

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

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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. 2134, effective January 21, 2011.

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.

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.

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.

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

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.

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.

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.

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.

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).

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.

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.

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.

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].

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.

Section 840.128 Closure Plan

- a) Within 180 days after January 28, 2011, 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.

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.

Section 840.132 Modification of Existing Permits

Within 180 days after January 28, 2011, 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.

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.
- 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.

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.

Section 840.138 Post-Closure Care Plan

- a) Within 180 days after January 28, 2011, 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.

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.

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.

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.

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;
 - 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.

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].

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) 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.

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.