

ILLINOIS POLLUTION CONTROL BOARD

January 20, 2011

IN THE MATTER OF:)
)
AMEREN ASH POND CLOSURE RULES) R09-21
(HUTSONVILLE POWER STATION):) (Rulemaking - Land)
PROPOSED 35 ILL. ADM. CODE PART)
840.101 THROUGH 840.152)

Adopted Rule. Final Opinion and Order.

OPINION AND ORDER OF THE BOARD (by A.S. Moore):

The Board today adopts rules establishing standards under which Ameren Energy Generating Company (Ameren) can close Ash Pond D, a surface impoundment managing coal combustion waste at Ameren's Hutsonville Power Station (Station) near Hutsonville, Crawford County. Ameren originally filed a proposal for a site-specific rule with the Board on May 19, 2009. After the Illinois Environmental Protection Agency (Agency or IEPA) responded to that filing by proposing various revisions to it, Ameren and the Agency on September 22, 2009, submitted a joint rulemaking proposal.

In an order dated October 7, 2010, the Board submitted the joint proposal without significant substantive amendments to first notice publication in the *Illinois Register*. See 34 Ill. Reg. 16188 (Oct. 22, 2010). During the 45-day comment period (see 5 ILCS 100/5-40(b) (2008)), the Board received two comments, one from the Agency and one from Ameren. Both comments supported the Board's first-notice proposal, and neither proposed any further amendment to it. The Board adopted its second-notice proposal in an opinion and order dated December 16, 2010. At its meeting on January 11, 2011, the Joint Committee on Administrative Rules (JCAR) recommended a limited number of technical changes, the nature of which does not merit discussion in this opinion, and issued its certificate of no objection.

In this opinion and order, the Board first provides at pages 1-4 the procedural history before addressing its first-notice opinion and order at page 4. The Board then addresses at pages 4-6 the issues of economic reasonableness and technical feasibility. Next, on a section-by-section basis at pages 6-53, the Board summarizes the development of the record for its second-notice proposal. Next, the Board at page 53 directs the Clerk to submit the adopted regulations to the Secretary of State for publication in the *Illinois Register*. The proposal itself appears in the Board's order following the opinion at pages 53-80.

PROCEDURAL HISTORY

On May 19, 2009, Ameren filed its original proposal for site-specific regulation (Orig. Prop.) addressing the closure of Ash Pond D at the Station. Both a Statement of Reasons (SR) and a Technical Support Document (TSD) accompanied the original proposal. Also on May 19, 2009, Ameren filed a motion to waive signature requirements and a motion for expedited review. On June 1, 2009, the Agency filed its response opposing Ameren's motion for expedited review.

On June 3, 2009, Ameren filed a motion for leave to file a reply in support of its motion for expedited review, accompanied by its reply. In an order dated June 18, 2009, the Board accepted Ameren's proposal for hearing, granted Ameren's motion to waive signature requirements, granted Ameren's motion for leave to file a reply, and denied Ameren's motion for expedited review.

In a letter dated June 30, 2009, the Board requested that the Department of Commerce and Economic Opportunity (DCEO) conduct an economic impact study of Ameren's site-specific rulemaking proposal. *See* 415 ILCS 5/27(b) (2008). DCEO has not responded to this request.

In an order dated June 30, 2009, the hearing officer scheduled a hearing beginning September 29, 2009, in Robinson, Crawford County. The order also set deadlines of August 18, 2009, for pre-filing testimony; September 1, 2009, for pre-filing questions; and September 15, 2009, for pre-filing answers to those questions. On August 18, 2009, Ameren pre-filed the testimony of Mr. Michael F. Bollinger (Bollinger Test.).

On August 18, 2009, the Agency pre-filed its proposed amendments to Ameren's proposed regulations (Agency Prop.) and testimony by Mr. William E. Buscher (Buscher Test.), Mr. Lynn E. Dunaway (Dunaway Test.), Mr. Richard P. Cobb (Cobb Test.), Mr. Christian J. Liebman (Liebman Test.), and Mr. Stephen F. Nightingale (Nightingale Test.). On the same date, the Agency filed a motion for waiver of filing requirements, which the Board granted on October 1, 2009.

On September 1, 2009, Prairie Rivers Network (PRN) pre-filed questions (PRN Questions) addressed separately to Ameren with regard to its Statement of Reasons, to Mr. Bollinger specifically with regard to his pre-filed testimony, to the Agency generally with regard to its pre-filed proposed amendments, and to Mr. Nightingale specifically with regard to his pre-filed testimony. Also on September 1, 2009, Ameren filed a motion for extension of time to pre-file questions and answers. In an order dated September 10, 2009, the hearing officer granted Ameren's motion for an extension, extending the deadline to pre-file questions to September 15, 2009, and the deadline to pre-file answers to September 22, 2009.

On September 22, 2009, the Agency and Ameren filed a joint rulemaking proposal (Joint Prop.) accompanied by a joint statement (Joint Statement). Also on September 22, 2009, the Board received responses to the questions pre-filed by PRN from both the Agency (Agency Resp.) and Ameren (Ameren Resp.).

The hearing took place as scheduled on September 29, 2009. The Board received the transcript of the hearing (Tr.) on October 9, 2009. During the hearing, the hearing officer admitted eight exhibits into the record:

- Pre-Filed Testimony of Michael Bollinger (Exh.1);
- Pre-Filed Testimony of Richard P. Cobb, P.G., on Ameren's Proposal and the Agency's Proposed Amendments to Sections 840.116 and 840.118 (Exh. 2);

Pre-Filed Testimony of Stephen F. Nightingale on Ameren's Proposal, the Agency's Proposed Amendment at Section 840.152, and Request to Board to Consider Temporary Moratorium on Additional Site-Specific Rules for Closure of Coal Combustion Waste Surface Impoundments (Exh. 3);

Pre-Filed Testimony of Christian J. Liebman on Ameren's Proposal and the Agency's Proposed Amendments to Sections 840.124 through 840.130, 840.134, 840.136 and 840.146 (Exh. 4);

Pre-Filed Testimony of William E. Buscher, P.G., on Ameren's Proposal and the Agency's Proposed Amendments to Sections 840.100 through 840.106, 840.120 through 840.122, 840.132, and 840.138 through 840.150 (Exh. 5);

Pre-Filed Testimony of Lynn E. Dunaway, P.G., on Ameren's Proposal and the Agency's Proposed Amendments to Sections 840.110 through 840.114 (Exh. 6);

Joint Statement in Support of Proposed Revisions (Exh. 7); and

Joint Revisions to Proposed Part 840 (Exh. 8). *See* Tr. at 18, 20.

On October 23, 2009, the Board received post-hearing comments from the Agency (PC 2). On October 30, 2009, the Board received post-hearing comments from PRN (PC 3) and from Ameren (PC 4).

On November 10, 2009, Ameren filed a motion for leave to file additional comment accompanied by its additional post-hearing comment (PC 5). In an order dated November 13, 2009, the hearing officer granted Ameren's motion. The order allowed any participant to file a response to the post-hearing comments filed during the period ending October 30, 2009, or to the additional comment allowed in the order by November 30, 2009. On November 30, 2009, PRN filed additional comments (PC 6).

In an order dated January 7, 2010, the Board addressed issues raised in those post-hearing comments and directed Ameren to submit additional information. The Board directed Ameren as the original proponent to submit both specified groundwater quality monitoring data and an environmental impact assessment of the proposed discharge into the Wabash River. On February 22, 2010, Ameren filed its response to the Board's request for more information (Ameren Info.). On February 26, 2010, Ameren filed a supplemental response (Ameren Supp. Info.) On March 9, 2010, the Agency filed a motion for leave to file a response to the Board's order of January 7, 2010 (Mot. Leave), accompanied by its response to that order (Agency Info.).

On July 6, 2010, the Board received a public comment on coal ash from Mr. Peter Illyn, Executive Director of Restoring Eden, and Mr. James Ennis, Executive Director of the National Catholic Rural Life Conference (PC 7).

On July 28, 2010, Ameren filed motion to adopt the joint proposal for first notice (Mot. Adopt).

On October 7, 2010, the Board adopted its first-notice opinion and order. *See* 34 Ill. Reg. 16188 (Oct. 22, 2010). On December 6, 2010, the Board received comments from the Agency (PC 8) and from Ameren (PC 9).

On December 16, 2010, the Board adopted its second-notice opinion and order. At its meeting on January 11, 2011, JCAR issued its certificate of no objection to the Board's proposal.

FIRST-NOTICE OPINION AND ORDER

In proceeding to first notice on October 7, 2010, the Board adopted a 113-page opinion followed by a 27-page order. The Board's second-notice opinion and order noted that the record had grown only to the extent of two public comments and did not significantly amend the first-notice proposal. This order adopting regulations does not significantly amend the Board's second-notice proposal. Accordingly, substantial portions of the Board's first-notice opinion, including its review of the record and its conclusions on contested issues, support the Board's adoption of regulations in this order. Accordingly, the Board has not duplicated here today various sections of its first-notice opinion and instead refers the reader to it with regard to various issues. The full text of the opinion and order is available from the Clerk's Office On-Line, or COOL, through the Board's Web site at www.ipcb.state.il.us.

Specifically, the Board's first-notice opinion and order summarized the background of the Hutsonville Station, including its history and operation, site geology, groundwater flow, existing groundwater monitoring network, groundwater impacts, groundwater use at and near the Station, groundwater modeling, surface water, and regulation of coal combustion waste surface impoundments. Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 7-16 (Oct. 7, 2010). The Board also addressed various closure options for Ash Pond D, including their projected costs and environmental impacts. *Id.* at 16-33. Next, the Board summarized its January 7, 2010 order requesting more information and the responses to that order filed by Ameren and the Agency. *Id.* at 33-45. The Board then discussed contested issues, including the description of the area affected, the projected environmental impact of the joint proposal, requirements of federal law, the Agency's request for a temporary moratorium on additional site-specific rules of this nature, and the technical feasibility and economic reasonableness of closure alternatives. *Id.* at 45-70. The Board then provided a section-by-section summary of the Board's first-notice proposal. *Id.* at 70-113.

TECHNICAL FEASIBILITY AND ECONOMIC REASONABLENESS

In a letter dated June 30, 2009, the Board requested that DCEO conduct an economic impact study of the rulemaking proposal in this docket. *See* 415 ILCS 5/27(b) (2008). DCEO has not responded to this request. Although the hearing officer during the hearing sought testimony on the Board's request to DCEO, no participant offered such testimony. *See* Tr. at 110-11.

As noted in the Board's first-notice opinion and order, Ameren evaluated several alternatives to meet the closure objectives of preventing off-site migration of contaminated groundwater, minimizing infiltration of precipitation through the ash pond, and protecting human health and the environment. *See* Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 16-33 (Oct. 7, 2010). These alternatives addressed the management of impacted groundwater, ash removal and on- or

off-site treatment and disposal, and placement of final cover. Regarding groundwater management, Ameren evaluated “no action” with groundwater monitoring, placement of a low permeability vertical barrier, and a groundwater collection trench. *Id.* at 17-22; *see* TSD at 22, 73. Ameren found the installation of groundwater trench to be technically feasible and economically reasonable to address the impacted groundwater. The other alternatives were found to be technically infeasible for achieving the closure objectives. In its first-notice opinion and order, the Board agreed with Ameren’s conclusions, as “no action” and a vertical barrier may not prevent the off-site migration of contaminated groundwater. Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 69 (Oct. 7, 2010).

With regard to ash removal and disposal, Ameren asserted that removing the entire volume of waste and disposing of the ash off-site or in a newly constructed on-site landfill are not feasible options because of the exorbitant costs associated with those options. Ameren estimated the excavation and off-site disposal cost to be approximately \$34 million. TSD at 73. For on-site disposal, in addition to waste excavation cost, Ameren noted that there would be a very high capital cost of reconstructing the landfill. Ameren contended that the ash removal options are economically unreasonable. *Id.* Also, Ameren stated that the ash removal options also pose technical concerns regarding dewatering and storage of the waste. The Agency also expressed concerns regarding the implications of excavating ash in a steady state condition in terms of geochemistry and equilibrium with the site hydrogeologic conditions. Tr. at 66-76. In light of the issues highlighted by Ameren and the Agency, the Board agreed that excavation and disposal of ash from Ash Pond D, whether on-site or off-site, is not a viable option. Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 69 (Oct. 7, 2010).

Finally, with regard to the final cover alternatives, the Board found that the proposed final cover consisting of a geomembrane with a 3-foot thick protective soil layer to be technically feasible and economically reasonable. Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 69 (Oct. 7, 2010). The Board noted that the proposed final cover is similar to those required for landfills under the Board’s landfill regulations at 35 Ill. Adm. Code 811.314. *Id.* As noted by Ameren, the effectiveness of the geomembrane to minimize infiltration and leachate generation is comparable to the other options considered by Ameren, including compacted clay and pozzolonic fly ash. Regarding the cost of the proposed closure alternative, Ameren expected that “capital costs associated with the selected closure scenario could range from \$3 to \$4 million dollars, excluding engineering design.” SR at 21, citing TSD at 73-74; *see* TSD at 27, Bollinger Test. at 15. Ameren has also estimated that its “[a]nnual operating and maintenance costs associated with the trench and final cover system are expected to be around \$50,000.” SR at 21, citing TSD at 73-74; *see* TSD at 27, Bollinger Test. at 15. In its analysis of economic and budgetary effects submitted with its original proposal, Ameren indicated that its costs as owner of the Station were “undetermined,” but it projected capital and operating costs consistent with these figures.

Regarding PRN’s position that treatment of contaminated groundwater collected from the groundwater trench should be considered in this rulemaking, the Board noted the proposed rules

require Ameren to discharge groundwater collected in the groundwater trench in accordance with its NPDES permit or an option approved by the Agency. Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 70 (Oct. 7, 2010); *see* Joint Prop. at 17 (proposed Section 840.122). The Board expected any treatment issues concerning groundwater from the collection trench to be fully addressed during the Agency’s permitting process. *Id.*

In adopting its first-notice opinion and order, the Board concluded on the basis of the record before it that Ameren has undertaken an appropriate review of closure alternatives. Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 70 (Oct. 7, 2010). The Board also concluded that the record supported the conclusion that the joint proposal is economically reasonable and technically feasible. *Id.* Accordingly, the Board proceeded to adopt the joint proposal without significant substantive amendment for first-notice publication in the *Illinois Register*. *Id.*

Since adoption of the first-notice opinion and order, the record in this proceeding has grown only to the extent of two first-notice comments. Both comments support the Board’s action in proceeding to first notice and request that the Board proceed to Second Notice with its proposal as expeditiously as possible. PC 8 at 5, PC 9 at 5. Neither comment cast doubt on the Board’s findings and conclusions regarding the technical feasibility or economic reasonableness of the first-notice proposal, and the Board proceeded to second notice without significantly amending it. In the absence of any contrary arguments, the Board concludes that its adopted regulations are technically feasible and economically reasonable and below directs the Clerk to file them with the Secretary of State for publication in the *Illinois Register*.

SECTION-BY-SECTION SUMMARY OF ADOPTED RULES

In the following subsections of its opinion, the Board on a section-by-section basis summarizes the development of the record in support of the adopted rules.

Section 840.100: Purpose

As originally proposed by Ameren, this Section provided in its entirety that “[t]his Subpart [A] provides for the closure of Ash Pond D at the Hutsonville Power Station, 15142 East 1900 Avenue, Hutsonville, Crawford County, Illinois.” Orig. Prop. at 2. Ameren stated that this proposed language intends “to identify that Subpart A specifically addresses the closure of Ash Pond D. . . .” SR at 24. In his pre-filed testimony, Mr. Buscher stated that “[t]he purpose Section of Ameren’s proposed rule was not changed” by the Agency’s subsequent proposal. Buscher Test. at 2; *see* Agency Prop. at 2, Joint Prop. at 2.

In its first-notice opinion, the Board did not substantively amend this section of the joint proposal (*see* Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 70, 114 (Oct. 7, 2010), and no first-notice comment sought revision (*see* PC 8, PC 9). Accordingly, the Board adopts this language without substantive amendment.

Section 840.102: Applicability

As originally proposed by Ameren, this Section provided in its entirety that “[t]his Subpart [A] exclusively applies to the closure of Ash Pond D, located at the Hutsonville Power Station, and particularly, no other Part of Subtitle G applies to the closure of Ash Pond D.” Orig. Prop. at 2; *see* 35 Ill. Adm. Code 700.101-888.140 (Subpart G). Ameren stated that this proposed language

sets forth the entirety of the requirements that apply to the closure of Ash Pond D, including the site-specific groundwater quality standards applicable to the site and the portion of the neighboring property where groundwater has been impacted by Ash Pond D. No other provisions of the Board’s rules would apply to Ash Pond D and its closure upon adoption of this proposed site-specific rule. SR at 24-25.

In his pre-filed testimony, Mr. Buscher stated that, in Ameren’s proposed language,

the term “closure” is used somewhat ambiguously to refer at times to the entire set of procedures and requirements set forth in Subpart A and at other times to refer to the planning and construction stage preceding the post-closure care period in which the structures and devices put in place during the closure period combine to become the operational corrective action activities. Buscher Test. at 2.

Accordingly, he stated that the Agency proposed to add the phrase “and post-closure care” in order to clarify the definition “by maintaining the distinction between closure and post-closure care, both of which are required by this [proposed] Subpart.” *Id.*, *see* Agency Prop. at 2.

Mr. Buscher also addressed the final portion of Ameren’s proposed applicability language. He stated that the Agency proposed to strike “the language excluding the closure of Ash Pond D from all other requirements under Subtitle G because the Agency simply was unwilling at this point to accept on its face such a broad assertion.” Buscher Test. at 2. He elaborated that “Subpart G covers a range of issues, and the nature and extent of future modifications to Subpart G is uncertain.” *Id.*; *see* Agency Prop. at 2. The subsequent joint proposal incorporated these amendments offered by Mr. Buscher. *See* Joint Prop. at 2. As proposed by Ameren and the Agency, Section 840.102 would provide in its entirety that “[t]his Subpart exclusively applies to the closure and post-closure care of Ash Pond D, located at the Hutsonville Power Station.”

In its first-notice opinion, the Board stated that Mr. Buscher’s testimony reflected the Agency’s reluctance to exclude Ash Pond D from other authorities that may now or in the future apply to it. Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 71 (Oct. 7, 2010). Reflecting this reluctance, the Board proposed to amend this section of the joint proposal. The Board stated that the phrase “[t]his Subpart exclusively applies” may be interpreted to provide that Ash Pond D is subject to no other regulatory requirements. *Id.* Seeking to clarify that the proposal would apply to no other site, the Board proposed that this section provide in its entirety as follows: “[t]his

Subpart applies exclusively to the closure and post-closure care of Ash Pond D, located at the Hutsonville Power Station.” *Id.*

The Agency stated that it “supports this revision” (PC 8 at 3), and Ameren indicated that it did not object to it (PC 9 at 4). Accordingly, the Board adopts this language without further amendment.

Section 840.104: Definitions

Proposed Section 840.104 stated that, unless otherwise specified, the Act’s definitions apply to Subpart A. Orig. Prop. at 2; *see generally id.* (proposing single Subpart A to 35 Ill. Adm. Code 840). Ameren stated that “[t]his Section sets forth the definitions applicable to Subpart A.” SR at 25. The Board separately addresses the proposed definitions in the following subsections.

“Agency”. Ameren stated that, “[f]or purposes of clarity and consistency with other Board rules, the definition of ‘Agency,’ the Illinois Environmental Protection Agency, was included in the definitions.” SR at 25; *see* Orig. Prop. at 2, Agency Prop. at 2, Joint Prop. at 2; *see also, e.g.*, 35 Ill. Adm. Code 301.215 (defining “Agency” identically in water pollution regulations).

“Aquifer”. Ameren stated that “[t]he definition of “aquifer” was taken from Section 3(b) of the Illinois Groundwater Protection Act.” SR at 25, citing 415 ILCS 55/3(b) (2008). In its entirety, the proposed definition stated that “[a]quifer” means saturated (with groundwater) soils and geologic materials which are sufficiently permeable to readily yield economically useful quantities of water to wells, springs, or streams under ordinary hydraulic gradients.” Orig. Prop. at 2, Agency Prop. at 2, Joint Prop. at 2.

“Ash Pond D”. Ameren stated that “[t]he definition of ‘Ash Pond D’ was derived from the designation used by Ameren and referenced in various permits issued by the Agency to describe the surface impoundment at the Hutsonville Power Station that is subject to the proposed rule.” SR at 25. In its entirety, the proposed definition stated that “‘Ash Pond D’ means the surface impoundment designated as Ash Pond D, located at the Hutsonville Power Station, 15142 East 1900 Avenue, Hutsonville, Crawford County, Illinois.” Orig. Prop. at 2, Agency Prop. at 2, Joint Prop. at 2-3.

“Board”. Ameren stated that, “[f]or purposes of clarity and consistency with other Board rules, the definition of ‘Board,’ the Illinois Pollution Control Board, was included in the definitions.” SR at 25; *see* Orig. Prop. at 2, Agency Prop. at 2, Joint Prop. at 3; *see also, e.g.*, 35 Ill. Adm. Code 301.235 (defining “Board” identically in water pollution regulations).

“Contaminant”. In his pre-filed testimony, Mr. Buscher stated that, “because the term is used repeatedly throughout Subpart A,” the Agency proposed to add a definition of “contaminant” to Ameren’s proposal. Buscher Test. at 3. In its entirety, the proposed definition provided that “[c]ontaminant” means any solid, liquid or gaseous matter, any odor, or any form of energy, from whatever source.” Agency Prop. at 3. Mr. Buscher stated that the proposed

definition is drawn from the Act. Buscher Test. at 3, citing 415 ILCS 5/3.165 (2008) (defining “contaminant” identically). The subsequent joint proposal did not amend the Agency’s proposed definition. *See* Joint Prop. at 3.

“Hutsonville Power Station” or “Hutsonville site”. In its original proposal, Ameren stated that, “for purposes of clarity,” it included a definition of the term “Hutsonville Power Station.” SR at 25. Specifically, Ameren defined the term as “the electric generating station located at 15142 East 1900 Avenue, Hutsonville, Crawford County, Illinois.” Orig. Prop. at 3. In its proposal, the Agency sought to provide that Ameren’s proposed definition also applied to the term “Hutsonville site.” Agency Prop. at 3. The subsequent joint proposal did not amend the Agency’s proposed definition. *See* Joint Prop. at 3.

“Lower zone of underlying aquifer”. In their joint statement, Ameren and the Agency stated that they agreed to strike Ameren’s original designations of “Zone A” and “Zone B” and to use this term proposed by the Agency “with respect to applicable groundwater standards that will apply both on-site and off-site as set forth in [proposed] Section 840.116.” Joint Statement at 4. Ameren and the Agency stated that “[t]he Agency’s approach provides a more straightforward framework for determining compliance obligations and relies largely on standards and requirements previously promulgated by the Board” *Id.*; *see* 35 Ill. Adm. Code 620 (Groundwater Quality). In its entirety, the definition provided that “[l]ower zone of underlying aquifer’ means the sands and gravels beneath the fine-grained surficial alluvium within the Wabash River bedrock valley.” Joint. Prop. at 3.

“Off-site”. In his pre-filed testimony, Mr. Buscher stated that, “to identify property that is, or is not, part of the Hutsonville Power Station,” the Agency proposed to add a definition of “off-site.” Buscher Test. at 3. Mr. Buscher further stated that the concept appears in a number of proposed sections and is “used as a basis for the Agency’s proposed groundwater quality standards for the site and demonstrations of compliance.” *Id.*, citing Agency Prop. at 7-10 (proposed Section 810.114 Groundwater Monitoring Program). In its entirety, the proposed definition provided that “[o]ff-site’ means any property that is not part of the Hutsonville Power Station.” Agency Prop. at 3. The subsequent joint proposal did not amend the Agency’s proposed definition. *See* Joint Prop. at 3.

“On-site”. In his pre-filed testimony, Mr. Buscher stated that, “to identify property that is, or is not, part of the Hutsonville Power Station,” the Agency proposed to add a definition of “on-site.” Buscher Test. at 3. Mr. Buscher further stated that the concept appears in a number of proposed sections and is “used as a basis for the Agency’s proposed groundwater quality standards for the site and demonstrations of compliance.” *Id.*, citing Agency Prop. at 7-10 (proposed Section 810.114 Groundwater Monitoring Program). In its entirety, the proposed definition provided that “[o]n-site’ means the same or geographically contiguous property constituting the Hutsonville Power Station.” Agency Prop. at 3. The subsequent joint proposal did not amend the Agency’s proposed definition. *See* Joint Prop. at 3.

“Operator”. In its original proposal, Ameren stated that it offered this definition in order to “describe the persons responsible for various requirements of the proposed rule and clarify that they are the owner or operator of Ash Pond D only.” SR at 25. In its entirety, the proposed

definition provided that “[operator] means the person responsible for the operation of Ash Pond D.” Orig. Prop. at 3, Agency Prop. at 3, Joint Prop. at 3.

“Owner”. In its original proposal, Ameren stated that it offered this definition in order to “describe the persons responsible for various requirements of the proposed rule and clarify that they are the owner or operator of Ash Pond D only.” SR at 25. In its entirety, the proposed definition provided that “[owner] means the person who owns Ash Pond D.” Orig. Prop. at 3, Agency Prop. at 3, Joint Prop. at 3.

“Person”. In his pre-filed testimony, Mr. Buscher stated that, “because the term is used in other definitions,” the Agency sought to define “person.” Buscher Test. at 3. In its entirety, the proposed definition provided that “‘person’ is any individual, partnership, co-partnership, firm, company, limited liability company, corporation, association, joint stock company, trust, estate, political subdivision, state agency, or any other legal entity, or their legal representative, agent or assigns.” Agency Prop. at 3. Mr. Buscher stated that the proposed definition is drawn from the Act. *Id.*, citing 415 ILCS 5/3.315 (2008) (defining “person” identically). The subsequent joint proposal did not amend the Agency’s proposed definition. *See* Joint Prop. at 3.

“Professional engineer”. In its original proposal, Ameren sought to add a definition of “professional engineer.” SR at 25. In its entirety, the definition provided that “[p]rofessional engineer’ means a person who has registered and obtained a seal pursuant to the Professional Engineering Practice Act of 1989.” Orig. Prop. at 3, Agency Prop. at 3, Joint Prop. at 3. Ameren stated that this definition is based upon that statute. SR at 25, citing 225 ILCS 325 (2008).

“Professional Geologist”. In its original proposal, Ameren sought to add a definition of “professional geologist.” SR at 25. In its entirety, the definition provided that “[p]rofessional geologist’ means a person licensed under the laws of the State of Illinois to practice as a professional geologist.” Orig. Prop. at 3, Agency Prop. at 3, Joint Prop. at 3. Ameren stated that this definition is based upon Section 58.2 of the Environmental Protection Act (Act). SR at 25, citing 415 ILCS 5/58.2 (2008) (defining “licensed professional geologist” under Site Remediation Program).

“Site”. In its proposal, the Agency sought to add a definition of “site.” Agency Prop. at 3. In its entirety, the proposed definition provided that “[s]ite’ means any location, place, tract of land, and facilities, including but not limited to buildings and improvements used for purposes subject to regulation or control by this act or regulations thereunder.” *Id.* This definition is based upon Section 3.460 of the Act. *See* 415 ILCS 5/3.460 (2008) (defining “site” identically). The subsequent joint proposal did not amend the Agency’s proposed definition. *See* Joint Prop. at 3.

“Statistically significant”. In their joint statement, Ameren and the Agency stated that they seek to define this term because it “is used in several sections of the [proposed] site-specific rule.” Joint Statement at 4. In its entirety, the definition provided that “[s]tatistically significant’ means the application of a Mann-Kendall analysis performed at 95 percent

confidence to determine whether consecutive groundwater sampling data showing greater or lesser concentrations of constituents is statistically significant.” Joint Prop. at 3-4.

“Upper zone of underlying aquifer”. In their joint statement, Ameren and the Agency stated that they agree to strike Ameren’s original designation of “Zone A” and “Zone B” and to use this term proposed by the Agency “with respect to applicable groundwater standards that will apply both on-site and off-site as set forth in [proposed] Section 840.116.” Joint Statement at 4. Ameren and the Agency stated that “[t]he Agency’s approach provides a more straightforward framework for determining compliance obligations and relies largely on standards and requirements previously promulgated by the Board. . . . *Id.*; see 35 Ill. Adm. Code 620 (Groundwater Quality). In its entirety, the proposed definition provided that “[u]pper zone of underlying aquifer’ means surficial sands and sandstones overlying shale west of the Wabash River bedrock valley, and sand lenses within the surficial fine-grained alluvium.” Joint. Prop. at 4.

Summary of Section 840.104. In its first-notice opinion, the Board did not substantively amend any of the definitions in this section of the joint proposal (*see Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 71-74, 114-16 (Oct. 7, 2010)*), and no first-notice comment sought revision (*see PC 8, PC 9*). Accordingly, the Board adopts these definitions without substantive amendment.

Section 840.106: Abbreviations and Acronyms

In its original proposal, Ameren stated that this language identifies five abbreviations and acronyms used in the proposed Subpart A. SR at 26; *see Orig. Prop. at 4*. In his pre-filed testimony, Mr. Buscher proposed to add the acronym “GMZ,” representing “groundwater management zone” and based upon provisions of the Board’s current groundwater quality standards. Buscher Test. at 4, citing 35 Ill. Adm. Code 620.250; *see Agency Prop. at 4*. The subsequent joint proposal incorporated the Agency’s additional acronym. *See Joint Prop. at 4-5*.

In its first-notice opinion, the Board did not substantively amend this section of the joint proposal (*see Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 75, 116 (Oct. 7, 2010)*), and no first-notice comment sought revision (*see PC 8, PC 9*). Accordingly, the Board adopts this language without substantive amendment.

Section 840.108: Incorporations by Reference

In its proposal, the Agency sought to add incorporations by reference to Ameren’s original proposal and then to renumber subsequent sections. *See Agency Prop. at 4-5*. Specifically, the Agency proposed in subsection (a) to incorporate seven sets of materials from the National Technical Information Service and a single set of materials from the United States Geological Survey (USGS). *Id.* The Agency also proposed in subsection (b) that “[t]his Section incorporates no later edition or amendments.” *Id.* at 5. The subsequent joint proposal included the additional language offered by the Agency. *See Joint Prop. at 5-6*.

In its first-notice opinion, the Board did not substantively amend this section of the joint proposal (*see* Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 75, 116-17 (Oct. 7, 2010), and no first-notice comment sought revision (*see* PC 8, PC 9). Accordingly, the Board adopts this language without substantive amendment.

Section 840.110: Hydrogeologic Site Investigation

In its original proposal, Ameren obligated the owner or operator of Ash Pond D to “design and implement a hydrogeologic site investigation of Ash Pond D to develop information” for three specific uses. Orig. Prop. at 4; *see* SR at 26. Specifically, proposed subsection (a) provided that the required investigation shall be used “[t]o provide information to define hydrogeology and to assess the groundwater impacts associated with Ash Pond D.” Orig. Prop. at 4; *see* SR at 26. Proposed subsection (b) required the investigation to be used “[t]o provide information to perform a model to assess the groundwater impacts associated with closure of Ash Pond D.” Orig. Prop. at 4; *see* SR at 26. Finally, proposed subsection (c) required it to be used “[t]o provide information to establish a groundwater monitoring system.” Orig. Prop. at 4; *see* SR at 26.

Ameren’s proposal also provided that “[i]nformation from any hydrogeologic site investigation performed since 1999 may be used to satisfy the requirements of this Section.” Orig. Prop. at 4; *see* SR at 26. Ameren stated that it “performed such an investigation in 1999. The information that Ameren collected at that time continues to be valid; therefore, the rule provides that Ameren may use that data rather than conducting a new hydrogeologic site investigation.” SR at 26. Ameren further stated that its proposal included this requirement “for purposes of completeness.” *Id.*

In his pre-filed testimony, Mr. Dunaway sought to amend Ameren’s proposal with three changes he described as “interrelated.” Dunaway Test. at 3. First, he noted that Ameren’s original language did not provide for prior Agency review of the hydrogeologic site investigation. *Id.* Claiming that Ameren’s proposal would render the Agency merely a “passive recipient of plans, reports, and related modifications,” he characterized such prior Agency review as “essential.” *Id.* He proposed that the investigation “be reviewed and approved by the Agency as part of the closure plan.” *Id.* at 2; *see* Agency Prop. at 5. Mr. Dunaway claimed that “the better approach in the case of the closure of a coal ash impoundment with off-site groundwater contamination is for the Agency to be involved in an administrative oversight capacity during the design, construction and implementation of closure and post-closure activities that are likely to continue over several years.” Dunaway Test. at 3. He continued by arguing that “[t]his is consistent with the Agency’s obligation to assure compliance with the Act and rules adopted under the Act.” *Id.*; *see also* Agency Prop. at 28-33 (proposing Agency review, approval, and modification of closure and post-closure plans in additional Sections 840.148 and 840.150), Buscher Test. at 7-10 (addressing proposed Sections 840.148 and 840.150).

Second, Mr. Dunaway sought to strike “Ameren’s proposed language to allow the use of any hydrogeologic site assessment performed since 1999.” Dunaway Test. at 3; *see* Agency Prop. at 5-6. He stated that, “[w]hile the Agency is not opposed to the use of hydrogeologic data

gathered since 1999, the Agency should be able to review and approve the appropriateness of the data's inclusion in a current assessment.” Dunaway Test. at 3. He argued that Ameren's original language would allow data to satisfy this requirement even if it no longer remained valid. *Id.*

Third, Mr. Dunaway “proposed language intended to focus the hydrogeologic assessment on the nature and extent of contaminants originating from Ash Pond D.” Dunaway Test. at 3; *see* Agency Prop. at 5-6.

Ultimately, the joint proposal reflected these Agency amendments by offering the following language:

[t]he owner or operator of Ash Pond D must design and implement a hydrogeologic site investigation to determine the nature and extent of contamination originating from Ash Pond D and to develop hydrogeologic information for the uses set forth below. If approved in the closure plan, any information from any hydrogeologic site investigation performed since 1999 may be used to satisfy the requirements of this Section. Joint Prop. at 6

The joint proposal then listed three uses of the investigation with only grammatical changes from the language originally proposed by Ameren. *Id.*; *see* Orig. Prop. at 4.

In its first-notice opinion, the Board did not substantively amend this section of the joint proposal (*see* Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 75-76, 117 (Oct. 7, 2010), and no first-notice comment sought revision (*see* PC 8, PC 9). Accordingly, the Board adopts this language without substantive amendment.

Section 840.112: Groundwater Monitoring System

In its original proposal, Ameren obligated the owner or operator of Ash Pond D “to design and install a groundwater monitoring system that is sufficient to evaluate post-closure groundwater quality and trends.” SR at 26; *see* Orig. Prop. at 4-5 (proposed Section 840.110). Ameren stated that, after conducting a hydrogeologic site investigation in 1999, it designed and installed such a system. SR at 26; *see generally* TSD at 542-45 (Technical Memorandum addressing Preliminary Groundwater Monitoring Plan). Ameren further stated that it “proposes to continue using components of that system pursuant to this [proposed] rule” and offered language regarding that system “[f]or purposes of completeness.” SR at 26-27.

Ameren's proposed subsection (a) provided specific “[s]tandards for monitoring well construction and design.” Orig. Prop. at 4. As originally proposed, subsection (a)(2) provided in its entirety that “[w]ells must be screened to allow sampling only at the desired interval.” Orig. Prop. at 5. In its subsequent proposal, the Agency amended Ameren's language to provide that “[w]ells must be screened to allow sampling only at the specified ~~desired~~ interval.” Agency Prop. at 6. The joint proposal maintained this amendment. Joint Prop. at 7. At the hearing, Mr. Cobb indicated that, although the Agency would review these intervals as elements of the monitoring system, the Agency has received data of good quality from Ameren's wells. Tr. at

106. He stated that this proposed revision intends primarily to allow the Agency flexibility to address matters that cannot be addressed by those data. *Id.*

As proposed by Ameren, subsection (b) established “[s]tandards for the location of monitoring points,” and proposed subsection (c) addressed “sample collection and analysis.” Orig. Prop. at 4-5. Ameren stated that “[t]he proposed standards are consistent with protocols and practices utilized by the Company in submitting monitoring data to the Agency as part of its ongoing compliance obligations with respect to the Station’s Water Pollution Control and NPDES permits.” SR at 27.

In his pre-filed testimony, Mr. Dunaway proposed substantive amendments to Ameren’s original proposal. First, he offered “[a] requirement for Agency review and approval of the planning for the groundwater monitoring system,” which Ameren had not included. Dunaway Test. at 4. He stated that “[t]his change is proposed to assure that the groundwater monitoring system will be capable of providing the Agency with data adequate to perform its oversight duties.” *Id.*; see Agency Prop. at 6. Mr. Dunaway further stated that, “[t]o expedite the review and approval process, the Agency has proposed to incorporate the design of the groundwater monitoring system as part of the closure plan rather than making it a separate submittal.” Dunaway Test. at 4.

Second, the Agency proposed a new subsection (b) addressing the number, installation, and depth of monitoring wells. Dunaway Test. at 4. Mr. Dunaway stated that this language is based on the Agency’s belief that “the monitoring system’s functionality should not be limited by including only the existing monitoring system.” *Id.* The proposed new subsection intended to allow “the option of expanding the monitoring system that currently exists at appropriate locations, if required, to demonstrate compliance with applicable groundwater standards under this [proposed] rule.” *Id.*; see Agency Prop. at 6-7. The Agency stated that it does not seek to eliminate wells operating since 1999 but intends to ensure that the system collects data necessary for demonstrating compliance without generating unnecessary costs. Dunaway Test. at 4.

Third, the Agency proposed to strike Ameren’s proposed subsection (c) addressing sample collection and analysis. Dunaway Test. at 4; see Orig. Prop. at 5, Agency Prop. at 7. Noting that Ameren’s original proposal addressed sample collection and analysis in this subsection (c), the Agency expressed the view that “discussion of the Groundwater Monitoring System should be limited to monitoring well characteristics, such as the number of wells, construction details and placement.” Dunaway Test. at 4-5. Mr. Dunaway stated that the Agency has addressed the issues of sample collection, preservation, and analysis in a separate section of its own proposal. *Id.* at 5; see Agency Prop. at 7-10 (proposed Section 840.114 Groundwater Monitoring Program). The Agency sought to replace Ameren’s original subsection with language requiring that “[t]he groundwater monitoring system approved in the closure plan must include a maintenance plan.” Agency Prop. at 7. During the hearing, the Agency anticipated that that this maintenance plan would be submitted with the closure plan. Tr. at 106. In its post-hearing comment, the Agency proposed to amend Section 840.130(f) to require a maintenance plan as an element of a closure plan. PC 2 at 2, citing Tr. at 106-07.

The joint proposal generally reflected the substantive amendments proposed by the Agency. *See* Joint Prop. at 6-8, Agency Prop. at 6-7.

In its first-notice comment, the Agency noted that the Board’s first-notice opinion “discusses a revision proposed at Section 840.130(f) to include a requirement to submit a maintenance plan for the groundwater monitoring system (Section 840.112) along with the closure plan.” PC 8 at 3, citing Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 78, 98, 99-100 (Oct. 7, 2010). The Agency indicated that “this issue was raised at hearing by the Board and appropriate language was submitted by the Agency in post-hearing comments, which the Board has adopted.” PC 8 at 3. The Agency stated that it “affirms its support for this revision (*id.*), and Ameren’s first-notice comment does not specifically address Section 840.112 (*see* PC 9). Accordingly, the Board adopts this language without substantive amendment.

Section 840.114: Groundwater Monitoring Program

In its original proposal, Ameren required the owner or operator of Ash Pond D “to develop a groundwater monitoring program, the frequency of monitoring, and the constituents to be monitored at each well installed. . . .” SR at 27; *see* Orig. Prop. at 5-7. In its opening paragraph, the proposed section provided among other requirements that “[t]he owner or operator must begin the groundwater monitoring program upon completion of the final cover installation.” Orig. Prop. at 5.

Ameren’s proposed subsection (a) specifically provided that the owner or operator of Pond D must monitor each well on a quarterly basis for five years after closure for the following constituents: boron, iron, manganese, pH, sulfate, and TDS [total dissolved solids]. Orig. Prop. at 5. Ameren stated that it “chose to monitor for the specified constituents set forth in subsection (a) of this Section because they are consistent with parameters required in the Station’s NPDES Permit. . . .” SR at 27. Ameren added that “boron and sulfate are indicator parameters of coal ash leachate and are very mobile.” *Id.* Proposed subsection (a) also obligated the owner or operator to monitor for specific conductance, groundwater elevation, and monitoring well depth. Orig. Prop. at 5-6.

In addition, proposed subsection (a) addressed frequency of monitoring beyond the first five years after closure. *See* Orig. Prop. at 6. Specifically, the proposal allowed the owner or operator to reduce the frequency to semi-annual upon determining that each of three conditions have been met: “that monitoring effectiveness will not be compromised by the reduced frequency;” that quarterly data have provided sufficient characterization of the groundwater; and that concentrations of monitored constituents “show no statistically significant increasing trends that can be attributed to Pond D.” *Id.* Ameren argued that “[t]he monitoring frequency is similar to that prescribed in the Board’s Landfill Regulations and will provide sufficient data to monitor the effectiveness of the proposed closure activities.” SR at 27, citing 35 Ill. Adm. Code 811.319.

Ameren’s proposed subsection (b) provided that the owner or operator of Pond D must monitor each well on an annual basis until monitoring is discontinued under subsection (a) for the following inorganic constituents: antimony, barium, beryllium, cadmium, chloride,

chromium, cobalt, copper, cyanide, fluoride, lead, mercury, nickel, nitrate as N, selenium, silver, thallium, and zinc. Orig. Prop. at 7. Ameren stated that, as a result of discussions with the Agency, it included monitoring for these additional inorganic constituents “to properly monitor the effectiveness of the proposed closure activities.” SR at 27.

Finally, Ameren’s proposed subsection (c) provided in its entirety that “[e]lements of the Groundwater Monitoring Program may be modified upon agreement with the Agency, so long as the modification is in accordance with the provisions of this Subpart.” Orig. Prop. at 7.

In his pre-filed testimony, Mr. Dunaway proposed amending Ameren’s original language to an extent he characterized as “significant.” Dunaway Test. at 5. First, the Agency proposed to include the groundwater monitoring program in the closure plan, “just as it did with the hydrogeologic assessment and the groundwater monitoring system.” *Id.*; see Agency Prop. at 7. The Agency argued that including the program in the closure plan will ensure that the program is consistent with various regulatory requirements. Dunaway Test. at 5. The Agency stated its “intent that once the closure plan has been approved, and the groundwater monitoring system installed as agreed, the monitoring plan will be implemented even if the rest of the closure construction activities have not been completed.” *Id.* The Agency stated that it has amended the opening paragraph and subsection (a) to reflect these positions. *Id.*; see Agency Prop. at 7.

The Agency also proposed to require quarterly monitoring for all contaminants listed in Section 620.410(a) and (d) of the Board’s groundwater quality standards for Class I groundwater, except for radium 226 and radium 228. Dunaway Test. at 5, citing 35 Ill. Adm. Code 620.410(a) (inorganic chemicals), 620.410(d) (pH). In its pre-filed questions, PRN asked why the Agency’s proposal excluded these two constituents. PRN Questions at 6 (¶ 11). In its pre-filed response, the Agency stated that USGS research found that “radium and other radioactive elements in coal ash are not significantly elevated above concentrations that occur in materials found naturally in the environment. The USGS also found that dissolved concentrations of these radioactive elements are below levels of health concern. Therefore, inclusion of Radium 226 and Radium 228 is not warranted.” Agency Resp. at 1; see *id.*, Att. 1 (Radioactive Elements in Coal and Fly Ash: Abundance, Forms, and Environmental Significance). Responding to a question at hearing, Mr. Bollinger addressed monitoring for organic chemicals by indicating that Ameren has “no reason to suspect that there would be organic contaminants present in pond D.” Tr. at 107. In addition, Mr. Cobb indicated that Agency is not aware of issues involving organic contaminants in the Wabash River. *Id.*

The Agency acknowledged that both Ameren and the Agency have proposed to require monitoring for the same contaminants. Dunaway Test. at 5; see Agency Prop. at 7-8, Orig. Prop. at 5-7. However, the Agency noted that Ameren’s proposed Section 840.112(b) had proposed annual monitoring for specific inorganic constituents. Dunaway Test. at 5; see Orig. Prop. at 7. The Agency stated that monitoring all contaminants on the same quarterly schedule effectively eliminates Ameren’s proposed Section 840.112(b). Dunaway Test. at 5; see Orig. Prop. at 7, Agency Prop. at 7, 9-10.

The Agency acknowledged that Ameren’s proposed Section 840.112(a) listed suitable parameters for indicating ash impacts on groundwater. Dunaway Test. at 5; see Orig. Prop. at 5.

Specifically, that provision required monitoring for boron, iron, manganese, pH, sulfate, and TDS. Orig. Prop. at 5. The Agency cited boron in particular as “an excellent contaminant for impact assessment” because it “is abundant in coal ash” and is “mobile in groundwater.” Dunaway Test. at 5. However, the Agency argued that there is “no dispute that an impact exists” and that contaminants “other than the indicator contaminants could have impacted groundwater.” *Id.* at 5, 6. The Agency supported its own proposed monitoring program by stating that a “full assessment of contaminants that may be present in groundwater is needed to adequately characterize and protect the resource.” *Id.* at 6.

The Agency also proposed to allow Ameren to discontinue monitoring any contaminant other than six indicator contaminants (boron, iron, manganese, sulfate, TDS, and pH) after one year if the concentration of the contaminant has been below the detection limit in downgradient wells for four consecutive quarters or is not statistically greater than the background concentration detected in upgradient wells for four consecutive quarters. Dunaway Test. at 6; Agency Prop. at 7. The Agency stated it proposed a minimum of four quarters of monitoring “to account for seasonal variation in groundwater quality.” Dunaway Test. at 6. The Agency indicated that Ameren may use the first annual report filed under proposed Section 840.144 to suggest eliminating monitoring contaminants with concentrations below detection limits. *Id.*, *see* Agency Prop. at 24-25 (proposed Section 840.144 Recordkeeping and Reporting Requirements). The Agency stated that, after one year of monitoring, Ameren will be required to monitor only indicator contaminants, contaminants that are impacting groundwater, and those that have the potential to do so. Dunaway Test. at 6.

The Agency noted that Ameren’s original subsection (a)(1) provided conditions under which Ameren after five years might reduce its monitoring frequency to semi-annual. Dunaway Test. at 7; *see* Orig. Prop. at 6. The Agency reorganized this provision as subsection (b). Agency Prop. at 8. The Agency also added language reflecting its proposal to require “review and approval before implementation [of] or modification to the post-closure care plan.” Dunaway Test. at 7.

The Agency also noted that Ameren’s original subsection (a)(2) provided conditions under which Ameren might reduce its monitoring frequency to annual “[b]eginning fifteen years after closure, or five years after reducing the monitoring frequency to semi-annual. . . .” Orig. Prop. at 6; *see* Dunaway Test. at 7. The Agency reorganized this provision as subsection (c). Agency Prop. at 8. The Agency again added language reflecting its proposal to require review and approval before implementation [of] or modification to the post-closure care plan.” Dunaway Test. at 7. In addition, the Agency proposed to limit the option of conducting annual monitoring after 15 years by requiring that Ameren meet conditions listed in the Agency’s proposed subsection (b). *Id.*, *see* Agency Prop. at 8. In support of this amendment, the Agency expressed its belief

that the low permeability cover and the extraction trench proposed by Ameren will allow Ameren to successfully achieve the applicable groundwater standards at the Hutsonville site. However, if for some unforeseen reason Ash Pond D continues to cause statistically significant increases in groundwater contamination, in spite of implementation of the closure plan, quarterly or semi-

annual monitoring pursuant to [proposed] Section 840.118, should continue as long as required to assure the protection of the off-site water resource. Dunaway Test. at 7.

The Agency also proposed to add a subsection (d). Dunaway Test. at 6; *see* Agency Prop. at 9. That proposed subsection provided in its entirety that “[s]ampling and analysis data from groundwater monitoring and decisions to drop any constituent from the monitoring program must be reported to the Agency no later than 30 days after the sampling and analysis have been completed as provided in Section 840.144(a) of this Part.” Agency Prop. at 9. The Agency stated that this provision will “ensure that sampling and analysis data are provided to the Agency in a timely manner consistent with Ameren’s proposed Section 840.142(a).” Dunaway Test. at 6; *see* Orig. Prop. at 15-16 (proposed Section 840.142 Recordkeeping and Reporting Requirements).

The Agency also proposed to add a subsection (e). Dunaway Test. at 7; Agency Prop. at 9. The Agency argued that Ameren’s original proposal included “only general guidelines for appropriate sample collection and analytical procedures.” Dunaway Test. at 7. The Agency stated that it seeks to provide more specific direction by proposing language based on the Board’s groundwater quality standards. *Id.*, citing 35 Ill. Adm. Code 620.510 (Monitoring and Analytical Requirements); *see* Agency Prop. at 9 (listing methods and procedures for monitoring and analysis). The Agency stated that its proposal lists methods and procedures that it seeks to incorporate by reference. Dunaway Test. at 7; *see* Agency Prop. at 4-5 (proposed Section 840.108).

Finally, the Agency also sought to add to Ameren’s proposal a subsection (f) requiring a quality assurance program as an element of the monitoring program. Dunaway Test. 7; *see* Agency Prop. at 9. Although the Agency acknowledged that Ameren’s original proposal included such a requirement, the Agency sought to include it in this section, “as the Agency believes a quality assurance program for sample collection, preservation and analysis more directly relates to the Groundwater Monitoring Plan.” Dunaway Test. at 7-8.

The joint proposal generally reflected the substantive amendments proposed by the Agency and summarized in the preceding paragraphs. *See* Joint Prop. at 8-11, Agency Prop. at 7-11. In their joint proposal, however, Ameren and the Agency stated that they added language to this proposed Section 840.114 in order “to clarify that the groundwater monitoring program for closure and post-closure of Ash Pond D ends once compliance is achieved at the property boundary.” Joint Statement at 4, citing Joint Prop. at 12-17 (proposed Section 840.118 Demonstration of Compliance); *see* Joint Prop. at 8. Ameren and the Agency stated that “[t]he rule is drafted so that monitoring frequency may be gradually reduced over time unless there is a statistically significant increasing trend *that is attributable to Ash Pond D*. Attribution of statistically significant trends to Ash Pond D is a concept that carries over to the compliance determinations under [proposed] Section 840.118.” Joint Statement at 4-5 (emphasis in original); *see* Joint Prop. at 8-9. The Joint Statement also noted that “[r]eporting requirements generally have been moved to [proposed] Section 840.144.” Joint Statement at 5; *see* Joint Prop. at 9.

In its first-notice opinion, the Board noted that Section 840.114(a) of the joint proposal refers to “a concentration that is not statistically greater than the concentration detected in the upgradient wells. . . .” Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 81 (Oct. 7, 2010), citing Joint Prop. at 8. The Board further noted that the joint statement emphasized statistical significance as it pertains both to monitoring and compliance determinations. Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 81 (Oct. 7, 2010), citing Joint Statement at 4. Because “statistically significant” is a term defined in the joint proposal, the Board employed it in subsection (a) for clarification and consistency. Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 81-82, 119 (Oct. 7, 2010); citing Joint Prop. at 3-4 (definition).

The Agency stated that this revision “has improved the clarity and consistency of the provision,” (PC 8 at 3), and Ameren indicated that it “does not object to any of the Board’s changes” made to the joint proposal for first notice (PC 9 at 4). Accordingly, the Board adopts this language without further amendment.

Section 840.116: Groundwater Quality Standards

In its original proposal, Ameren noted that the operation of Ash Pond D has impacted groundwater and sought in a section entitled “Compliance Zones” to divide the impacted area into two sections. SR at 28. The first, Zone A, Ameren “defined as the upper migration zone underlying Pond D.” *Id.*; *see* Orig. Prop. at 2 (definition in proposed Section 840.104). The second, Zone B, Ameren defined as “the upper migration zone located east of Pond D, extending 500 feet south onto the adjacent landowner’s property, and running to the Wabash River.” SR at 28; *see* Orig. Prop. at 2-3 (definition in proposed Section 840.104).

Ameren stated that, because of the recognized groundwater impacts, “compliance with Class I groundwater quality standards is not feasible and is not consistent with Board regulations pertaining to other pre-existing fill operations.” SR at 28, citing 35 Ill. Adm. Code 811.320 (waste disposal). Ameren proposed “that concentrations of parameters as monitored are authorized and no groundwater quality standards shall apply within Zones A and B.” SR at 28; *see* Orig. Prop. at 7; *see also* Cobb Test. at 3. Ameren also proposed that “the results of annual trend analysis will be used to determine compliance within Zone B.” Orig. Prop. at 7; SR at 28; *see* Orig. Prop. at 8 (requiring annual trend analysis).

In his pre-filed testimony, Mr. Cobb stated that, under its original proposal, Ameren could achieve compliance at the downgradient boundaries of Zone B by meeting Class I groundwater quality standards with no increasing trend attributable to Ash Pond D. Cobb Test. at 3, citing Orig. Prop. at 6 (proposed Section 840.112(a)(3)). He indicated that, with compliance at such a point, “corrective action would be complete, and no groundwater quality standards would apply within Zones A and B . . . regardless of future occurrences or sources of contamination.” Cobb Test. at 3-4. The Agency considered the Board’s existing regulations for a groundwater management zone (GMZ) as a suitable approach for the Hutsonville site. *Id.* at 4, citing 35 Ill. Adm. Code 620. Off-site, the Agency favored greater consistency with the Board’s

groundwater quality standards including nondegradation, “unless an off-site GMZ can be established. . . .” Cobb Test. at 4, citing 35 Ill. Adm. Code 620. Mr. Cobb viewed off-site compliance as “complicated,” as the lower migration zone in the proposed Zone B has experienced contaminations at concentrations below numerical Class I groundwater quality standards but above Class I nondegradation standards. Cobb Test. at 4, citing 35 Ill. Adm. Code 620.401, 620.410, 620.Subpart C. He also noted that “the lower migration zone is a source of water for irrigation of crops while boron, one of the indicator contaminants, is known to be phyto-toxic at 2 milligrams per liter.” Cobb Test. at 4. Consequently, in its Section 840.116, the Agency proposed “[g]roundwater quality standards for both on-site and off-site contamination that more consistently reflect the existing Board standards.” *Id.* The Agency also proposed replacing Ameren’s proposed Zones A and B with “the downgradient boundaries of the Hutsonville site as the compliance point for both on-site and off-site contamination.” *Id.*

Specifically, in subsection (a), the Agency proposed, “because of the existing contamination, that the groundwater quality standards that apply on-site during closure and post-closure activities should be the existing concentrations as determined by groundwater monitoring for the contaminants that exceed the applicable Class I numeric groundwater quality standards.” Cobb Test. at 5, citing 35 Ill. Adm. Code 620.420; *see* Agency Prop. at 10. The Agency recommended relying upon such existing concentrations, as confirmed through groundwater monitoring, “to prevent causing or allowing any further degradation to occur. . . .” Cobb Test. at 5, citing 415 ILCS 5/12(a) (2008). The Agency further proposed that, “[a]fter the completion of closure and post-closure, the on-site standard would be the monitored concentrations if the monitored concentrations are above the Class I numerical standards and if three conditions” are satisfied:

- 1) To the extent practicable, the exceedance has been minimized and beneficial use, as appropriate for the class of groundwater, has been returned;
- 2) Any threat to public health or the environment has been minimized; and
- 3) An institutional control prohibiting potable uses of groundwater is placed on the Hutsonville site in accordance with the Uniform Environmental Covenants Act (765 ILCS 122). Cobb Test. at 5, citing Agency Prop. at 10 (proposed Sections 840.116(a)(1) - (a)(3)).

Mr. Cobb’s pre-filed testimony argued that these three conditions are similar to those that must be met in order to close a GMZ where corrective action does not attain full compliance. Cobb Test. at 5, citing 35 Ill. Adm. Code 620.450(a)(4); *see* Tr. at 70, 75-76.

In subsection (b), the Agency proposed that the Class I numerical and nondegradation standards apply off-site at all times. Cobb Test. at 5, citing 35 Ill. Adm. Code 620.401, 620.410, 620.Subpart C; *see* Agency Prop. at 11, Tr. at 70. Mr. Cobb’s pre-filed testimony stated that the Agency “is not persuaded that the Hutsonville site should be treated as a special case for off-site groundwater contamination, especially considering this rule may become a template for the closure of a significant number of other ash impoundments.” Cobb Test. at 5. The Agency

proposal provided “that the numerical standards for returning to compliance under this rule would be applicable only in the upper migration zone (in which numerical standards already have been exceeded) while the nondegradation standard would apply only in the lower migration zone (in which the nondegradation standard already has been exceeded).” Cobb Test. at 5; *see* Agency Prop. at 11. The Agency stated that it has not applied the nondegradation standard in the upper migration zone off-site in order to be consistent with Board regulations addressing the applicability of preventive notification and response activities. Cobb Test. at 5-6, citing 35 Ill. Adm. Code 620.302(c). The Agency noted that Ameren’s modeling shows that its proposed closure plan should achieve off-site compliance within approximately 25 years. Cobb Test. at 6, citing TSD at 534 (Figure 17D).

Mr. Cobb’s pre-filed testimony stated that “[t]he issue of whether the upper and lower aquifers . . . should be considered to be one hydrologic unit is closely related to the Agency’s proposal of separate groundwater quality standards for the off-site upper and lower migration zones and its proposed application of the nondegradation standards in the lower migration zone.” Cobb Test. at 6; *see* Agency Prop. at 11. While noting that Ameren describes the upper and lower aquifers as separate units, the Agency cited the record to conclude that the two have hydraulic connection. Cobb Test. at 6-7, citing R. at 40, 51-52, 214. Based on this connection, the Agency claimed that “the uppermost aquifer must include the deep alluvial aquifer in relation to evaluating off-site impacts to the south and southeast of Ash Pond D.” Cobb Test. at 7. Mr. Cobb’s pre-filed testimony acknowledged, however, that “[t]his issue is not critical on-site.” *Id.*

The Agency noted Ameren’s indication that “it considers contaminant concentration in the lower part of the aquifer to be insignificant because the levels found did not exceed the numerical standards.” Cobb Test. at 8, citing R. at 18 (Hydrogeology and Groundwater Quality). The Agency suggested that contamination in the lower zone may be “attributable to the radial gradient produced by mounding in Ash Pond D and seasonal pumping in the off-site irrigation well, which appears to eventually change the direction of the groundwater flow to southeast.” Cobb Test. at 8, citing R. at 40. Also, noting that the “the irrigation well is screened in the lower zone of the aquifer,” the Agency suggested that there may be “less impact to the lower part of the aquifer than to the upper part because of the transient nature of the cone of depression, produced by the seasonal use of the off-site irrigation well.” Cobb Test. at 8.

Mr. Cobb’s pre-filed testimony stressed the Agency’s position that nondegradation requirements “apply to off-site groundwater downgradient of Ash Pond D in the lower cone of the unconsolidated aquifer.” Cobb Test. at 8, citing 415 ILCS 5/12(a), (d), 35 Ill. Adm. Code 620.401, 620.Subpart C. Specifically, he reviewed various authorities to argue that these provisions prohibit “causing, threatening or allowing contamination of potable resource groundwater above what is not removed by ordinary treatment processes in a private drinking water system well.” Cobb Test. at 9-11, citing Cent. Illinois Pub. Serv. Co. v. PCB, 116 Ill.2d 397, 409-10; Water Quality Standard for Intrastate Waters (SWB-14), R71-20; Water Quality Standards Revisions, R71-14. Mr. Cobb elaborated that “contaminants in off-site groundwater must not cause, threaten or allow contamination above existing concentrations,” which “would constitute continuing degradation off-site.” Cobb Test. at 12. He expressed the Agency’s belief, however, that decreasing contaminant concentrations in the upper zone “will at least not

increase the concentration in the lower zone of the aquifer and probably will decrease it as shown in Ameren's modeling." *Id.*, citing R. at 534.

In subsection (b), the Agency also proposed an alternative to strict compliance with numerical and antidegradation standards: establishing an off-site GMZ with written permission from the affected property owner(s). Cobb Test. at 6, citing 35 Ill. Adm. Code 620.250; *see* Agency Prop. at 11. Mr. Cobb's pre-filed testimony argued that this alternative "offers more flexibility because groundwater quality standards for the GMZ are as set forth in Section 620.450(a) for a variety of circumstances including the inability to achieve the numerical standards using the approved corrective action methods -- in this case, the final cover system, groundwater collection trench and groundwater discharge system." Cobb Test. at 6. Mr. Cobb's pre-filed testimony also stated that "the Agency has always required the written permission of affected property owners for the establishment of off-site GMZs, so the details of the GMZ off-site alternative would have to be worked out at a later time." *Id.*; *but see* 35 Ill. Adm. Code 620.250.

In their joint statement, Ameren and the Agency concurred that, "[w]ith respect to on-site conditions, the applicable groundwater quality standards shall be the numerical value established through the monitoring program and related requirements." Joint Statement at 5; *see* Joint Prop. at 11. In the proposed Section 840.116(a), the joint proposal sought to clarify this language by adding the term "on-site" and describing groundwater standards as "numeric." Joint Prop. at 11.

The joint proposal also modified subsection (a)(3) addressing institutional controls "to acknowledge that instruments other than the uniform environmental covenant may be available by the time the corrective action is completed." Joint Statement at 6. In the event that on-site contamination levels continue to exceed Class I numeric standards, the revised subsection allows an institutional control placed on the site through "an alternative instrument authorized for environmental uses under Illinois law and approved by the Agency." Joint Prop. at 11. In addition, the joint statement noted that "Ameren has on-site wells drawing both potable and process water from the lower zone of the underlying aquifer." Joint Statement at 6. The joint proposal further amended subsection (a)(3) by providing that "[e]xisting potable uses of groundwater may be preserved as long as such uses remain fit for human consumption in accordance with accepted water supply principles." Joint Prop. at 11, citing 415 ILCS 5/3.340 (defining "potable"). The joint statement indicated that "[i]nstitutional controls are not required for non-potable wells." Joint Statement at 6.

In their joint statement, Ameren and the Agency concurred that, "for the Ash Pond D site-specific rule and with respect to off-site groundwater quality, numeric Class I Groundwater Quality Standards will apply within the upper zone of the underlying aquifer and non-degradation standards will apply within the lower zone of the underlying aquifer." Joint Statement at 5. The joint statement also referred to the alternative of establishing an off-site GMZ. *Id.*, citing 35 Ill. Adm. Code 620.450(a)(4). The joint proposal amended subsection (b) "to clarify that Ameren may propose and the Agency may approve a groundwater management zone not only in the closure and post-closure care plans, but also in subsequent modification of those plans." Joint Statement at 6; *see* Joint Prop. at 12.

In its first-notice opinion, the Board did not substantively amend this section of the joint proposal (*see* Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 82-85, 120-21 (Oct. 7, 2010), and no first-notice comment sought revision (*see* PC 8, PC 9). Accordingly, the Board adopts this language without substantive amendment.

Section 840.118: Demonstration of Compliance

In its original proposal, Ameren recognized that operating Ash Pond D had affected groundwater and relied upon “a trend analysis to ensure that the closure strategy is effectively reducing the level of constituents over time.” SR at 28. First, Ameren’s proposed subsection (a) provided in its entirety that “[t]he owner or operator of Ash Pond D must establish and identify in the closure plan and post-closure care plan no fewer than three downgradient monitoring wells located within Zone B for determining groundwater quality.” Orig. Prop. at 7-8; *see* SR at 28. Ameren stated that, “[b]y identifying these wells in the closure and post closure care plans, the plans can be updated when necessary to account for new or replacement wells that will be used for monitoring and evaluating groundwater quality.” SR at 29.

Ameren’s proposed subsection (b) required that, for each of the downgradient monitoring wells situated in Zone B, the owner or operator of Ash Pond D must perform an annual trend analysis “for all constituents monitored in accordance with Section 840.112(a) . . . and for all constituents monitored in accordance with Section 840.112(b) that are above Class 1 groundwater quality standards. . . .” Orig. Prop. at 8; *see* SR at 29. If the results of this analysis reveal an increasing trend, subsection (b) also required further analysis “to determine whether the increasing trend is statistically significant.” Orig. Prop. at 8.

Ameren’s proposed subsection (c) provided that, if that further analysis reveals a statistically significant increasing trend, then the owner or operator of Ash Pond D must conduct an investigation to determine its cause. SR at 29; *see* Orig. Prop. at 8. Subsection (c) further provided that, “[i]f the statistically significant increasing trend occurs during post-closure care, such investigation must include more frequent inspection of the surface of the cover system and evaluation of the effectiveness of the groundwater collection trench. . . .” Orig. Prop. at 8.

Ameren’s proposed subsection (c)(1) provided that, if the investigation of the statistically significant increasing trend attributes it to a cause other than Ash Pond D, then “the owner or operator of Ash Pond D must notify the Agency in writing, stating the cause of the increasing trend and providing the rationale used in such a determination.” Orig. Prop. at 8; *see* SR at 29. Proposed subsection (c)(2) provided that, “[i]f the investigation determines that the increasing trend is a result of Ash Pond D and monitoring frequency has been reduced” to semi-annual or annual sampling, then the owner or operator must return to quarterly sampling. SR at 29; *see* Orig. Prop. at 8. The subsection further provided that, “[a]fter four consecutive quarterly samples show no statistically significant increasing trend, sampling frequency may return to either semi-annual or annual,” whichever was conducted before returning to quarterly sampling. SR at 29; *see* Orig. Prop. at 8.

Ameren's proposed subsection (d) provided that, "[i]f a statistically significant increasing trend attributable to Ash Pond D continues over a period of two or more consecutive years, the owner or operator must perform additional investigations to determine the extent of the impact and the effectiveness of the closure activities." SR at 29; *see* Orig. Prop. at 8-9. Ameren indicated that such an "investigation may include more frequent inspections of the surface of the cover system, more frequent sampling of the monitoring wells, installation of additional wells, or one-time sampling of groundwater at other points." SR at 29; *see* Orig. Prop. at 9. Proposed subsection (e) provided that, based on the results of these additional investigations, "the owner or operator of Ash Pond D must take action to mitigate exceedances occurring at the outer edge of Zone B." Orig. Prop. at 9; *see* SR at 29.

Finally, Ameren's proposed subsection (e) required the owner or operator of Ash Pond D to file an annual report with the Agency. Orig. Prop. at 9. Specifically, the report was required to include results of trend analysis, discussion of any statistically significant increasing trends within Zone B, and notice regarding any superseding cause. *Id.*

In his pre-filed testimony on behalf of the Agency, Mr. Cobb summarized Ameren's proposal for demonstrating compliance: "compliance will be achieved and groundwater monitoring discontinued when 'no statistically significant increasing trend that can be attributed to Pond D is detected in the concentration of any such constituent at the downgradient monitoring wells inside Zone B for three consecutive years after changing to an annual monitoring frequency' and 'all concentrations of constituents monitored in accordance with Section 840.112 are at or below Class 1 groundwater quality standards for a period of five years.'" Cobb Test. at 13; *see* Orig. Prop. at 7-8. Mr. Cobb indicated that an approach similar to a GMZ may be appropriate for the site "but that off-site compliance should be more consistent with the Board's groundwater quality standards at Part 620 including the nondegradation standard unless an off-site GMZ can be established. . . ." Cobb Test. at 4; *see* 35 Ill. Adm. Code 620. Characterizing compliance with off-site standards as complicated, the Agency proposed to establish compliance points for both on-site and off-site contaminations and "appropriate methods of demonstrating compliance with the proposed standards at the proposed compliance points." Cobb Test. at 4; *see id.* at 13.

Specifically, the Agency first proposed to amend Ameren's proposal by eliminating the designations of Zones A and B and providing that the "property boundary downgradient of Ash Pond D is the applicable vertical plane of compliance for both on-site and off-site groundwater quality standards." Cobb Test. at 14; *see* Agency Prop. at 11-12. Mr. Cobb's pre-filed testimony noted that, "[e]ven though there are two sets of off-site standards in one aquifer for the upper and lower migration zones, nested wells can be used to monitor simultaneously at the upper and lower levels." Cobb Test. at 14. Mr. Cobb opined that Ameren's proposed final cover and groundwater collection trench appear to be "the appropriate remedy to decrease off-site contamination in the upper part of the aquifer, and to also subsequently prevent increases in concentrations in the lower zone of the aquifer off-site." *Id.*

The Agency proposed in its subsection (a)(1) that on-site compliance "will be achieved when monitoring at the downgradient boundaries of the Hutsonville site after a change to annual monitoring frequency shows no statistically significant increasing trend for four consecutive

years.” Cobb Test. at 13; *see* Agency Prop. at 11-12. Based on its proposed monitoring frequencies, the Agency noted that Ameren could attain on-site compliance no sooner than fourteen years after beginning monitoring. Cobb Test. at 13; *see* Agency Prop. at 7-8 (monitoring frequency).

The Agency addressed off-site compliance in its proposed subsection (a)(2). The Agency stated that its proposal requires “a demonstration of off-site compliance by monitoring at the downgradient boundaries of the Hutsonville site for two conditions: 1) A statistically significant decreasing trend for four consecutive years after changing to an annual monitoring frequency, and 2) compliance with the upper and lower migration zone groundwater quality standards. . . .” Cobb Test. at 13-14; *see* Agency Prop. at 12; *see also id.* at 11 (off-site groundwater quality standards).

The Agency addressed demonstrating compliance in its proposed section (b). Subsection (b)(1) provided that on-site compliance “will be demonstrated using an annual trend analysis for each monitoring well at the downgradient boundaries of the Hutsonville site and each constituent that is above the Class 1 numerical standards of Section 620.410.” Cobb Test. at 14; *see* Agency Prop. at 12-13; *see also* 35 Ill. Adm. Code 620.410. Mr. Cobb stated that “[a] trend is established with a minimum of four consecutive samples, and the absence of an increasing trend after changing to annual monitoring will demonstrate compliance. . . .” Cobb Test. at 14. Subsection (b)(2) addressed off-site compliance by requiring a trend analysis and monitoring data demonstrating compliance with the proposed groundwater quality standards. Agency Prop. at 13; *see* Cobb Test. at 14. Mr. Cobb’s pre-filed testimony stressed that the Agency’s proposed Section 840.116(b) “would enable Ameren and the Agency to develop alternative groundwater quality standards, compliance points and demonstration requirements as provided in 35 Ill. Adm. Code 620 and to the extent appropriate at this site.” Cobb. Test. at 14-15; *see* Agency Prop. at 11 (allowing establishment of off-site GMZ).

The Agency modified Ameren’s proposed subsection (c) specifically to address compliance with nondegradation standards during periods of closure and post-closure care. Agency Prop. at 14-15. Mr. Cobb’s pre-filed testimony stated that this amended subsection relied on trend analyses. Cobb Test. at 15. He further testified that “[i]n effect, an increasing trend will indicate further degradation of the groundwater quality that will require additional investigation” and may require mitigating action. Cobb Test. at 15; *see* Agency Prop. at 14-15. Finally, the Agency also modified Ameren’s proposed subsection (d) to require that annual reports to the Agency must also address “actions taken to mitigate increasing trends.” *Id.* at 15; *see* Cobb. Test. at 15.

In their joint statement, Ameren and the Agency emphasized that “Ameren must demonstrate off-site compliance at the down-gradient property boundaries of the Hutsonville site with numeric Class 1 Groundwater Quality standards in the upper zone of the underlying aquifer and non-degradation standards in the lower zone of the underlying aquifer.” Joint Statement at 6; *see* Joint Prop. at 12 (proposed Section 840.116(b)). The joint proposal amended subsections (a)(2)(A)(i) and (a)(2)(A)(ii) to account for the separate groundwater quality standards “and the ability to demonstrate that there is either no increasing trend or a decreasing trend, as applicable.” Joint Statement at 7; *see* Joint Prop. at 13. Noting that operation of Ash Pond D has

affected groundwater quality in the lower zone at the downgradient property boundary, the joint statement indicated that Ameren will demonstrate compliance with the nondegradation standard when “there is no statistically significant increasing trend attributable to Ash Pond D and the actual concentrations are at or below the concentrations reflected in the sampling data provided in the TSD.” Joint Statement at 6-7 (citing monitoring well 14); *see* Joint Prop. at 13; *see also* Tr. at 71-74, 79-80, 84-85.

In addition, the joint proposal amended subsection (b) by removing redundant language and by simply referring to other sections “for the applicable groundwater quality standards, list of constituents to monitor, and monitoring frequency.” Joint Statement at 7; *see* Joint Prop. at 14-15. The joint proposal also amended subsection (c) to clarify “that the duty to investigate, notify the Agency, or take action to mitigate depends on the determination of a *statistically significant* increasing trend. . . .” Joint Statement at 7 (emphasis in original); *see* Joint Prop. at 15-16. Finally, the joint proposal struck the subsection (d) proposed by Ameren and amended by the Agency. Joint Prop. at 16-17; *see* Joint Statement at 7. The joint proposal incorporated those reporting requirements into the proposed Section 840.144. Joint Statement at 7; *see* Joint Prop. at 16-17, 26-28.

In its first-notice opinion, the Board did not substantively amend this section of the joint proposal (*see* Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 85-88, 121-24 (Oct. 7, 2010), and no first-notice comment sought revision (*see* PC 8, PC 9). Accordingly, the Board adopts this language without substantive amendment.

Section 840.120: Groundwater Collection Trench

In its original proposal, Ameren stated that it “has determined that it is appropriate to construct and operate a groundwater collection trench to address the impacts on groundwater emanating from Ash Pond D.” SR at 30. As originally proposed by Ameren, this section provided in its entirety that

[t]he owner or operator of Ash Pond D must design, install, and, consistent with wastewater discharge permit conditions, operate a groundwater collection trench along the south property boundary of the Hutsonville Power Station to prevent migration of groundwater impacted by Ash Pond D south of the property boundary. Upon completion of the post-closure care certification required by Section 840.140 of this Subpart, the owner or operator of Ash Pond D may discontinue operation of the groundwater collection trench. Orig. Prop. at 9.

Ameren elaborated that “[t]his trench will route groundwater collected to Ash Pond B, where it will be managed pursuant to Section 840.120 and discharged through the NPDES-permitted outfall from that pond.” SR at 30.

In his pre-filed testimony on behalf of the Agency, Mr. Buscher elaborated upon Ameren’s description of the proposed trench: “[t]he groundwater collection trench system is the engineered barrier which will be designed to prohibit contaminated groundwater from moving

off site and to capture contaminated groundwater which has already migrated offsite.” Buscher Test. at 4. He also described the manner in which the Agency proposed to amend Ameren’s original proposal. First, the Agency sought to add to this section language requiring that “[p]lans for the groundwater collection trench including, but not limited to, a plan for operation and maintenance, must be approved by the Agency in the closure plan.” Agency Prop. at 15; *see* Buscher Test. at 4. Second, the Agency sought to amend this section by providing that “[t]he groundwater collection trench must be constructed according to a construction quality assurance program that meets the requirements of Section 840.146 of this Part.” Agency Prop. at 15; *see* Buscher Test. at 4; *see also id.* at 25-28 (proposing new section 840.146 addressing construction quality assurance). Finally, the Agency also proposed that “Ameren may discontinue operation of the groundwater collection trench when the post-closure care certification . . . has been approved by the Agency.” Buscher Test. at 4; *see* Agency Prop. at 15; *see also id.* at 23-24 (addressing post-closure certification in Section 840.142).

In their joint statement, Ameren and the Agency proposed to amend this section by providing that the owner or operator of Ash Pond D may discontinue operation of the trench “[o]nce compliance with the groundwater quality standards as set forth in Section 840.116 has been achieved in accordance with Section 840.118(a).” Joint Prop. at 17. The joint proposal also sought to add to this section the following language:

[u]pon discontinuing operation of the groundwater collection trench, the owner or operator must perform four quarterly sampling of the groundwater system monitoring wells as identified in the post-closure care plan, or modification thereof, to ensure compliance with the applicable groundwater quality standards as set forth in Section 840.116. Results of the four quarterly sampling must be included in the post-closure report documentation. If compliance is not confirmed, operation of the groundwater collection trench and discharge must be resumed. *Id.*, *see* Joint Statement at 7-8.

In the course of the hearing, the Board noted that this section of the joint proposal addressed requirements for the groundwater collection trench in a single lengthy paragraph. *See* Tr. at 107-08. The Board asked whether the section would be more comprehensible if separated into subsections. *Id.* at 108. In its post-hearing comments, the Agency stated that it had consulted with Ameren about this question and that they had agreed to reorganize this section into subsections. PC 2 at 2-3 (proposing reorganization). In its post-hearing comments, Ameren proposed the same reorganization. PC 4 at 10-11. In its first-notice opinion and order, the Board concluded that this reorganization improved the comprehensibility of these provisions and incorporated the participants’ proposal. Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 90 (Oct. 7, 2010).

In its first-notice opinion, the Board did not substantively amend this section of the joint proposal (*see* Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 88-90, 125 (Oct. 7, 2010), and no first-notice comment sought revision (*see* PC 8, PC 9). Accordingly, the Board adopts this language without substantive amendment.

Section 840.122: Groundwater Discharge System

Ameren's original Section 840.120 provided in its entirety that

[g]roundwater collected in the groundwater collection trench must be directed to Ash Pond B at the Hutsonville Power Station consistent with wastewater discharge permit conditions. Groundwater collected must be routed through the outfall from Ash Pond B as authorized by the Hutsonville Power Station's NPDES permit in compliance with applicable water quality standards for the Wabash River. Orig. Prop. at 9; *see* SR at 30.

Ameren noted that routing the collected groundwater in this manner "may require Ameren to amend its current NPDES permit." SR at 30. Ameren further noted that "segments of the Wabash River are impaired for PCBs and mercury but not for any of the constituents Ameren expects to discharge as a result of the management of groundwater via the groundwater collection trench and Ash Pond B's permitted NPDES-permitted outfall." *Id.* (referring to Agency listing of impaired waters).

In his pre-filed testimony on behalf of the Agency, Mr. Buscher claimed that Ameren will have to modify its current NPDES permit in order to discharge water from the groundwater collection trench and implement its proposed rule. Buscher Test. at 4-5. He stated, however, that "issuance of a NPDES permit is completely independent of this rule and is governed by the statutory rules pertaining to the NPDES permit process." *Id.* at 5.

In his pre-filed testimony, Mr. Buscher suggested that Ameren's original language was too restrictive in directing water from the collection trench specifically through Ash Pond B. *See* Buscher Test. at 4. He further stated that, in order to provide Ameren with other options for its discharge point, its amended proposal "requires Ameren to obtain the required NPDES permits to discharge water from the collection trench to the Wabash River and does not specify how the discharge is to be routed to the river or otherwise managed." *Id.* at 5. Mr. Buscher claimed that, "[w]hile the Agency has no objections to Ameren's preference to discharge through Ash Pond B, Ameren may need to utilize an alternate discharge point if there are problems with permitting the discharge through Ash Pond B." *Id.* at 4-5. Accordingly, the Agency's revised Section 840.122 provided in its entirety that

[g]roundwater collected in the groundwater collection trench must be directed to an outfall for which the Hutsonville Power Station has NPDES authorization or to another option as approved by the Agency in the closure plan or post-closure care plan. Plans for the groundwater discharge system including, but not limited to, a plan for operation and maintenance, must be approved by the Agency in the closure plan. The groundwater collection trench must be constructed according to a construction quality assurance program that meets the requirements of Section 840.146 of this Part. Agency Prop. at 16.

The joint proposal incorporated the Agency's proposed language without significant change. *See* Joint Prop. at 17.

During the hearing, the Board noted that this section of the joint proposal addressed requirements for the groundwater discharge system in a single lengthy paragraph. *See* Tr. at 108. The Board asked whether the section would be more comprehensible if separated into subsections. *Id.* In its post-hearing comments, the Agency stated that it had consulted with Ameren about this question and that they had agreed to reorganize this section into three subsections. PC 2 at 2-4 (proposing specific reorganization). In its post-hearing comments, Ameren proposed the same reorganization. PC 4 at 10-11. Having reviewed this proposed reorganization, the Board concluded that it improved the comprehensibility of this section and incorporated it in its first-notice opinion and order. Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 91, 125 (Oct. 7, 2010).

In its response to the Board's January 7, 2010 order, the Agency argued that "[t]he joint proposal is protective as proposed because all the available options for management of contaminated groundwater are regulated by existing and well-settled law subject to Agency administration." Agency Info. at 2. However, the Agency proposed one clarifying amendment "to make even clearer that these decisions will not be left unaddressed but are merely being deferred to other appropriate procedures." *Id.* at 20. Specifically, the Agency suggests adding the underlined language below to this proposed section:

[g]roundwater collected in the groundwater collection trench must be directed to an outfall for which the Hutsonville Power Station has NPDES authorization or to another option as approved by the Agency in the closure plan or post-closure plan in accordance with applicable law, including, without limitation, permit requirements. Plans for the groundwater discharge system including, but not limited to, a plan for operation and maintenance, must be approved by the Agency in the closure plan. The groundwater discharge system must be constructed according to a construction quality assurance program that meets the requirements of Section 840.146 of this Subpart. *Id.*

The Agency stated that "Ameren's counsel has informed the Agency that Ameren does not object to the proposed amendment." *Id.* at 2, 20. The Board found that this amendment would clarify implementation of the proposed regulations and incorporated the amendment into its first-notice opinion and order with one modification. The Board replaced the phrase "without limitation" with the phrase "but not limited to" in order to provide greater clarity and be consistent with other Board regulations. Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 91-92, 125 (Oct. 7, 2010).

In its first-notice comment, the Agency agreed that this reorganization adopted by the Board "improves comprehensibility of the Section." PC 8 at 3. In addition, the Agency's comment supported the Board's incorporation of language clarifying "that discharge of groundwater from the collection trench, whether to the Wabash River or another option, would

be allowed only as approved by the Agency subject to applicable laws.” *Id.*; *see* Agency Info. at 20. No first-notice comment otherwise sought revision of this section (*see* PC 8, PC 9). Accordingly, the Board adopts this language without substantive amendment.

Section 840.124: Final Slope and Stabilization

In a subsequent section of its original proposal, Ameren required installation of a final cover over Ash Pond D. Orig. Prop. at 10-12 (proposing Section 840.124); *see* SR at 30-31. In this section, originally proposed as Section 840.122, Ameren required in subsections (a) and (b) “that all final slopes on that cover be designed and constructed to that they minimize erosion, support vegetation, and drain runoff.” SR at 30; *see* Orig. Prop. at 10-11. In subsection (c), Ameren proposed that “Ash Pond D must meet the stability criteria of 35 Ill. Adm. Code 811.304” before installation of the final cover. Orig. Prop. at 11; SR at 30-31; *see* 35 Ill. Adm. Code 811.304 (Foundation and Mass Stability Analysis).

Proposed subsection (c) also originally provided that the owner or operator may use coal combustion waste (CCW) generated at the Hutsonville Power Station to establish the final grade and slope. SR at 31; *see* Orig. Prop. at 10. Ameren’s original proposal elaborated that “[a]ny coal combustion waste used to establish the final grade and slope is considered coal combustion byproduct, and its use does not require any independent approval pursuant to 415 ILCS 5/3.135.” Orig. Prop. at 10 (proposed Section 840.122); *see* SR at 31; *see also* 415 ILCS 5/3.135 (2008) (defining “coal combustion by-product” and providing for beneficial use determinations).

In his pre-filed testimony on behalf of the Agency, Mr. Liebman stated that “Section 840.124 describes how the final slopes of the coal combustion wastes should be contoured before final cover is applied to them and allows additional coal combustion waste, generated at the Hutsonville Power Station, to be used to help create the desired contours.” Liebman Test. at 2. The Agency’s proposal removed from subsection (c) language addressing the use of coal combustion waste in establishing the final grade and slope. Agency Prop. at 16; *see* Liebman Test. at 2. The Agency proposed to address that issue in a new subsection (d), which placed restrictions on use of that waste:

- 1) The earthen berms surrounding Pond D must be regraded to eliminate any freeboard between the top of the berm and the adjacent surface of the coal combustion waste;
- 2) Additional coal combustion waste only may be placed directly on top of coal combustion waste that is already in place;
- 3) The maximum final slope must be no greater than three (3) percent;
- 4) Any additional coal combustion waste used to establish the final grade and slope is considered coal combustion by-product, and its use does not require any independent approval pursuant to Section 3.135 of the Act (415 ILCS 5/3.135). Agency Prop at 16-17; *see* Liebman Test. at 2.

Mr. Liebman's pre-filed testimony stated that "[t]he coal combustion waste in Pond D has contaminated the groundwater and restricting the placement of additional coal combustion waste in Pond D will help limit the potential for further groundwater contamination." Liebman Test. at 2. During the hearing, Mr. Liebman testified that, in developing and reviewing these proposed regulations, the Agency had only considered the beneficial re-use of CCW at this site in "the final grading and sloping of the ash impoundment before the cap is placed on top." Tr. at 103.

In its question pre-filed for the hearing, PRN noted that Act provides that coal combustion by-product (CCB) "shall not exceed Class 1 Groundwater Standards for metals when tested utilizing test method ASTM D3987-85. The sample or samples tested shall be representative of the CCB being considered for use." PRN Questions at 2-3 (Question 12), *see* 415 ILCS 5/3.135(a-5)(B) (2008) (defining CCB). PRN first asked why the proposed Section 840.124 does not refer to this requirement. PRN Questions at 3. PRN also asked why the proposed use of additional CCB would not require independent approval. *Id.*, citing Agency Prop. at 16-17 (proposed Section 840.124(d)). The Agency responded to the two questions by claiming that the Act allows CCB

to be used beneficially without meeting the metals standards established in Section 3.135(a-5)(B), if the applicant demonstrates to the Agency that three criteria will be met: 1) The use of the CCW will not cause, threaten or allow the discharge of any contaminant into the environment; 2) the use will otherwise protect human health and safety and the environment; and 3) the use constitutes a legitimate use of the CCW as a raw material that is an effective substitute for an analogous raw material." Agency Resp. at 1-2, citing 415 ILCS 5/3.135(b) (2008).

Answering a question at hearing, Mr. Liebman elaborated upon the Agency's response by explaining how an applicant meets the statutory criteria. He stated that the first of these criteria "will substantially be met by a combination of the final cover system and the groundwater trench." Tr. at 102. He suggested that the Agency continue examining this criterion when it reviews and approves any closure and post-closure care plans submitted by Ameren. *Id.* at 102-03. Addressing the second criterion, Mr. Liebman testified that "we think through the development of these proposed regulations and then Ameren's drafting the closure and post-closure care plan, our review of it and approval and their implementation of it will satisfy this criteria." *Id.* at 103. Regarding the third criterion, he stated that CCW is a legitimate and effective substitute for such raw material as clean soil or granular material such as sand or gravel. *Id.*

The Agency stated that it concurs with Ameren's general approach of making a beneficial use determination on a site-specific basis in this rulemaking. *See* Agency Resp. at 2; citing Orig. Prop. at 10 (proposed Section 840.122(c)), Agency Prop. at 16-17 (proposed Section 840.124(d)(4)). The Agency claimed that CCW is "an effective substitute for other fill material" in creating the slope for the final cover system. Agency Resp. at 2. First, the Agency argued that the slope is subject to stability criteria in the Board's regulations. *Id.*, citing 35 Ill. Adm. Code 811.304 (Foundation and Mass Stability Analysis). Second, the Agency argued that

[t]he use will not result in discharge of contaminants to the environment and will otherwise protect human health and safety because the material will be used in an engineered application in which it will be placed above the water table and beneath the final cover system consisting of a geosynthetic membrane and at least three feet of soil material.” Agency Resp. at 2.

The Agency claimed that “[t]his exceeds the standard for CCB used as structural fill.” *Id.*, citing 415 ILCS 5/3.135(a)(8) (2008). The Agency also argued that “[o]nce construction is complete, vegetation must be established to stabilize the soil layer.” Agency Resp. at 2. Finally, the Agency argued that the final cover system must follow inspection and maintenance requirements. *Id.*; see Agency Prop. at 21-22 (proposed Section 840.136). The Agency concluded that “the three statutory criteria will be satisfied” and that this approach substantially complies with the Act’s requirements. Agency Resp. at 2; see 415 ILCS 5/3.135(b) (2008).

In their joint proposal, Ameren and the Agency incorporated the Agency’s proposal but “set the maximum final grade and slope at five percent” instead of three percent. Joint Statement at 8; see Joint Prop. at 18. The joint statement indicated that “[a] five percent slope is consistent with prior Agency approvals with respect to the movement of ash for such purposes.” Joint Statement at 8. The joint statement elaborated that, “[i]f coal combustion waste is not used to establish the final grade and slope, then the slope only has to be designed to support vegetation, minimize erosion, drain runoff away from the cover and to prevent ponding.” *Id.*; see Joint Prop. at 18. It also emphasized that, “[u]nder all circumstances, Ameren will perform a stabilization analysis as part of its closure engineering and design activities.” Joint Statement at 8; see Joint Prop. at 18.

In its first-notice opinion, the Board noted that proposed Section 840.124(d)(2) provides in its entirety that “[a]dditional coal combustion waste only may be placed directly on top of coal combustion waste that is already in place.” Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 94, 125 (Oct. 7, 2010), citing Joint Prop. at 18. The Board also noted Mr. Liebman’s testimony on limiting the placement of CCW in order to limit the risk of further groundwater contamination. Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 94 (Oct. 7, 2010), citing Liebman Test. at 2. In light of this testimony, the Board stated that it understood subsection (d)(2) to limit the surface on which CCW may be placed and not to limit the material such as clean soil that may be used to establish the final grade and slope over Ash Pond D. Accordingly, the Board modified this language to provide that “[a]dditional coal combustion waste may be placed only directly on top of coal combustion waste that is already in place.” Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 94, 125 (Oct. 7, 2010).

In its first-notice comment, the Agency agreed “that the Board’s proposed revision clarifies that the intent of the provision is to limit the surface on which CCW may be placed and not to limit placement of clean soil or other clean material that might be used to establish the grade and slope.” PC 8 at 4. Ameren indicated that it “does not object to any of the Board’s

changes” made to the joint proposal for first notice (PC 9 at 4). Accordingly, the Board adopts this language without further amendment.

Section 840.126: Final Cover System

In its original proposal, Ameren sought to provide that “[t]he owner or operator of Ash Pond D must design and install a final cover system for Ash Pond D. The final cover system must consist of a low permeability layer and a final protective layer.” Orig. Prop. at 10.

Ameren first proposed standards for a low permeability layer. Orig. Prop. at 10. Ameren stated that it had “considered a variety of cap alternatives such as compacted clays and pozzolonic materials but selected the geosynthetic membrane as it readily complies with existing landfill performance criteria, is commercially available and technologically known to the Company, and represents an economically viable alternative.” SR at 31. Ameren further stated that “[s]uch a cover is consistent with those required by the Board’s Landfill Regulations and will adequately minimize infiltration.” *Id.* Specifically, Ameren’s proposed subsection (a) provided that the low permeability layer must consist of a geosynthetic membrane and be constructed according to these standards: “must have a minimum thickness of 40 mil (0.04 inches) and a hydraulic conductivity of 1×10^{-7} centimeters per second or less” and “must be placed over a prepared base free from sharp objects and other materials that may cause damage.” Orig. Prop. at 10.

Ameren’s proposed subsection (b) addressed standards for a final protective layer. Orig. Prop. at 10-11. Specifically, “[t]he final protective layer must cover all of the low permeability layer and be at least three feet thick or the thickness necessary to protect the low permeability layer from freezing and to minimize root penetration into the low permeability layer.” SR at 31; *see* Orig. Prop. at 10-11 (proposed subsections (b)(1) - (3)). Ameren’s proposed subsection (b)(4) requires that “[t]he final protective layer must be placed as soon as possible after placement of the geosynthetic membrane.” Orig. Prop. at 11; *see* SR at 31. In addition, its proposed subsection (b)(5) provides that “[t]he final protective layer must be covered with vegetation to minimize wind and water erosion.” Orig. Prop. at 11; *see* SR at 31.

In addition, Ameren’s proposed subsection (c) required that “[t]he final cover system must be constructed according to a construction quality assurance program” meeting various requirements. Orig. Prop. at 11. First, subsection (c)(1) provides that “[t]he operator must designate a construction quality assurance (“CQA”) officer.” *Id.* In subsection (c)(2), Ameren proposed that,

[a]t the end of each week of construction of the final cover system until construction is complete, a summary report must be either prepared by the CQA officer or under the supervision of the CQA officer. The report must include descriptions of the weather, locations where construction occurred during the previous week, material used, results of testing, inspection reports, and procedures used to perform the inspection. *Id.*

Ameren also proposed to require that the CQA officer certify these reports. *Id.* Specifically, Ameren’s proposed subsection (c)(3) provided that

[t]he CQA officer must exercise judgment to certify the following:

- A) That the bedding material contains no undesirable objects;
- B) That the closure plan has been followed;
- C) That the anchor trench and backfill are constructed to prevent damage to the geosynthetic membrane;
- D) That all tears, rips, punctures, and other damage are repaired; and
- E) That all geosynthetic membrane seams are properly constructed and tested in accordance with manufacturer’s specifications. *Id.* at 11-12.

In his pre-filed testimony on behalf of the Agency, Mr. Liebman noted that subsection (a)(1) of Ameren’s original proposal addressed specifications for the thickness and conductivity of the geosynthetic membrane forming the low permeability layer of the final cover system. Liebman Test. at 2; *see* Orig Prop. at 10. Mr. Liebman argued that,

[a]s proposed by Ameren, the hydraulic conductivity specification is essentially meaningless. Virtually all geosynthetic membranes have hydraulic conductivities several orders of magnitude lower than 1×10^{-7} centimeters/second and the amount of water that will pass through a geosynthetic membrane is determined, almost entirely, by the number of holes in it and its placement. Liebman Test. at 2.

The Agency proposed to modify subsection (a)(1) to make the “low permeability layer equivalent to that of a solid waste landfill subject to Part 811.” *Id.*; *see* 35 Ill. Adm. Code 811. Specifically, the Agency sought to require that “[t]he geosynthetic membrane must have a minimum thickness of 40 mil (0.04 inches) and, in terms of hydraulic flux, be equivalent or superior to a three (3) foot layer of soil with a hydraulic conductivity of 1×10^{-7} centimeters per second.” Agency Prop. at 17. At hearing, Mr. Liebman agreed that this 40 mil thickness is typical of and common for the minimum requirements for geosynthetic cover systems at landfills or surface impoundments. Tr. at 108.

Mr. Liebman’s pre-filed testimony also noted that Ameren’s original proposal “requires the final cover system to be constructed according to a construction quality assurance (CQA) program.” Liebman Test. at 2-3; *see* Orig. Prop. at 11-12. He added that “[t]he Agency is recommending the addition of an entire section (840.146), prescribing a more robust CQA program. . . .” Liebman Test. at 3; *see infra* at 47-48 (summarizing proposed Section 840.146). Accordingly, the Agency’s proposal deleted “mention of the CQA officer’s responsibilities

specific to the final cover system and simply references the CQA program required by 840.146.” Liebman Test. at 3; *see* Agency Prop. at 17-18.

In their joint proposal, Ameren and the Agency incorporated the Agency’s proposed language for this section without significantly amending it. *See* Joint Prop. at 18-20; Agency Prop. at 17-18.

In its first-notice opinion, the Board did not substantively amend this section of the joint proposal (*see* Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 94-96, 126-27 (Oct. 7, 2010), and no first-notice comment sought revision (*see* PC 8, PC 9). Accordingly, the Board adopts this language without substantive amendment.

Section 840.128: Closure Plan

In its original proposal, Ameren provided language regarding a plan to close Ash Pond D. Ameren’s proposed subsection (a) provided in its entirety that, “[w]ithin 180 days after the effective date of this rule, the owner or operator of Ash Pond D must prepare and submit to the Agency a closure plan.” Orig. Prop. at 12; *see* SR at 32. Proposed subsection (b) provided in its entirety that “[t]he owner or operator of Ash Pond D must maintain the closure plan onsite or at a location specified in the closure plan.” Orig. Prop. at 12; *see* SR at 32.

In his pre-filed testimony on behalf of the Agency, Mr. Liebman stated that the Agency proposed to amend this section only to clarify “that submission of the plan to the Agency is for the purpose of review and approval. . . .” Liebman Test. at 3; *see* Agency Prop. at 18.

In their joint proposal, Ameren and the Agency incorporated the Agency’s language without amendment. *See* Joint. Prop. at 20.

In its first-notice opinion, the Board did not substantively amend this section of the joint proposal (*see* Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 96-97, 127 (Oct. 7, 2010), and no first-notice comment sought revision (*see* PC 8, PC 9). Accordingly, the Board adopts this language without substantive amendment.

Section 840.130: Contents of Closure Plan

In its original proposal, Ameren specified the information required to be included in the closure plan. Subsection (a) required that the plan include a site map identifying “all pertinent features and buildings at the Hutsonville Power Station.” Orig. Prop. at 12; *see* SR at 32. Specifically, the map must identify the following:

- 1) All of the surface impoundments located at the site;
- 2) All existing and proposed groundwater collection trenches associated with the operation or closure of Ash Pond D;

- 3) All existing and proposed groundwater monitoring wells; and
- 4) Diagrams depicting Zone A and Zone B. Orig. Prop. at 12; *see* SR at 32.

Subsection (b) required that the closure plan include a description of Ash Pond D including all of the following information:

- 1) A description of the contents of Ash Pond D;
- 2) The estimated volume of material contained in Ash Pond D; and
- 3) An analysis of the structural integrity of Ash Pond D. Orig. Prop. at 12; *see* SR at 32.

Subsection (c) required that the closure plan include “a description of the closure activities planned and already performed.” SR at 32; *see* Orig. Prop. at 12-13. Subsection (d) required a description of the hydrogeologic site investigation addressed in Ameren’s proposed Section 840.108. Orig. Prop. at 13; *see supra* at 12-13 (summarizing proposed Section 840.110). Subsection (e) required a description of the groundwater trend analysis addressed in Ameren’s proposed Section 840.116. Orig. Prop. at 13; *see supra* at 23-26 (summarizing proposed Section 840.118). Subsection (f) required a description of the groundwater monitoring system addressed in Ameren’s proposed Section 840.110. Orig. Prop. at 13; *see supra* at 13-15 (summarizing proposed Section 840.112). Subsection (g) required a description of the groundwater monitoring program addressed in Ameren’s proposed Section 840.112. Orig. Prop. at 13; *see supra* at 15-19 (summarizing proposed Section 840.114). Subsection (h) required “identification of the monitoring wells where trend analysis is being performed, which would be one or more of the groundwater monitoring wells included under subsections (f) and (g).” SR at 32; *see* Orig. Prop. at 13. Subsection (i) required a description of the final cover system addressed in Ameren’s proposed Section 840.124. Orig. Prop. at 13; *see supra* at 33-35 (summarizing proposed Section 840.126). Finally, subsection (j) required “[e]stimates of the amount of time to complete closure, the cost of closure, and the cost of post-closure care.” Orig. Prop. at 13; *see* SR at 32.

In his pre-filed testimony on behalf of the Agency, Mr. Liebman noted that Ameren’s proposal in this section “describes the information and documents that must be contained in the closure plan for Pond D.” Liebman Test. at 3. On a subsection-by-subsection basis, he described the Agency’s proposed amendments to Ameren’s language. *See id.* at 3-4. He argued that these amendments “will result in a better, more detailed closure plan that covers all the steps integral to closing Pond D: creation of the final waste slopes, installation of the final cover system, establishment of a groundwater monitoring program, and implementation of groundwater corrective action, including construction of the necessary structures and installation of necessary devices.” *Id.* at 5.

First, the Agency proposed to add to the introductory language a requirement that the closure plan must “at a minimum” contain the listed information or documents. Agency Prop. at 19. The Agency proposed in subsection (a)(4) to delete the requirement that the site map must

depict Zone A and Zone B. Liebman Test. at 3; *see* Agency Prop. at 19. Mr. Liebman argued that this deletion is consistent with the Agency's proposal to eliminate those terms. Liebman Test. at 3; *see* Cobb Test. at 4, 14, Buscher Test. at 3; *see also supra* at 19-26 (summarizing proposed Sections 840.116 and 840.118). The Agency also proposed to amend subsection (d) so that the closure plan must include both the description and results of the required hydrogeologic site investigation. Agency Prop. at 19.

In subsection (f) addressing the required groundwater monitoring system, the Agency proposed to replace the term "description" with "plans, specifications, and drawings." Agency Prop. at 19; *see* Liebman Test. at 3. Mr. Liebman argued that this replacement clarifies "the type of information needed to accurately depict the groundwater monitoring program." Liebman Test. at 3. During the hearing, the Board observed "that the joint proposal overlooks the inclusion of the groundwater monitoring system maintenance plan required by Section 840.112(d)." PC 2 at 2; *see* Tr. at 106, Joint Prop. at 8 (proposed Section 840.112(d)). In its post-hearing comments, the Agency noted this observation and proposed to amend subsection (f) of the joint proposal to provide in its entirety that the closure plan must include "[p]lans, specifications and drawings for the groundwater monitoring system required by Section 840.112 of this Subpart, including, but not limited to, a description of the maintenance plan required by Section 840.112(d)." PC 2 at 2. After reviewing this proposed language, the Board concluded that it clarifies this provision and adopted the Agency's proposed revision in its first-notice opinion and order. Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 98, 127-28 (Oct. 7, 2010). In its first-notice comment, "[t]he Agency affirms its support for this revision." PC 8 at 3. Ameren indicates that it "does not object to any of the Board's changes" made to the joint proposal for first notice (PC 9 at 4).

In subsection (g) addressing the required groundwater monitoring program, the Agency proposed to add language providing that the description of the program must include, but not be limited to, "a description of the quality assurance program for sample collection, preservation and analysis." Agency Prop. at 19-20; *see* Liebman Test. at 4. Mr. Liebman argued that this addition is consistent with language originally proposed by Ameren and contained in Section 840.114(f) of the Agency's proposal. Liebman Test. at 4.

The Agency proposed to add a new subsection (i) providing in its entirety that the closure plan must include "[p]lans, specifications and drawings for the groundwater collection trench and discharge system set forth in Section 840.120 and 840.122." Agency Prop. at 20; *see* Liebman Test. at 4; *see also supra* at 26-30 (summarizing proposed Sections 840.120 and 840.122). The Agency also proposed to add a new subsection (j) providing in its entirety that the closure plan must include "[p]lans, specifications and drawings for the final slope design and construction and demonstration of compliance with the stability criteria required in Section 840.124." Agency Prop. at 20; *see* Liebman Test. at 4; *see also supra* at 30-33 (summarizing proposed Section 840.124). With the proposed addition of these two subsections, the Agency sought to re-designate Ameren's proposed subsection (i) as subsection (k). Agency Prop. at 20. In that re-designated subsection requiring the closure plan to address the final cover system, the Agency proposed to replace the term "description" with "plans, specifications, and drawings." *Id.*; *see* Liebman Test. at 4. Mr. Liebman argued that this replacement clarifies "the type of

information needed to accurately depict the groundwater monitoring program.” Liebman Test. at 4. The Agency also sought to re-designate Ameren’s proposed subsection (j) as subsection (l). Agency Prop. at 20. In that re-designated subsection requiring the closure plan to address the estimated amount of time to complete steps and the cost to do so, the Agency proposed to add the phrase “including an estimate of the time required for hydrostatic equilibrium of groundwater beneath Ash Pond D.” *Id.*; see Liebman Test. at 4.

The Agency also sought to add four additional new subsections. Proposed subsection (m) provided in its entirety that the closure plan must contain “[a] proposal for a groundwater management zone as set forth in Section 840.116(b) of this Part, if applicable, and including, but not limited to, plans, specifications and drawings for any structures or devices that must be constructed.” Agency Prop. at 20; see Liebman Test. at 4; see also *supra* at 19-23 (summarizing proposed Section 840.116). Proposed subsection (n) required a “[d]escription of the Construction Quality Assurance program required by Section 840.146 of this Part, including, but not limited to, the sampling programs required by Section 840.146(b)(7) of this Part.” Agency Prop. at 20; see Liebman Test. at 4; see also *infra* at 47-48 (summarizing proposed Section 840.146). Proposed subsection (o) required a “[d]escription of actions proposed to mitigate increasing trends in accordance with Section 840.118(c) of this Part, if applicable, including, but not limited to, plans, specifications, and drawings for any structures or devices that must be constructed.” Agency Prop. at 20; see Liebman Test. at 5; see also *supra* at 23-26 (summarizing Section 840.118). Finally, proposed subsection (p) required “[t]he signature and seal of the professional engineer supervising the preparation of the closure plan.” Agency Prop. at 20; see Liebman Test. at 5.

In their joint proposal, Ameren and the Agency incorporated the Agency’s language with one substantive amendment. Ameren and the Agency proposed to amend subsection (o) to provide that the closure plan must include a “[d]escription of actions proposed to mitigate statistically significant increasing trends. . . .” Joint Prop. at 22. The joint statement indicated that this revision intends “to ensure that the duty to mitigate depends on the determination of a *statistically significant* increasing trend as required by Section 840.118.” Joint Statement at 8 (emphasis in original).

Except as noted above in addressing subsection (f), the Board’s first-notice opinion did not substantively amend this section of the joint proposal (see Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 97-100, 127-28 (Oct. 7, 2010)), and no first-notice comment sought revision (see PC 8, PC 9). Accordingly, the Board adopts this language without substantive amendment.

Section 840.132: Modification of Existing Permits

In its original proposal, Ameren provided language regarding modification of its existing permits. Its proposed Section 840.130 provided in its entirety that “[t]he owner or operator of Ash Pond D must timely submit to the Agency an application to revise any state operating permit or NPDES permit issued by the Agency as required by Section 840.118 of this Subpart.” Orig. Prop. at 13; see *supra* at 28-30 (summarizing proposed Section 840.122 addressing groundwater discharge).

Ameren supported this provision by stating that “[t]he proposed rule requires that groundwater collected in the groundwater collection trench be routed to Ash Pond B for treatment and disposal.” SR at 33; *see* Orig. Prop. at 9 (proposed Section 840.120). Ameren stated that, in 2005, it filed an application to renew the NPDES for Ash Pond B. SR at 33. Ameren further stated that, “at the time that Ameren applied for renewal of the NPDES permit, it did not know that groundwater collected in the groundwater collection trench for Ash Pond D would be routed to Ash Pond B for treatment and disposal.” *Id.* Ameren committed to amend its application for the NPDES permit for Ash Pond B “within 180 days of the effective date of this rule.” *Id.*; *but see* Orig. Prop. at 13 (requiring “timely” submission).

In his pre-filed testimony on behalf of the Agency, Mr. Buscher noted that the Agency’s amended proposal requires Ameren to apply to revise any state operating permit or NPDES permit, as required by the Agency’s amended Sections 840.120 and 840.122. Buscher Test. at 5; Agency Prop. at 20-21; *see supra* at 26-30 (summarizing proposed Sections 840.120, 840.122). He added that the Agency proposed to require that “[t]his application must be submitted to the Agency within six (6) months of the effective date of this site-specific rule.” Buscher Test. at 5; Agency Prop. at 20; *see* Tr. at 97.

Mr. Buscher argued that “[i]t is important to understand the issuance of a NPDES permit is completely independent of this rule and is governed by the statutory rules pertaining to the permit process. The permit modification will require a public notice. A public hearing may be requested which could lengthen the time required to obtain a permit.” Buscher Test. at 5; *see* Tr. at 97, 99-100.

In their joint proposal, Ameren and the Agency revised this section to provide in its entirety that “[w]ithin 180 days of the effective date of this Subpart A, the owner or operator of Ash Pond D must timely submit to the Agency an application to revise any state operating permit or NPDES permit issued by the Agency as required by Section 840.120 and 840.122 of this Subpart, if necessary.” Joint Prop. at 22.

In its first-notice opinion, the Board did not substantively amend this section of the joint proposal (*see* Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 100, 128-29 (Oct. 7, 2010)), and no first-notice comment sought revision (*see* PC 8, PC 9). Accordingly, the Board adopts this language without substantive amendment.

Section 840.134: Completion of Closure, Closure Report, and Certification of Completion of Closure

In its original proposal, Ameren provided language addressing closure. Specifically, Ameren’s Section 840.132 provided in its entirety that,

[n]o later than 90 days after completion of all closure activities required by this Subpart, the owner or operator of Ash Pond D must prepare and submit to the Agency a closure report. The report must include certification by a professional

engineer that Ash Pond D has been closed in accordance with the closure plan required by Section 840.126 of this Subpart and include all CQA reports required by Section 840.124(c)(2). Orig. Prop. at 13; *see* SR at 33.

In his pre-filed testimony on behalf of the Agency, Mr. Liebman noted that Ameren's proposed Section 840.132 addressed closure requirements. *See* Liebman Test. at 5. The Agency recommended three significant revisions to Ameren's original proposal. *See id.* at 5-6; Agency Prop. at 21. First, the Agency added a subsection (a) requiring that "[t]he owner or operator must complete closure of Ash Pond D within eighteen months after the Agency's approval of the closure plan." Agency Prop. at 21; Liebman Test. at 5. Mr. Liebman argued that this 18-month deadline "should provide sufficient time for Ameren to complete closure." Liebman Test. at 5. He further argued that "[c]ompleting closure, with the installation of the final cover system and implementation of groundwater corrective action, will be beneficial to the environment and a deadline will help ensure that closure is completed in a timely manner." *Id.*

Second, in the original language re-designated as subsection (b), the Agency revised Ameren's original proposal to provide that Agency must approve the closure plan and closure report. Agency Prop. at 21; *see* Liebman Test. at 5. Third, the Agency also proposed a revision specifying "the type of documentation that must be provided with the closure report." Liebman Test. at 5. Specifically, that documentation must include, but is not limited to,

- 1) Engineering and hydrogeology reports including, but not limited to, monitoring well completion reports and boring logs, all CQA reports, certifications, and designations of CQA officers-in-absentia required by Section 840.146 of this Part;
- 2) Photographs;
- 3) A written summary of closure requirements and activities as set forth in the closure plan and this Subpart A;
- 4) Any other information relied upon by the professional engineer in making the closure certification; and
- 5) The signature and seal of the professional engineer supervising the implementation of the closure plan, the preparation of the closure report, and making the certification of completion of closure. Agency Prop. at 21; *see* Liebman Test. at 5-6.

Mr. Liebman argued that these revisions "will help ensure that the closure activities are expeditiously carried out, in accordance with the closure plan, and that this conformance is adequately documented." *Id.* at 6.

In their joint proposal, Ameren and the Agency proposed to insert a new subsection (a) providing in its entirety that "[t]he owner or operator must complete engineering and design activities for the closure of Ash Pond D within 180 days after the effective date of this rule."

Joint Prop. at 22-23; *see* Joint Statement at 8. The joint proposal then re-designated subsection (a) as subsection (b) and revised it to provide in its entirety that “[t]he owner or operator must complete closure of Ash Pond D within 18 months after the Agency’s approval of the closure plan, unless the Agency approves an alternative timeline.” Joint. Prop. at 23. The joint statement claimed that these revisions “allow flexibility in the timeline subject to Agency approval.” Joint Statement at 8. Finally, Ameren and the Agency also revised the re-designated subsection (c) to specify that the closure report include “[p]hotographs of the final cover system and groundwater collection trench and any other photographs relied upon to document construction activities.” Joint Prop. at 23.

In its first-notice opinion, the Board did not substantively amend this section of the joint proposal (*see* Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 101-02, 129 (Oct. 7, 2010)), and no first-notice comment sought revision (*see* PC 8, PC 9). Accordingly, the Board adopts this language without substantive amendment.

Section 840.136: Post-Closure Maintenance of Cover System

In its original proposal, Ameren required the owner or operator of Ash Pond D to perform maintenance of the cover system. SR at 33; *see* Orig. Prop. at 13-14. Subsection (a) provided in its entirety that, “[a]fter closure and until completion of the post-closure care report, the owner or operator of Ash Pond D must conduct annual inspections of the cover system.” Orig. Prop. at 14; *see* SR at 33. Subsection (b) provided in its entirety that “[t]he owner or operator of Ash Pond D must fill all rills, gullies, and crevices six inches or deeper identified during the inspection. Areas identified as particularly susceptible to erosion must be recontoured.” Orig. Prop. at 14; *see* SR at 33. Subsection (c) provided in its entirety that “[t]he owner or operator of Ash Pond D must repair all eroded and scoured drainage channels identified during inspections and replace lining material, if necessary.” Orig. Prop. at 14; *see* SR at 33. Subsection (d) provided in its entirety that “[t]he owner or operator of Ash Pond D must fill and recontour all holes and depressions created by settling so as to prevent standing water.” Orig. Prop. at 14; *see* SR at 33. Subsection (e) provided in its entirety that “[t]he owner or operator of Ash Pond D must revegetate all areas in excess of 10 square feet, cumulative, with failed or eroded vegetation that had previously been vegetated.” Orig. Prop. at 14; *see* SR at 33. Finally, subsection (f) provided in its entirety that “[t]he owner or operator of Ash Pond D must repair all tears, rips, punctures, and other damage to the geosynthetic membrane, if necessary.” Orig. Prop. at 14; *see* SR at 33.

In his pre-filed testimony on behalf of the Agency, Mr. Liebman proposed a number of revisions to Ameren’s original proposal. He claimed that these revisions “will result in better, more frequent final cover inspection and in a better maintained and more functional final cover system.” Liebman Test. at 7. First, he stated that the Agency revised the introductory sentence to specify “that the final cover system must be maintained, beginning immediately after its construction, and continuing until certification of completion of post-closure care is approved by the Agency.” *Id.* at 6; *see* Agency Prop. at 21. Second, the Agency modified subsection (a) to require that inspection of the final cover system occur “at the same time, and in the same frequency, that samples are collected for routine groundwater monitoring.” Liebman Test. at 6;

see Agency Prop. at 22. Third, the Agency deleted the phrase “identified during the inspection” from subsection (b) in order to indicate “a continuing obligation” to fill specified rills, gullies, and crevices. Liebman Test. at 6; *see* Agency Prop. at 22.

Fourth, the Agency deleted the phrase “identified during inspections” from subsection (c) in order to indicate “a continuing obligation” to repair scoured and eroded drainage channels. Liebman Test. at 6; *see* Agency Prop. at 22. Fifth, the Agency deleted the phrase “that had previously been vegetated” from subsection (e) in order “to maintain consistency with Section 840.126(b)(5).” Liebman Test. at 6; *see* Agency Prop. at 22; *see also id.* at 17 (Section 840.126(b)(5)). Sixth, the Agency deleted the phrase “if necessary” from subsection (f) to indicate that specified repairs to the geosynthetic membrane “generally will be necessary.” Liebman Test. at 6; *see* Agency Prop. at 22. Seventh, the Agency added a new subsection (g) providing in its entirety that “[t]he owner or operator must prevent the growth of woody species on the protective cover.” Agency Prop. at 22; *see* Liebman Test. at 6

In their joint proposal, Ameren and the Agency adopted the Agency’s revisions without substantial amendment. *See* Joint Prop. at 23-24.

In its first-notice opinion, the Board did not substantively amend this section of the joint proposal (*see* Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 102-03, 130 (Oct. 7, 2010), and no first-notice comment sought revision (*see* PC 8, PC 9). Accordingly, the Board adopts this language without substantive amendment.

Section 840.138: Post-Closure Care Plan

In its original proposal, Ameren provided language in Section 840.136 addressing a post-closure care plan. Orig. Prop. at 14. Subsection (a) provided in its entirety that “[t]he owner or operator of Ash Pond D must prepare and submit to the Agency a post-closure care plan.” *Id.*; *see* SR at 34. Subsection (b) provided in its entirety that “[t]he owner or operator of Ash Pond D must maintain the post-closure care plan onsite or at a location specified in the post-closure care plan.” Orig. Prop. at 14; *see* SR at 34.

In his pre-filed testimony on behalf of the Agency, Mr. Buscher stated that the Agency revised subsection (a) to require “Ameren to prepare and submit a post-closure care plan within 180 days after the effective date of this site-specific rule.” Buscher Test. at 5; *see* Agency Prop. at 22.

In their joint proposal, Ameren and the Agency further amended subsection (a) to provide in its entirety that “[w]ithin 180 days after the effective date of this Subpart A, the owner or operator of Ash Pond D must prepare and submit to the Agency a post-closure care plan for review and approval.” Joint Prop. at 24.

In its first-notice opinion, the Board did not substantively amend this section of the joint proposal (*see* Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 103, 130 (Oct. 7, 2010), and no first-

notice comment sought revision (*see* PC 8, PC 9). Accordingly, the Board adopts this language without substantive amendment.

Section 840.140: Contents of Post-Closure Care Plan

In its original proposal, Ameren listed the required contents of a post-closure care plan. Orig. Prop. at 14-15; *see* SR at 34. Subsection (a) provided that the plan must include a description of required post-closure care activities. Orig. Prop. at 14; *see* SR at 34; *see also supra* at 41-42 (summarizing proposed Section 840.136). Subsection (b) required that the plan include a description of the required groundwater monitoring system. Orig. Prop. at 15; *see* SR at 34; *see also supra* at 13-15 (summarizing proposed Section 840.112). Subsection (c) provided that the plan must include a description of the required groundwater monitoring program. Orig. Prop. at 15; *see* SR at 34; *see also supra* at 15-19 (summarizing Section 840.114). Subsection (d) required that the plan include an identification of the location of the required monitoring wells used for trend analyses. Orig. Prop. at 15; *see* SR at 34; *see also supra* at 23-26 (summarizing Section 840.118). Finally, subsection (e) provided that the plan must include a copy of the required certification of closure. Orig. Prop. at 15; *see* SR at 34; *see also supra* at 39-41 (summarizing Section 840.134).

In his pre-filed testimony on behalf of the Agency, Mr. Buscher stated that the Agency sought to add “more detail to Ameren’s post-closure care plan.” Buscher Test. at 5. First, the Agency revised the introduction to provide that the plan must, at a minimum, include the specified elements. Agency Prop. at 22. Second, the Agency proposed to amend subsection (b) to require that the plan include “a description of the maintenance plan for the groundwater monitoring system.” Agency Prop. at 23; *see* Buscher Test. at 5-6. Third, the Agency revised subsection (e) to require that the plan include a description of the plan for operation and maintenance of the groundwater collection trench and discharge system. Agency Prop. at 23; Buscher Test. at 6.

The Agency also proposed to add four new subsections. Subsection (f) provided that the post-closure care plan include a description of the required groundwater trend analysis. Agency Prop. at 23; Buscher Test. at 6; *see supra* at 23-26 (summarizing proposed Section 840.118). Subsection (g) required that the plan include, if applicable, a proposal for a GMZ. Agency Prop. at 23; Buscher Test. at 6; *see supra* at 19-23 (summarizing proposed Section 840.116(b)). Subsection (h) provided that the plan include, if applicable, a “[d]escription of action proposed to mitigate increasing trends . . . and the operation and maintenance of any structures or devices.” Agency Prop. at 23; Buscher Test. at 6; *see supra* at 23-26 (summarizing proposed Section 840.118(c)). Finally, subsection (i) required that the plan include “[t]he signature and seal of the professional engineer supervising the preparation of the post-closure care plan.” Agency Prop. at 23; *see* Buscher Test. at 6.

In their joint proposal, Ameren and the Agency revised the introduction to require that both the post-closure care plan and any modification to it must both include the specified elements. Joint Prop. at 24. Ameren and the Agency also proposed to amend subsection (h) to require that the plan include, if applicable, a description of actions proposed to mitigate statistically significant increasing trends and the operation and maintenance of any structures or

devices. *Id.* at 25. The joint proposal otherwise reflects the Agency’s revisions without substantive amendment. *See id.* at 24-25.

In its first-notice opinion, the Board did not substantively amend this section of the joint proposal (*see* Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 103-04, 130-31 (Oct. 7, 2010), and no first-notice comment sought revision (*see* PC 8, PC 9). Accordingly, the Board adopts this language without substantive amendment.

Section 840.142: Post-Closure Report and Certification of Completion of Post-Closure Care Plan

In its original proposal, Ameren addressed the completion of post-closure care in proposed Section 840.140, which provided in its entirety that

[t]he owner or operator of Ash Pond D must prepare and submit to the Agency a Post-Closure Report within 60 days after satisfying the requirements of Section 840.134 and 840.112(a) of this Subpart. The Post-Closure Report must include a certification by a professional engineer or professional geologist that the requirements of Section 840.134 and Section 840.112(a)(3) of this Subpart have been met. Orig. Prop. at 15; *see* SR at 34.

In his pre-filed testimony on behalf of the Agency, Mr. Buscher addressed the Agency’s revisions to Ameren’s language. First, the Agency added language requiring that “[p]ost-closure care must continue until a demonstration of compliance with the groundwater quality standards as set forth in Section 840.116 has been approved by the Agency.” Agency Prop. at 23; *see* Buscher Test. at 6; *supra* at 19-23 (summarizing proposed Section 840.116). Second, the Agency amended Ameren’s original proposal to require that the owner or operator must submit a post-closure report to the Agency “within 60 days after satisfying the requirements of the approved post-closure care plan and achieving the applicable groundwater quality standards as set forth in the plan and Sections 840.116 through 840.118 of this Part.” Agency Prop. at 23; *see* Buscher Test. at 6; *supra* at 19-26 (summarizing proposed Sections 840.116 and 840.118). Third, the Agency proposed to revise Ameren’s language regarding required certification of the post-closure report. *See* Agency Prop. at 23-24. Although this revision struck language allowing a professional geologist to certify the report, the Agency proposed language providing that “[a] professional geologist may supervise post-closure care activities as appropriate under the Professional Geologist Licensing Act (225 ILCS 745).” Agency Prop. at 24; *see* 225 ILCS 745/1 *et seq.* (2008).

The Agency also proposed language requiring that the post-closure report

“must contain supporting documentation including, but not limited to:

- a) Engineering and hydrogeology reports including, but not limited to, documentation of compliance with the groundwater quality standards of this Subpart A;

- b) Photographs;
- c) A written summary of post-closure care requirements and activities as set forth in the post-closure care plan and this Subpart A and their completion;
- d) Any other information relied upon by the professional engineer and professional geologist supervising the implementation of the post-closure care plan, and the signature and seal of the professional engineer supervising preparation of the post-closure report and making the certification of completion of the post-closure care plan. Agency Prop. at 24; *see* Buscher Test. at 6-7.

In their joint proposal, Ameren and the Agency proposed revisions to the Agency’s language. First, the joint proposal adds language providing that the post-closure report must be submitted to the Agency “for review and approval.” Joint Prop. at 25. Second, the joint proposal amended subsection (a) to require that engineering and hydrogeology reports include “results of the four quarterly sampling performed under Section 840.120 of this Subpart.” *Id.* at 26. Third, the joint proposal also revised subsection (b) to specify that the report include photographs “of the final cover system and groundwater collection trench and any other photographs relied upon to document construction activities.” *Id.*

In its first-notice opinion, the Board did not substantively amend this section of the joint proposal (*see* Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 104-06, 131-32 (Oct. 7, 2010), and no first-notice comment sought revision (*see* PC 8, PC 9). Accordingly, the Board adopts this language without substantive amendment.

Section 840.144: Recordkeeping and Reporting Requirements

In its original proposal, Ameren addressed recordkeeping in subsection (a) by requiring “[t]he owner or operator of Ash Pond D to file groundwater monitoring data electronically with the Agency no later than 30 days after the end of the sampling period. . . .” Orig. Prop. at 15; *see* SR at 34. In subsection (b), Ameren required the owner or operator to file “an annual report with the Agency no later than January 31 of each year during the closure and post-closure periods.” SR at 34-35; *see* Orig. Prop. at 15. Subsection (b) also required the filing of these annual reports “until the owner or operator of Ash Pond D has complied with the requirements of Section 840.140.” SR at 35; *see* Orig. Prop. at 15; *supra* at 43-44 (summarizing proposed Section 840.140).

In subsection (c), Ameren required that

[a]ll annual reports must contain the following information:

- 1) Trend analysis of all groundwater monitoring data generated by the groundwater monitoring program required by Section 840.112 of this Subpart during the preceding year;
- 2) The completed closure or post-closure activities performed during the preceding year; and
- 3) A summary of all modifications made to the closure plan or post-closure care plan during the preceding year and copies of the updated closure and post-closure plans reflecting any such modifications. Orig. Prop. at 16; *see* SR at 35.

Ameren's proposed subsection (d) provided in its entirety that "[t]he owner or operator of Ash Pond D must maintain on-site or at a location specified in the closure or post-closure care plan all monitoring data and trend analysis data for 10 years following generation of the data." Orig. Prop. at 16; *see* SR at 35. Proposed subsection (e) provided in its entirety that "[t]he owner or operator of Ash Pond D must maintain the closure plan until the end of the post-closure care period." Orig. Prop. at 16; *see* SR at 35. Ameren's proposed subsection (f) provided in its entirety that "[t]he owner or operator of Ash Pond D must maintain the post-closure care plan for 10 years following the certification of the Post Closure Report as required by Section 840.142." Orig. Prop. at 16; *see* SR at 35. Finally, proposed subsection (g) provided the Agency mailing address to which reports must be submitted and allows electronic submission "as authorized and directed by the Agency." Orig. Prop. at 16; *see* SR at 35.

In his pre-filed testimony on behalf of the Agency, Mr. Buscher proposed to combine Ameren's subsections (a) and (b) "because they appear to overlap." Buscher Test. at 7; *see* Agency Prop. at 24. He stated that

[t]he Agency's amended subsection (a) requires the owner or operator to file an annual report with the Agency no later than January 31 of each year during the closure of Ash Pond D and for the entire post-closure care period. It also requires the owner or operator to submit groundwater sampling and analysis data no later than 30 days after the sampling and analysis have been completed, consistent with Ameren's original proposal. Buscher Test. at 7; *see* Agency Prop. at 24.

In the subsection re-designated from (c)(1) to (b)(1), the Agency required "reporting increasing trends, actions taken to mitigate increasing trends, and required notices as referenced in the amended Section 840.118(d)" in the annual report. Buscher Test. at 7; *see* Agency Prop. at 24-25; *supra* at 23-26 (summarizing proposed Section 840.118). The Agency also proposed to strike "Ameren's original subsection (c)(3) requiring Ameren to provide annual summaries of all modifications to the closure and post-closure care plans . . . because the Agency's proposal provides review and approval authority to the Agency for such changes." Buscher Test. at 7; *see* Agency Prop. at 25. Finally, in the subsection re-designated from (g) to (f), the Agency provided "updated Agency contact information for reporting purposes." Buscher Test. at 7; *see* Agency Prop. at 25.

In their joint proposal, Ameren and the Agency proposed additional changes to Section 840.144. First, the joint proposal amends subsection (a) to include “decisions to remove constituents from the monitoring program” in the information that must be submitted to the Agency within 30 days after completing sampling and analysis. Joint Prop. at 26-27. The joint proposal also amended subsection (b)(1) by clarifying that the annual report must include trend analyses “required by Section 840.118(b).” *Id.* at 27. The joint proposal further amended subsection (b)(1) by striking the reference to “any additional data or information required by Section 840.118(d) of this Part” as information that the annual report must contain. *Id.* at 27.

The joint proposal also added two new subsections. Proposed new subsection (b)(2) required that the annual report include “[a] copy of any notice to the Agency pursuant to Section 840.118(c)(1)(A).” Joint Prop. at 27; *see* at 23-26 (summarizing Section 840.118). Proposed new subsection (b)(3) required that the annual report include “[a] discussion of any statistically significant increasing trends and actions taken to mitigate such trends in accordance with Section 840.118(c)(3).” Joint Prop. at 27; *see supra* at 23-26 (summarizing Section 840.118). Finally, the joint proposal amended subsection (f) to provide for submission of plans and modifications to the Agency in addition to submission of reports and notifications. Joint Prop. at 27.

In its first-notice opinion, the Board did not substantively amend this section of the joint proposal (*see Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152*, R09-21, slip op. at 106-07, 132-33 (Oct. 7, 2010), and no first-notice comment sought revision (*see* PC 8, PC 9). Accordingly, the Board adopts this language without substantive amendment.

Section 840.146: Construction Quality Assurance Program

In his pre-filed testimony, Mr. Liebman stated that the Agency recommended adding this section, “which expands on the construction quality assurance (CQA) program proposed by Ameren in its section concerning the final cover system.” Liebman Test. at 7; *see* Agency Prop. at 25-28; Orig. Prop. at 11-12 (CQA Program). Mr. Liebman further stated that this section “is modeled on 35 Ill. Adm. Code, Part 811, Subpart E, which outlines the minimum requirements for the CQA programs used in constructing solid waste landfills.” Liebman Test. at 7; *see* 35 Ill. Adm. Code 811.501 - 811.509. He argued that, “[j]ust as the quality of solid waste landfills benefits from being constructed under comprehensive CQA programs, the quality of the Pond D waste disposal unit will benefit from being constructed under the CQA program required by Section 840.146.” Liebman Test. at 7.

Mr. Liebman specified that the Agency’s proposed CQA program “addresses installation of the groundwater collection trench and discharge system, compaction of the subgrade and foundation for the final cover system and construction of the surface water control structures.” Liebman Test. at 7; *see* Agency Prop. at 25-26 (proposed subsection (a)). Proposed subsection (b) established various requirements that the CQA program must meet. Agency Prop. at 26-28. Proposed subsection (b)(1) required designation of an Illinois licensed professional engineer as CQA officer, and proposed subsections (b)(2) and (b)(3) required filing a weekly summary report certified by the CQA officer addressing specific matters. *Id.* at 26-27. Subsection (b)(4) and (b)(5) provided for the CQA officer’s supervision of inspections and various closure

activities. *Id.* at 27. Subsection (b)(6) addressed the possible absence of the CQA officer, and subsection (b)(7) provided for implementation of a sampling program as part of the CQA plan for construction activities. *Id.* at 27-28.

In their joint proposal, Ameren and the Agency adopted the Agency's language in Section 840.146 regarding a CQA program without amendment.

In its first-notice opinion, the Board noted that the joint proposal did not provide for the maintenance, reporting, or filing with the Agency of certified weekly summary reports required by subsection (b)(2). Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 108 (Oct. 7, 2010). As the Board's other waste disposal regulations generally address this issue (*see, e.g.*, 35 Ill. Adm. Code 809.501(g), 811.505(d)), the Board added to the end of the proposed subsection (b)(2) the following requirement: "[t]he owner or operator of the Hutsonville Power Station shall retain all weekly summary reports certified by the CQA officer until the completion of the post-closure care period and must make those reports available at reasonable times for inspection and photocopying by the Agency." The Board invited comment from the participants on the addition of this language.

In its first-notice comment, the Agency noted that the Board had added to subsection (b)(2) the language in the preceding paragraph. PC 8 at 4. The Agency commented that it "notes that retention and inspection language should have been included with the original proposal and agrees with the Board's correction of this oversight." *Id.* Ameren's first-notice comment stated that it "does not object to any of the Board's changes." PC 9 at 4. Accordingly, the Board adopts this language without further amendment.

Section 840.148: Review, Approval and Modification of Closure Plan and Post-Closure Care Plan

In his pre-filed testimony on behalf of the Agency, Mr. Buscher noted that Ameren's original proposal did not include a provision for prior Agency review, approval, and modification of the closure and post-closure plans and various other documents and reports. Buscher Test. at 7. He argued that, without ability to review and approve such information, the Agency's only authority "would be to rely on enforcement for any violations after they occur." *Id.* at 8. He also expressed the "concern that Ameren's proposal might not be sufficiently prescriptive in some circumstances to support effective enforcement." *Id.*

The Agency thus proposed this new section "to provide for the review, approval and modification of closure and post-closure care plans." Buscher Test. at 7. Mr. Buscher's testimony argued that "the better approach in the case of the closure of a coal ash impoundment with off-site groundwater contamination is for the Agency to be involved in an administrative oversight capacity during the design, construction and implementation of closure and post-closure care activities that are likely to continue over several years." *Id.* at 8. He further argued that this authority "is consistent with the Agency's obligation to assure compliance with the Act and rules adopted thereunder." *Id.*

Specifically, the Agency’s proposed subsection (a) required “the closure plan, post-closure care plan and any modification to these plans to be prepared and submitted to the Agency for review and approval.” Buscher Test. at 8; Agency Prop. at 28. Subsection (a) further provided that “[t]he Agency will have 90 days from the receipt of a plan or proposed modification to conduct a review and make a final determination to approve or disapprove a plan or modification or to approve a plan or modification with conditions.” Agency Prop. at 28; *see* Buscher Test. at 8. Subsection (a) also included a provision under which an owner or operator may waive the Agency’s 90-day decision deadline. Agency Prop. at 28; Buscher Test. at 8.

Proposed subsection (b) provided in its entirety that

[a] proposed modification to a closure plan or post-closure care plan must include the reason for the modification, all the information and supporting documentation that will be changed from or will supplement the information provided in the original or most recently approved plan, and the signature and seal of the professional engineer supervising the preparation of the proposed modification. Agency Prop. at 28-29; *see* Buscher Test. at 8.

Proposed subsections (c) and (d) proposed “standards for review of a closure plan, post-closure plan or a modification of either plan.” Buscher Test. at 8; *see* Agency Prop. at 28-29. Under proposed subsection (e), “[t]he Agency must notify the owner or operator in writing of its final determination on the plan or proposed modification once the plan has been reviewed.” Buscher Test. at 9; *see* Agency Prop. at 30. The subsection also provided that,

[i]f the Agency disapproves a plan or modification or approves a plan or modification with conditions, the written notification must contain the following information, as applicable:

- 1) An explanation of the specific type of information or documentation, if any, that the Agency deems the owner or operator did not provide;
- 2) A list of the provisions of the Act, this Subpart A, or other applicable regulations that may be violated if the plan or modification is approved as submitted;
- 3) A statement of the specific reasons why the Act, this Subpart A, or other applicable regulations may be violated if the plan or modification is approved as submitted; and
- 4) A statement of the reasons for conditions if conditions are required. Agency Prop. at 20; *see* Buscher Test. at 9.

Finally, proposed subsection (f) allowed the owner or operator to file an appeal with the Board under Section 40 of the Act “[i]f the Agency disapproves a plan or modification, approves a plan

or modification with conditions, or fails to issue a final determination within the applicable review period.” Agency Prop. at 30; *see* 415 ILCS 5/40 (2008).

In their joint proposal, Ameren and the Agency revised this section with the intent “to facilitate timely closure by allowing the owner or operator to appeal to the Board in the event the Agency fails to issue a final determination within the applicable review period.” Joint Statement at 8. Specifically, revised subsection (f) provided in pertinent part that “[a]ppeals to the Board are subject to review under Section 40 of the Act.” Joint Prop. at 33; *see* 415 ILCS 5/40 (2008). Ameren and the Agency argued that “[t]his approach is consistent with provisions for review of plans and reports in the Underground Storage Tank Rules and the Site Remediation Program.” *Id.* at 8-9, citing 35 Ill. Adm. Code 732.306(a)(4)(B), 732.503(f), 734.450(a)(4)(B), 734.505(f), 740.505(h); *see* Joint Prop. at 33. In all other respects, the joint proposal adopted the Agency’s Section 840.148 without substantive amendment.

In its first-notice opinion, the Board did not substantively amend this section of the joint proposal (*see* Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 108-10, 135-38 (Oct. 7, 2010)), and no first-notice comment sought revision (*see* PC 8, PC 9). Accordingly, the Board adopts this language without substantive amendment.

Section 840.150: Review and Approval of Closure Report and Certification of Completion of Closure, Post-Closure Report and Certification of Completion of Post-Closure Care Plan

In his pre-filed testimony on behalf of the Agency, Mr. Buscher stated that this proposed section, like proposed Section 840.148, is based on “the Agency’s belief that administrative oversight is appropriate for this site as it proceeds through the closure process.” Buscher Test. at 9. Accordingly, proposed subsection (a) required “a closure report and post-closure report prepared and submitted to the Agency . . . to be reviewed and approved by the Agency prior to the completion of closure or post-closure care.” *Id.*; *see* Agency Prop. at 31. Subsection (b) provided that “[s]ubmission and review requirements and deadlines, notification requirements, and rights of appeal shall be the same as those set forth in Section 840.148. . . .” Agency Prop. at 31; *see* Buscher Test. at 9-10. Subsection (c) and (d) established standards for review of closure and post-closure reports, and each subsection lists nine criteria. Agency Prop. at 31-33; *see* Buscher Test. at 10.

In their joint proposal, Ameren and the Agency revised subsection (b) to provide that “[s]ubmission, review, and approval procedures and deadlines, notification requirements, and rights of appeal shall be the same as those set forth in Section 840.148. . . .” Joint Prop. at 33. Otherwise, the joint proposal adopts the Agency’s language without substantive amendment.

In its first-notice opinion, the Board did not substantively amend this section of the joint proposal (*see* Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 110, 138-40 (Oct. 7, 2010)), and no first-notice comment sought revision (*see* PC 8, PC 9). Accordingly, the Board adopts this language without substantive amendment.

Section 840.152: Resource Conservation and Recovery Act

The Agency's proposal included a new Section 840.152, which provided in its entirety that

[n]othing in this Subpart A shall be construed to be less stringent than or inconsistent with the provisions of the federal Resource Conservation and Recovery Act of 1976 (P.L. 94-480), as amended, or regulations adopted thereunder. Any rules adopted in this Subpart A that are less stringent than or inconsistent with such federal laws applicable to Ash Pond D or state laws adopted to obtain federal delegation, authorization or approval of a state program, administered pursuant to such federal laws are void by operation of law. Agency Prop. at 33.

In his pre-filed testimony on behalf of the Agency, Mr. Nightingale stated that USEPA is reviewing the management of coal combustion waste (CCW) and is considering promulgation of comprehensive federal rules under Subtitle C or D of RCRA. Nightingale Test. at 2. He argued that this proposed section addresses the possibility of this promulgation. Specifically, he noted that "[t]he Board has adopted, and the Agency administers, waste management rules in our delegated program under Subtitle C and approved program under Subtitle D." *Id.* at 3. He acknowledged that "it is unclear at this point whether federal rules proposed and adopted for CCW will address closure of CCW impoundments, and, if so, whether those rules will be applicable to Ash Pond D once it begins closure pursuant to proposed Subpart A. . . ." *Id.* at 3. He stated that, in order "[t]o maintain these delegated and approved programs, statutes and rules adopted in Illinois are required to be at least as stringent as, and not inconsistent with, those adopted at the federal level." *Id.*

Mr. Nightingale argued that the Agency's proposed Section 840.152 guides interpretation of Subpart A "to maintain consistency with any RCRA requirements applicable to Ash Pond D." Nightingale Test. at 2; *see* Agency Prop. at 33. He further argued that, "[i]f consistency could not be accomplished through interpretation, or, if rules clearly were less stringent than RCRA requirements applicable to Ash Pond D, then those rules would be void by operation of law." Nightingale Test. at 2; *see* Agency Prop. at 33. He claimed that "[t]his would apply for any state laws adopted to obtain or maintain federal delegation, authorization or approval of a state program based on RCRA or implementing regulations." Nightingale Test. at 2.

Mr. Nightingale argued that the Agency's proposed language reflects current provisions of the Act intended "to create or maintain consistency with federal requirements under RCRA." Nightingale Test. at 3, citing 415 ILCS 5/3.485, 3.500, 22.4(a), (b), (d), 35(a), 39(d), 39.2(i) (2008). He claimed that the Act states "the legislature's intent that federal approval for such program be secured and maintained." Nightingale Test. at 3, citing 415 ILCS 5/20(a)(5) - (a)(8), (a)(11) - (a)(14) (2008). Noting the resources necessary to amend Subpart A in the event that a conflict with federal rules arises, the Agency urged the Board "to consider adoption of proposed Section 840.152." Nightingale Test. at 4.

In their joint statement, Ameren and the Agency stressed that the substance of any federal CCW regulations is not now known and that it is unclear whether those rules would apply retroactively. Joint Statement at 9. They argued that, while the proposed Section 840.152 may ultimately be unnecessary, its inclusion “would not be disruptive to the operation of the rules.” *Id.* Although they acknowledged that federal CCW regulations may require amending Subpart A, they claimed that the proposed Section 840.152 allows the Agency to argue “that it is unnecessary to amend potentially inconsistent rules prior to submitting an application to the USEPA for delegation, authorization or approval of state” CCW regulations. *Id.*

The joint proposal amended proposed Section 840.152 to provide in its entirety that

[n]othing in this Subpart A shall be construed to be less stringent than or inconsistent with the provisions of the federal Resource Conservation and Recovery Act of 1976 (P.L. 94-480), as amended, or regulations adopted thereunder. To the extent that any rules adopted in this Subpart A are less stringent than or inconsistent with any such laws applicable to the closure of Ash Pond D, such law will prevail. Joint Prop. at 35-36.

In their joint statement, Ameren and the Agency stated that this revision clarifies “that RCRA does not govern the closure of Ash Pond D, but that in the event future federal regulations are deemed to govern the closure of Ash Pond D, and such future requirements are more stringent than, or inconsistent with, the proposed rule, RCRA would govern.” Joint Statement at 9. They characterized the revised section as “a ‘conflict of laws’ provision providing guidance to the Board or the courts in the event an action concerning Ash Pond D comes before them in which a potential conflict with federal law is at issue.” *Id.*

In a question pre-filed for hearing and directed to Mr. Nightingale, PRN asked, “[i]f USEPA redetermines coal combustion waste to be ‘hazardous’ in nature per RCRA, would subchapter c, Part 724 regulations governing standards for hazardous waste treatment, storage and disposal facilities be sufficient to govern the closure of Ameren’s Hutsonville Pond D?” PRN Questions at 3 (¶15). The Agency responded that it has no knowledge that USEPA is considering such a redetermination and argued that the action “suggested by the question is beyond the scope of this proceeding.” Agency Resp. at 4. The Agency stated that it expects USEPA to publish its proposal in the *Federal Register*, at which time it “will very likely perform an evaluation of the proposal” and offer comment upon it. *Id.*

In its response to PRN’s question, Ameren noted that “this question appears to be directed to the Agency.” Ameren Resp. at 8. Ameren nonetheless responded that, “[u]ntil USEPA proposes and enacts rules governing coal combustion waste, we do not know how such material will be characterized or whether such characterization and rules will be applicable to ash ponds similar to Ash Pond D.” *Id.* Stating that adoption of such rules could take years, Ameren expresses the belief “that final closure of impoundments when they are no longer permitted as water treatment devices is both prudent and environmentally responsible.” *Id.*

In its March 9, 2010 response to the Board’s January 7, 2010 order, the Agency stated that this proposed section includes a typographical error. Agency Info. at 23. The Agency

indicated that “[t]he public law referenced for the Resource Conservation and Recovery Act of 1976 should be P.L. 94-580 instead of 94-480.” *Id.* The Agency requested correction (*id.*), and the Board amended the statutory reference in its first-notice opinion and order. Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 113, 140 (Oct. 7, 2010).

In its first-notice comment, the Agency noted the Board’s correction of this citation to the public law adopting the Resource Conservation and Recovery Act of 1976 and thanked the Board for making this correction. PC 8 at 4. In its first-notice opinion, the Board did not otherwise substantively amend this section of the joint proposal (*see* Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill. Adm. Code 840.101 through 840.152, R09-21, slip op. at 113, 140 (Oct. 7, 2010), and no first-notice comment sought revision (*see* PC 8, PC 9). Accordingly, the Board adopts this language without substantive amendment.

CONCLUSION

In its first-notice opinion and order, the Board submitted the joint proposal filed by Ameren and the Agency to first-notice publication without significantly amending it. The Board received two first-notice comments, both of which supported the proposal. On second-notice review, JCAR issued its certificate of no objection. The Board has again found that its proposal is both economically reasonable and technically feasible. Accordingly, the Board concludes to adopt its second-notice proposal without significant amendment. In the order below, the Board directs the Clerk to file the adopted rules with the Secretary of State for publication in the *Illinois Register*.

ORDER

The Board directs the Clerk to file the following adopted rules with the Secretary of State for publication in the *Illinois Register*. Proposed additions are underlined, and proposed deletions appear stricken.

TITLE 35: ENVIRONMENTAL PROTECTION
 SUBTITLE G: WASTE DISPOSAL
 CHAPTER I: POLLUTION CONTROL BOARD
 SUBCHAPTER j: COAL COMBUSTION WASTE SURFACE IMPOUNDMENTS

PART 840
 SITE-SPECIFIC CLOSURES OF COAL COMBUSTION WASTE SURFACE
 IMPOUNDMENTS

SUBPART A: CLOSURE OF ASH POND D, HUTSONVILLE POWER STATION

Section	
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840.102	Applicability

840.104	Definitions
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840.120	Groundwater Collection Trench
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840.124	Final Slope and Stabilization
840.126	Final Cover System
840.128	Closure Plan
840.130	Contents of Closure Plan
840.132	Modification of Existing Permits
840.134	Completion of Closure, Closure Report and Certification of Completion of Closure
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840.138	Post-Closure Care Plan
840.140	Contents of Post-Closure Care Plan
840.142	Post-Closure Report and Certification of Completion of Post-Closure Care Plan
840.144	Recordkeeping and Reporting Requirements
840.146	Construction Quality Assurance Program
840.148	Review, Approval, and Modification of Closure Plan and Post-Closure Care Plan
840.150	Review and Approval of Closure Report and Certification of Completion of Closure, Post-Closure Report and Certification of Completion of Post-Closure Care Plan
840.152	Resource Conservation and Recovery Act

AUTHORITY: Implementing Section 22 of the Environmental Protection Act [415 ILCS 5/22] and Section 8 of the Illinois Groundwater Protection Act [415 ILCS 55/8], and authorized by Sections 22, 27, and 28 of the Environmental Protection Act [415 ILCS 5/22, 27, and 28] and Section 8 of the Illinois Groundwater Protection Act [415 ILCS 55/8].

SOURCE: Adopted in R09-21 at 35 Ill. Reg. _____, effective _____.

SUBPART A: CLOSURE OF ASH POND D, HUTSONVILLE POWER STATION

Section 840.100 Purpose

This Subpart provides for the closure of Ash Pond D located at the Hutsonville Power Station, 15142 East 1900 Avenue, Hutsonville, Crawford County, Illinois.

(Source: Added at 35 Ill. Reg. ____, effective____)

Section 840.102 Applicability

This Subpart applies exclusively to the closure and post-closure care of Ash Pond D, located at the Hutsonville Power Station.

(Source: Added at 35 Ill. Reg. ____, effective____)

Section 840.104 Definitions

Unless otherwise specified, the definitions of the Environmental Protection Act (Act) [415 ILCS 5] apply to this Subpart. The following definitions also apply:

"Agency" means the Illinois Environmental Protection Agency.

"Aquifer" means saturated (with groundwater) soils and geologic materials which are sufficiently permeable to readily yield economically useful quantities of water to wells, springs, or streams under ordinary hydraulic gradients. [415 ILCS 55/3(b)]

"Ash Pond D" means the surface impoundment designated as Ash Pond D, located at the Hutsonville Power Station, 15142 East 1900 Avenue, Hutsonville, Crawford County, Illinois.

"Board" means the Illinois Pollution Control Board.

"Contaminant" means any solid, liquid or gaseous matter, any odor, or any form of energy, from whatever source. [415 ILCS 5/3.165]

"Hutsonville Power Station" or "Hutsonville site" means the electric generating station located at 15142 East 1900 Avenue, Hutsonville, Crawford County, Illinois.

"Lower zone of underlying aquifer" means the sands and gravels beneath the fine-grained surficial alluvium within the Wabash River bedrock valley.

"Off-site" means any property that is not part of the Hutsonville Power Station.

"On-site" means the same or geographically contiguous property constituting the Hutsonville Power Station.

"Operator" means the person responsible for the operation of Ash Pond D.

"Owner" means the person who owns Ash Pond D.

"Person" is any individual, partnership, co-partnership, firm, company, limited liability company, corporation, association, joint stock company, trust, estate, political subdivision, State agency, or any other legal entity, or their legal representative, agent or assigns. [415 ILCS 5/3.315]

"Professional engineer" means a person who has registered and obtained a seal pursuant to the Professional Engineering Practice Act of 1989 [225 ILCS 325].

"Professional geologist" means a person licensed under the laws of the State of Illinois to practice as a professional geologist. [415 ILCS 5/57.2]

"Site" means any location, place, tract of land and facilities, including but not limited to, buildings, and improvements used for purposes subject to regulation or control by the Act or regulations thereunder. [415 ILCS 5/3.460]

"Statistically significant" means the application of a Mann-Kendall analysis performed at 95 percent confidence to determine whether consecutive groundwater sampling data showing greater or lesser concentrations of constituents is statistically significant.

"Upper zone of underlying aquifer" means surficial sands and sandstones overlying shale west of the Wabash River bedrock valley, and sand lenses within the surficial fine grained alluvium.

(Source: Added at 35 Ill. Reg. ____, effective____)

Section 840.106 Abbreviations and Acronyms

Agency	Illinois Environmental Protection Agency
CQA	Construction Quality Assurance
GMZ	Groundwater Management Zone
Mg\L	milligrams per liter
NPDES	National Pollutant Discharge Elimination System
TDS	total dissolved solids

(Source: Added at 35 Ill. Reg. ____, effective____)

Section 840.108 Incorporations by Reference

- a) The Board incorporates the following material by reference:

NTIS. National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161, (703) 605-6000.

"Methods for Chemical Analysis of Water and Wastes," March 1983, Doc. No. PB84-128677. EPA 600/4-79-020 (available on-line at <http://nepis.epa.gov/>).

"Methods for the Determination of Inorganic Substances in Environmental Samples," August 1993, Doc. No. PB94-120821 (referred to as "USEPA Environmental Inorganic Methods"). EPA 600/R-93-100 (available online at <http://nepis.epa.gov/>).

"Methods for the Determination of Metals in Environmental Samples," June 1991, Doc. No. PB91-231498. EPA 600/4-91-010 (available on-line at <http://nepis.epa.gov/>).

"Methods for the Determination of Metals in Environmental Samples Supplement I," May 1994, Doc. No. PB95-125472. EPA 600/4-94-111 (available on-line at <http://nepis.epa.gov/>).

"Methods for the Determination of Organic and Inorganic Compounds in Drinking Water: Volume I," EPA 815-R-00-014 (August 2000) (available on-line at <http://nepis.epa.gov/>).

"Practical Guide for Ground-Water Sampling," EPA Publication No. EPA/600/2-85/104 (September 1985), Doc. No. PB 86-137304, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, USEPA Publication No. SW-846, as amended by Updates I, II, IIA, IIB, III, IIIA, and IIIB (Doc. No. 955-001-00000-1), (available on-line at <http://www.epa.gov/epaoswer/hazwaste/test/main.htm>).

USGS. United States Geological Survey, 1961 Stout St., Denver, CO 80294, (303) 844-4169.

"Techniques of Water Resources Investigations of the United States Geological Survey, Guidelines for Collection and Field Analysis of Ground-Water Samples for Selected Unstable Constituents," Book I, Chapter D2 (1976).

- b) This Section incorporates no later editions or amendments.

(Source: Added at 35 Ill. Reg. ____, effective ____)

Section 840.110 Hydrogeologic Site Investigation

The owner or operator of Ash Pond D must design and implement a hydrogeologic site investigation to determine the nature and extent of contamination originating from Ash Pond D and to develop hydrogeologic information for the uses set forth in this Section. If approved in the closure plan, any information from any hydrogeologic site investigation performed since 1999 may be used to satisfy the requirements of this Section. The uses of the hydrogeologic site investigation shall include, but not be limited to:

- a) Providing information to define hydrogeology and to assess the groundwater impacts associated with Ash Pond D;
- b) Providing information to perform a model to assess the groundwater impacts associated with closure of Ash Pond D; and

- c) Providing information to establish a groundwater monitoring system.

(Source: Added at 35 Ill. Reg. ____, effective____)

Section 840.112 Groundwater Monitoring System

The owner or operator of Ash Pond D must design and install a groundwater monitoring system that enables it to monitor groundwater to evaluate post-closure groundwater quality and trends and to demonstrate compliance with the applicable groundwater quality standards at designated compliance points as set forth in Sections 840.116 and 840.118 of this Subpart. If approved in the closure plan, any groundwater monitoring well in operation since 1999 that complies with the requirements set forth in this Section may be used in satisfying the requirements of this Section.

- a) Standards for monitoring well design and construction.
 - 1) All monitoring wells must be cased in a manner that maintains the integrity of the bore holes.
 - 2) Wells must be screened to allow sampling only at the specified interval.
 - 3) All wells must be covered with vented caps, unless located in flood-prone areas, and equipped with devices to protect against tampering and damage.
- b) The groundwater monitoring system must consist of a sufficient number of wells, installed at appropriate locations and depths to yield groundwater samples to:
 - 1) Represent the quality of background water that has not been affected by contamination from Ash Pond D;
 - 2) Represent the quality of groundwater at the compliance point or points; and
 - 3) Determine compliance with Sections 840.116 and 840.118 of this Subpart.
- c) Monitoring wells must be located in stratigraphic horizons that could serve as contaminant pathways.
- d) The groundwater monitoring system approved in the closure plan must include a maintenance plan.

(Source: Added at 35 Ill. Reg. ____, effective____)

Section 840.114 Groundwater Monitoring Program

The owner or operator of Ash Pond D must develop a groundwater monitoring program that enables it to monitor groundwater to evaluate post-closure groundwater quality both on-site and off-site to demonstrate compliance with Sections 840.116 and 840.118 of this Subpart. The owner or operator must begin the groundwater monitoring program upon completion of the installation of the groundwater monitoring system in accordance with Section 840.112 of this Subpart and the approved closure plan. The groundwater monitoring program must comply with following requirements:

- a) The owner or operator of Ash Pond D must monitor each well included in the groundwater monitoring system pursuant to Section 840.112 on a quarterly basis for the constituents identified in 35 Ill. Adm. Code 620.410(a) and (d) except radium-226 and radium-228. Any constituent that is not detectable in the down-gradient wells for four consecutive quarters or has a concentration that does not differ to a statistically significant degree from the concentration detected in the up-gradient wells for four consecutive quarters may be removed from the monitoring program in both the up-gradient and down-gradient wells with the exception of boron, iron, manganese, pH, sulfate, and TDS. The owner or operator must also monitor for the following: specific conductance, groundwater elevation, and monitoring well depth.
- b) Five years after approval of the closure plan, the owner or operator of Ash Pond D may request modification of the post-closure care plan to reduce the frequency of groundwater monitoring to semi-annual sampling by demonstrating all of the following:
 - 1) That monitoring effectiveness will not be compromised by the reduced frequency of monitoring;
 - 2) That sufficient data has been collected to characterize groundwater; and
 - 3) That concentrations of constituents monitored pursuant to subsection (a) of this Section at the down-gradient boundaries of the Hutsonville site show no statistically significant increasing trends that can be attributed to Ash Pond D.
- c) If concentrations of constituents monitored pursuant to subsection (a) of this Section at the down-gradient boundaries of the Hutsonville site show no statistically significant increasing trends that can be attributed to Ash Pond D for the five years after reducing the monitoring frequency to semiannual, the owner or operator of Ash Pond D may request modification of the post-closure care plan to reduce monitoring frequency to annual sampling by demonstrating all of the factors set forth in subsections (b)(1) through (b)(3) of this Section.
- d) The owner or operator of Ash Pond D may discontinue groundwater monitoring upon Agency approval of the certified post-closure care report required by Section 840.142.

- e) Sampling and analysis data from groundwater monitoring and decisions to remove any constituent from the monitoring program must be reported to the Agency as provided in Section 840.144(a) of this Subpart.
- f) Representative samples from the groundwater monitoring system must be collected and analyzed in accordance with the procedures for groundwater monitoring and analysis set forth in the following documents, incorporated by reference at Section 840.108 of this Subpart, or other procedures approved by the Agency in the closure plan or post-closure care plan:
 - 1) "Methods for Chemical Analysis of Water and Wastes";
 - 2) "Methods for the Determination of Inorganic Substances in Environmental Samples";
 - 3) "Methods for the Determination of Metals in Environmental Samples";
 - 4) "Methods for the Determination of Metals in Environmental Samples - Supplement I";
 - 5) "Methods for the Determination of Organic and Inorganic Compounds in Drinking Water: Volume I";
 - 6) "Practical Guide for Ground-Water Sampling";
 - 7) "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods" (SW-846), as amended by Updates I, II, IIA, IIB, III, IIIA, and IIIB;
 - 8) "Techniques of Water Resources Investigations of the United States Geological Survey, Guidelines for Collection and Field Analysis of Ground-Water Samples for Selected Unstable Constituents."
- g) The owner or operator of Ash Pond D must establish a groundwater monitoring quality assurance program for sample collection, preservation and analysis.

(Source: Added at 35 Ill. Reg. ____, effective_____)

Section 840.116 Groundwater Quality Standards

- a) On-site, prior to the completion of the post-closure care period, the applicable groundwater quality standards at the Hutsonville site for concentrations of contaminants from Ash Pond D are the concentrations as determined by groundwater monitoring, if those concentrations exceed the numeric standards for Class I: Potable Resource Groundwater set forth in 35 Ill. Adm. Code 620.410. After completion of the post-closure care period, the on-site concentrations of

contaminants from Ash Pond D as determined by groundwater monitoring, if those concentrations exceed the numeric standards for Class I: Potable Resource Groundwater set forth in 35 Ill. Adm. Code 620.410, are the applicable groundwater standards at the Hutsonville site if:

- 1) To the extent practicable, the exceedence has been minimized and beneficial use, as appropriate for the class of groundwater, has been returned on-site;
 - 2) Any threat to human health or the environment on-site has been minimized; and
 - 3) An institutional control prohibiting potable uses of groundwater is placed on the Hutsonville site in accordance with the Uniform Environmental Covenants Act [765 ILCS 122] or an alternative instrument authorized for environmental uses under Illinois law and approved by the Agency. Existing potable uses of groundwater may be preserved as long as those uses remain fit for human consumption in accordance with accepted water supply principles.
- b) Off-site, the applicable groundwater quality standards are the numeric standards for Class I: Potable Resource Groundwater set forth in 35 Ill. Adm. Code 620.410 in the upper zone of the underlying aquifer and the nondegradation standard of 35 Ill. Adm. Code 620.Subpart C in the lower zone of the underlying aquifer, unless a groundwater management zone (GMZ) has been established as provided in 35 Ill. Adm. Code 620.250 with the written permission of the affected owners for off-site or properties with groundwater contamination from Ash Pond D so that monitoring wells may be installed and other corrective actions designed and implemented as necessary to achieve compliance with 35 Ill. Adm. Code 620.
- 1) A GMZ for off-site properties with groundwater contamination from Ash Pond D and any related design and construction activities must be proposed and approved in the closure plan or post-closure care plan or any modification of those plans, as appropriate.
 - 2) Groundwater quality standards for an off-site GMZ are set forth at 35 Ill. Adm. Code 620.450(a)(4).

(Source: Added at 35 Ill. Reg. ____, effective____)

Section 840.118 Demonstration of Compliance

- a) Compliance with the on-site and off-site groundwater quality standards set forth in Sections 840.116(a) and (b) of this Subpart:

- 1) Compliance with on-site groundwater quality standards will be achieved when no statistically significant increasing trend that can be attributed to Ash Pond D is detected in the concentrations of all constituents monitored in accordance with Section 840.114 of this Subpart at the down-gradient boundaries of the Hutsonville site for four consecutive years after changing to an annual monitoring frequency pursuant to Section 840.114(c).
- 2) Compliance with off-site groundwater quality standards:
 - A) Compliance with off-site groundwater quality standards set forth in Section 840.116(b) of this Subpart will be achieved when:
 - i) A statistically significant decreasing trend in concentrations of constituents monitored in accordance with Section 840.114 of this Subpart in the upper zone of the underlying aquifer at the down-gradient boundaries of the Hutsonville site is detected in the concentrations of all constituents monitored for a period of four consecutive years after changing to an annual monitoring frequency pursuant to Section 840.114(c);
 - ii) No statistically significant increasing trend that can be attributed to Ash Pond D is detected in concentrations of constituents monitored in accordance with Section 840.114 of this Subpart in the lower zone of the underlying aquifer at the down-gradient boundaries of the Hutsonville site for four consecutive years after changing to an annual monitoring frequency pursuant to Section 840.114(c); and
 - iii) All concentrations of constituents monitored in accordance with Section 840.114 of this Subpart are at or below the applicable groundwater quality standards as provided in Section 840.116(b) of this Subpart at the down-gradient boundaries of the Hutsonville site.
 - B) If a groundwater management zone for off-site properties with groundwater contamination from Ash Pond D is established as provided in Section 840.116(b) of this Subpart, the compliance points will be determined as set forth in the GMZ approved in the closure plan or post-closure care plan, as appropriate.
- b) For purposes of demonstrating compliance:
 - 1) The owner or operator of Ash Pond D must perform an annual trend analysis for each monitoring well located at the down-gradient boundaries

of the Hutsonville site for all constituents monitored in accordance with Section 840.114 of this Subpart, based on a minimum of four consecutive samples, by applying Sen's Estimate of Slope.

- 2) If a groundwater management zone for off-site properties with groundwater contamination from Ash Pond D is established as provided in Section 840.116(b) of this Subpart, the demonstration of compliance will be determined as set forth in the GMZ approved in the closure plan or post-closure care plan, as appropriate.
- c) Compliance with nondegradation standards during closure and post-closure care periods:
- 1) If the results of sampling and analysis show an increasing trend at any monitoring well located at the down-gradient boundaries of the Hutsonville site, a Mann-Kendall analysis must be performed at 95 percent confidence to determine whether the increasing trend is statistically significant. The owner or operator of Ash Pond D must investigate the cause of a statistically significant increasing trend as determined under subsection (b) of this Section. If the statistically significant increasing trend occurs during post-closure care, the investigation must include more frequent inspection of the surface of the cover system and evaluation of background concentrations and the effectiveness of the groundwater collection trench required by Section 840.120 of this Subpart.
 - A) If an investigation performed in accordance with subsection (c)(1) of this Section attributes a statistically significant increasing trend to a superseding cause, the owner or operator of Ash Pond D must notify the Agency in writing, stating the cause of the increasing trend and providing the rationale used in that determination.
 - B) If there is no superseding cause for the statistically significant increasing trend and sampling frequency has been reduced pursuant to Section 840.114(b) or (c) of this Subpart to semiannual or annual sampling, the owner or operator must return to a quarterly sampling schedule. After four consecutive quarterly samples show no statistically significant increasing trend, the frequency of groundwater monitoring may be returned to either semiannual or annual, whichever frequency was utilized prior to the return to quarterly sampling.
 - C) For purposes of this subsection (c)(1), notifications concerning statistically significant increasing trends and revisions of the sampling frequency must be reported to the Agency in writing

within 30 days after making the determinations, as provided in Section 840.144(f) of this Subpart.

- 2) If a statistically significant increasing trend is observed to continue over a period of two or more consecutive years and there are no superseding causes for the trend, the owner or operator must perform the following:
 - A) A hydrogeologic investigation; and
 - B) Additional site investigation, if necessary.
- 3) Based on the outcome of the activities required by subsection (c)(2) of this Section, the owner or operator of Ash Pond D must take action to mitigate statistically significant increasing trends that are causing, threatening or allowing exceedences of off-site groundwater quality standards as set forth in Section 840.116(b). These actions must be proposed as a modification to the post-closure care plan within 180 days after completion of the activities required by subsection (c)(2) of this Section.

(Source: Added at 35 Ill. Reg. ____, effective____)

Section 840.120 Groundwater Collection Trench

- a) The owner or operator of Ash Pond D must design, install, and, consistent with any applicable wastewater discharge permit conditions, operate a groundwater collection trench along the south property boundary of the Hutsonville Power Station to prevent migration of groundwater impacted by Ash Pond D south of the property boundary.
- b) Plans for the groundwater collection trench, including, but not limited to, a plan for operation and maintenance, must be approved by the Agency in the closure plan.
- c) The groundwater collection trench must be constructed according to a construction quality assurance program that meets the requirements of Section 840.146 of this Subpart.
- d) Once compliance with the groundwater quality standards set forth in Section 840.116 of this Subpart has been achieved in accordance with Section 840.118(a) of this Subpart, the owner or operator of Ash Pond D may discontinue operation of the groundwater collection trench.
 - 1) Upon discontinuing operation of the groundwater collection trench, the owner or operator must perform four quarterly sampling of the groundwater monitoring system wells as identified in the post-closure care plan, or modification of that plan, to ensure compliance with the

applicable groundwater quality standards set forth in Section 840.116 of this Subpart.

- 2) Results of the four quarterly samplings must be included in the post-closure report documentation. If compliance is not confirmed, operation of the groundwater collection trench and discharge system must be resumed.

(Source: Added at 35 Ill. Reg. ____, effective____)

Section 840.122 Groundwater Discharge System

- a) Groundwater collected in the groundwater collection trench must be directed to an outfall for which the Hutsonville Power Station has NPDES authorization or to another option as approved by the Agency in the closure plan or post-closure care plan in accordance with applicable law, including, but not limited to, permit requirements.
- b) The groundwater discharge system must be constructed according to a construction quality assurance program that meets the requirements of Section 840.146 of this Subpart.
- c) Plans for the groundwater discharge system, including, but not limited to, a plan for operation and maintenance, must be approved by the Agency in the closure plan.

(Source: Added at 35 Ill. Reg. ____, effective____)

Section 840.124 Final Slope and Stabilization

- a) All final slopes must be designed and constructed to a grade capable of supporting vegetation and minimizing erosion.
- b) All slopes must be designed to drain runoff away from the cover and to prevent ponding.
- c) Ash Pond D must meet the stability criteria of 35 Ill. Adm. Code 811.304.
- d) The owner or operator may use coal combustion waste generated at the site in establishing the final grade and slope as provided below:
 - 1) The earthen berms surrounding Ash Pond D must be regraded to eliminate any freeboard between the top of the berm and the adjacent surface of the coal combustion waste;
 - 2) Additional coal combustion waste may be placed only directly on top of coal combustion waste that is already in place;

- 3) The maximum final slope must be no greater than 5 percent;
- 4) Any additional coal combustion waste used to establish the final grade and slope is considered coal combustion by-product, and its use does not require any independent approval pursuant to Section 3.135 of the Act [415 ILCS 5/3.135].

(Source: Added at 35 Ill. Reg. ____, effective____)

Section 840.126 Final Cover System

The owner or operator of Ash Pond D must design and install a final cover system for Ash Pond D. The final cover system must consist of a low permeability layer and a final protective layer.

- a) Standards for the low permeability layer. The low permeability layer must be designed to minimize surface infiltration and must consist of a geosynthetic membrane cover and be constructed in accordance with the following standards:
 - 1) The geosynthetic membrane must have a minimum thickness of 40 mil (0.04 inches) and, in terms of hydraulic flux, be equivalent or superior to a 3 foot layer of soil with a hydraulic conductivity of 1×10^{-7} centimeters per second.
 - 2) The geosynthetic membrane must be placed over a prepared base free from sharp objects and other materials that may cause damage.
- b) Standards for the final protective layer. The final protective layer must:
 - 1) Cover the entire geosynthetic membrane.
 - 2) Be at least 3 feet thick and must be sufficient to protect the geosynthetic membrane from freezing and minimize root penetration of the geosynthetic membrane.
 - 3) Consist of soil material capable of supporting vegetation.
 - 4) Be placed as soon as possible after placement of the geosynthetic membrane.
 - 5) Be covered with vegetation to minimize wind and water erosion.
- c) Construction Quality Assurance Program. The final cover system must be constructed according to a construction quality assurance program that meets the requirements of Section 840.146 of this Subpart.

(Source: Added at 35 Ill. Reg. ____, effective____)

Section 840.128 Closure Plan

- a) Within 180 days after January 28, 2011~~the effective date of this Subpart~~, the owner or operator of Ash Pond D must prepare and submit to the Agency a closure plan for review and approval.
- b) The owner or operator of Ash Pond D must maintain the closure plan onsite or at a location specified in the closure plan.

(Source: Added at 35 Ill. Reg. ____, effective____)

Section 840.130 Contents of Closure Plan

The closure plan must contain, at a minimum, the following information or documents:

- a) Site map. The site map must identify all pertinent features and buildings at the Hutsonville Power Station and must clearly identify the following:
 - 1) All of the surface impoundments located at the site;
 - 2) All existing and proposed groundwater collection trenches associated with the operation or closure of Ash Pond D; and
 - 3) All existing and proposed groundwater monitoring wells.
- b) Description of Ash Pond D. The description of Ash Pond D must include all of the following information:
 - 1) A description of the contents of Ash Pond D;
 - 2) The estimated volume of material contained in Ash Pond D; and
 - 3) An analysis of the structural integrity of Ash Pond D.
- c) Description of the closure activities to be performed in accordance with this Subpart and any additional activities performed by the owner or operator to close Ash Pond D, including any dewatering.
- d) Description and results of the hydrogeologic site investigation required by Section 840.110 of this Subpart.
- e) Description of the groundwater trend analysis methods required by Section 840.118 of this Subpart.

- f) Plans, specifications and drawings for the groundwater monitoring system required by Section 840.112 of this Subpart, including, but not limited to, a description of the maintenance plan required by Section 840.112(d).
- g) Description of the groundwater monitoring program required by Section 840.114 of this Subpart, including, but not limited to, a description of the quality assurance program for sample collection, preservation and analysis.
- h) Identification of the location of the monitoring wells used for trend analyses required by Section 840.118 of this Subpart.
- i) Plans, specifications and drawings for the groundwater collection trench and discharge system set forth in Sections 840.120 and 840.122 of this Subpart.
- j) Plans, specifications and drawings for the final slope design and construction and demonstration of compliance with the stability criteria required in Section 840.124 of this Subpart.
- k) Plans, specifications and drawings for the final cover system required by Section 840.126 of this Subpart.
- l) Estimates of the amount of time to complete closure, including an estimate of the time required for hydrostatic equilibrium of groundwater beneath Ash Pond D, the cost of closure, and the cost of post-closure care.
- m) A proposal for a groundwater management zone as set forth in Section 840.116(b) of this Subpart, if applicable, and including, but not limited to, plans, specifications and drawings for any structures or devices that must be constructed.
- n) Description of the Construction Quality Assurance program required by Section 840.146 of this Subpart, including, but not limited to, the sampling programs required by Section 840.146(b)(7).
- o) Description of actions proposed to mitigate statistically significant increasing trends in accordance with Section 840.118(c) of this Subpart, if applicable, including, but not limited to, plans, specifications, and drawings for any structures or devices that must be constructed.
- p) The signature and seal of the professional engineer supervising the preparation of the closure plan.

(Source: Added at 35 Ill. Reg. ____, effective____)

Section 840.132 Modification of Existing Permits

Within 180 days after January 28, 2011~~the effective date of this Subpart A~~, the owner or operator of Ash Pond D must timely submit to the Agency an application to revise any State operating permit or NPDES permit issued by the Agency as required by Sections 840.120 and 840.122 of this Subpart, if necessary.

(Source: Added at 35 Ill. Reg. ____, effective____)

Section 840.134 Completion of Closure, Closure Report and Certification of Completion of Closure

- a) The owner or operator must complete engineering and design activities for the closure of Ash Pond D within 180 days after January 28, 2011~~the effective date of this Subpart~~.
- b) The owner or operator must complete closure of Ash Pond D within 18 months after the Agency's approval of the closure plan, unless the Agency approves an alternative timeline.
- c) No later than 90 days after the completion of all closure activities required by this Subpart and approved in the closure plan, the owner or operator of Ash Pond D must prepare and submit to the Agency a closure report for review and approval. The report must include certification by a professional engineer that Ash Pond D has been closed in accordance with the approved closure plan required by Section 840.128 of this Subpart and the requirements of this Subpart. The report also must contain supporting documentation, including, but not limited to:
 - 1) Engineering and hydrogeology reports, including, but not limited to, monitoring well completion reports and boring logs, all CQA reports, certifications, and designations of CQA officers-in-absentia required by Section 840.146 of this Subpart;
 - 2) Photographs of the final cover system and groundwater collection trench and any other photographs relied upon to document construction activities;
 - 3) A written summary of closure requirements and activities as set forth in the closure plan and this Subpart A;
 - 4) Any other information relied upon by the professional engineer in making the closure certification; and
 - 5) The signature and seal of the professional engineer supervising the implementation of the closure plan, the preparation of the closure report, and making the certification of completion of closure.

(Source: Added at 35 Ill. Reg. ____, effective____)

Section 840.136 Post-Closure Maintenance of Cover System

The owner or operator of Ash Pond D must maintain the surface of the cover system beginning immediately after construction until approval of the post-closure report by the Agency.

- a) After closure, and until completion of the post-closure report, the owner or operator of Ash Pond D must conduct inspections of the cover system at the same time and frequency as the groundwater monitoring sampling schedule set forth in Section 840.114 of this Subpart.
- b) The owner or operator of Ash Pond D must fill all rills, gullies, and crevices six inches or deeper. Areas identified as particularly susceptible to erosion must be recontoured.
- c) The owner or operator of Ash Pond D must repair all eroded and scoured drainage channels and replace lining material, if necessary.
- d) The owner or operator of Ash Pond D must fill and recontour all holes and depressions created by settling so as to prevent standing water.
- e) The owner or operator of Ash Pond D must revegetate all areas in excess of 100 square feet, cumulative, with failed or eroded vegetation.
- f) The owner or operator of Ash Pond D must repair all tears, rips, punctures, and other damage to the geosynthetic membrane.
- g) The owner or operator must prevent the growth of woody species on the protective cover.

(Source: Added at 35 Ill. Reg. ____, effective____)

Section 840.138 Post-Closure Care Plan

- a) Within 180 days after January 28, 2011~~the effective date of this Subpart A~~, the owner or operator of Ash Pond D must prepare and submit to the Agency a post-closure care plan for review and approval.
- b) The owner or operator must maintain the post-closure care plan onsite or at a location specified in the post-closure care plan.

(Source: Added at 35 Ill. Reg. ____, effective____)

Section 840.140 Contents of Post-Closure Care Plan

The post-closure care plan, or modification of the plan, must include, at a minimum, the following elements:

- a) Description of the post-closure care activities required by Section 840.136 of this Subpart;
- b) Description of the groundwater monitoring system required by Section 840.112 of the Subpart and a description of the maintenance plan for the groundwater monitoring system;
- c) Description of the groundwater monitoring program required by Section 840.114 of this Subpart;
- d) Identification of the location of the monitoring wells used for trend analyses required by Section 840.118 of this Subpart;
- e) Description of the operation and maintenance that will be required for the groundwater collection trench and discharge system required by Sections 840.120 and 840.122 of this Subpart;
- f) Description of the groundwater trend analysis methods required by Section 840.118 of this Subpart;
- g) A proposal for a groundwater management zone as set forth in Section 840.116(b) of this Subpart, if applicable;
- h) Description of actions proposed to mitigate statistically significant increasing trends in accordance with Section 840.118(c) of this Subpart, if applicable, and the operation and maintenance of any structures or devices; and
- i) The signature and seal of the professional engineer supervising the preparation of the post-closure care plan.

(Source: Added at 35 Ill. Reg. ____, effective____)

Section 840.142 Post-Closure Report and Certification of Completion of Post-Closure Care Plan

Post-closure care must continue until a demonstration of compliance with the groundwater quality standards set forth in Section 840.116 has been approved by the Agency. The owner or operator of Ash Pond D must prepare and submit to the Agency for review and approval a post-closure report within 60 days after satisfying the requirements of the approved post-closure care plan and achieving the applicable groundwater quality standards as set forth in the plan and Sections 840.116 through 840.118 of this Subpart. The post-closure report must include certifications by a professional engineer that the standards and requirements set forth in this Subpart A and approved in the post-closure care plan have been met. A professional geologist

may supervise post-closure care activities as appropriate under the Professional Geologist Licensing Act [225 ILCS 745]. The report also must contain supporting documentation, including, but not limited to:

- a) Engineering and hydrogeology reports, including, but not limited to, documentation of compliance with the groundwater quality standards of this Subpart and results of the four quarterly samplings performed under Section 840.120 of this Subpart;
- b) Photographs of the final cover system and groundwater collection trench and any other photographs relied upon to document construction activities;
- c) A written summary of post-closure care requirements and activities as set forth in the post-closure care plan and this Subpart A and their completion;
- d) Any other information relied upon by the professional engineer or professional geologist, as appropriate for the activity, in making the post-closure care certifications; and
- e) The signature and seal of the professional engineer and professional geologist supervising the implementation of the post-closure care plan, and the signature and seal of the professional engineer supervising preparation of the post-closure report and making the certification of completion of the post-closure care plan.

(Source: Added at 35 Ill. Reg. ____, effective____)

Section 840.144 Recordkeeping and Reporting Requirements

- a) The owner or operator of Ash Pond D must file an annual report with the Agency no later than January 31 of each year during the closure of Ash Pond D and for the entire post-closure care period. Once the requirements of Section 840.142 of this Subpart have been met, annual reports are no longer required. The owner or operator must submit groundwater sampling and analysis data and decisions to remove constituents from the monitoring program no later than 30 days after the sampling and analysis have been completed.
- b) All annual reports must contain the following information:
 - 1) Trend analyses required by Section 840.118(b) of all groundwater monitoring data generated by the groundwater monitoring program required by Section 840.114 of this Subpart;
 - 2) A copy of any notice submitted to the Agency pursuant to Section 840.118(c)(1)(A) of this Subpart;

- 3) A discussion of any statistically significant increasing trends and actions taken to mitigate such trends in accordance with Section 840.118(c)(3) of this Subpart; and
 - 4) The completed closure or post-closure activities performed during the preceding year.
- c) The owner or operator of Ash Pond D must maintain onsite or at a location specified in the closure or post-closure care plan all monitoring data and trend analysis data for 10 years following generation of the data.
 - d) The owner or operator of Ash Pond D must maintain the closure plan until the end of the post-closure care period.
 - e) The owner or operator of Ash Pond D must maintain the post-closure care plan for 10 years following the certification of the post-closure report required by Section 840.142 of this Subpart.
 - f) All reports, plans, modifications and notifications required under this Subpart to be submitted to the Agency must be submitted in writing to the Bureau of Water, Division of Public Water Supplies, Attn: Hydrogeology and Compliance Unit, 1021 North Grand Avenue East, P.O. Box 19276, Springfield, Illinois 62794-9276 or electronically as authorized and directed by the Agency.

(Source: Added at 35 Ill. Reg. ____, effective ____)

Section 840.146 Construction Quality Assurance Program

- a) The following components must be constructed according to a construction quality assurance program:
 - 1) Installation of the groundwater collection trench and discharge system required by Sections 840.120 and 840.122 of this Subpart ~~Part~~;
 - 2) Compaction of the final cover system subgrade and foundation to design parameters;
 - 3) Application of final cover, including installation of the geomembrane; and
 - 4) Construction of ponds, ditches, lagoons and berms.
- b) The construction quality assurance program must meet the following requirements:
 - 1) The operator must designate a construction quality assurance (CQA) officer who is an Illinois licensed professional engineer (LPE).

- 2) At the end of each week of construction of the final cover system until construction is complete, a summary report must be either prepared by the CQA officer or under the supervision of the CQA officer. The report must include descriptions of the weather, locations where construction occurred during the previous week, materials used, results of testing, inspection reports, and procedures used to perform the inspections. The CQA officer must certify the report. The owner or operator of the Hutsonville Power Station shall retain all weekly summary reports certified by the CQA officer until the completion of the post-closure care period and must make those reports available at reasonable times for inspection and photocopying by the Agency.
- 3) The CQA officer must exercise judgment to certify the following:
 - A) That the bedding material contains no undesirable objects;
 - B) That the closure plan has been followed;
 - C) That the anchor trench and backfill are constructed to prevent damage to the geosynthetic membrane;
 - D) That all tears, rips, punctures, and other damage are repaired;
 - E) That all geosynthetic membrane seams are properly constructed and tested in accordance with manufacturer's specifications;
 - F) That the groundwater trench is constructed to intersect the water table;
 - G) That the groundwater trench is properly constructed to slope toward extraction points, and the extraction equipment is properly designed and installed;
 - H) That an appropriate operations and maintenance plan for the trench and extraction and discharge equipment is provided;
 - I) That proper filter material consisting of uniform granular fill, to avoid clogging, is used in construction; and
 - J) That the filter material as placed must possess structural strength adequate to support the maximum loads imposed by the overlying materials and equipment used at the facility.

- 4) The CQA officer must supervise and be responsible for all inspections, testing and other activities required to be implemented as part of the CQA program under this Section.
- 5) The CQA officer must be present to provide supervision and assume responsibility for performing all inspections of the following activities:
 - A) Compaction of the subgrade and foundation to design parameters;
 - B) Application of final cover, including installation of the geomembrane;
 - C) Installation of the groundwater collection trench and discharge system required by Sections 840.120 and 840.122 of this Subpart; and
 - D) Construction of ponds, ditches, lagoons and berms.
- 6) If the CQA officer is unable to be present to perform, as required by subsection (b)(5) of this Section, the CQA officer must provide, in writing, the reasons for his or her absence, a designation of a person who must exercise professional judgment in carrying out the duties of the CQA officer-in-absentia, and a signed statement that the CQA officer assumes full responsibility for all inspections performed and reports prepared by the designated CQA officer-in-absentia during the absence of the CQA officer.
- 7) The sampling program must be implemented as part of the CQA plan for all construction activities in order to ensure, at a minimum, that construction materials and operations meet design specifications.
 - A) The sampling program must be designed prior to construction.
 - B) The sampling program must be based upon statistical sampling techniques and must establish and specify criteria for acceptance or rejection of materials and operations.

(Source: Added at 35 Ill. Reg. ____, effective ____)

Section 840.148 Review, Approval, and Modification of Closure Plan and Post-Closure Care Plan

The closure plan and post-closure care plan prepared and submitted to the Agency in accordance with Sections 840.128 and 840.138 of this Subpart, and any modifications to those plans, must be reviewed and approved by the Agency prior to implementation.

- a) A closure plan satisfying the requirements of Section 840.130 of this Subpart, a post-closure care plan satisfying the requirements of Section 840.140 of this Subpart, and any modifications to approved plans must be submitted to the Agency for review and approval prior to implementation. The Agency will have 90 days from the receipt of a plan or proposed modification to conduct a review and make a final determination to approve or disapprove a plan or modification or to approve a plan or modification with conditions.
 - 1) The Agency's record of the date of receipt of a plan or proposed modification to a plan will be deemed conclusive unless a contrary date is proved by a dated, signed receipt from the Agency or certified or registered mail.
 - 2) Submission of an amended plan or amended modification to a plan restarts the time for review.
 - 3) The owner or operator may waive the Agency's decision deadline upon a request from the Agency or at the owner's or operator's discretion.
- b) A proposed modification to a closure plan or post-closure care plan must include the reason for the modification, all the information and supporting documentation that will be changed from or will supplement the information provided in the original or most recently approved plan, and the signature and seal of the professional engineer supervising the preparation of the proposed modification.
- c) When reviewing a closure plan or modification, the Agency must consider:
 - 1) Whether the plan or modification contains, at a minimum, all the elements required pursuant to Section 840.130 of this Subpart and has been accompanied by the information and supporting documentation necessary to evaluate the compliance of the proposed plan relative to the standards and requirements of this Subpart;
 - 2) Whether the activities, structures and devices proposed are in accordance with the applicable standards and requirements of this Subpart and are otherwise consistent with generally accepted engineering practices and principles of hydrogeology, accepted groundwater modeling practices, appropriate statistical analyses, and appropriate sampling techniques and analytical methods;
 - 3) The likelihood that the plan or modification will result in the containment of the ash and associated contaminants and the attainment of the applicable groundwater quality standards set forth in Sections 840.116 and 840.118 of this Subpart;

- 4) Whether the plan or modification contains the required professional signatures and seals.
- d) When reviewing a post-closure care plan or proposed modification, the Agency must consider:
- 1) Whether the plan or modification contains, at a minimum, all the elements required pursuant to Section 840.140 of this Subpart and has been accompanied by the information and supporting documentation necessary to evaluate the compliance of the proposed plan relative to the standards and requirements of this Subpart;
 - 2) Whether the activities, structures and devices proposed will be completed, operated and maintained in accordance with the applicable standards and requirements of this Subpart and are otherwise consistent with generally accepted engineering practices and principles of hydrogeology, accepted groundwater modeling practices, appropriate statistical analyses, and appropriate sampling techniques and analytical methods;
 - 3) The management of risk relative to any remaining contamination, including, but not limited to, provisions for the use of long-term restrictions on the use of groundwater as a potable water supply, if appropriate;
 - 4) Whether the plan or modification contains the required professional signatures and seals.
- e) Upon completion of the review, the Agency must notify the owner or operator in writing of its final determination on the plan or proposed modification. The notification must be made by certified or registered mail post-marked with a date stamp and with return receipt requested. The Agency's final determination will be deemed to have taken place on the post-marked date that the notice is mailed. If the Agency disapproves a plan or modification or approves a plan or modification with conditions, the written notification must contain the following information, as applicable:
- 1) An explanation of the specific type of information or documentation, if any, that the Agency deems the owner or operator did not provide;
 - 2) A list of the provisions of the Act, this Subpart or other applicable regulations that may be violated if the plan or modification is approved as submitted;
 - 3) A statement of the specific reasons why the Act, this Subpart or other applicable regulations may be violated if the plan or modification is approved as submitted; and

- 4) A statement of the reasons for conditions if conditions are required.
- f) If the Agency disapproves a plan or modification, approves a plan or modification with conditions, or fails to issue a final determination within the applicable review period, the owner or operator may, within 35 days after receipt of the final determination or expiration of the review period, file an appeal with the Board. Appeals to the Board are subject to review under Section 40 of the Act [415 ILCS 5/40].

(Source: Added at 35 Ill. Reg. ____, effective _____)

Section 840.150 Review and Approval of Closure Report and Certification of Completion of Closure, Post-Closure Report and Certification of Completion of Post-Closure Care Plan

The closure report and post-closure report prepared and submitted to the Agency in accordance with Sections 840.134 and 840.142 of this Subpart must be reviewed and approved by the Agency prior to the completion of closure or post-closure care.

- a) A closure report satisfying the requirements of Section 840.134 of this Subpart and a post-closure report satisfying the requirements of Section 840.142 of this Subpart must be submitted to the Agency for review and approval. Closure and post-closure activities will not be deemed complete until the reports are approved by the Agency.
- b) Submission, review, and approval procedures and deadlines, notification requirements, and rights of appeal shall be the same as those set forth in Section 840.148 of this Subpart for closure plans and post-closure care plans.
- c) When reviewing a closure report and certification of completion of closure, the Agency must consider whether the documentation demonstrates that the activities, structures and devices approved in the closure plan have been completed in accordance with this Subpart and the approved closure plan, including, but not limited to:
- 1) The performance of the hydrogeologic site investigation required by Section 840.110 of this Subpart;
 - 2) The installation of the groundwater monitoring system required by Section 840.112 of this Subpart;
 - 3) The installation of the groundwater collection trench and discharge system or alternative approved by the Agency as required by Sections 840.120 and 840.122 of this Subpart;

- 4) The construction of the final slope and compliance with the stability criteria required by Section 840.124 of this Subpart;
 - 5) The installation of the final cover system required by Section 840.126 of this Subpart;
 - 6) Compliance with the Construction Quality Assurance requirements of Section 840.146 of this Subpart;
 - 7) The establishment of a groundwater management zone in accordance with Section 840.116(b) of this Subpart, if applicable;
 - 8) The implementation of actions to mitigate increasing trends as required by Section 840.118(c) of this Subpart, if applicable; and
 - 9) The presence of professional signatures and seals required by Section 840.134 of this Subpart.
- d) When reviewing a post-closure report and certification of completion of post-closure care plan, the Agency must consider whether the documentation demonstrates that the activities, structures and devices approved in the post-closure care plan have been completed, operated and maintained in accordance with this Subpart A and the approved post-closure care plan including, but not limited to:
- 1) The post-closure maintenance of the cover system required by Section 840.136 of this Subpart;
 - 2) The maintenance of the groundwater monitoring system in accordance with Section 840.112(d) of this Subpart;
 - 3) The implementation of the groundwater monitoring program required by Section 840.114 of this Subpart;
 - 4) The operation and maintenance of the groundwater collection trench and discharge system, or alternative approved by the Agency, required by Sections 840.120 and 840.122 of this Subpart;
 - 5) The performance of the groundwater trend analysis required by Section 840.118 of this Subpart;
 - 6) The implementation of actions to mitigate increasing trends as required by Section 840.118(c) of this Subpart, if applicable;

- 7) Compliance with the requirements of the groundwater management zone as established pursuant to Section 840.116(b) of this Subpart, if applicable;
- 8) Compliance with the groundwater quality standards set forth in Sections 840.116(a) and 840.116(b) of this Subpart as demonstrated in accordance with Section 840.118 of this Subpart; and
- 9) The presence of professional signatures and seals required by Section 840.140 of this Subpart.

(Source: Added at 35 Ill. Reg. ____, effective____)

Section 840.152 Resource Conservation and Recovery Act

Nothing in this Subpart shall be construed to be less stringent than or inconsistent with the provisions of the federal Resource Conservation and Recovery Act of 1976 (P.L. 94-580), as amended, or regulations adopted under that Act. To the extent that any rules adopted in this Subpart are less stringent than or inconsistent with any portion of RCRA applicable to the closure of Ash Pond D, RCRA will prevail.

(Source: Added at 35 Ill. Reg. ____, effective____)

IT IS SO ORDERED.

I, John T. Therriault, Assistant Clerk of the Illinois Pollution Control Board, certify that the Board adopted the above opinion and order on January 20, 2011, by a vote of 5-0.



John T. Therriault, Assistant Clerk
Illinois Pollution Control Board