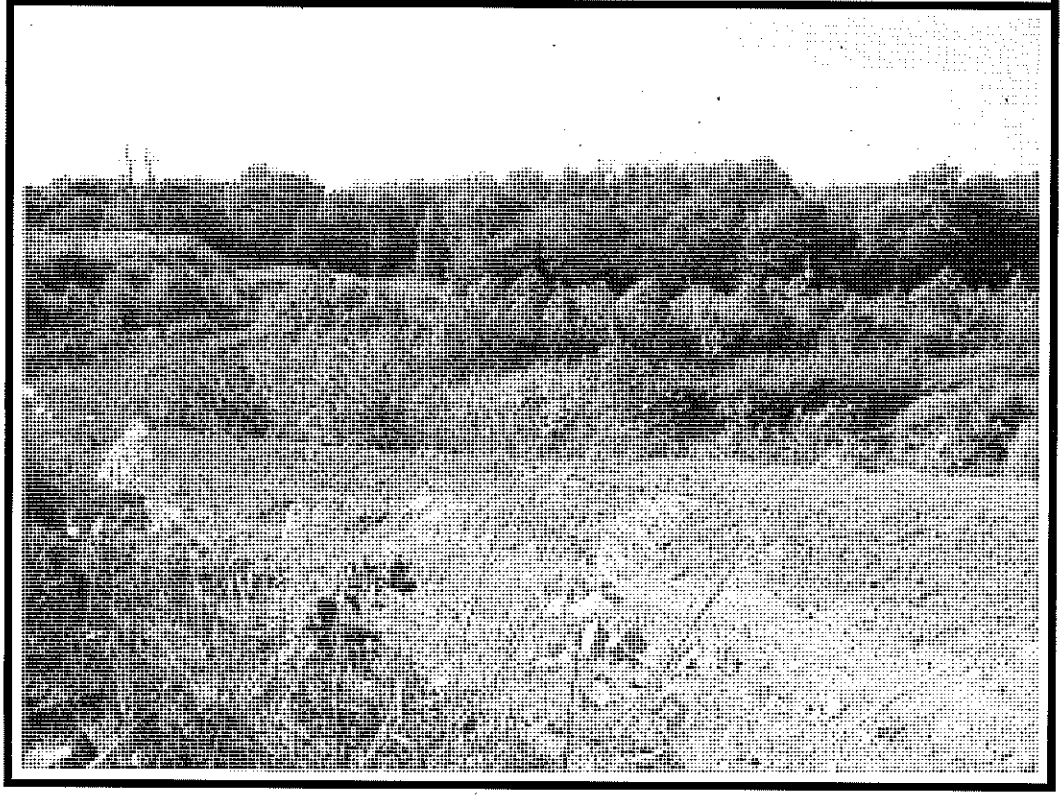
surface of fill area



Site: Southern Illinois Power Cooperative (1990555005)
Williamson County

Photo ID: 3
Photo Date: 9/27/2019
Photo Time: 14:35:12
Direction: NE
Taken By: Sheila Williams

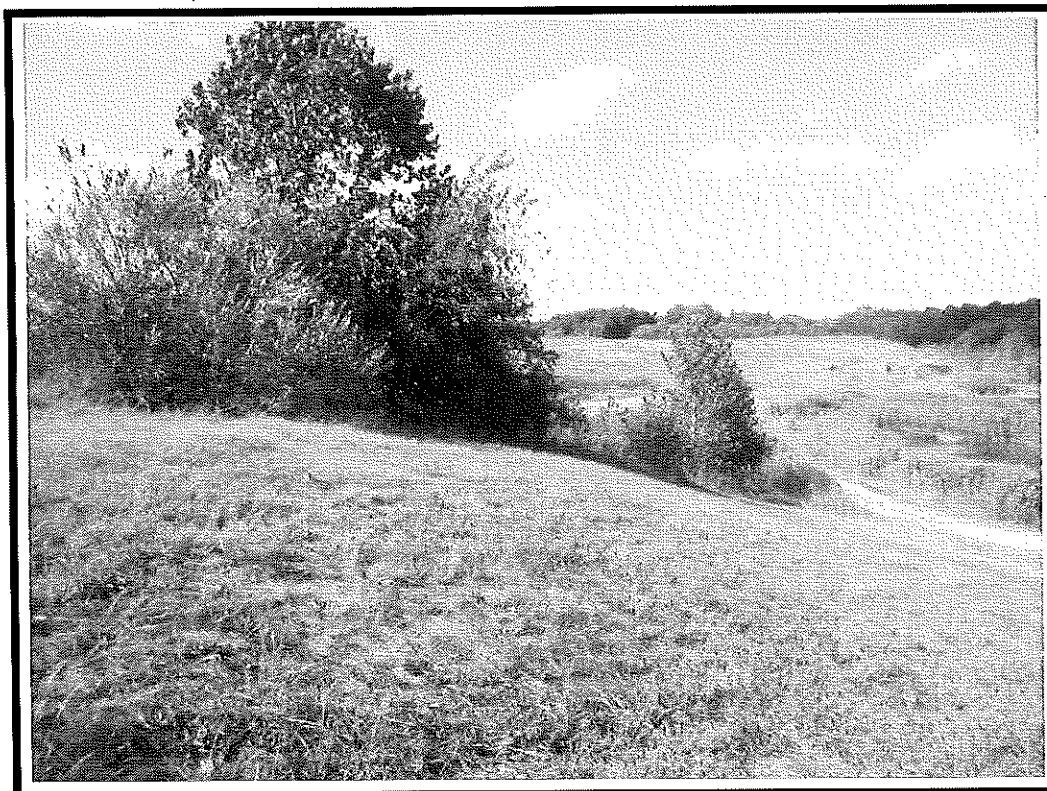
surface of fill area



Site: Southern Illinois Power Cooperative (1990555005)
Williamson County

Photo ID: 4
Photo Date: 9/27/2019
Photo Time: 14:42:40
Direction: NW
Taken By: Sheila Williams

berm is along the northwestern fill area of the landfill



Site: Southern Illinois Power Cooperative (1990S55005)
Williamson County

Photo ID: 5
Photo Date: 9/27/2019
Photo Time: 14:51:07
Direction: N
Taken By: Sheila Williams

southeastern boundary of waste boundary

Site: Southern Illinois Power Cooperative (1990555005)
Williamson County

Photo ID: 6
Photo Date: 9/27/2019
Photo Time: 14:55:18
Direction: SW
Taken By: Sheila Williams

eastern boundary of landfill

Site: Southern Illinois Power Cooperative (1990555005)
Williamson County

Photo ID: 7
Photo Date: 9/27/2019
Photo Time: 14:59:35
Direction: SW
Taken By: Sheila Williams

"moat" and northeastern perimeter of the waste boundary

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

Site Diagram(s)

Site Diagram 1: September 27, 2019 • Southern Illinois Power Cooperative (1995555005) • Williamson County

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

Site Diagram(s)

Site Diagram 2: September 27, 2019 • Southern Illinois Power Cooperative (1990255005) • Williamson County

Illinois Environmental Protection Agency
Bureau of Land – Field Operations Section
Response/Document Review

General Facility Information			
BOL ID:	1990555005	**Region:**	Marion
USEPA ID:	ILD007813900	**County:**	Williamson
Site Name:	Southern Illinois Power Coop	**Phone:**	618-964-1448
Address:	11543 Lake of Egypt Rd	**Latitude:**	
City/State/Zip:	Marion, IL 62959	**Longitude:**	
Permit No(s):	None		

Owner	Operator
Southern Illinois Power Coop Attn: Wendell Watson 11543 Lake of Egypt Rd PO Box 311 Marion, IL 62959	Southern Illinois Power Coop Attn: Wendell Watson 11543 Lake of Egypt Rd PO Box 311 Marion, IL 62959

Inspection Details	
Inspection Type	814C Landfill Groundwater Response/Document Review
Inspection Date	1/7/2020
Inspector(s)	Letsky, Connie
Person(s) Interviewed	None
Previous Inspection Date	N/A

Executive Summary

On January 7, 2020, I conducted a non-financial, groundwater record review for Southern Illinois Power's on-site permit exempt "815" landfill which is located near Marion. I reviewed documents regarding groundwater information received at the Agency in 2019. Numerous groundwater violations are being alleged as a result of this review.

Inspection Narrative

This on-site landfill at Southern Illinois Power (SIP) is a permit-exempt facility, per 41S ILCS 5/21(d) of the [Illinois] Environmental Protection Act. Since the landfill facility remained opened more than seven years after September 18, 1990, for groundwater compliance they are subject to Part 814 Subpart C: Standards for Existing Units Accepting Chemical and Putrescible Wastes that May Remain Open for More than Seven Years, as well as 35 Illinois Administrative Code (IAC) Parts 620 (groundwater regulations), 810 (solid waste general provisions), 811 (general standards for all landfills, and putrescible and chemical waste landfills standards) , 812 (general information requirements for all landfills), 815 (procedural requirements for landfills exempt from permits); 816 (alternative standards for coal combustion power generating facilities waste landfills), and their Initial Facility Report (IFR). For this groundwater review, I reviewed SIP's IFR, and their 2018 Annual Report.

This landfill is not subject to U.S. EPA's Final Coal Combustion Residue (CCR) Rule which had an effective date of October 19, 2015. SIP apparently stopped accepting waste as of October 13, 2015.

SIP has submitted their On-Site Permit Exempt "815" Facility Annual Reports to the Agency for past years. Attached to these annual reports is SIP's quarterly well sampling of nine groundwater wells. However, only four parameters (Sulfate, Boron, Cadmium and Iron) have been sampled, instead of the complete groundwater parameter lists as required by Sections 620 and 811 regulations. In addition, SIP did not follow correct analytical procedures, as required by U.S. EPA's "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" and other sampling requirements, as incorporated by reference in Section 620.125. I only reviewed SIP's 2018 quarterly sample results which were conducted using Methods EPA 200.7 and 300.0, instead of Methods USEPA 375.2, 6010, 6020, 245.1/7470, 310.2, and SM 4500Cl-E, 2540C and 2540D, per SW846.

Although the groundwater data submitted by SIP is inadequate, if it were to be considered on a Total basis, compared to the 620 Class II groundwater standards, year 2018 has exceedances of Iron, Boron and Cadmium. However, no evaluation has apparently been made by SIP of the exceedances, as required by regulations. In addition, SIP has neglected to submit Applicable Groundwater Quality Standards (AGQS), as well as Maximum Allowable Predicted Concentration (MAPC) values with their Initial Facility Report (IFR).

Summary of Apparent Violation(s)			
Status	Date	Violation	Narrative
New	1/7/2020	21(e)	Dispose, treat, store, abandon any waste, or transport any waste into Illinois at or to sites not meeting requirements of the Act
New	1/7/2020	620.115	Cause, threaten or allow a violation of the Act, the IGPA or regulations adopted by the Board
New	1/7/2020	620.420(a)	Inorganic standards for Class II groundwater
New	1/7/2020	620.420(b)	Organic chemical constituents for Class II groundwater
New	1/7/2020	620.420(c)	Explosive constituents for Class II groundwater
New	1/7/2020	811.318	811.318(c) Maximum Allowable Predicted Concentrations (MAPCs)
New	1/7/2020	811.318(e)	Standards for Sample Collection and Analysis
New	1/7/2020	811.319(a)(2)	Criteria for choosing constituents to be monitored.
New	1/7/2020	811.319(a)(3)	Organic chemicals monitoring
New	1/7/2020	811.320(d)	Establishment of background concentrations

EXHIBIT 17

FEDERAL REGISTER

Vol. 80 Friday,
No. 74 April 17, 2015

Part II

Environmental Protection Agency

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 dewaters 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*, 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*. 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*. 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*.

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

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

EXHIBIT 18

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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

STATEMENT OF REASONS

NOW COMES the Illinois Environmental Protection Agency ("Illinois EPA"), by and through its counsel, and hereby submits this Statement of Reasons to the Illinois Pollution Control Board ("Board") pursuant to Sections 13, 22, 27 and 28 of the Environmental Protection Act ("Act") (415 ILCS 5/13, 22, 27 and 28) and 35 Ill. Adm. Code 102.202 in support of the attached proposed regulations.

I. INTRODUCTION

The Illinois EPA has developed a rule of general applicability for coal combustion residual ("CCR") surface impoundments at power generating facilities. The proposal contains comprehensive rules for the design, construction, operation, corrective action, closure and post-closure care of surface impoundments containing CCR. CCR is commonly referred to as coal ash, and CCR surface impoundments are commonly referred to as coal ash ponds or coal ash pits. This proposed rule includes groundwater protection standards applicable to each CCR surface impoundment at the waste boundary and requires each owner or operator to monitor groundwater. Illinois EPA's proposed rule will include a permitting program as well as all federal standards for CCR surface impoundments promulgated by the United States Environmental Protection Agency ("USEPA") under the Solid Waste Disposal Act of 1970, as amended by the Resource Conservation and Recovery Act of 1976 (RCRA), 42 U.S.C. 6901. In addition, the proposed rules

particles settle out of the waste water. In addition to the primary cell, an impound system may have one or two secondary cells, often referred to as polishing ponds for the settlement of very fine suspended solids. In some instances, the CCR surface impoundments have a constructed liner which allows the owner or operator to utilize heavy equipment to remove ash from the surface impoundment and dispose it off-site.

Historically, CCR may have been discharged to low lying areas or borrow pits at some locations. A borrow pit is an excavation where earth materials have been removed for site development. Borrow pits are usually incised, and the CCR and liquid is not contained by a dam, but contained in a depression or hole in the ground where earth materials have been removed. To increase storage capacity, owners or operators would sometimes build a CCR surface impoundment by constructing a diked enclosure. These structures are considered dams and are required to comply with Illinois' dam safety regulations. *See* 17 Ill. Adm. Code 3702.20. The size of the diked enclosure units ranges from less than an acre to over 300 acres.

The Illinois EPA has identified 73 CCR surface impoundments at power generating facilities. *See* Section VI. Some of surface impoundments are lined with impermeable materials, while others are not. Illinois EPA believes there are up to 6 CCR surface impoundments with liners that comply with the federal liner standards in 40 CFR 257.

The chemical make-up of CCR depends on the type of coal used, as well as the combustion technology and pollution control technology used at a facility. CCR can contain constituents such as antimony, arsenic, barium, beryllium, boron, cadmium, chloride, chromium, cobalt, fluoride, lead, lithium, mercury, molybdenum, radium 226 and 228, selenium, sulfate, and thallium. The presence of these contaminants 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. While some of these contaminants affect the safety of drinking water, others affect taste and odor, and other potential uses such as irrigation.

Regulatory Development

Until the adoption of Section 22.59 of the Act in P.A. 101-171 on July 30, 2019, the Illinois EPA had generally permitted the construction and operation of CCR surface impoundments as a waste water treatment unit under Title III of the Act Subtitle C of the Board's administrative rules. Many of these impoundments are permitted through a National Pollutant Discharge Elimination System (NPDES) permit or state operating permit issued under Section 12(b) of the Act.

The regulation of CCR surface impoundments became a national focus on December 22, 2008, after a dike ruptured at the Kingston Fossil Plant in Kingston Tennessee and approximately 1.1 billion gallons of CCR was released to the Emory River. In response, USEPA began developing rules for coal ash ponds and coal ash landfills under RCRA. *See* 75 Fed. Reg. 35137 (June 21, 2010). Illinois EPA responded by developing a coal ash impoundment strategy that required groundwater monitoring at all power plants in Illinois that use coal as a fuel source.

Under the ash impoundment strategy, the Illinois EPA identified facilities with CCR surface impoundments, requested groundwater monitoring well data, requested potable water system surveys, requested hydrogeologic site assessments, required the installation of groundwater monitoring and conferred with the Illinois Department of Natural Resources on dam safety. The information gathered under Illinois EPA's ash impoundment strategy showed that 14 facilities had violations of the numerical groundwater quality standards on-site.

In 2009, the Board held that coal ash ponds should not be regulated under the existing on-site landfill regulations, and instead the ash ponds required their own regulations, either site-

broad strokes Illinois EPA's goals. A more detailed explanation of the proposed rules' purpose and effect is set forth in the Section IV: Regulatory Proposal: Language.

As noted above, Section 22.59(g) of the Act requires the Illinois EPA to propose CCR rules to the Board no later than March 30, 2020. 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. 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. *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.

The third purpose and effect of this proposed rule is to adopt the federal CCR rules in Illinois and obtain federal approval of Illinois' CCR surface impoundment program. The federal CCR rules provide a framework for Illinois to fill the regulatory gap that exists when CCR surface impoundments are no longer operating as waste water treatment units. With the adoption of these proposed rules, Illinois will have a program that covers the design, construction, operation, corrective action and closure of CCR surface impoundments. The proposed rules contain groundwater protection standards that apply in addition to the groundwater quality standards in Part 620. Owners or operators of CCR surface impoundments will be required to conduct

This Section generally describes the available financial assurance mechanisms and sets forth timeframes within which owners or operators must provide financial assurance. Further, this Section describes instances when owners or operators may use multiple mechanisms for a single CCR surface impoundment or when a single mechanism may be utilized for multiple CCR surface impoundments in Illinois.

Section 845.960: Trust Fund

This Section details the requirements applicable to the use of a Trust Fund for financial assurance pursuant to Subpart I.

Section 845.970: Surety Bond Guaranteeing Payment

This Section details the requirements applicable to the use of a Surety Bond Guaranteeing Payment for financial assurance pursuant to Subpart I.

Section 845.980: Surety Bond Guaranteeing Performance

This Section details the requirements applicable to the use of a Surety Bond Guaranteeing Performance for financial assurance pursuant to Subpart I.

Section 845.990: Letter of Credit

This Section details the requirements applicable to the use of a Letter of Credit for financial assurance pursuant to Subpart I.

V. TECHNICAL FEASIBILITY AND ECONOMIC REASONABLENESS

As mandated by P.A. 101-171, the proposed regulation must be as protective and comprehensive as Subpart D of 40 CFR 257.[4] Since 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

[4] 415 ILCS 5/22.59(g)(1).

under federal law. For example, both 40 CFR 257 and the proposed Part 845 require groundwater monitoring systems and periodic groundwater monitoring, closure and post-closure care plans, corrective action, if necessary, to achieve groundwater protection standards, design criteria for any newly constructed CCR surface impoundments and the maintenance of publicly available records. The proposed regulation requires the owner or operator of CCR surface impoundments to complete a thorough alternatives analysis for corrective action and closure, the technical feasibility and economical reasonableness of which, will be a facility-specific determination based on multiple factors, including constructability, long and short term effectiveness, reliability and protection of human health and the environment. Therefore, the Illinois EPA believes proposed Part 845 is technically feasible and economically reasonable.

Public Act 101-171 also mandated fees and financial assurance for all CCR surface impoundments regulated by the proposed regulations.[5] Unlike P.A. 101-171, 40 CFR 257 is a self-implementing program. Therefore, documentation to demonstrate compliance are certified by a professional engineer and posted on a public website, relying on citizen lawsuits for enforcement. In contrast, the Illinois EPA, through the mandate of P.A. 101-171, proposes a permitting program administered by the Illinois EPA. As such, the documentation submitted to the Illinois EPA by the owners and operators of CCR surface impoundments is reviewed and approved by Illinois EPA staff during the operation, corrective action, and, if necessary, closure and post-closure care of every CCR surface impoundment in the state. The fees are set in P.A. 101-171, with higher initial fees for CCR surface impoundments that have not completed closure and lower fees for CCR surface impoundments that have completed closure.

In addition to the initial fee, annual fees are required by P.A. 101-171, again with CCR

[5] 415 ILCS 5/22.59 (f); (g); (j)(1).

surface impoundments that have not completed closure paying a higher annual fee than those that have completed closure. CCR surface impoundments that close with the CCR left in place have a 30-year minimum post-closure care period, which may be longer if the groundwater protection standards that are protective of human health and the environment have not been achieved. However, CCR surface impoundments that close by removing CCR do not have a specified post-closure care period. Once the owner or operator of a CCR surface impoundment that has closed by removing CCR demonstrates that they have achieved the groundwater protection standards, which will assure protection of human health and the environment, annual fees cease, since all work required by the proposed rule will be completed. While the time required to achieve the groundwater protection standards will vary depending on hydrogeologic conditions at each facility, the potentially reduced post-closure care period when closure is by removal of CCR, offsets to some extent the potentially higher costs associated with closure by removal. Because the fee system is designed to support the Illinois EPA's administrative work for the review of documents and permitting associated with CCR surface impoundment operation, corrective action, and, if necessary, closure and post-closure care, the fees are reduced as work progresses and the potential higher costs associated with closing CCR surface impoundments may be offset by a shorter period over which fees are collected, the proposed regulations are economically reasonable.

The financial assurance requirements of P.A. 101-171 also create economic considerations in the proposed regulation that do not exist in 40 CFR 257. Each CCR surface impoundment must have and maintain financial assurance to cover the costs of corrective action, and, if necessary, closure and the post-closure care period. The proposed regulations allow the use of several different financial instruments, or combinations thereof, to provide financial assurance. Because CCR surface impoundments that close with the CCR left in place have a 30-year minimum post-

closure care period, financial assurance must necessarily extend at least 30 years past closure. The period for which financial assurance must be maintained is longer if the corrective action to meet groundwater protection standards is still ongoing at the end of the 30-year post-closure care period. However, CCR surface impoundments that close by removing CCR do not have a specified post-closure care period. Once the owner or operator of a CCR surface impoundment that has closed by removing CCR demonstrates that they have achieved the groundwater protection standards, the requirement for financial assurance ends. While the time required to achieve the groundwater protection standards will vary depending on hydrogeologic conditions at each facility, the potentially reduced post-closure care period when closure is by removal of CCR, offsets to some extent the costs associated with maintaining financial assurance. Financial assurance is required to guarantee that in the event of financial default by the owner or operator of a CCR surface impoundment, adequate funds will be available to complete corrective action, and, if necessary, closure and post-closure care, and the burden of those costs do not fall on the State, the local citizenry, or worse, the facilities set derelict for many years. Because financial assurance is designed to guarantee that corrective action, if necessary, closure and post-closure care will be completed in the event of financial default of an owner or operator and the term of financial assurance may be shorter when closure is by removal of CCR, the proposed regulations are economically reasonable.

VI. AFFECTED FACILITIES

Power generating facilities with CCR surface impoundments may be affected by the Illinois EPA's proposed rule. These facilities include:

NAME OF FACILITY	CCR SURFACE IMPOUNDMENTS
Ameren MO /UE	
Venice	2
Ameren Energy Generating	
Hutsonville	5
Meredosia	3
City Water Light and Power	
City Water Light and Power	2
Commercial Liability Partners, LLC	
Wood River Station	4
Grand Tower Energy Center, LLC	
Grand Tower	1
NRG	
Will County Station	4
Waukegan Station	3
Lincoln Stone Quarry	1
Joliet 29	3
Powerton	5
Prairie Power Inc	
Prairie Power	1
Southern Illinois Power Co-op	
Southern Illinois Power Co-op	9
Vistra	
Baldwin Energy Center	4
Coffeen Station	4
Duck Creek Station	5
Edwards Station	1
Havana Station	3
Hennepin Station	6
Joppa Station	2

Kincaid Generation	1
Newton Station	1
Vermilion Station	3

VII. PUBLIC OUTREACH

After the passage of Public Act 101-171, the Illinois EPA began creating a list of the email addresses of persons wishing to be kept apprised of developments in the Illinois EPA's rulemaking process. The Illinois EPA informed all interested persons on the email list of public informational meetings, public commenting periods, stakeholder meetings, and the filing of this regulatory proposal with the Board.

Prior to proposing draft rules, the Illinois EPA hosted in-person listening sessions, including a webinar, across the State to receive public input. The locations were chosen for geographic diversity and to emphasize coal ash impoundments located in areas of environmental justice concern. These listening sessions included the following times and locations:

Peoria	September 10, 2019	Gateway Building 200 Northeast Water Street	2 pm to 4 pm & 6 pm to 8 pm
Granite City	September 11, 2019	Granite City Township Hall 2060A Delmar Avenue	2 pm to 4 pm & 6 pm to 8 pm
Danville	September 17, 2019	Bremer Auditorium 2000 E. Main Street	2 pm to 4 pm & 6 pm to 8 pm
Webinar	September 24, 2019	Web login	10 am
Mt. Vernon	September 26, 2019	Rolland Lewis Community Building 800 S 27th Street	2 pm to 4 pm & 6 pm to 8 pm
Springfield	October 1, 2019	Zion Missionary Baptist Church, 1601 E. Laurel Street	6 pm to 8 pm
Joliet	October 8, 2019	Joliet Jr. College Weitendorf Agriculture Center 17840 Laraway Road	2 pm to 4 pm & 6 pm to 8 pm
Waukegan	October 9, 2019	Whittier Elementary School 901 N. Lewis Avenue	2 pm to 4 pm & 6 pm to 8 pm

EXHIBIT 19

COMMENTS TO ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:

STANDARDS FOR THE DISPOSAL OF COAL COMBUSTION RESIDUALS IN SURFACE IMPOUNDMENTS:

PROPOSED 35 ILL. ADM. CODE Part 845

R20-19 (Rulemaking – Land)

By

Southern Illinois Power Cooperative

11543 Lake of Egypt Road

Marion, IL

In its First Supplemental Response to its Pre-Filed Questions, the Agency identifies 73 "water treatment units" as "CCR surface impoundments". Nine of the 73 units are owned and operated by Southern Illinois Power Cooperative ("SIPC"). Of the units owned by SIPC, only one is a CCR surface impoundment as defined by the Act 415 ILCS 5/3 Section 3.143 and the Federal Coal Combustion Residuals Rule, 40 CFR Part 257, ("CCR Rule"). SIPC identified, according to the CCR Rule, that Emery Pond is a CCR surface impoundment. The other eight ponds do not meet the definition of a CCR surface impoundment by either the "CCR Rule" or under the CCR fee provisions of the Act ("Illinois CCR statute"), Sections 3.143 and 22.59. These ponds are identified by the names of Pond 1, Pond 2, Pond 3, Pond 4, Pond A-1, Pond B-3, South Fly Ash Pond (built but never used as a fly ash pond), and Pond 6.

Section 3.143 of the Act, as added by the CCR Law, defines CCR surface impoundment to be "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 ILCS 5/3.143.

The units described in the First Supplemental Response to its Pre-Filed Questions never received regulated CCR, were not designed to hold an accumulation of CCR with water and indirectly received only *de minimis* amounts of CCR, if any, were completely cleaned of CCR prior to the effective date of the Federal CCR Rule and the Illinois CCR statute, and/or are exempt beneficial uses.

The Agency stated in the First Supplemental Response to its Pre-Filed Questions that ponds not subject to the CCR Rule are also not subject to Part 845. *In the Matter of: Standards for the Combustion of Coal Combustion Residuals in Surface Impoundments: Proposed New 35 Ill. Adm. Code 845*, R20-19, Pre-Filed Answers of the Illinois Environmental Protection Agency, p. 17 ("*CCRs in Surface Impoundments*"). Since Emery Pond is the only pond subject to the CCR Rule then it is the only SIPC pond subject to Part 845. IEPA's listing of all SIPC ponds ignores the clear terms of the federal CCR surface impoundment definition and the Illinois legislature's choice to use that definition.

As the Act and the proposed rules copy and incorporate language of the key federal definitions, including "CCR surface impoundment," the state definitions effectively incorporate federal guidance on what constitutes regulated CCR and regulated CCR surface impoundments, including that ponds that receive *de minimis* amounts of CCR, especially only indirectly from other ponds, wind deposition or stormwater, are not regulated units. This is because such units do not, per USEPA's extensive assessments, present any risk that warrants regulation.

In response to questions in the ongoing state CCR rulemaking, IEPA states it does not agree that Part 845 does not regulate surface impoundments that contain *de minimis* amounts of CCR, claiming that U.S. EPA left the concept vague in Part 257 by not defining *de minimis*. *CCRs in Surface Impoundments*, R20-19, Pre-Filed Answers of the Illinois Environmental Protection Agency (Aug. 5, 2020), p. 40. While U.S. EPA did not define the term *de minimis*, it clarified the

concept in the rule Preamble by explaining that units that received only small amounts of CCR or never received a direct discharge of CCR are not covered by the rule. Specifically, U.S. EPA states in the Preamble that "[U.S.] 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 . . . [U.S.] 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." 80 Fed. Reg. 21301, 21357 (Apr. 17, 2015). Further, at the time that USEPA clarified in the Preamble this view of units excluded from Part 257, it also added in the final federal rule the phrase "treats, stores, or disposes" of CCR to the definition of CCR surface impoundment, implementing its view of excluded units through the rule's language. 40 Fed. Reg. at 21357. Again, IEPA has stated in the R20-19 rulemaking proceeding that units not covered by Part 257 are not covered by the proposed Part 845 rule.

IEPA has conceded in the state rulemaking that it has conducted no risk assessment or other study to support its proposed Part 845 rules. R20-19, IEPA Statement of Reasons for Part 845 Rulemaking, p. 44. Thus, even if IEPA were otherwise authorized to deviate from and go beyond the Act's definition of CCR surface impoundment, which copied that in the federal rule, it would have no basis for doing so under statutory rulemaking authorities that require some support for proposed regulatory requirements. Here, there is none for rules that go beyond federal requirements. Moreover, units that do not meet the definition of a CCR surface impoundment remain subject to other regulation. The Act prohibits the open dumping of solid wastes, and the State has adopted groundwater quality standards to protect against impacts to groundwater.

Pursuant to the Act's definition of CCR surface impoundments, units that have been cleaned of CCR prior to the adoption of the Illinois CCR statute, or at least prior to effective date of the federal CCR rule that provided the definition incorporated verbatim into the Act, are not CCR surface impoundments because they are not designed to hold an accumulation of CCR and do not treat, store or dispose of CCR. The regulatory definitions of "new," "existing" and "inactive" CCR surface impoundments in Part 257 and proposed Part 845 lend further support for the conclusion that the Act does not reach units from which CCR was removed before October 2015 and that do not receive regulated CCR thereafter. Such ponds cannot be "new" ponds, nor can they be "existing" CCR surface impoundments under the federal or proposed state rules because they did not receive regulated CCR before and after October, 2015. Further, the proposed state rules provide that an "'[i]nactive 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." Proposed 35 Ill. Adm. Code 845.120. To be a surface impoundment under this proposed "inactive" definition, a unit must contain

regulated CCR on or after October 19, 2015. If CCR was removed from a unit before then, the unit cannot be a regulated CCR surface impoundment.

IEPA erroneously claims in the table of 73 alleged CCR surface impoundments that each of the eight SIPC units is a CCR surface impoundment under the Act, and thus Part 257, because they are CCR surface impoundments that have not completed closure. This is wrong because the units must first be "CCR surface impoundments" before they can be CCR surface impoundments that have not completed closure, and they are not for the various reasons described in these comments, including because they contain only excluded beneficial use materials, they were not designed to accumulate CCR and water or they contain no or only *de minimis* amounts of CCR. Further, IEPA misconstrues the closure required to avoid applicability under the Act and rules. To support its view of what constitutes closure, IEPA misinterprets the USWAG decision in responses to questions presented in the *CCR in Surface Impoundments* rulemaking by erroneously conflating the concepts of rule applicability and completion of closure.[1] It appears this misinterpretation is contributing to IEPA's identification of alleged CCR surface impoundments from which CCR was removed prior to the effective date of the federal rules.

IEPA relies on the USWAG decision when stating it does not agree that a pond closed by removal prior to the effective date of the CCR rule is not a CCR surface impoundment. *CCRs in Surface Impoundments*, R20-19, Pre-Filed Answers of the Illinois Environmental Protection Agency (Aug. 3, 2020), p. 138. Relying on the USWAG decision, IEPA states "it is the Agency's position that any surface impoundment that had not completed removal of CCR from the CCR surface impoundment prior to October 19, 2015, the effective date of Part 257, is subject to the requirements of Part 257 . . . [a]s currently written, Part 257 does not deem closure by removal complete until the CCR and any liner have been removed and decontamination of any area affected by releases from the CCR surface impoundment has been completed pursuant to Part 257.100(b)(5)." *Id*. at, pp. 138-39.

The USWAG decision, however, set forth a fact pattern about legacy ponds described as containing "a toxic 'slurry' of Coal Residuals mixed with water." USWAG decision, p. 28. It is these legacy ponds that the court in USWAG decided must be regulated under the CCR Rule even though they were located at inactive power plant sites. In stark contrast, units that have had all CCR removed from them prior to the effective date of the federal rule are not "legacy ponds," and if water was removed as well they are not ponds at all. They did not treat, store, or dispose of CCR as of the effective date of the federal rule, this characteristic being essential to meeting the definition of a regulated CCR surface impoundment. Whether or not a unit has "completed closure" within the meaning of the federal rule is a question that only arises after it is first determined that the rule applies. For legacy ponds, which still contained "the toxic slurry" of CCR and water, the rule does apply. For units from which CCR and/or water was removed prior to the

[1] *Utility Solid Waste Activities Group, et al. v. United States Environmental Protection Agency and Waterkeeper Alliance, et al.*, United States Court of Appeals for the District of Columbia Circuit, Case No. 15-1219 (Aug. 21, 2018) ("USWAG decision").

effective date of the federal rule, the federal CCR rule does not apply because the unit is not a regulated CCR surface impoundment. In other words, closure by removal and corrective action requirements, including the requirement to decontaminate after closure by removal under Section 257.100(b)(5), do not apply to units that are not regulated CCR surface impoundments. Quite simply, the USWAG decision did not change the fact that a pond from which CCR was removed prior to the effective date of the CCR rule is not a CCR surface impoundment. The same holds true for Part 845's definition of "inactive" CCR surface impoundment, under which a unit can be regulated as an "inactive" CCR surface impoundment only if it "still contains" CCR as of October, 2015. There is nothing in that definition equating "sill contains" CCR with the notion of "closure by removal" under the rules. Thus, the definition of "closure" under the rules, which applies only when the rules apply to a unit, has no place in deciding whether a unit is subject to the rules. And it would be anomalous to construe the Act to apply to units that are not covered by the federal CCR Rules or proposed Part 845. This would be an arbitrary and capricious interpretation of the Act.

In essence, IEPA seems to be erroneously interpreting the federal rules to mean that a unit still can be an "inactive CCR surface impoundment" even though CCR was removed before October, 2015 if the CCR removal did not fully comply with the closure by removal requirements of the federal rule. However, this reading of the federal rules incorporates closure requirements applicable only to units subject to the rules to determine if a unit is subject to the rule in the first place. This reasoning is circular and ignores the fact that the federal definition does not tie the prior CCR removal that exempts a unit from the "inactive CCR surface impoundment" definition to any "closure by removal" requirements that apply to units only after they are first determined to be subject to the rules. Only regulated CCR units are subject to closure by removal requirements. 40 CFR 257.102(c) ("An owner or operator may elect to close a CCR unit by removing and decontaminating all areas affected . . . ."). Further, under IEPA's interpretation, to exempt a unit from Part 257 coverage an owner or operator would have needed to comply with Part 257 closure by removal requirements before they were adopted, and potentially even before they were proposed. It is not possible for a source to know and comply with requirements that do not yet exist. IEPA's interpretation is illogical and fundamentally flawed.

The eight units still in dispute at Marion Station do not constitute CCR surface impoundments under the Act, including because they do not satisfy the definition of CCR surface impoundment under federal law as incorporated into the Act. SIPC asks the board to reject the characterization of the eight SIPC ponds as CCR surface impoundments.

EXHIBIT 20

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 · (217) 782-3397
JB PRITZKER, GOVERNOR JOHN J. KIM, DIRECTOR

217/785-0561

July 28, 2020

CERTIFIED MAIL # 7019 1120 0001 3038 4244
RETURN RECEIPT REQUESTED

Southern Illinois Power Cooperative
c/o Wendell Watson
11543 Lake of Egypt Road
Marion, IL 62959

Re: Violation Notice: SOUTHERN ILLINOIS POWER COOPERATIVE – MARION POWER PLANT
Facility Id.: 6364
Violation Notice No.: W-2020-00046

Dear Mr. Watson:

This constitutes a Violation Notice pursuant to Section 31(a)(1) of the Illinois Environmental Protection Act ("Act"), 415 ILCS 5/31(a)(1), and is based upon a review of available information and an investigation by representatives of the Illinois Environmental Protection Agency ("Illinois EPA").

The Illinois EPA hereby provides notice of alleged violations of environmental laws, regulations, or permits as set forth in Attachment A to this notice. Attachment A includes an explanation of the activities that the Illinois EPA believes may resolve the specified alleged violations, including an estimate of a reasonable time period to complete the necessary activities. Due to the nature and seriousness of the alleged violations, please be advised that resolution of the violations may also require the involvement of a prosecutorial authority for purposes that may include, among others, the imposition of statutory penalties.

A written response, which may include a request for a meeting with representatives of the Illinois EPA, must be submitted via certified mail to the Illinois EPA within 45 days of receipt of this letter. If a meeting is requested, it shall be held within 60 days of receipt of this notice. The response must include information in rebuttal, explanation, or justification of each alleged violation and a statement indicating whether or not the facility wishes to enter into a Compliance Commitment Agreement ("CCA") pursuant to Section 31(a) of the Act. If the facility wishes to enter into a CCA, the written response must also include proposed terms for the CCA that includes dates for achieving each commitment and may include a statement that compliance has been achieved for some or all of the alleged violations. The proposed terms of the CCA should contain sufficient detail and must include steps to be taken to achieve compliance and the necessary dates by which compliance will be achieved.

ID NO 6364: SOUTHERN ILLINOIS POWER COOPERATIVE – MARION POWER PLANT
VN W-2020-00046

The Illinois EPA will review the proposed terms for a CCA provided by the facility and, within 30 days of receipt, will respond with either a proposed CCA or a notice that no CCA will be issued by the Illinois EPA. If the Illinois EPA sends a proposed CCA, the facility must respond in writing by either agreeing to and signing the proposed CCA or by notifying the Illinois EPA that the facility rejects the terms of the proposed CCA.

If a timely written response to this Violation Notice is not provided, it shall be considered a waiver of the opportunity to respond and meet, and the Illinois EPA may proceed with referral to a prosecutorial authority.

Written communications should be directed to:

Illinois EPA – Division of Public Water Supplies
Attn: Andrea Rhodes, CAS #19
P.O. BOX 19276
Springfield, IL 62794-9276

All communications must include reference to this Violation Notice number, W-2020-00046.

Questions regarding this Violation Notice should be directed to Andrea Rhodes at 217/785-0561.

Sincerely,

Mary F. Reed

Mary F. Reed
Manager, Compliance Assurance Section
Division of Public Water Supplies
Bureau of Water

Attachments

BOW ID: W1998600002

ATTACHMENT A

SOUTHERN ILLINOIS POWER COOPERATIVE - MARION POWER PLANT, ID NO 6364
VIOLATION NOTICE NO. W-2020-00046:

Questions regarding the violations identified in this attachment should be referred to Andrea Rhodes at (217) 785-0561.

A review of information available to the Illinois EPA indicates the following violations of statutes, regulations, or permits. Included with each type of violation is an explanation of the activities that the Illinois EPA believes may resolve the violation including an estimated time period for resolution.

Coal Combustion Residuals Surface Impoundment Fees

The Illinois Environmental Protection Act ("Act") Section 22.59 (j) establishes a fee system for Coal Combustion Residuals ("CCR") surface impoundments. CCR surface impoundments must pay an initial fee of seventy-five thousand dollars for CCR surface impoundments that have not completed closure and fifty thousand dollars for CCR surface impoundments that have completed closure and are in post-closure care.

(j) The owner or operator of a CCR surface impoundment shall pay the following fees:

(1) An initial fee to the Agency within 6 months after the effective date of this amendatory Act of the 101st General Assembly of:

$50,000 for each closed CCR surface impoundment; and

$75,000 for each CCR surface impoundment that have not completed closure.

(2) Annual fees to the Agency, beginning on July 1, 2020, of:

$25,000 for each CCR surface impoundment that has not completed closure; and

$15,000 for each CCR surface impoundment that has completed closure, but has not completed post-closure care.

To achieve compliance payment in full is expected immediately.

ATTACHMENT A

SOUTHERN ILLINOIS POWER COOPERATIVE - MARION POWER PLANT, ID NO 6364
VIOLATION NOTICE NO. W-2020-00046:

Violation Date	Violation Description
02/01/2020	Failure to submit a $75,000 initial fee for SIPC, Pond 1 (IEPA ID # W1998600002-01) that was due January 31, 2020. The Agency has determined that Pond 1 is a CCR surface impoundment that has not completed closure, and therefore, is subject to an initial fee.
Rule/Reg	Section 22.59(j)(1) of the Act 415 ILCS 22.59(j)(1).
02/01/2020	Failure to submit a $75,000 initial fee for SIPC, Pond 2 (IEPA ID # W1998600002-02) that was due January 31, 2020. The Agency has determined that Pond 2 is a CCR surface impoundment that has not completed closure, and therefore, is subject to an initial fee.
Rule/Reg	Section 22.59(j)(1) of the Act 415 ILCS 22.59(j)(1).
02/01/2020	Failure to submit a $75,000 initial fee for SIPC, Pond 4 (IEPA ID # W1998600002-03) that was due January 31, 2020. The Agency has determined that Pond 4 is a CCR surface impoundment that has not completed closure, and therefore, is subject to an initial fee.
Rule/Reg	Section 22.59(j)(1) of the Act 415 ILCS 22.59(j)(1).
02/01/2020	Failure to submit a $75,000 initial fee for SIPC, Pond A-1 (IEPA ID # W1998600002-04) that was due January 31, 2020. The Agency has determined that Pond A-1 is a CCR surface impoundment that has not completed closure, and therefore, is subject to an initial fee.
Rule/Reg	Section 22.59(j)(1) of the Act 415 ILCS 22.59(j)(1).
02/01/2020	Failure to submit a $75,000 initial fee for SIPC, Pond B-3 (IEPA ID # W1998600002-05) that was due January 31, 2020. The Agency has determined that Pond B-3 is a CCR surface impoundment that has not completed closure, and therefore, is subject to an initial fee.
Rule/Reg	Section 22.59(j)(1) of the Act 415 ILCS 22.59(j)(1).

ATTACHMENT A

SOUTHERN ILLINOIS POWER COOPERATIVE - MARION POWER PLANT, ID NO 6364
VIOLATION NOTICE NO. W-2020-00046:

Violation Date	Violation Description
02/01/2020	Failure to submit a $75,000 initial fee for SIPC, Pond South Fly Ash Pond (IEPA ID # W1998600002-06) that was due January 31, 2020. The Agency has determined that Pond South Fly Ash Pond is a CCR surface impoundment that has not completed closure, and therefore, is subject to an initial fee.
Rule/Reg	Section 22.59(j)(1) of the Act 415 ILCS 22.59(j)(1).
02/01/2020	Failure to submit a $75,000 initial fee for SIPC, Pond 3 (IEPA ID # W1998600002-07) that was due January 31, 2020. The Agency has determined that Pond 3 is a CCR surface impoundment that has not completed closure, and therefore, is subject to an initial fee.
Rule/Reg	Section 22.59(j)(1) of the Act 415 ILCS 22.59(j)(1).
02/01/2020	Failure to submit a $75,000 initial fee for SIPC, Pond 6 (IEPA ID # W1998600002-09) that was due January 31, 2020. The Agency has determined that Pond 6 is a CCR surface impoundment that has not completed closure, and therefore, is subject to an initial fee.
Rule/Reg	Section 22.59(j)(1) of the Act 415 ILCS 22.59(j)(1).

EXHIBIT 21

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 · (217) 782-3397
JB PRITZKER, GOVERNOR JOHN J. KIM, DIRECTOR

217/785-0561

December 16, 2020

CERTIFIED MAIL # 7020 0090 0000 7313 2659
RETURN RECEIPT REQUESTED

Southern Illinois Power Cooperative
c/o Wendell Watson
11543 Lake of Egypt Road
Marion, IL 62959

Re: Violation Notice: SOUTHERN ILLINOIS POWER COOPERATIVE – MARION POWER PLANT
Facility ID.: 6364
Violation Notice No.: W-2020-00087

Dear Mr. Watson:

This constitutes a Violation Notice pursuant to Section 31(a)(1) of the Illinois Environmental Protection Act ("Act"), 415 ILCS 5/31(a)(1), and is based upon a review of available information and an investigation by representatives of the Illinois Environmental Protection Agency ("Illinois EPA").

The Illinois EPA hereby provides notice of alleged violations of environmental laws, regulations, or permits as set forth in Attachment A to this notice. Attachment A includes an explanation of the activities that the Illinois EPA believes may resolve the specified alleged violations, including an estimate of a reasonable time period to complete the necessary activities. Due to the nature and seriousness of the alleged violations, please be advised that resolution of the violations may also require the involvement of a prosecutorial authority for purposes that may include, among others, the imposition of statutory penalties.

A written response, which may include a request for a meeting with representatives of the Illinois EPA, must be submitted via certified mail to the Illinois EPA within 45 days of receipt of this letter. If a meeting is requested, it shall be held within 60 days of receipt of this notice. The response must include information in rebuttal, explanation, or justification of each alleged violation and a statement indicating whether or not the facility wishes to enter into a Compliance Commitment Agreement ("CCA") pursuant to Section 31(a) of the Act. If the facility wishes to enter into a CCA, the written response must also include proposed terms for the CCA that includes dates for achieving each commitment and may include a statement that compliance has been achieved for some or all of the alleged violations. The proposed terms of the CCA should contain sufficient detail and must include steps to be taken to achieve compliance and the necessary dates by which compliance will be achieved.

ID NO 6364: SOUTHERN ILLINOIS POWER COOPERATIVE – MARION POWER PLANT
VN W-2020-00087

The Illinois EPA will review the proposed terms for a CCA provided by the facility and, within 30 days of receipt, will respond with either a proposed CCA or a notice that no CCA will be issued by the Illinois EPA. If the Illinois EPA sends a proposed CCA, the facility must respond in writing by either agreeing to and signing the proposed CCA or by notifying the Illinois EPA that the facility rejects the terms of the proposed CCA.

If a timely written response to this Violation Notice is not provided, it shall be considered a waiver of the opportunity to respond and meet, and the Illinois EPA may proceed with referral to a prosecutorial authority.

Written communications should be directed to:

Illinois EPA – Division of Public Water Supplies
Attn: Andrea Rhodes, CAS #19
P.O. BOX 19276
Springfield, IL 62794-9276

All communications must include reference to this Violation Notice number, W-2020-00087.

Questions regarding this Violation Notice should be directed to Andrea Rhodes at 217/785-0561.

Sincerely,

Mary F. Reed
Manager, Compliance Assurance Section
Division of Public Water Supplies
Bureau of Water

Attachments

BOW ID: W1998600002

ATTACHMENT A

SOUTHERN ILLINOIS POWER COOPERATIVE – MARION POWER PLANT, ID NO 6364
VIOLATION NOTICE NO. W-2020-00087:

Questions regarding the violations identified in this attachment should be referred to Andrea Rhodes at (217) 785-0561.

A review of information available to the Illinois EPA indicates the following violations of statutes, regulations, or permits. Included with each type of violation is an explanation of the activities that the Illinois EPA believes may resolve the violation including an estimated time period for resolution.

Coal Combustion Residuals Surface Impoundment Fees

The Illinois Environmental Protection Act ("Act") Section 22.59 (j) establishes a fee system for Coal Combustion Residuals ("CCR") surface impoundments.

(j) The owner or operator of a CCR surface impoundment shall pay the following fees:

(1) An initial fee to the Agency within 6 months after the effective date of this amendatory Act of the 101st General Assembly of:

$50,000 for each closed CCR surface impoundment; and

$75,000 for each CCR surface impoundment that have not completed closure.

(2) Annual fees to the Agency, beginning on July 1, 2020, of:

$25,000 for each CCR surface impoundment that has not completed closure; and

$15,000 for each CCR surface impoundment that has completed closure, but has not completed post-closure care.

To achieve compliance payment in full is expected immediately.

ATTACHMENT A

SOUTHERN ILLINOIS POWER COOPERATIVE - MARION POWER PLANT, ID NO 6364
VIOLATION NOTICE NO. W-2020-00087:

Violation Date	Violation Description
07/02/2020	Failure to submit a $25,000 annual fee for SIPC, Pond 1 (IEPA ID # W1998600002-01) that was due July 1, 2020. The Agency has determined that Pond 1 is a CCR surface impoundment that has not completed closure, and therefore, is subject to an annual fee.
Rule/Reg	Section 22.59(j)(2) of the Act 415 ILCS 22.59(j)(2).
07/02/2020	Failure to submit a $25,000 annual fee for SIPC, Pond 2 (IEPA ID # W1998600002-02) that was due July 1, 2020. The Agency has determined that Pond 2 is a CCR surface impoundment that has not completed closure, and therefore, is subject to an annual fee.
Rule/Reg	Section 22.59(j)(2) of the Act 415 ILCS 22.59(j)(2).
07/02/2020	Failure to submit a $25,000 annual fee for SIPC, Pond 4 (IEPA ID # W1998600002-03) that was due July 1, 2020. The Agency has determined that Pond 4 is a CCR surface impoundment that has not completed closure, and therefore, is subject to an annual fee.
Rule/Reg	Section 22.59(j)(2) of the Act 415 ILCS 22.59(j)(2).
07/02/2020	Failure to submit a $25,000 annual fee for SIPC, Pond A-1 (IEPA ID # W1998600002-04) that was due July 1, 2020. The Agency has determined that Pond A-1 is a CCR surface impoundment that has not completed closure, and therefore, is subject to an annual fee.
Rule/Reg	Section 22.59(j)(2) of the Act 415 ILCS 22.59(j)(2).
07/02/2020	Failure to submit a $25,000 annual fee for SIPC, Pond B-3 (IEPA ID # W1998600002-05) that was due July 1, 2020. The Agency has determined that Pond B-3 is a CCR surface impoundment that has not completed closure, and therefore, is subject to an annual fee.
Rule/Reg	Section 22.59(j)(2) of the Act 415 ILCS 22.59(j)(2).

ATTACHMENT A

SOUTHERN ILLINOIS POWER COOPERATIVE – MARION POWER PLANT, ID NO 6364
VIOLATION NOTICE NO. W-2020-00087:

Violation Date	Violation Description
07/02/2020	Failure to submit a $25,000 annual fee for SIPC, Pond South Fly Ash Pond (IEPA ID # W1998600002-06) that was due July 1, 2020. The Agency has determined that Pond South Fly Ash Pond is a CCR surface impoundment that has not completed closure, and therefore, is subject to an annual fee.
Rule/Reg	Section 22.59(j)(2) of the Act 415 ILCS 22.59(j)(2).
07/02/2020	Failure to submit a $25,000 annual fee for SIPC, Pond 3 (IEPA ID # W1998600002-07) that was due July 1, 2020. The Agency has determined that Pond 3 is a CCR surface impoundment that has not completed closure, and therefore, is subject to an annual fee.
Rule/Reg	Section 22.59(j)(2) of the Act 415 ILCS 22.59(j)(2).
07/02/2020	Failure to submit a $25,000 annual fee for SIPC, Pond 6 (IEPA ID # W1998600002-09) that was due July 1, 2020. The Agency has determined that Pond 6 is a CCR surface impoundment that has not completed closure, and therefore, is subject to an annual fee.
Rule/Reg	Section 22.59(j)(2) of the Act 415 ILCS 22.59(j)(2).
07/02/2020	Failure to submit a $25,000 annual fee for SIPC, Emery Pond (IEPA ID # W1998600002-10) that was due July 1, 2020. The Agency has determined that Emery Pond is a CCR surface impoundment that has not completed closure, and therefore, is subject to an annual fee.
Rule/Reg	Section 22.59(j)(2) of the Act 415 ILCS 22.59(j)(2).

EXHIBIT 22

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	R 2020-019
STANDARDS FOR THE DISPOSAL	)	
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 if 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.

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.lOO(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)(l) 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 <u>in combination with</u> 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 quantitively 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.

EXHIBIT 23

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)
) No. R20-19
) (Rulemaking-Land)
Standards for the Disposal)
of Coal Combustion)
Residuals in Surface)
Impoundments: Proposed new)
35 Ill. Adm. Code 845)

REPORT OF THE PROCEEDINGS held in the above entitled cause before Hearing Officer Vanessa Horton, called by the Illinois Pollution Control Board, taken by Steven Brickey, CSR, RMR, for the State of Illinois, 1021 North Grand Avenue East, Springfield, Illinois, on the 11th day of August, 2020, commencing at the hour of 9:03 a.m.

MR. BONEBRAKE: So is it correct that the Illinois CCR Act in proposed Part 845 defines CCR surface impoundment in identical ways?

MR. DUNAWAY: Lynn Dunaway. Yes.

MR. BONEBRAKE: And you are familiar with the federal CCR rule Part 257, which is the driver for this rulemaking and is it correct that that Part 257 also defines the term CCR surface impoundment?

MR. DUNAWAY: Lynn Dunaway. Yes.

MR. BONEBRAKE: And does Part 257 define surface impoundment in a manner identical to the definition included in proposed Part 845, Section 120?

MR. DUNAWAY: Lynn Dunaway. Yes.

MR. BONEBRAKE: So is it IEPA's intent that its proposed Part 845 rules, like the Illinois CCR Act, will define CCR surface impoundments all in the same way?

MR. DUNAWAY: Lynn Dunaway. All CCR surface impoundments will be defined the same way.

MR. BONEBRAKE: And is it also correct then that IEPA's view is that the federal rules in Part 257 and the proposed state rules in

Part 845 will apply to the same CCR surface impoundments?

MR. DUNAWAY: Lynn Dunaway. Section 22.59 of the act identifies two types of CCR surface impoundments and those are existing and those are new ones. Existing ones under 22.59 of the act is any CCR surface impoundment created after the executive date of the act and new ones are any created after the --

THE COURT REPORTER: Created what?

HEARING OFFICER HORTON: Would you repeat that, just the last part. Create what?

MR. DUNAWAY: New -- new CCR surface impoundments or any CCR surface impoundment created after the executive date of 22.59 of the act.

MR. BONEBRAKE: I think my question was a little different in that my 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?

MR. DUNAWAY: Lynn Dunaway. In the Agency's opinion, they will be the same ones.

EXHIBIT 24

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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

FIRST SUPPLEMENT TO ILLINOIS EPA'S PRE-FILED ANSWERS

NOW COMES the Illinois Environmental Protection Agency (Illinois EPA or Agency), by and through one if its attorneys, and submits the following information with respect to this first supplement 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.

a. **The preamble to the 2015 CCR Rule states that the CCR Rule must meet RCRA's requirement that there be "'no reasonable probability of adverse effects on health or the environment" from the disposal of CCR in CCR surface impoundments, correct? (81 Fed. Reg. at 21,311).**

Response: Yes.

b. **To be "at least as protective" as the CCR Rule, does Part 845 also need to ensure that CCR surface impoundments subject to Part 845 will not present a "reasonable probability of adverse effects on health or the environment"?**

Response: Part 845 must be at least as protective and comprehensive as Part 257.

3. **Is IEPA aware that U.S. EPA used a 2014 risk assessment (*Human and Ecological Risk Assessment of Coal Combustion Residuals*, Reg. ID No. 2050-AE81 (Dec. 2014)) to "estimate the resulting risks to human and ecological receptors" from CCR units? (*See* 80 Fed. Reg. at 21,433).**

Response: Yes.

a. **Has IEPA reviewed that risk assessment?**

Response: No. The Agency is aware this document exists.

b. **Did IEPA rely upon U.S. EPA's risk assessment to support its Part 845 proposal?**

Response: Only to the extent that USEPA's risk assessment was used by USEPA to develop the requirements of Part 257.

c. **Does IEPA view U.S. EPA's risk assessment as sufficiently conservative? In other words, does the Agency believe that U.S. EPA adequately assessed and quantified the potential risks associated with CCR surface impoundments?**

Response: The Agency did not review the U.S. EPA's risk assessment.

d. **If so, are there any risks that IEPA does not believe were adequately assessed in U.S. EPA's risk assessment?**

Response: See Response 3(c).

e. **Has IEPA performed its own risk assessment to identify risks associated**

with surface impoundments warranting regulation?

Response: No.

f. Are there any other risk assessments that IEPA relied on in developing its Part 845 proposal?

Response: No.

4. In its 2015 preamble for the CCR Rule, U.S. EPA stated that it "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." (80 Fed. Reg. at 21,357.) Does IEPA agree that "units that contain a large amount of CCR managed with water, under a hydraulic head" are the "source of the risks" that Part 845 seeks to address? If not, why not?

Response: Part 845 addresses CCR surface impoundments.

5. How did IEPA identify the 73 surface impoundments listed in the Statement of Reasons? (Statement of Reasons at 37-38).

Response: The Agency utilized Agency and publicly available records.

6. Are Illinois landfills containing CCR subject to the Board's rules governing landfills (e.g., 35 Ill. Adm. Code 810 – 815)?

Response: They are; however, landfills are not proposed for regulation by Part 845.

a. Do those rules include provisions to prevent and correct groundwater contamination?

Response: Yes, but landfills are not proposed for regulation by Part 845.

7. Are Illinois landfills containing CCR also subject to the requirements of the CCR Rule?

Response: CCR landfills owned or operated by utilities and independent power producers are regulated by Part 257.

a. Do those rules include provisions to prevent and correct groundwater contamination?

Response: While the Agency is aware that certain provisions of Part

EXHIBIT 25

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

(Docket # EPA-HQ-RCRA-2009-0640)

Volume 3: Scope and Purpose, Effective Dates, Applicability, Off-site Disposal & Definitions

December 2014

Comment Number: EPA-HQ-RCRA-2009-0640-09885-33 **Organization:** Progress Energy, Inc. **Commenter Type:** Electric Utility Company
Comment Number: EPA-HQ-RCRA-2009-0640-10483-48 **Organization:** Utility Solid Waste Activities Group (USWAG) et al. **Commenter Type:** Trade Association

Response: As discussed in Section VI. B. 2 of the preamble to the final rule, the Agency has determined that inactive CCR surface impoundments also pose risks and is applying the requirements for CCR surface impoundments in today's rule to inactive CCR surface impoundments at active electric utilities and independent power producers. (See §257.54 of the final rule for definitions of *active CCR disposal unit* and *inactive CCR surface impoundment*.) One exception being CCR surface impoundments that have been dewatered and are no longer able to hold free liquids, and have a final cover installed in accordance with §257.102 of today's rule, are not subject to today's regulations for CCR surface impoundments. (See the Applicability section in the preamble to the final rule at Section VI. B.) When a new CCR landfill is constructed over a CCR surface impoundment that has been dewatered, the impoundment no longer holds an accumulation of liquids and, therefore, no longer meets the definition of CCR surface impoundment. Additionally, the new CCR landfill is subject to the requirements for new CCR landfills in today's regulations. Today's regulations require new CCR landfills to install a composite liner, which would effectively serve as a cover over the dewatered CCR surface impoundment.

Since publication of the proposed rule, EPA has learned of the practice of using inactive or closed CCR landfills, and dewatered CCR surface impoundments as the base for constructing new CCR landfills. The subsequent new CCR landfill is typically referred to as an "overfill." Overfills are an alternative to siting a new landfill and provide an opportunity to develop additional disposal capacity without creating a new CCR disposal footprint. (See the discussion, regarding Overfills in Section VI. J. 1 of the preamble to the final rule.) When these overfills are constructed and operated in accordance with the requirements of today's rule for new CCR landfills; i.e., with composite liners or alternative liners meeting the hydraulic conductivity standard, leachate collection and removal systems, groundwater monitoring systems, corrective action, record keeping, and the closure, and post closure care requirements, they are as protective

EXHIBIT 26

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY'S FINAL POST-HEARING COMMENTS

NOW COMES the Illinois Environmental Protection Agency ("Illinois EPA" or "Agency"), by and through one if its attorneys, and hereby submits its Final Post Hearing Comments as directed by the Hearing Officer Orders entered on October 4 and 20, 2020 in the above captioned rulemaking.

I. Procedural Background

On March 31, 2020, the Illinois EPA filed its proposed rulemaking for coal combustion residual surface impoundments pursuant to Section 22.59 of the Illinois Environmental Protection Act, along with a Statement of Reasons ("SOR") in support. On April 24, 2020 the Illinois Pollution Control Board ("Board") accepted Illinois EPA's proposal for hearing and set prehearing deadlines. On June 2, 2020, Illinois EPA filed with the Board pre-filed testimony of eight witnesses: Lynn Dunaway, Darin LeCrone, Melinda Shaw, William Buscher, Lauren Martin, Amy Zimmer, Chris Pressnall, and Robert Mathis (Hrg, Ex. 1). Illinois EPA filed Answers to Pre-Filed Questions from the Board, Little Village Environmental Justice Organization, the Environmental Law and Policy Center, Prairie Rivers Network, and Sierra Club ("Environmental Groups," collectively), Springfield City Water, Light, and Power, the Illinois Environmental Regulatory Group, Ameren, Midwest Generation, and Dynegy on August 3 (Hrg. Ex. 2), August 5 (Hrg. Ex.

Mr. Rehn testifies that structural stability factors should be evaluated by a third party. Hrg. Ex. 16, p. 6. Dam safety, including dams of CCR surface impoundments, are currently regulated and evaluated by the Illinois Department of Natural Resources (IDNR). The Agency intends to work in conjunction with the IDNR on the safety factors of CCR surface impoundments. Proposed Part 845 is drafted with the intent and consideration of this fact so as to not overlap or contradict IDNR's process of review.

Mr. Rehn's testimony suggests that Part 845 should require rail and barge transportation to be considered in the closure alternatives analysis. Hrg. Ex. 16, p. 10. The Agency does not believe requiring consideration of specific types of transportation in the closure alternatives of Section 845.710 is necessary. As identified in Mr. Rehn's pre-filed answers and testimony during the hearing, there are a myriad of logistical considerations and impediments to the various modes of transportation (Hrg. Ex. 17, p. 3-5, Hrg. Transcript Sept. 29, 2020, p. 73-75), so requiring extensive evaluation where such modes may not have reason to be considered could be unnecessarily burdensome. As proposed, Part 845 does not preclude exploration of transportation types, nor does it recommend or limit consideration to trucks for removal of CCR. Rather, Part 845 acknowledges the availability of such transportation methods by requiring manifests when transporting CCR off-site by any other mode or method, including but not limited to trains or barges.

Andrew Rehn's testimony concludes with the opinion that the "Board must adopt rules regulating more than just coal ash *impoundments*." Hrg. Ex. 16, p. 12 (emphasis in original). As provided in the SOR, the foremost purpose and effect of the Agency proposing Part 845 is to fulfill its statutory obligation to propose rules for CCR surface impoundments consistent with the requirements of Section 22.59(g) of the Act. SOR, p. 10. Section 22.59(g) also contains a

rulemaking mandate directed at the Board to adopt rules for CCR surface impoundments within one year of the Agency's proposal. Therefore, limiting Part 845 to CCR surface impoundments is necessary and appropriate.

Andrew Rehn's testimony also discusses CCR surface impoundments located in floodplains. Additional Agency comments regarding location restrictions and floodplains can be found in the discussion of Mark Hutson's testimony below.

B. Mark Hutson

Mr. Hutson recommends that "uppermost zone of saturation" be defined and incorporated into Part 845. Hrg. Ex. 14, p. 9. The Agency opposes the proposal to use the "uppermost zone of saturation" in addition to the "uppermost aquifer" as drafted in proposed Part 845. First, as stated in the SOR, the Agency is seeking to obtain federal approval of Illinois' CCR surface impoundment program. The Agency has worked closely with the USEPA during the Part 845 rulemaking process and has been frequently reminded to keep the language and function of Part 257 as similar as possible. In this regard, the Agency has made as few changes to the language of Part 257 as possible, especially pertaining to definitions and location restrictions. Changes to definitions and location restrictions will require additional explanation and justification to USEPA to gain federal approval.

In order to be as comprehensive and protective as the USEPA's federal Part 257 regulations, the Agency has chosen to focus the Part 845 regulations on "groundwater" rather than limiting protection to the "uppermost aquifer" in Subpart F. Regarding location restrictions in Subpart C, the Agency believes the usage of "uppermost aquifer" already includes the uppermost zone of saturation in the definitions contained in Section 845.120. Part 845 as proposed includes the zone of saturation in the definition of "groundwater." See Section 845.120

EXHIBIT 27

INDIANA OFFICE OF ENVIRONMENTAL ADJUDICATION

Mary Davidsen
Chief Environmental Law Judge

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STATE OF INDIANA	)	BEFORE THE INDIANA OFFICE OF
	)	ENVIRONMENTAL ADJUDICATION
COUNTY OF MARION	)	

IN THE MATTER OF:	)	
	)	
OBJECTION TO THE ISSUANCE OF PARTIAL	)	
APPROVAL OF CLOSURE/POST CLOSURE PLAN	)	CAUSE NO. 20-S-J-5095
DUKE GALLAGHER GENERATING STATION	)	
ASH POND SYSTEM	)	
DUKE ENERGY INDIANA LLC	)	
FLOYD COUNTY, INDIANA	)	
	)	
Hoosier Environmental Council	)	
Petitioner	)	
Duke Energy Indiana LLC	)	
Permittee/Respondent	)	
Indiana Department of Environmental Management	)	
Respondent	)	

FINDINGS OF FACT, CONCLUSIONS OF LAW AND FINAL ORDER

The parties filed motions for summary judgment. The presiding Environmental Law Judge (the ELJ), having read the motions, responses and replies and examined the evidence, now enters the following findings of fact, conclusions of law and order:

Findings of Fact

1. Gallagher Generating Station (Gallagher Station or Station) is a two-unit coal-fired power plant located in Floyd County, New Albany, Indiana. There are two active units, Units 2 and 4, that began operating in 1958 and 1961, respectively. There are also two retired units, Units 1 and 3. The station is located along the west bank of the Ohio River and across from Louisville, Kentucky.

2. Duke Energy Indiana LLC (Duke or Duke Energy) submitted its closure/post closure application for the coal combustion residuals (CCR) ponds in December 2016.

3. The Indiana Department of Environmental Management's (IDEM) review process for the Closure Plan took more than three years to complete and involved more than a dozen agency subject matter experts. IDEM issued several detailed "Requests for Additional

Information," and Duke Energy filed its responses. There were a number of technical meetings between IDEM and Duke Energy. And IDEM solicited public comments on the Closure Plan, received comments from several third-party environmental interest groups, including Petitioner, and responded to all comments on the Closure Plan.

4. On December 10, 2019, the Indiana Department of Environmental Management (IDEM) issued the Partial Approval of the Closure/Post Closure Plan (the Partial Approval) to Duke Energy Indiana LLC (Permittee or Duke) for the Ash Pond System at the Gallagher Generating Station. The ash ponds subject to this Approval, are the North Ash Pond, Primary Pond Ash Fill Area, Ash Pond A, Secondary Settling Pond, and Coal Pile Ash Fill Area.

5. The Station has two other ash ponds, the Primary Pond and Ash Pond B. The Primary Pond has not received closure approval. The Primary Pond contained both CCR and liquid until at least October 19, 2015. It was identified as a separate water treatment unit in the Station's NPDES permit.

6. The closure plan for Ash Pond B was approved in the Restricted Waste Site Type I facility (Solid Waste Program ID 22-01) minor modification dated November 1, 2016. Neither the Primary Pond nor Ash Pond B are at issue in this litigation.

7. The Approval authorizes the closure of surface impoundments containing CCR as follows:

   a. North Ash Pond - closure in place and is subject to 329 IAC 10-3-1(9).
   b. Primary Pond Ash Fill Area - closure in place and is subject to 329 IAC 10-3-1(9).
   c. Ash Pond A - closure by removal of CCR material and one additional foot of underlying soil. This pond is subject to 329 IAC 10-3-1(9) and 329 IAC 10-9-1(c) with 40 CFR 257.
   d. Secondary Settling Pond - closure in place with removal of only CCR material. This pond is subject to 329 IAC 10-3-1(9) and 329 IAC 10-9-1(c) with 40 CFR 257.
   e. Coal Pile Ash Fill Area -- closure by removal of CCR material and one additional foot of underlying soil. This pond is subject to 329 IAC 10-3-1(9). Upon removal of CCR material and one foot of underlying soil, this pond will be re-purposed to serve as a geomembrane lined (non-CCR) pond to store leachate and industrial storm water from the permitted Restricted Waste Site (RWS) Type 1 landfill and other runoff from the Gallagher Station.

8. Petitioner, Hoosier Environmental Council (Petitioner or HEC), filed its Petition for Administrative Review on January 27, 2020[1]. Petitioner has challenged the closures of

[1] On May 5, 2020, the presiding ELJ issued Findings of Fact, Conclusions of Law and Order denying Duke's Motion to Dismiss, finding that Petitioner had timely filed its petition for review.

five of the former ash ponds in this litigation – Ash Pond A, the Secondary Settling Pond, the Coal Pile Ash Fill, the North Ash Pond, and the Primary Pond Ash Fill.

9. HEC filed its Amended Petition for Administrative Review on March 6, 2020 and alleges that the Approval violates the following regulations: 329 IAC 10-30-1; 40 CFR 257.102 and 329 IAC 10-9-1; CCR Rule at 40 CFR 257 Subpart D; 40 CFR 257.101; 329 IAC 10-3-1(9); and I.C. § 13-30-2-1(1).

10. HEC requests the following relief[2]:

    a. complete excavation of all CCR in the Ash Pond System at the Gallagher facility including CCR in the North Ash Pond, Ash Pond A, Primary Pond, Primary Pond Ash Fill, and Coal Pile Ash Fill; and
    b. proper disposal of this CCR in a safe, dry CCR landfill that complies with the construction and siting requirements for new CCR landfills found in 40 CFR 257 Subpart D and is at least as protective as the CCR excavation and management activities being undertaken by Duke Energy at its CCR facilities in North Carolina.

11. IDEM determined that Ash Pond A and the Secondary Settling Pond are governed by, and must be closed pursuant to, the Federal CCR Rule requirements at 40 C.F.R. § 257, subpart D[3] (hereafter referred to as the Federal CCR Rule). IDEM determined that the Coal Pile Ash Fill, the North Ash Pond, and the Primary Pond Ash Fill are not subject to the regulations set forth in the Federal CCR Rule but are subject to 329 IAC 10-3-1(9).

12. Between approximately 1958 until 1987, coal ash was sluiced to an unlined area called the Original Ash Pond. Duke stopped using this area in approximately 1987 and covered it with approximately six (6) inches of soil and seeded it. The Primary Pond was formed within the footprint of the Original Ash Pond. The North Ash Pond and the Primary Pond Ash Fill Area are also located in the footprint of the Original Ash Pond. The bottom elevation of North Ash Pond and Primary Pond Ash Fill lie beneath the elevation of groundwater. No CCR was excavated from the Original Ash Pond. There are no underground barriers between these 3 ponds in the Original Ash Pond. No portion of the Original Ash Pond is lined.

13. The Station is located within the 1% annual chance flood area (commonly referred to as 100-year flood).

14. Ash Pond A:

    a. In approximately 1973, the Station constructed Ash Pond A, an area of about 36 acres, and began operating the impoundment to provide ash management and water

[2] Amended Petition for Administrative Review, filed March 6, 2020, pg. 7.
[3] 40 C.F.R. Part 257, subpart D (Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities, 80 Fed. Reg. 21,301 (April 17, 2015)).

treatment needed for Station operation. Ash Pond A ceased receiving sluiced ash for initial settling in the pond around November 15, 2020.

b. After 2016, the decant water from Ash Pond A was eventually discharged directly to the Ohio River through the Station's National Pollutant Discharge Elimination System (NPDES) permitted outfall.
c. Groundwater beneath Ash Pond A generally flows east toward the Ohio River.
d. To date, Ash Pond A has not been dewatered. Therefore, it still has significant hydraulic head pressure.
e. The CCR material and one foot of underlying soil will be excavated. Closure must be conducted in accordance with to 329 IAC 10-3-1(9) and 329 IAC 10-9-1(c) with 40 CFR 257, including 18 inches of soil cover and 6 inches of vegetative cover.
f. CCR excavated from Ash Pond A may be used as structural fill for the subgrade of the engineered cover system at the North Ash Pond and the Primary Pond Ash Fill.

15. Secondary Settling Pond:

a. The Secondary Settling Pond, an area of approximately 4 acres, was constructed and began operating as an ash management and water treatment unit in approximately 1973. The Secondary Settling Pond received decant water from Ash Pond A so that additional settling of ash could occur. The decant water from the Secondary Settling Pond was discharged to the Ohio River in accordance with applicable laws.
b. Groundwater beneath the Secondary Settling Pond generally flows northeast toward the Ohio River.
c. CCR from the Secondary Settling Pond was completely excavated in 2016.
d. This pond will be closed in place with removal of only CCR material. This pond is subject to 329 IAC 10-3-1(9) and 329 IAC 10-9-1(c) with 40 CFR 257.
e. The cover components include:
    - Compacted soil structural fill
    - 18 inches of compacted soil layer with a hydraulic conductivity of not greater than 1x10-5 centimeter/second
    - 6 inches of vegetative cover

16. Primary Pond Ash Fill:

a. The Primary Pond Ash Fill occupies approximately 7.5 acres within the footprint of the Original Ash Pond. It was dewatered in approximately 1987 as part of the Original Ash Pond. It ceased being a water treatment unit at that time. No CCR was placed in this pond after 1987. Later, some of the CCR that was excavated from the construction of the Primary Pond (discussed above) was also placed on top of the Primary Pond Ash Fill.
b. Following the construction of the Primary Pond, the surface of the Primary Pond Ash Fill was covered with a soil veneer, vegetated, and maintained in its current condition.
c. There are perimeter roads around the Primary Pond Ash Fill.
d. The average groundwater elevation beneath the Primary Pond Ash Fill is presently at approximately 435 ft. The base of the ash in the Primary Pond Ash Fill is at an elevation of approximately 413 ft. Therefore, under current conditions, groundwater,

in general terms, flows laterally east toward the Ohio River and is in contact with the ash at the bottom of the Primary Pond Ash Fill as the groundwater proceeds through the site.

e. This pond will be closed in place, subject to 329 IAC 10-3-1(9).
f. The final cover system must include:
    - 30 -mil PVC or 40 -mil LLDPE or 60 -mil HDPE geomembrane liner or equivalent installed over structural fill
    - Geotextile cushion or geocomposite drainage layer
    - 30 inches of uncompacted cover soil
    - 6 inches of vegetative cover

17. North Ash Pond:

g. In 1987, the approximately 40-acre area of the Original Ash Pond to the north of the Primary Pond (called the "North Ash Pond") was dewatered and a soil veneer and vegetation was placed over it. It ceased being a water treatment unit at that time. No CCR was placed in this pond after 1987. Over the last 30 years, this former ash pond area has often been used as a construction lay down area, and it is crossed by multiple active transmission lines and other utility infrastructure. There are perimeter roads around the North Ash Pond.
h. The average groundwater elevation for the majority of the area beneath the North Ash Pond is presently at approximately 437 ft. The base of the ash at the bottom of the North Ash Pond is at an approximate elevation of 413 ft. Therefore, groundwater, in general, flows laterally toward the Ohio River and is in contact with the ash at the bottom of the North Ash Pond as the groundwater proceeds through the site.
i. This pond will be closed in place, subject to 329 IAC 10-3-1(9).
j. The final cover system must include:
    - 30 -mil PVC or 40 -mil LLDPE or 60 -mil HDPE geomembrane liner or equivalent installed over structural fill
    - Geotextile cushion or geocomposite drainage layer
    - 30 inches of uncompacted cover soil
    - 6 inches of vegetative cover

18. Coal Pile Ash Fill:

a. The former Coal Pile Ash Fill was constructed in 2001 and is located in the southern half of the original limits of the Station's coal pile. At that time, an embankment was constructed to isolate an approximately 11-acre area from the active coal pile on the north. The Coal Pile Ash Fill was filled with ash excavated from other on-site ash ponds. The area was then covered with soil and vegetated, and generally utilized as a construction lay-down area.
b. Groundwater beneath the Coal Pile Ash Fill generally flows east toward the Ohio River.
c. CCR from the Coal Pile Ash Fill was excavated in 2020.
d. This will be closed by removal of CCR material and one additional foot of underlying soil. This pond is subject to 329 IAC 10-3-1(9). Upon removal of CCR material and

one foot of underlying soil, this pond will be re-purposed to serve as a geomembrane lined (non-CCR) pond to store leachate and industrial storm water from the permitted Restricted Waste Site (RWS) Type 1 landfill and other runoff from the Gallagher Station.

19. The Approval authorizes the use of CCR material from Ash Pond A as structural fill for the subgrade for the engineered cover system involving the closure of the North Ash Pond and the Primary Pond Ash Fill. This structural fill will be used to provide proper drainage for the cover system. The ash to be used as structural fill will have at least 10 – 43 feet of separation from groundwater.

20. There is an extensive network of groundwater monitoring wells that have been sampled over the years to identify any potential groundwater impacts involving the Station's current and decommissioned ash ponds as well as the Station's Landfill.

21. As part of the development and implementation of the Closure Plan, Duke Energy has been submitting monitoring well sampling data to IDEM since 2017. In accordance with Section D.23 of the Closure Plan, Duke Energy continues to conduct semi-annual groundwater sampling and submits that data to IDEM.

22. Duke Energy is required to follow the standard practices for well installation for the monitoring well networks, which are set forth in 329 IAC 10-21-4 and 312 IAC 13. As noted in Section D.3 of the Closure Plan, the location of the Station's groundwater monitoring well system was analyzed during IDEM's review of the Closure Plan application and approved as part of the Closure Plan.

23. Groundwater sampling events for the ash impoundments at Gallagher Station were conducted in accordance with the Station's Sampling and Analysis Plan for the Station's approved on-site restricted waste site ("RWS") Type I Landfill (SW ID 22-01), ensuring that high quality data was collected for evaluation, until IDEM approved the Sampling and Analysis Plan for the Station's Ash Pond System on June 30, 2020, in accordance with Section F.1 of the Closure Plan.

24. Pursuant to Section F.3 of the Closure Plan, IDEM approved the Statistical Evaluation Plan for the Station's Ash Pond System on June 11, 2020.

25. Section D.3 of the Closure Plan outlines the requirements for the monitoring well system and the changes that will be made to the current monitoring well system due to construction activities.

26. In accordance with the Closure Plan, Duke Energy submitted its Monitoring Well Installation Work Plan to IDEM on June 5, 2020, which contained industry standard practices consistent with 329 IAC 10-21-4 and 312 IAC 13 for the method of well installation. This Monitoring Well Plan sets out the location for the installation of the remaining five (5) monitoring wells that will be installed after closure activities are completed. IDEM approved this Monitoring Well Work Plan on August 14, 2020.

27. Pursuant to 329 IAC 10-15-5(7), wells must have a well spacing of (500) feet.

28. 329 IAC 10-24-4 requires a minimum number of monitoring wells based on the acreage of the units being assessed. In this case, pursuant to Section D.3 of the Closure Plan, Gallagher Station's final, post-closure monitoring well system related to the ponds at issue has approximately 26 monitoring devices compared to the minimum of approximately 17 monitoring devices required by this regulation.

29. In mid-2020, Duke Energy also installed Monitoring Wells T-1 and T-2, which are being added to the Station's Monitoring Well Network. According to Duke Energy, MWs T-1 and T-2 were installed so that Duke Energy could better understand the groundwater quality at Gallagher Station, particularly the groundwater quality downgradient from the former North Ash Pond near where such groundwater interfaces with the Ohio River.

30. To date, the sampling results from MWs T-1 and T-2 have not exceeded any drinking water standards ("Maximum Contaminant Levels" or "MCLs") or other enforceable health-based standards.

31. The Station has used, and continues to use, an on-site groundwater well screened in the sand and gravel aquifer on the eastern portion of the Site (near the Ohio River) to supply its drinking water. To date, the sampling results from this drinking water well have not exceeded any MCL or health-based standards.

32. The Closure Plan imposes requirements regarding the construction of an engineered cover system that exceeds all state and federal requirements for the reduction of infiltration from surface water that could come into contact with ash under the closure cap. This advanced geomembrane cover system will result in a highly effective 99.8% reduction of surface water infiltration into the ash pond after closure. This 99.8% reduction of surface water infiltration (amounting to a reduction of 774 million gallons over the monitoring period) is, by design, a post-closure leachate control mechanism.

33. Section D of the Closure Plan requires Duke Energy to implement and operate an extensive post-closure monitoring network to conduct groundwater sampling for at least 30 years after the closure work is completed. If post-closure monitoring identifies any defined groundwater exceedances, then Duke Energy must conduct assessment monitoring and, if applicable, conduct corrective action in accordance with regulatory requirements. This is another mechanism to control post-closure leachate.

34. Section C.3 of the Closure Plan requires Duke Energy to correct and control any post-closure nuisance conditions, eliminate any threat to human health and the environment, and perform all appropriate remedial action. This Closure Plan provision imposes requirements to further "control" any post-closure leachate when warranted.

35. Section C.2 of Closure Plan provides that in order for Duke Energy "to be released from its post-closure monitoring requirements, the owner or operator must submit a post-

closure certification statement signed by both the owner/operator and a registered professional engineer stating that the post-closure care requirements have been met and the surface impoundments are stabilized." IDEM must review the post-closure certification, and if it is found to be deficient, require Duke Energy to address those deficiencies including but not limited to any additional monitoring beyond the 30 years already required by the Closure Plan.

36. Duke Energy Indiana LLC filed a Motion for Summary Judgment on January 29, 2021. The Indiana Department of Environmental Management (IDEM) filed its Concurrence on January 29, 2021. Petitioner filed its Motion for Summary Judgement and Brief of Hoosier Environmental Council in Response to the Motion of Duke Energy Corp. and Indiana Department of Environmental Management for Summary Judgment and In Support of Hoosier Environmental Council's Motion for Summary Judgment on March 1, 2021. Duke filed its Reply Duke Energy's Reply Brief in Support of Its Motion for Summary Judgment and Response in Opposition to HEC's Cross Motion for Summary Judgment on March 15, 2021. IDEM filed its Concurrence with Duke Energy's Reply in Support of Its Motion for Summary Judgment and Response in Opposition to HEC's Cross Motion for Summary Judgment on March 15, 2021. HEC filed its Reply in Support of Its Cross Motion for Summary Judgment on March 30, 2021. Oral argument was held on April 6, 2021.

Conclusions of Law

1. The Office of Environmental Adjudication ("OEA") has jurisdiction over the decisions of the Commissioner of the Indiana Department of Environmental Management ("IDEM") and the parties to this controversy pursuant to Ind. Code § 4-21.5-7, et seq.

2. Findings of Fact that may be construed as Conclusions of Law and Conclusions of Law that may be construed as Findings of Fact are so deemed.

3. This office must apply a *de novo* standard of review to this proceeding when determining the facts at issue. *Indiana Dept. of Natural Resources v. United Refuse Co., Inc.,* 615 N.E.2d 100 (Ind. 1993). Findings of fact must be based exclusively on the evidence presented to the ELJ, and deference to the agency's initial factual determination is not allowed. *Id.;* I.C. 4-21.5-3-27(d). "*De novo* review" means that "all issues are to be determined anew, based solely upon the evidence adduced at that hearing and independent of any previous findings. *Grisell v. Consol. City of Indianapolis*, 425 N.E.2d 247 (Ind. Ct. App. 1981).

4. The OEA and IDEM, as state agencies, only have the authority to take those actions that are granted by the law. "An agency, however, may not by its rules and regulations add to or detract from the law as enacted, nor may it by rule extend its powers beyond those conferred upon it by law." *Lee Alan Bryant Health Care Facilities, Inc. v. Hamilton,* 788 N.E.2d 495, 500 (Ind. Ct. App. 2003). IDEM can only determine whether a permit should be issued by applying the relevant statutes and regulations and may only consider those factors specified in the applicable regulations in deciding whether to issue a permit.

As the ultimate authority for the IDEM, the OEA's authority is limited by statute (I.C. §4-21.5-7-3) to determining whether the IDEM decision complies with the applicable statutes and regulations. OEA is an impartial litigation forum, not a body which formulates or advises as to public policy or regulatory content.

5. The OEA shall consider a motion for summary judgment "as would a court that is considering a motion for summary judgment filed under Trial Rule 56 of the Indiana Rules of Trial Procedure." I.C. § 4-21.5-3-23. Ind. Trial Rule 56 states, "The judgment sought shall be rendered forthwith if the designated evidentiary matter shows that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law."

6. The Indiana Supreme Court in *Hughley v. State*, 15 N.E.3d 1000, 1003-1004 (Ind. 2014) held:

> The initial burden is on the summary-judgment movant to "demonstrate [] the absence of any genuine issue of fact as to a determinative issue," at which point the burden shifts to the non-movant to "come forward with contrary evidence" showing an issue for the trier of fact. *Williams v. Tharp*, 914 N.E.2d 756, 761 (Ind. 2009).
>
> ...
>
> We have therefore cautioned that summary judgment "is not a summary trial," id. (internal quotation marks omitted); and the Court of Appeals has often rightly observed that it "is not appropriate merely because the non-movant appears unlikely to prevail at trial." *Tucher v. Brothers Auto Salvage Yard, Inc.*, 564 N.E.2d 560, 564 (Ind. Ct. App. 1991), trans. denied; see also *LaCava v. LaCava*, 907 N.E.2d 154, 166 n.9 (Ind. Ct. App. 2009) (recognizing that the decedent's "claim should withstand summary judgment" despite counsel's "conce[ssion] . . . that he will be unlikely to prevail" at trial). In essence, Indiana consciously errs on the side of letting marginal cases proceed to trial on the merits, rather than risk short-circuiting meritorious claims.

7. The moving party carries the burden of establishing summary judgment to be appropriate. *Gibson v. Evansville Vanderburgh Building Commission, et al.*, 725 N.E.2d 949 (Ind. Ct. App. 2000). All facts and inferences must be construed, and issues of doubt resolved by the court in the fashion most favorable to the non-moving party. *City of Indianapolis v. Buschman*, 988 N.E.2d 791 (Ind. 2013) see also; *Town of Avon v. W. Cent. Conservancy Dist.*, 957 N.E.2d 598, 602 (Ind. 2011). After the burden of proof regarding summary judgment has been established by the moving party, the burden shifts to the non-moving party to demonstrate through specific evidence that there lies a genuine issue of material fact. *Bushong v. Williamson*, 790 N.E.2d 467, 474 (Ind. 2003). "[I]t is well-settled that speculation may not be used to manufacture a genuine issue of fact." *Amadio v. Ford Motor Co.*, 238 F.3d 919, 927 (7th Cir. 2001); see also *Borcky v. Maytag Corp.*, 248 F.3d 691, 695 (7th Cir. 2001) ("The mere existence of some alleged factual dispute will not defeat an otherwise properly supported motion for summary judgment . . .. Speculation

will not suffice."). Further, "Finally, we note that mere speculation cannot create questions of fact. *Briggs v. Finley*, 631 N.E.2d 959, 964-65 (Ind. Ct. App. 1994). Opinions expressing a mere possibility with regard to a hypothetical situation are insufficient to establish a genuine issue of material fact. Id. Put another way, "guesses, supposition and conjecture are not sufficient to create a genuine issue of material fact to defeat summary judgment." *Midwestern Indem. Co. v. Sys. Builders, Inc.*, 801 N.E.2d 661, 666 (Ind. Ct. App. 2004)." *Beatty v. LaFountaine*, 896 N.E.2d 16, 20 (Ind. Ct. App. 2008) "The law is well settled, neither arguments of counsel nor allegations in memoranda qualify as evidentiary materials for purposes of a motion for summary judgment." *Richards-Wilcox, Inc. v. Cummins*, 700 N.E.2d 496, 499 n.3 (Ind. Ct. App. 1998) (citing *J.A.W. v. Roberts*, 627 N.E.2d 802, 808 (Ind. Ct. App. 1994), rev"d on other grounds).

8. Each party has requested summary judgment in this matter. "The fact that both parties requested summary judgment does not alter our standard of review. Instead, we must separately consider each motion to determine whether there is a genuine issue of material fact and whether the moving party is entitled to judgment as a matter of law." *Laudig v. Marion County Bd. of Voters Registration*, 585 N.E.2d 700, 703-704, (Ind. Ct. App. 1992) see also; *Five Star Concrete, L.L.C. v. Klink, Inc.*, 693 N.E.2d 583, 585 (Ind. Ct. App. 1998).

9. If a court determines that the statute or rule is ambiguous, it may look to the agency's interpretation for evidence of the legislative intent. The Indiana Supreme Court, in *Shell Oil v. Meyer*, 705 N.E.2d 962, 976 (Ind. 1998) held, "However, administrative interpretation may provide a guide to legislative intent. "A long adhered to administrative interpretation dating from the legislative enactment, with no subsequent change having been made in the statute involved, raises a presumption of legislative acquiescence which is strongly persuasive upon the courts." *Board of Sch. Trustees v. Marion Teachers Ass'n,* 530 N.E.2d 309, 311 (Ind. Ct. App. 1988); accord *Baker v. Compton*, 247 Ind. 39, 42, 211 N.E.2d 162, 164 (1965)."

10. The Approval was issued pursuant to 329 IAC 10-9 and 40 CFR 257, Subpart D as incorporated in 329 IAC 10-9-1(c).

A. <u>Secondary Settling Pond, Coal Pile Ash Fill, Ash Pond A</u>

11. HEC initially challenged the closure plans for the Secondary Settling Pond and the Coal Pile Ash Fill. However, in the summary judgment briefing, HEC conceded that the closure plans for these units was acceptable.[4] HEC does not challenge the closure plan for Ash Pond A but does challenge the use of CCR from Ash Pond A as structural fill for the subgrade of the engineered cover system at the North Ash Pond and the Primary Pond Ash.

12. HEC has not presented any evidence to support its argument that the closure plans for the Secondary Settling Pond and the Coal Pile Ash Fill are deficient. There is no genuine dispute of material fact. Even without HEC's concession that the closure plans are

[4] Footnote 7, pg. 8, Petitioner's Motion for Summary Judgment.

appropriate, summary judgment in Duke's and IDEM's favor regarding these two ash ponds is appropriate.

13. HEC also has not produced any evidence that the specific closure plan for Ash Pond A is deficient. Therefore, there is no genuine issue of material fact regarding Ash Pond A closure plan and summary judgment in IDEM's and Duke's favor regarding Ash Pond A's closure is appropriate. However, HEC challenges whether the use of CCR from Ash Pond A constitutes a beneficial use.

14. 40 CFR 257.50(g) provides that Subpart D does not apply to practices that meet the definition of a beneficial use of CCR. Pursuant to 40 CFR 257.53, "Beneficial use of CCR" means the CCR meet all of the following conditions:

> (1) The CCR must provide a functional benefit;
> (2) The CCR must substitute for the use of a virgin material, conserving natural resources that would otherwise need to be obtained through practices, such as extraction;
> (3) The use of the CCR must meet relevant product specifications, regulatory standards or design standards when available, and when such standards are not available, the CCR is not used in excess quantities; and
> (4) When unencapsulated use of CCR involving placement on the land of 12,400 tons or more in non-roadway applications, the user must demonstrate and keep records, and provide such documentation upon request, that environmental releases to groundwater, surface water, soil and air are comparable to or lower than those from analogous products made without CCR, or that environmental releases to groundwater, surface water, soil and air will be at or below relevant regulatory and health-based benchmarks for human and ecological receptors during use.

15. HEC argues that this use of CCR constitutes "overfill". Overfill is defined in 40 CFR 257.53 as "a new CCR landfill constructed over a closed CCR surface impoundment."

16. The CCR from Ash Pond A will be used as structural fill for the subgrade of the engineered cover system at the North Ash Pond and the Primary Pond Ash. The North Ash Pond and the Primary Pond Fill Area are not new landfills. These areas have not received CCR since 1987 and are being closed. According to the plain language of 40 CFR 257.53, it is clear that the use of CCR from Ash Pond A for this purpose does not constitute overfill.

17. Further, the CCR removed from Ash Pond A will not be placed so as to come into contact with groundwater. Also, the cap will prevent infiltration of surface water and precipitation into the ash. Petitioners' concerns about the CCR becoming a source of groundwater contamination does not hold up to scrutiny and does not create a genuine issue of material fact.

18. Petitioners also cite to 40 CFR 257.101(a)(1), which states "Except as provided by paragraph (a)(3) of this section, as soon as technically feasible, but not later than April

11, 2021, an owner or operator of an existing unlined CCR surface impoundment must cease placing CCR and non-CCR wastestreams into such CCR surface impoundment and either retrofit or close the CCR unit in accordance with the requirements of § 257.102."

19. This section is not applicable because Duke stopped placing CCR in the North Ash Pond and the Primary Pond Ash Fill in 1987 and is seeking to close these CCR units.

20. There is no genuine issue of material fact in this matter. The closure plans for the Secondary Settling Pond, the Coal Pile Ash Fill and Ash Pond A meet all applicable requirements. Further, there is no genuine issue of material fact that the use of the CCR as subgrade for the cap constitutes a beneficial use. Summary judgment in Duke's and IDEM's favor as to this portion of the Partial Approval is appropriate.

B. North Ash Pond and Primary Ash Fill Pond

1. IDEM was correct in determining that the North Ash Pond and Primary Ash Fill Pond were not subject to the Federal CCR Rule.

21. IDEM has determined that the North Ash Pond and Primary Ash Fill Pond are not subject to the Federal CCR rule, but are governed by, and must be closed pursuant to, IDEM state rules and guidance.

22. There is no question of fact that the North Ash Pond and Primary Ash Fill Pond are distinct ponds separate from the Primary Pond. Neither received CCR or impounded water after 1987.

23. The federal rule applies to:

(b) This subpart applies to owners and operators of new and existing landfills and surface impoundments, including any lateral expansions of such units that dispose or otherwise engage in solid waste management of CCR generated from the combustion of coal at electric utilities and independent power producers. Unless otherwise provided in this subpart, these requirements also apply to disposal units located off-site of the electric utility or independent power producer. This subpart also applies to any practice that does not meet the definition of a beneficial use of CCR.

(c) This subpart also applies to inactive CCR surface impoundments at active electric utilities or independent power producers, regardless of the fuel currently used at the facility to produce electricity.

40 CFR 257.50

24. The rule gives the owner or operator of a CCR unit the option of closing in place or removing the CCR. 80 FR 21305.

25. It is clear that groundwater contamination is one of the factors behind the promulgation of this rule. The rule is specifically written to, among other things, address groundwater contamination from the improper management of CCR in landfills. 80 FR 21303. *See also*, the liner design criteria are designed to "help prevent contaminants in CCR from leaching from the CCR unit and contaminating groundwater". 80 FR 21304.

26. Duke contends that North Ash Pond and the Primary Ash Fill Pond are not subject to the Federal CCR Rule because the surface water was drained, and soil and grass were placed on top prior to 1987. HEC contends that they are subject to the rule because the CCR sits in groundwater and is subject to infiltration from the Ohio River.

27. Not all impoundments are regulated by the Federal CCR Rule. Rather, the Federal CCR Rule targets the regulation of only certain types of impoundments.

28. "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. 40 CFR 257.53. In order for a surface impoundment to be subject to the Federal CCR Rule, it must "hold an accumulation of CCR and liquids" as of the Rule's effective date of October 19, 2015. 40 C.F.R. § 257.53 (defining surface impoundment).

29. EPA statements are illustrative of what this phrase means and what impoundments were intended to be regulated under the Federal CCR Rule. For example, EPA indicated that the Federal CCR Rule only targets the regulation of units "that contain a large amount of CCR managed with water, under a hydraulic head, that promotes the rapid leaching of contaminants." 80 Fed. Reg at 21,342.

30. According to the preamble of the Federal CCR Rule, EPA considers surface impoundments that no longer held free liquids and were covered with soil before the Federal CCR Rule's effective date to be initially "closed" and did not require them to "reclose" under the new federal standards. See 80 Fed. Reg. 21,301, 21,343 ("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."). Further, in the preamble to the Federal CCR Rule, EPA explicitly confirms that, "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." Id.

31. EPA also stated, "CCR surface impoundments that have been dewatered and are no longer able to hold free liquids" and have "a soil, concrete, asphalt, or similar cover" before the Rule's effective date of October 19, 2015, "are not subject to [the Federal] regulations for CCR surface impoundments." See EPA, Vol. 3 (Scope and Purpose, Effective Dates, Applicability, Off-site Disposal & Definitions), Comment Summary and Response Document, at 74 (Dec. 2014) (emphasis added); see also 40 C.F.R. § 257.53.

32. The term "free liquids" is not a new term under RCRA and the Federal CCR Rule. EPA intentionally used the same definition of "free liquids" that is used in EPA's existing hazardous waste rules, such as the commonly used paint filter liquids test (EPA Method 9095B). This is a routine EPA test method for hazardous waste "used to determine the presence of free liquids in a representative sample of waste." EPA Method 9095B, Paint Filter Liquids Test (Rev. 2, Nov. 2004) (emphasis added).

33. EPA states that groundwater, and for that matter, any environmental medium containing contaminants, is not a solid waste in the first place. Therefore, because groundwater is not a solid waste, it is axiomatic that groundwater does not, and cannot, constitute a "free liquid" under RCRA. 40 C.F.R. § 257.53.

34. This legal conclusion is also confirmed by the language in the Federal CCR Rule itself, which defines "groundwater" as "water below the land surface in a zone of saturation." On the other hand, the Federal CCR Rule (like the paint filter liquids test) defines "free liquids" to mean "liquids that readily separate from the solid portion of a waste under ambient temperature and pressure." Id.

35. Consequently, for present purposes, "free liquids" in the Federal CCR Rule consists of the water that separates from sluiced ash and forms the surface water in an ash pond.

36. With respect to the North Ash Pond and Primary Pond Ash Fill, there were not any free liquids present when the Federal CCR Rule became effective. Moreover, there were no liquids or free liquids being "held" in or by those impoundments. The opposite is true, since groundwater at the site laterally flows to the Ohio River. Likewise, those impoundments did not have hydraulic head pressure (since they had been dewatered over thirty years ago).

37. As a result, the closures of the North Ash Pond and Primary Pond Ash Fill are governed by Indiana's established closure regulations; they are not governed by the Federal CCR Rule, which applies to other types of impoundments.

38. HEC attempts to escape this legal conclusion by asserting that: (a) groundwater freely flows underneath the site's impoundments; and (b) because a subsequently re-purposed portion of the Original Ash Pond (the "Primary Pond") is subject to the CCR Rule since it was actively being used in 2015, then the former North Ash Pond and Primary Pond Ash Fill (that were formerly in the footprint of the Original Ash Pond) must also somehow be subject to the Federal CCR Rule. These assertions are legally unavailing because an impoundment's regulatory status over three decades ago is not relevant to determining whether it is currently subject to the Federal CCR Rule. Likewise, EPA rejects any notion that potential groundwater interactions under or between impoundments have any relevance to defining the boundaries of a unit subject to the Federal CCR Rule.

39. As such, IDEM correctly applied its well-established state law regulations and requirements in its evaluation of the proposed Closure Plan for the North Ash Pond and Primary Pond Ash Fill.

40. EPA observed, "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." 80 FR 21342.

41. Inactive CCR surface impoundments are subject to all of the requirements of this subpart applicable to existing CCR surface impoundments. 40 CFR 257.10. The US EPA stated that "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." 80 FR 21342.

42. As defined in 40 CFR 257.53, "Inactive CCR surface impoundment" means 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.

43. EPA explains, ""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." 80 FR 21302, 21343.

44. It is clear from the definition; the North Ash Pond and the Primary Ash Fill Pond are not inactive CCR surface impoundments as neither received CCR after 1987 and neither impounded water after this year.

2. IDEM properly applied the requirements of 329 IAC to the North Ash Pond and Primary Fill Ash Pond.

45. 329 IAC 10-3-1 excludes certain solid waste management activities from Article 10. Subsection (9) states that:

> Except as provided in 329 IAC 10-9-1, coal combustion residuals impoundments subject to 40 CFR 257, Subpart D, the operation of surface impoundments; however, the final disposal of solid waste in surface impoundments at the end of their operation is subject to approval by the commissioner except as excluded under subdivisions (8) and (10). The commissioner's approval is based on management practices that are protective of human health and the environment.

46. 329 IAC 10-30-1 requires that the closure of a Restricted Waste Type I or II meet certain performance standards. These standards are:

> (1) minimizes the need for further maintenance;

> (2) controls post-closure escape of waste, waste constituents, leachate, contaminated precipitation, or waste decomposition products to the ground or surface waters or the atmosphere; and
> (3) at a minimum, is in compliance with applicable closure provisions and conditions imposed in the facility permit.

47. HEC alleges that the plans do not meet the standard because the plans do not control post-closure leachate because the groundwater is in contact with the CCR and will become contaminated and flow to the Ohio River.

48. Duke argues that HEC only speculates as to the harm to human health and the environment. OEA has decided frequently that speculation that a permittee will not comply with the terms and conditions of a permit does not provide sufficient basis for the revocation of a permit. OEA presumes that a permittee will comply with the permit. In this case, HEC is not alleging that Duke will not comply with the permit. HEC is alleging that there was not sufficient information available for IDEM to determine that this permit will protect human health and the environment. HEC presents evidence, namely in the form of expert testimony, relating to groundwater sampling done by Duke as the basis for its assertion that the closure is not protective of human health and the environment. The experts presented by HEC, while certainly qualified and credible, did not visit the Station or gather data. Dr. Indra Frank[5] offers her opinion of the deleterious effects of various pollutants associated with CCR. However, she only speculates that certain of these pollutants are present. This is the type of speculation that is insufficient to overcome the evidence provided by Duke regarding the contaminants present at the Station. Likewise, the opinion of Greg Bright[6] is speculative as to whether the groundwater flowing into the Ohio River is contaminated above the applicable standards. Speculation as to the potential to accumulate in sediments and the harm to human health from bioaccumulation in fish is certainly founded in science but if it cannot be traced specifically to the Station, it does not create an issue of fact.

49. Duke asserts that the exceedances in groundwater on site are not indicative of whether the closure plan is protective of human health and the environment because closure is not complete. The true test will be the groundwater levels after the closure (removal of ash and construction of the cap) has been implemented.

50. The Closure Plan incorporates requirements set forth in Indiana's solid waste management regulations related to the in-place closure of Type I and Type II non-municipal solid waste landfills. These provisions include requirements involving the impoundment's engineered cover system, minimum berm elevation, engineering design and stability, drainage, and maintenance.

51. The closure plans for these units require an engineered cover system which will reduce infiltration of surface water. Duke argues that this meets the standard for "control". The

[5] Dr. Indra Frank, MD, Master of Public Health, Director of Environmental Health and Water Quality, Hoosier Environmental Council.
[6] Greg Bright, Qualified Environmental Professional.

cap is intended to meet requirements of 40 CFR 102(d)(2) by stopping infiltration. There is no genuine issue of material fact that the cap exceeds the standards and will stop infiltration.

52. The closure plans also require post-closure monitoring. If sampling discloses exceedances of groundwater limits, Duke must undertake assessment monitoring and, if necessary, corrective action.

53. In addition to the requirements above, the Closure Plan also imposes ongoing requirements in accordance with 40 C.F.R. § 257.102(d) and 329 IAC 10 to minimize the need for maintenance of the engineered cover system.

54. If monitoring well sampling or other conditions warrant, IDEM can require additional wells to be added to the Monitoring Well Network.

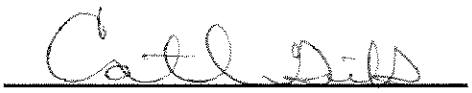
55. The Station's final groundwater monitoring system, as dictated by the Closure Plan and the approved Monitoring Well Work Plan, is consistent with the requirements imposed by 329 IAC 10-15-5(7).

Final Order

IT IS THEREFORE ORDERED, ADJUDGED AND DECREED that no genuine issues of material fact exist, and summary judgment is appropriate. Judgment is entered in favor of Duke Energy Indiana LLC and the Indiana Department of Environmental Management. The Petition for Review is dismissed. All further proceedings are vacated.

You are further notified that pursuant to provisions of I.C. § 4-21.5-7-5, the Office of Environmental Adjudication serves as the ultimate authority in administrative review of decisions of the Commissioner of the Indiana Department of Environmental Management. This is a Final Order subject to Judicial Review consistent with applicable provisions of I.C. § 4-21.5-5, *et seq.* Pursuant to I.C. § 4-21.5-5-5, a Petition for Judicial Review of a Final Order is timely only if filed with a civil court of competent jurisdiction within thirty (30) days after the date this notice is served.

IT IS SO ORDERED this 4th day of May 2021 in Indianapolis, IN.



Hon. Catherine Gibbs
Environmental Law Judge

DISTRIBUTION via email

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EXHIBIT 28

HALEY ALDRICH

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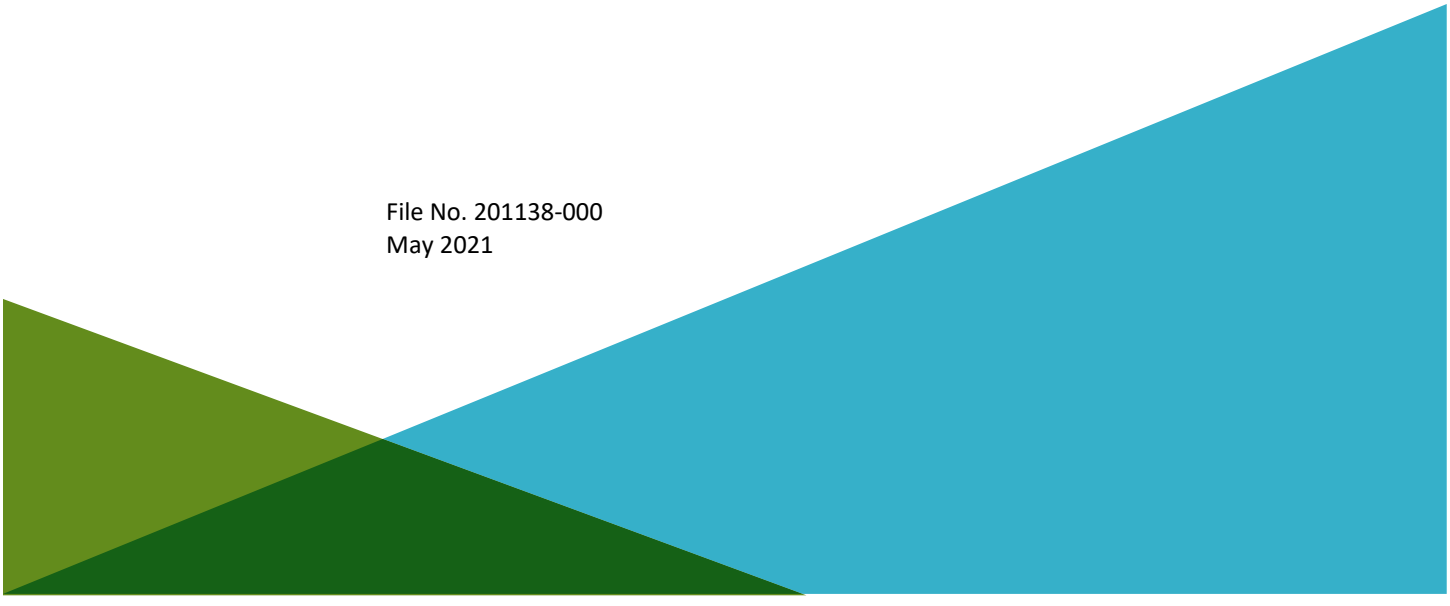
OPINION OF LISA JN BRADLEY, PH.D., DABT IN THE MATTER OF: PETITION OF SOUTHERN ILLINOIS POWER COOPERATIVE FOR AN ADJUSTED STANDARD FROM 35 ILL. ADMIN. CODE PART 845 OR, IN THE ALTERNATIVE, A FINDING OF INAPPLICABILITY

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

File No. 201138-000
May 2021



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SIGNATURE PAGE FOR

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

PREPARED BY:

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

May 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 opinion supporting the Petition for an adjusted standard 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 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 regulation 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,[1] 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 ponds at issue in the petition have acted exclusively or primarily as secondary ponds, rather than ponds designed to directly receive CCR, and they have in fact have not received significant amounts of CCR stored in water. Given their historic operation, they are the types of ponds that would not be expected to pose an appreciable threat to human health or the environment warranting regulation under Part 845:

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

In addition, the Petition also requests 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, were at least since 2015 fully covered by a former on-site landfill, and were fully or at least partially covered going back to at least the early 1990s:

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

[1] 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.

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 on-site permit exempt landfill has been operated by SIPC as a landfill and regulated by IEPA as a landfill for decades.

1.1 OPINION

I have reviewed SIPC's 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 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 warranted regulation as a CCR surface impoundment under Part 257. Accordingly, none of those units represents the risk that drove USEPA's Part 257 regulations, and the units at issue are not expected to a have a substantial or significant adverse threat to human health or the environment warranting regulation 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.

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,"[2] as regulated units under its federal CCR Rule. A former pond with no water, or a current pond with a small amount of CCR, should pose even less risk.

[2] CCR Rule. EPA-HQ-RCRA-2009-0640-11970; p21357.

Five of the ponds (South Fly Ash Pond, Pond B-3, Pond 4, Pond 3 (including Pond 3A), and Pond 6) that are the subject of this petition have received only de minimis amounts of CCR. Three are former ponds that have been drained of water, and been covered, and are within the boundary of the on-site permit exempt landfill, which has been operated by SIPC as a landfill and regulated by IEPA as a landfill for decades.

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

3. The USEPA Evaluation of CCR Impoundments

This section provides the information needed to understand USEPA's approach to regulating CCR disposal. 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.

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",[3] 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[4] that there will be "no reasonable probability of adverse effects on health or the environment from disposal."

The CCR Risk Assessment evaluated the following CCR management areas:

- CCR surface impoundment
- CCR landfills

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

[3] 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/

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

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, 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 90th percentile (i.e., upper-bound) of that range as the basis for comparison to the RCRA cancer benchmark of 1 x 10^{-5} as point-of-departure for the rulemaking[5], 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:

- 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.

[5] Note that this point of departure is conservative as USEPA guidance for the Superfund and other programs uses a risk range from 1 x 10^{-6} to 10 x 10^{-4}.

Table 1. USEPA National CCR 90th Percentile Probabilistic Risk Assessment Results Above the RCRA Risk Benchmarks	
	Ingestion of Groundwater
	Surface Impoundments
Constituent	**Excess Cancer Risks**
Arsenic III	2×10^{-4}
Arsenic V	1×10^{-5}
	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 90th 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 50th 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**
Groundwater as Drinking Water			**Ecological Exposure to Sediment**		
90th Percentile	*See **Table 3-1** Above*	None	**90th Percentile**	None	None
50th Percentile	None	None	**50th Percentile**	None	None
Fish Ingestion			**Ecological Exposure to Surface Water**		
90th Percentile	None	None	**90th Percentile**	None	None
50th Percentile	None	None	**50th Percentile**	None	None

The 50th percentile results are important to consider here. The 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,[6] 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 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."[7]

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.[8] 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:[9]

> "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

[6] 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.
[7] CCR Rule. EPA-HQ-RCRA-2009-0640-11970; p21371.
[8] CCR Rule. EPA-HQ-RCRA-2009-0640-11970; p21357.
[9] CCR Rule. EPA-HQ-RCRA-2009-0640-11970; p21357.

> (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,"[10] 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."

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 90th percentile of the population, it does not apply to ponds or impoundments that would 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.

Therefore, USEPA did not regulate units containing de minimis amounts of CCR, nor should Part 845.

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 90th 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."

[10] CCR Rule. EPA-HQ-RCRA-2009-0640-11970; p21357.

4. Opinion

I have reviewed SIPC's 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 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 warranted regulation as a CCR surface impoundment under Part 257. Accordingly, none of those units represents the risk that drove USEPA's Part 257 regulations, and the units at issue are not expected to a have a substantial or significant adverse threat to human health or the environment warranting regulation 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.