

**BEFORE THE ILLINOIS POLLUTION CONTROL BOARD**

IN THE MATTER OF: )  
 )  
AMEREN ASH POND CLOSURE RULES ) R09-21  
(HUTSONVILLE POWER STATION) : ) (Rulemaking – Land)  
PROPOSED 35 ILL. ADM. CODE 840.101 )  
THROUGH 840.144 )

**NOTICE**

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Attached Service List

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Illinois Pollution Control Board the Illinois Environmental Protection Agency's **Proposed Amendments to Ameren's Proposed 35 Ill. Adm. Code 840, Testimony of Richard P. Cobb, Testimony of William E. Buscher, Testimony of Lynn E. Dunaway, Testimony of Stephen F. Nightingale, Testimony of Christian J. Liebman, and Motion to Waive Filing Requirements**, copies of which are herewith served upon you.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

By: Mark Wight  
Mark Wight  
Assistant Counsel  
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DATE: August 18, 2009

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PROPOSED 35 ILL. ADM. CODE 840.100	)	
THROUGH 840.152	)	

AGENCY'S PRE-FILED PROPOSED AMENDMENTS TO AMEREN'S PROPOSED 35 ILL.  
ADM. CODE 840.100 THROUGH 840.152

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

PART 840  
SITE-SPECIFIC CLOSURES OF SURFACE IMPOUNDMENTS

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

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840.150	<u>Review and Approval of Closure Report and Certification of Completion of Closure, Post-Closure Report and Certification of Completion of Post-Closure</u>

840.152            Care Plan  
                         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 51/22, 27, and 28) and Section 8 of the Illinois Groundwater Protection Act (415 ILCS 55/8).

SOURCE: Adopted in R09- \_\_\_\_\_ at \_\_\_\_\_ Ill. Reg., effective \_\_\_\_\_, 2009.

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 exclusively applies to the closure and post-closure care 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.-~~

**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.

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

"Off-site" means any property that is not part of 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 5/58.2]*

*"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 this act or regulations thereunder. [415 ILCS 5/3.460]*

~~"Surface impoundment" means for purposes of this Subpart a natural topographic depression, a man-made excavation, or a diked area used to retain coal combustion wastes and free liquids that was designed and constructed prior to 1990 and currently operates under or has been subject to a water pollution control permit issued by the Agency. For purposes of this Subpart, a surface impoundment that contains coal combustion waste is not a landfill.~~

~~"Zone A" means for purposes of this Subpart the three dimensional region of groundwater that has been impacted by Ash Pond D bounded by a vertical plane 25 feet from the outside edge of the bermed area surrounding Ash Pond D to the south, north,~~

~~east, and west and extending to the base of the uppermost aquifer.~~

~~"Zone B" means the three dimensional region of the uppermost aquifer outside Zone A the three dimensional region of the uppermost aquifer outside Zone A and located 500 feet South of the Hutsonville Power Station boundary, in the North Half of Section 20, Township 8 North, Range 11 West of the Second Principal Meridian, Crawford County, Illinois, lying East of Township Road 254A which extends in a Northwesterly direction across said Section 20; the area located 500 feet South of the Hutsonville Generation Plant boundary, in the North half of Section 21, Township 8 North, Range 11 West of the Second Principal Meridian, Crawford County, Illinois, lying West of the Wabash River; and the area located within the Hutsonville Power Station, North of the southern Hutsonville Power Station boundary, in the South Half of Section 17, Township 8 North, Range 11 West of the Second Principal Meridian, Crawford County, Illinois, lying West of the Wabash River and extending from the river towards Ash Pond D 2,040 feet, turning North and extending 940 feet towards the Wabash River, and turning Southeasterly and extending 2,200 feet to the point of origin.~~

**Section 840.106      Abbreviations and Acronyms**

Agency	Illinois Environmental Protection Agency
CQA	Construction Quality Assurance
<u>GMZ</u>	<u>Groundwater Management Zone</u>
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 on-line 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 840.110 108 Hydrogeologic Site Investigation**

The owner or operator of Ash Pond D must design and implement a hydrogeologic site investigation, approved by the Agency in the closure plan, of Ash Pond D to determine the nature and extent of contamination originating from Ash Pond D and to develop hydrogeologic information for the uses set forth below. ~~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 To provide~~ information to define hydrogeology and to assess the groundwater impacts associated with Ash Pond D;
- b) ~~Providing To provide~~ information to perform a model to assess the groundwater impacts associated with closure of Ash Pond D; and
- c) ~~Providing To provide~~ information to establish a groundwater monitoring system.

#### **Section 840.112 ~~110~~ Groundwater Monitoring System**

The owner or operator of Ash Pond D must design and install a groundwater monitoring system, approved by the Agency in the closure plan, 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 Part. ~~If approved in the closure plan, any~~ Any groundwater monitoring well system in operation since 1999 that complies with the requirements standards set forth in this Section may be used to satisfy in part 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 ~~desired~~ 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 that:
  - 1) Represent the quality of background water that has not been affected by contamination from Ash Pond D; and
  - 2) Represent the quality of groundwater at the compliance point or points.

- b) ~~Standards for the location of monitoring points.~~
  - 1) ~~A network of no fewer than three monitoring points must be established at locations downgradient of Ash Pond D with respect to groundwater flow.~~
  - c2) Monitoring wells must be located in stratigraphic horizons that could serve as contaminant pathways.
- e) ~~Standards for sample collection and analysis.~~
  - 1) ~~The owner or operator of Ash Pond D must utilize sampling and analysis procedures that ensure that collected samples are representative of the zone being monitored and that the results can be relied upon to provide data representative of the zone being monitored.~~
  - 2) ~~The owner or operator of Ash Pond D must establish a quality assurance program.~~
- d) The groundwater monitoring system approved in the closure plan must include a maintenance plan.

### **Section 840.114 112 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. 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 and the approved closure plan. of the final cover system installation. 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 installed pursuant to Section 840.112~~110~~ for the following constituents on a quarterly basis beginning upon completion of the installation of the groundwater monitoring system and continuing for the first five years after approval of the closure plan: 35 Ill. Adm. Code 620.410(a) and (d) except radium-226 and radium-228. Any constituent that is non-detect in the down-gradient wells for four consecutive quarters or has a concentration that is not statistically greater than the concentration detected in the up-gradient wells for four consecutive quarters may be dropped 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.

- b1) After Five 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 upon a determination of all of the following:
- 1A) That monitoring effectiveness will not be compromised by the reduced frequency of monitoring;
  - 2B) That sufficient quarterly data has been collected to characterize groundwater; and
  - 3C) That concentrations of constituents monitored pursuant to subsection (a) of this Section at the down-gradient boundaries of the Hutsonville site monitoring wells inside Zone B show no statistically significant increasing trends that can be attributed to Pond D.
- c2) Beginning fifteen years after closure, or five years after reducing the monitoring frequency to semi-annual pursuant to subsection (a)(1) of this Section If and concentrations of constituents monitored pursuant to subsection (a) of this Section at the down-gradient boundaries of the Hutsonville site monitoring wells inside Zone B show no statistically significant increasing trends for the five years after reducing the monitoring frequency to semi-annual, 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.
- ~~3) The owner or operator of Ash Pond D may discontinue groundwater monitoring for the constituents in subsection (a) of this Section when no statistically significant increasing trend that can be attributed to Pond D is detected in the concentration of any such constituent at the down-gradient monitoring wells inside Zone B for three consecutive years after changing to an annual monitoring frequency pursuant to subsection (a)(2) of this Section and all concentrations of constituents monitored in accordance with Section 840.112 are at or below Class I groundwater quality standards for a period of five years.~~

- d) Sampling 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.
- e) 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 as incorporated by reference at Section 840.108 of this Part or other procedures approved by the Agency:
- 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";
  - 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."
- f) The owner or operator of Ash Pond D must establish a groundwater monitoring quality assurance program for sample collection, preservation and analysis.
- b) ~~The owner or operator of Ash Pond D must monitor each well installed pursuant to Section 840.110 for the following inorganic constituents on an annual basis until monitoring pursuant to subsection (a) of this Section is discontinued in accordance with Section 840.112(a)(3): antimony, arsenic, barium, beryllium,~~

~~cadmium, chloride, chromium, cobalt, copper, cyanide, fluoride, lead, mercury, nickel, nitrate as N, selenium, silver, thallium, and zinc.~~

- ~~1) Monitoring of inorganic constituents must be performed during the first quarter of each monitoring year as the monitoring year is defined in the closure plan.~~
- ~~2) Any inorganic constituent listed in this subsection observed to exceed its Class I groundwater quality standard must be monitored on a quarterly basis. After four consecutive quarterly samples show no exceedance of the Class I groundwater quality standard for such constituent, the owner or operator of Ash Pond D may reduce the monitoring frequency of that constituent to annual sampling.~~
- e) Elements 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.

**Section 840.116 114 Groundwater Quality Standards Compliance Zones**

- a) 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 shall be the concentrations as determined by groundwater monitoring, if such concentrations exceed the 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 such concentrations exceed the standards for Class I: Potable Resource Groundwater set forth in 35 Ill. Adm. Code 620.410, shall be the applicable groundwater standards at the Hutsonville site if:
  - 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).

~~No generally applicable groundwater quality standards apply within Zone A or Zone B. Within Zone A and Zone B, from the effective date of this rule and continuing indefinitely thereafter, concentrations of constituents may exceed any generally applicable groundwater quality standard established by the Board or the Agency, including the Class I groundwater quality standards, as set forth in 35 Ill. Adm. Code 620.~~

- b) Off-site, the applicable groundwater quality standards for Class I: Potable Resource Groundwater are as set forth in 35 Ill. Adm. Code 620.401 (e.g., numerical standards of 35 Ill. Adm. Code 620.410 in upper zone of underlying aquifer; nondegradation standard of 35 Ill. Adm. Code 620. Subpart C in lower zone of 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 property owner(s) for off-site properties with groundwater contamination from Ash Pond D so that monitoring wells may be installed and such 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, as appropriate.
  - 2) Groundwater quality standards for an off-site GMZ are set forth at 35 Ill. Adm. Code 620.450(a)(4).
- b) ~~As provided in Section 840.116 of this Part, the results of annual trend analysis will be used to determine compliance within Zone B.~~

#### **Section 840.118 116 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 Part:
- 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 Part 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) of this Part.

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 Part will be achieved when:

i) A statistically significant decreasing trend in concentrations of constituents monitored in accordance with Section 840.114 of this Part 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) of this Part; and

ii) All concentrations of constituents monitored in accordance with Section 840.114 of this Part are at or below the applicable groundwater quality standards as provided in Section 840.116(b) of this Part 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 Part, the compliance points will be determined as set forth in the GMZ approved in the closure plan or post-closure care plan, as appropriate.

3) A Mann-Kendall analysis must be performed at 95 percent confidence to determine whether the increasing or decreasing trend is statistically significant.

~~The owner or operator of Ash Pond D must establish and identify in the closure plan and post-closure care plan no fewer than three down-gradient monitoring wells located within Zone B for determining groundwater quality.~~

b) Compliance must be demonstrated as follows:

1) To demonstrate compliance with the on-site groundwater quality standards and subsection (a)(1) of this Section, the ~~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 in Zone B for all constituents monitored in accordance with Section 840.114112(a) of this Subpart and for all constituents monitored in accordance with Section 840.112(b) that are above Class I groundwater quality standards as provided in 35 Ill. Adm. Code 620.410, based on a minimum of four consecutive samples, by applying Sen's Estimate of Slope. If the results show an increasing trend, a Mann-Kendall analysis must be performed at 95 percent confidence to determine whether the increasing trend is statistically significant.

- 2) To demonstrate compliance with the off-site groundwater quality standards and subsection (a)(2) of this Section:
  - A) 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 Part that are above Class I groundwater quality standards as provided in 35 Ill. Adm. Code 620.401 (e.g., numerical standards of 35 Ill. Adm. Code 620.410 in upper zone of underlying aquifer; nondegradation standard of 35 Ill. Adm. Code 620.Subpart C in lower zone of underlying aquifer) based on a minimum of four consecutive samples, by applying Sen's Estimate of Slope; and
  - B) Sampling and analysis results 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 Part must achieve the applicable groundwater quality standards as provided in 35 Ill. Adm. Code 620.401 (e.g., numerical standards of 35 Ill. Adm. Code 620.410 in upper zone of underlying aquifer; nondegradation standard of 35 Ill. Adm. Code 620.Subpart C in lower zone of underlying aquifer) at the down-gradient boundaries of the Hutsonville site.
  - C) 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 Part, 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, such 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+18 of this Subpart.
- A1) 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 such a determination.
- B2) If there is no superseding cause for the statistically significant increasing trend and sampling frequency has been reduced pursuant to Sections 840.114(b) or (c) 840.112(a)(1) or (a)(2) 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 semi-annual or annual, whichever frequency was utilized prior to the return to quarterly sampling.
- C) For purposes of this subsection (c)(1), notifications concerning 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 Part.
- 2d) 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:

A1) A hydrogeologic investigation; and

~~2) An investigation to determine there are no exceedences of Class I standards attributable to Ash Pond D at the outer edge of Zone B; and~~

B3) Additional site investigation, if necessary.

3e) Based on the outcome of the activities required by subsection (c)(2) ~~(d)~~ of this Section, the owner or operator of Ash Pond D must take action to mitigate increasing trends exceedences that are causing, threatening or allowing exceedences of off-site groundwater quality standards as set forth in Section 840.116(b)(2), occurring at the outer edge of Zone B. Such 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.

df) In accordance with Section 840.144 of this Part, the ~~The~~ owner or operator of Ash Pond D must submit an annual report to the Agency with the results of the trend analysis required by subsection (b) of this Section and supporting data. The annual report must include a discussion of any statistically significant increasing trends, actions taken to mitigate increasing trends in accordance with subsection (c)(3) of this Section, within Zone B and a copy of any notice submitted to the Agency pursuant to subsection (c)(1)(A) of this Section.

### **Section 840.120 ~~118~~ Groundwater Collection Trench**

The 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. 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. 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. Upon approval by the Agency completion of the post-closure care certification required by Section 840.142~~140~~ of this Subpart, the owner or operator of Ash Pond D may discontinue operation of the groundwater collection trench.

**Section 840.~~122~~ 120 Groundwater Discharge System**

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. 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. 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.

**Section 840.~~124~~ 122 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. ~~The owner or operator may use coal combustion waste generated at the site in establishing the final grade and slope. Any 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.~~
- 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 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).

**Section 840.126 124 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 three (3) foot layer of soil with a hydraulic conductivity of  $1 \times 10^{-7}$  centimeters per second. ~~or less.~~
  - 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.
  - 1) The final protective layer must cover the entire geosynthetic membrane.
  - 2) The final protective layer must be at least three feet thick and must be sufficient to protect the geosynthetic membrane from freezing and minimize root penetration of the geosynthetic membrane.
  - 3) The final protective layer must consist of soil material capable of supporting vegetation.
  - 4) The final protective layer must be placed as soon as possible after placement of the geosynthetic membrane.
  - 5) The final protective layer must 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 following requirements of Section 840.146 of this Part. :

- 1) ~~The operator must designate a construction quality assurance ("CQA") officer.~~
- 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.~~
- 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; and~~
  - E) ~~That all geosynthetic membrane seams are properly constructed and tested in accordance with manufacturer's specifications.~~

**Section 840.~~128~~ 126 Closure Plan**

- a) Within 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 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 ~~128~~ 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. ~~;~~ ~~and~~
  - 4) ~~Diagrams depicting Zone A and Zone B.~~
- 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 840.110408 of this Subpart.
- e) Description of the groundwater trend analysis methods as required by Section 840.118416 of this Subpart.
- f) Plans, specifications and drawings for ~~Description of~~ the groundwater monitoring system required by Section 840.112410 of this Subpart.
- g) Description of the groundwater monitoring program required by Section 840.114412 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~~~~116~~ 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.
- 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.
- ~~k~~i) Plans, specifications and drawings for ~~Description of~~ the final cover system required by Section 840.~~126~~~~124~~ of this Subpart.
- ~~l~~j) 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 Part, 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 Part including, but not limited to, the sampling programs required by Section 840.146(b)(7) of this Part.
- ~~o~~) Description 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.
- ~~p~~) The signature and seal of the professional engineer supervising the preparation of the closure plan.

### **Section 840.~~132~~ ~~130~~ Modification of Existing Permits**

Within six months of the effective date of this Subpart A, the ~~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 ~~Section~~ 840.~~120~~~~118~~ and 840.122 of

this Subpart.

**Section 840.~~134~~ 132 Completion of Closure, Closure Report and Certification of Completion of Closure**

- a) The owner or operator must complete closure of Ash Pond D within eighteen months after the Agency's approval of the closure plan.
  
- b) 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~~~~126~~ of this Part and the requirements of this Subpart. The report also must contain supporting documentation including, but not limited to: and include all CQA reports required by Section 840.124(e)(2).
  - 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.

**Section 840.~~136~~ 134 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 ~~annual~~ 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 Part.

- b) The 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.
- c) The owner or operator of Ash Pond D must repair all eroded and scoured drainage channels ~~identified during inspections~~ 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. ~~that had previously been vegetated.~~
- f) The owner or operator of Ash Pond D must repair all tears, rips, punctures, and other damage to the geosynthetic membrane. ~~, if necessary.~~
- g) The owner or operator must prevent the growth of woody species on the protective cover.

#### **Section 840.138 ~~136~~ Post-Closure Care Plan**

- a) Within 180 days after the effective date of this Subpart A, the ~~The~~ owner or operator of Ash Pond D must prepare and submit to the Agency a post-closure care plan.
- 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 ~~138~~ Contents of Post-Closure Care Plan**

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

- a) Description of the post-closure care activities required by Section 840.136~~134~~ of this Subpart;

- b) Description of the groundwater monitoring system required by Section 840.112-110 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 840.114-112 of this Subpart;
- d) Identification of the location of the monitoring wells used for trend analyses required by Section 840.118-116 of this Subpart; and
- 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 Part; A copy of the certification of closure required by Section 840.132 of this Subpart.
- f) Description of the groundwater trend analysis methods as 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 Part, if applicable;
- h) Description of actions proposed to mitigate increasing trends in accordance with Section 840.118(c) of this Part, if applicable, and the operation and maintenance of any structures or devices; and
- p) The signature and seal of the professional engineer supervising the preparation of the post-closure care plan.

**Section 840.142-140 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 as 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 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 Part. Sections 840.134 and 840.112(a)(3) of this Subpart. The post-closure report must include a certification(s) by a professional engineer or professional geologist that the standards and requirements set forth in this Subpart A and approved in the

post-closure care plan of Section 840.134 and Section 840.112(a)(3) of this Subpart 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 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 or professional geologist, as appropriate for the activity, in making the post-closure care certification(s); 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 840.144 142 Recordkeeping and Reporting Requirements**

- a) ~~The owner or operator of Ash Pond D must file groundwater monitoring data electronically with the Agency each year during the closure of Ash Pond D and for the entire post-closure care period. The owner or operator must submit sampling data no later than 30 days after the end of the sampling period.~~
- ab) 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 840.142140 of this Subpart have been met, annual reports are no longer required. The owner or operator must submit groundwater sampling and analysis data no later than 30 days after the sampling and analysis have been completed.
- be) All annual reports must contain the following information:
  - 1) Trend analyses of all groundwater monitoring data generated by the

groundwater monitoring program required by Section 840.114~~112~~ of this Subpart during the preceding year and any additional data or information required by Section 840.118(d) of this Part; and

- 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.~~
- ~~c~~d) 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~~e) The owner or operator of Ash Pond D must maintain the closure plan until the end of the post-closure care period.
- ~~e~~f) 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 as required by Section 840.142~~140~~.
- ~~f~~g) All reports and notifications required under this Subpart to be submitted to the Agency must be submitted in writing to the Bureau of Water Land, Division of Public Water Supplies, Attn: Hydrogeology and Compliance Unit, 1021 North South Grand Avenue East, P.O. Box 19276, Springfield, Illinois 62794-9276 or electronically as authorized and directed by the Agency.

**Section 840.146 ~~144~~ Construction Quality Assurance Program ~~Modification of Closure Plan or Post-Closure Care Plan~~**

- 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 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.
  - 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 towards 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 Part; 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.
  - 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.

~~The owner or operator of Ash Pond D may modify the closure or post-closure plan so long as the modification is in accordance with the provisions of this Subpart. The updated plans must be filed with the Agency pursuant to Section 840.142(c)(3) of this Subpart.~~

**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 Part, 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 Part, a post-closure care plan satisfying the requirements of Section 840.140 of this Part, 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 Part 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 A;
- 2) Whether the activities, structures and devices proposed are in accordance with the applicable standards and requirements of this Subpart A 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 as set forth in Sections 840.116 and 840.118 of this Part;
- 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 Part 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 A;
- 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 A 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 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.
- 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 must be in the manner provided for the review of permit decisions in 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 Part 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 Part and a post-closure report satisfying the requirements of Section 840.142 of this Part 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 and review requirements and deadlines, notification requirements, and rights of appeal shall be the same as those set forth in Section 840.148 of this Part 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 A 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 Part;
  - 2) The installation of the groundwater monitoring system required by Section 840.112 of this Part;
  - 3) The installation of the groundwater collection trench and discharge system or alternative as approved by the Agency as required by Sections 840.120 and 840.122;
  - 4) The construction of the final slope and compliance with the stability criteria as required by Section 840.124 of this Part;
  - 5) The installation of the final cover system as required by Section 840.126 of this Part;
  - 6) Compliance with the Construction Quality Assurance requirements of Section 840.146 of this Part;

- 7) The establishment of a groundwater management zone in accordance with Section 840.116(b), if applicable;
  - 8) The implementation of actions to mitigate increasing trends as required by Section 840.118(c) of this Part, if applicable;
  - 9) The presence of professional signatures and seals as required by Section 840.134.
- 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 as required by Section 840.136;
  - 2) The maintenance of the groundwater monitoring system in accordance with Section 840.112(d);
  - 3) The implementation of the groundwater monitoring program as required by Section 840.114 of this Part;
  - 4) The operation and maintenance of the groundwater collection trench and discharge system, or alternative approved by the Agency, as required by Sections 840.120 and 840.122;
  - 5) The performance of the groundwater trend analysis as required by Section 840.118 of this Part;
  - 6) The implementation of actions to mitigate increasing trends as required by Section 840.118(c) of this Part, if applicable;
  - 7) Compliance with the requirements of the groundwater management zone as established pursuant to Section 840.116(b), 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; and

- 9) The presence of professional signatures and seals as required by Section 840.140.

**Section 840.152 Resource Conservation and Recovery Act**

Nothing 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.

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF: )  
 )  
 )  
AMEREN ASH POND CLOSURE RULES ) R09-21  
(HUTSONVILLE POWER STATION) : ) (Rulemaking – Land)  
PROPOSED 35 ILL. ADM. CODE 840.101 )  
THROUGH 840.144 )

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

My name is William E. Buscher. I graduated from the University of Missouri-Rolla in 1984 with a B.S. in Geological Engineering and I am a licensed professional geologist. I am currently the Manager of the Hydrogeology and Compliance Unit, Groundwater Section, Division of Public Water Supplies, Illinois Environmental Protection Agency ("Agency") Bureau of Water ("BOW"). I have worked in the Groundwater Section for over 21 years. My primary responsibilities include application of the Illinois Environmental Protection Act ("Act") and Illinois Pollution Control Board's ("Board") rules which pertain to groundwater. I am responsible for the direct supervision of technical & professional staff implementing groundwater protection, assessment and remediation programs. I also provide hydrogeologic expertise to all programs within the BOW including Public Water Supplies, Industrial and Municipal Wastewater Permits, Mine Permits, and for special reports and projects.

My testimony today and Attachment I, included with the testimony, provide part of the basis for the Agency's proposed changes to the AMEREN ENERGY GENERATING COMPANY's ("Ameren") proposed site-specific rules for the closure of Ash Pond D at the Hutsonville Power Station. For further detail on my qualifications I have enclosed a copy of my

Curriculum Vitae in Attachment I.

Specifically, my testimony addresses the following Sections proposed by Ameren, 840.100 through 840.106, Section 840.118 through 840.120, Section 840.130, and Sections 840.136 through 840.144. However, because of the Agency's proposed addition of a new Section 840.108 for incorporations by reference and the resulting renumbering of the existing sections, my testimony will refer to the Agency's proposed Sections 840.100, 840.102, 840.104, 840.106, 840.120, 840.122, 840.132, 840.138, 840.140, 840.142, 840.144, 840.148, and 840.150 unless otherwise specified.

**Section 840.100 Purpose**

The purpose Section of Ameren's proposed rule was not changed.

**Section 840.102 Applicability**

In this Section "post-closure care" was added for clarity by maintaining the distinction between closure and post-closure care, both of which are required by this Subpart. The problem arises because 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.

In addition, the Agency struck 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. Subtitle G currently covers a range of issues, and the nature and extent of future modifications to Subtitle G is uncertain. The Agency concluded it was unnecessary to make this assertion in this Subpart at this time.

**Section 840.104 Definitions**

In the Agency's amended Section 840.104 definitions have been added, deleted, and refined. Four new definitions have been proposed. The first new definition is "Contaminant." This definition is found in the Act at 415 ILCS 5/3.165. It is added because the term is used repeatedly throughout Subpart A.

Other new definitions include "on-site" and "off-site." They are used to identify property that is, or is not, part of the Hutsonville Power Station. The concepts are introduced in the Agency's Section 840.114, appear in several other sections, and are used as a basis for the Agency's proposed groundwater quality standards for the site and demonstrations of compliance. The use of the terms will be discussed further in Mr. Cobb's testimony on the Agency's proposed Sections 840.116 and 840.118.

The fourth new definition is "person." This definition is found in the Act at 415 ILCS 5/3.315. It was added because the term is used in other definitions.

The definitions of "surface impoundment," "Zone A" and "Zone B" have been stricken from the Agency's proposed rule. "Surface impoundment" has been stricken because its use in Subpart A is infrequent and incidental. The proposal clearly is applicable to Ash Pond D however it is characterized. In addition, the Agency specifically objects to the last sentence in the definition because it overstates the Board's conclusion in AS 09-1, which appears to be limited to landfills subject to 35 Ill. Adm. Code 810-815, and because federal regulations are anticipated in the relatively near future that may settle the waste management status of such facilities under RCRA's Subtitle C or D. The definitions of "Zone A" and "Zone B" were stricken because they are inconsistent with the Agency's view of how the closure should be conducted. These changes will be discussed further in Mr. Cobb's testimony.

**Section 840.106 Abbreviations and Acronyms**

GMZ was added to the acronym list. GMZ stands for Groundwater Management Zone and is based on 35 Ill. Adm. Code 620.250.

**Section 840.120 Groundwater Collection Trench**

The 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. The Agency's amended Section 840.120 requires the groundwater collection trench system design to be included in the closure plan. The design plans will be reviewed by the Agency as part of the closure plan review. Ameren must receive Agency approval prior to constructing the collection trench system. The Agency's amended language in this Section requires that the groundwater collection trench be constructed in accordance with the construction quality assurance program requirements of the Agency's proposed Section 840.146. Ameren may discontinue operation of the groundwater collection trench when the post-closure care certification required by Section 840.142 of this Subpart, has been approved by the Agency.

**Section 840.122 Groundwater Discharge System**

The current NPDES permit will need to be modified in order to accommodate the discharge of contaminated water from the groundwater collection trench. This modification will be required prior to operation of the trench. Ameren's proposed language has been deleted in Agency's amended Section 840.122 due to the restrictions which it places on how the waste water from the collection trench will be directed to the Wabash River discharge point. While the Agency has no objections to Ameren's preference to discharge through Ash Bond B, Ameren may need to utilize an alternate discharge point if there are problems with permitting the

discharge through Ash Pond B. The Agency's amended Section 840.122 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 routed to the river or otherwise managed. The purpose of this change was to provide Ameren with other discharge point options.

An important step in successfully implementing the amended rule is Ameren's ability to obtain the NPDES permit to discharge waste water from the trench into the Wabash River. The issuance of a NPDES permit is completely independent of this rule and is governed by the statutory rules pertaining to the NPDES permit process.

#### **Section 840.132 Modification of Existing Permits**

The Agency's amended Section 840.132 requires Ameren to 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 the Agency's amended rule. This application must be submitted to the Agency within six (6) months of the effective date of this site-specific rule. It 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.

#### **Section 840.138 Post-Closure Care Plan**

The Agency's amended Section 840.138 requires Ameren to prepare and submit a post-closure care plan within 180 days after the effective date of this site-specific rule.

#### **Section 840.140 Contents of Post-Closure Care Plan**

The Agency's amended Section 840.140 adds more detail to Ameren's post-closure care plan. Subsection (b) has been amended to include requiring a description of the groundwater

monitoring system maintenance plan. In the amended Subsection (e), a description of the operation and maintenance plan for the groundwater collection trench and discharge system required by Sections 840.120 and 840.122 of this proposed rule, has been required. Amended Subsection (f) requires a description of the groundwater trend analysis methods as required by Section 840.118 of the Agency's amended rule. In amended Subsection (g) a requirement to provide a proposal for a groundwater management zone as set forth in Section 840.116(b) of this Agency's amended rule has been added if the GMZ alternative is used. This would be required only if the Ameren decides to pursue a groundwater management zone for off-site contamination as provided in the Agency's proposed Section 84.116(b). Amended Subsection (h) includes providing a description of actions to be taken to address increasing trends in contaminant concentrations on-site if required under the Agency's proposed Section 840.118(c). Amended Subsection (i) includes requiring 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 Sections 840.116 through 840.118 of the Agency's proposed rule has been approved by the Agency. Amended Section 840.142 requires the owner to submit to the Agency 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 set forth in the Agency's proposed Sections 840.116 through 840.118. Additional supporting documentation has been required in subsections (a) through (e) for post-closure work including 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**

The Agency has proposed combining Subsections (a) and (b) from Ameren's proposal because they appeared to overlap. The 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. The Agency's amended Subsection (b)(1) requires reporting increasing trends, actions taken to mitigate increasing trends, and required notices as referenced in the amended Section 840.118(d). Ameren's original subsection (c)(3) requiring Ameren to provide annual summaries of all modifications to the closure and post-closure care plans was stricken because the Agency's proposal provides review and approval authority to the Agency for such changes. The Agency's amended subsection (f) contains updated Agency contact information for reporting purposes.

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

The Agency proposes new Sections 840.148 and 840.150 to provide for the review, approval and modification of closure and post-closure care plans. Ameren's proposed rule does not contain a provision for prior Agency review of these plans or other important documents, reports and requirements, including several added to the proposal by the Agency. Instead, the Agency would be a passive recipient of plans, reports, related modifications and other documentation. It was decided this puts the Agency in the untenable position of receiving substantial information about the site and ongoing activities but without authority to influence

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actions with which it may not agree. Rather than being in a position to influence events as they develop, the Agency's only recourse would be to rely on enforcement for any violations after they occur. In this regard, it was also a concern that Ameren's proposal might not be sufficiently prescriptive in some circumstances to support effective enforcement.

While the Board's rules do contain a few rules that are largely self-implementing, the Agency believes 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. This proactive approach is consistent with the Agency's obligation to assure compliance with the Act and rules adopted thereunder. Therefore, the Agency has proposed Sections that provide for the Agency's administrative oversight throughout the closure and post-closure process, including the associated procedural requirements.

The Agency's new Section 840.148 requires 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. The Agency will have 90 days from the receipt of the plan or modification to review and make a final determination to approve or disapprove or to approve with conditions the plan or modification. The 90-day period starts with the receipt of the plan. Submission of an amended plan or modification restarts the clock. The owner or operator may waive the Agency's decision deadline upon request from the Agency or at their own discretion. Modifications to a closure plan or post-closure plan must include the reason for the change and supporting documentation. At subsections (c) and (d), the Agency proposes standards for review of a closure plan, post closure plan or a modification of either plan.

The 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. 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 that the Agency deems the owner or operator did not provide; 2) a list of the provisions of the Act, 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, 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.

**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 Agency's proposed Section 840.150 is based on the same reasoning stated in my testimony under Section 840.148 above, the Agency's belief that administrative oversight is appropriate for this site as it proceeds through the closure process. The proposed Section 840.150 requires a closure report and a post-closure report prepared and submitted to the Agency in accordance with Sections 840.134 and 840.142 of the Agency's amended rule to be reviewed and approved by the Agency prior to the completion of closure or post-closure care. Closure and post-closure activities will not be deemed complete until the reports are approved by the Agency. The submission and review requirements and deadlines, notification requirements, and rights of appeal are the same as those described above in my testimony on amended Section 840.148 for

closure plans and post-closure care plans. At subsections (c) and (d), the Agency proposes standards for review of a closure report and post-closure report. Nine criteria for review are listed for each.

This concludes my testimony. I will be happy to address any questions.

ATTACHMENT I

CURRICULUM VITAE

**WILLIAM E. BUSCHER P.G.**  
**853 South Mac Arthur Blvd.**  
**Springfield, Illinois 62704**

**Professional Experience**

**Illinois Environmental Protection Agency** **April 1988 to Present**  
**Bureau of Water**  
**Division of Public Water Supplies**  
**Groundwater Section**  
**Springfield, Illinois**

**Public Service Administrator** **September 1994 to Present**  
**Duties Performed:** Hydrogeology and Compliance Unit Supervisor generally responsible for the direct supervision of technical & professional staff implementing groundwater protection, assessment and remediation programs. Functions include construction & review of analytical and numerical groundwater flow models, evaluation of the hydrogeologic aspects of groundwater protection & remediation programs.

**Environmental Protection Specialist IV** **April 1993 to August 1994**  
**Duties Performed:** Hydrogeology and Compliance Unit Supervisor generally responsible for the direct supervision of technical & professional staff implementing groundwater protection, assessment and remediation programs. Functions include construction & review of analytical and numerical groundwater flow models, evaluation of the hydrogeologic aspects of groundwater protection & remediation programs.

**Environmental Protection Engineer III** **March 1991 to April 1993**  
**Duties Performed:** Reviewing hydrogeologic aspects of implementing Illinois' groundwater protection program. Including construction and reviewing analytical and numeric groundwater flow models, completing groundwater protection needs assessments, and reviewing groundwater remediation corrective action plans. Providing technical assistance to community water supplies interested in implementing well recharge area protection program.

**Environmental Protection Engineer II** **June 1990 to April 1991**  
**Duties Performed:** Reviewing hydrogeologic aspects of implementing Illinois' groundwater protection program. Including construction and reviewing analytical and numeric groundwater flow models, completing groundwater protection needs assessments, and reviewing groundwater remediation corrective action plans. Providing technical assistance to community water supplies interested in

implementing well recharge area protection programs.

**Environmental Protection Engineer I** **April 1988 to May 1989**

**Duties Performed:** Review hydrogeologic aspects of implementing Illinois' groundwater protection program. Including reviewing the lateral area of influence determinations for pumping wells, and groundwater remediation corrective action plans. Provided technical assistance to community water supplies interested in implementing well recharge area protection programs.

**Metropolitan St. Louis Sewer District**

**2000 Hampton Avenue**

**St. Louis, Mo 63139-2979**

**Construction Inspector**

**July 1987 to November 1987**

**Duties Performed:** Inspected sewer line installation, logged soil and rock test borings and completed seismic studies for proposed sewer lines.

**Lincoln Devore Inc. Geotechnical Consultants**

**1000 West Fillmore St.**

**Colorado Springs Co. 80907**

**Engineering Geologist**

**July 1984 to November 1986**

**Duties Performed:** Geotechnical report writing, soil and rock boring logging, monitor well installation, percolation tests, geological mapping aerial photo interpretation, seismic and resistivity studies, excavation observations and drilled pier observations.

**Education**

**University of Missouri-Rolla**

**Rolla, Missouri**

Bachelor of Science Geological Engineering

May 1984

**Licenses**

**Illinois Licensed Professional Geologist**

**September 1998**

License Number 196.000656

Expiration Date March 31, 2011

**Additional Training**

1992 United States Geological Survey (MODFLOW and MODPATH groundwater modeling)

1995 Geology 435 - Computer Modeling of Groundwater Systems

**Publications**

Electronic Filing - Received, Clerk's Office, August 18, 2009

Buscher, W.E., and Cobb, R.P., 1990. Maximum Setback Zone Workbook. Illinois Environmental Protection Agency. 62 pp.

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF: )  
 )  
AMEREN ASH POND CLOSURE RULES ) R09-21  
(HUTSONVILLE POWER STATION) : ) (Rulemaking – Land)  
PROPOSED 35 ILL. ADM. CODE 840.100 )  
THROUGH 840.152 )

PRE-FILED TESTIMONY OF LYNN E. DUNAWAY, P.G., ON AMEREN'S PROPOSAL  
AND AGENCY'S PROPOSED AMENDMENTS TO SECTIONS 840.110 THROUGH 840.114

My name is Lynn E. Dunaway. I am a licensed professional geologist and an Environmental Protection Specialist in the Hydrogeology and Compliance Unit, Groundwater Section, Division of Public Water Supplies in the Illinois Environmental Protection Agency's ("Agency") Bureau of Water ("BOW"). I have worked in the Groundwater Section for more than 21 years. My primary responsibilities include application of the Illinois Environmental Protection Act ("Act") and Illinois Pollution Control Board's ("Board") rules, including review of potable well setback zone waiver and exception submissions, Certification of Minimal Hazard, Title 35 Part 620 Groundwater Quality Standards, Title 35 Part 615 Existing Activities Within Setback Zones and Regulated Recharge Areas, and Title 35 Part 616 New Activities Within Setback Zones and Regulated Recharge Areas. Such application includes being an expert witness at Board hearings for setback zone exceptions and amendments to the groundwater quality standards. I also provide hydrogeologic expertise to all programs within the BOW including Public Water Supplies, Industrial and Municipal Wastewater Permits, Mine Permits, and for special reports and projects. Provision of hydrogeologic expertise includes court testimony as needed. Further, I am a remedial project manager for sites not enrolled in other Agency remedial programs, due to the unique circumstances of the sites. These sites typically have a BOW permit and have contaminated groundwater, but no clear regulatory status beyond

the BOW permit. My current remedial projects include but are not limited to former ash impoundment sites, coal mine refuse sites and bulk fuel terminal sites. I also serve as a mentor in the Graduate Public Service Internship (GPSI) program and the Governor's Environmental Corp (GEC) program. For further detail on my qualifications I have enclosed a copy of my Curriculum Vitae in Attachment 1.

My testimony today and Attachment 1, included with the testimony, provide part of the basis for the Agency's proposed changes to the AMEREN ENERGY GENERATING COMPANY's ("Ameren") proposed site-specific rules for the closure of Ash Pond D at the Hutsonville Power Station. Specifically, my testimony addresses Ameren's proposed Sections 840.108 Hydrogeologic Site Assessment, 840.110 Groundwater Monitoring System and 840.112 Groundwater Monitoring Program. However, because of the Agency's proposed addition of a new Section 840.108 for incorporations by reference and the resulting renumbering of the existing sections, my testimony will refer to these sections (and others) using the section numbers proposed in the Agency's amendments, 840.110, 840.112, and 840.114, unless otherwise specified.

#### **Section 840.110 Hydrogeologic Site Assessment**

The Agency proposes substantive amendments to Ameren's proposed language in its Section 840.108. These changes are intimately related. First, the Agency proposes that any hydrogeologic assessment proposed by Ameren be reviewed and approved by the Agency as part of the closure plan. The proposed Ameren rule did not contain a provision for prior Agency review of the hydrogeologic site investigation or several other key documents and activities contained in the proposal. Instead, the Agency would be a passive recipient of plans, reports and related modifications. While the Board's rules do contain a few rules that are largely self-

implementing, the Agency believes 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. This is consistent with the Agency's obligation to assure compliance with the Act and rules adopted under the Act. Therefore, the Agency's review of submitted documentation pursuant to those regulations and involvement as decisions are made about site activities is essential. The submission and review of closure and post-closure documents will be discussed further in testimony on the Agency's proposed Sections 840.148 and 840.150.

Second, the Agency has stricken Ameren's proposed language to allow the use of any hydrogeologic site assessment performed since 1999. While 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. As written by Ameren, any site assessment data, whether it is still valid or not, could be used to satisfy this requirement.

Third, the Agency has proposed language intended to focus the hydrogeologic assessment on the nature and extent of contaminants originating from Ash Pond D. As proposed by Ameren, the rule would allow any hydrogeologic assessments completed since 1999 to be used to assess hydrogeology, groundwater impacts, and the design of a groundwater monitoring system for Ash Pond D. The Agency believes these interrelated amendments are appropriate since the purpose of this site-specific rule is the closure of Ash Pond D, and data used for that purpose should be relevant to circumstances at Ash Pond D.

**Section 840.112 Groundwater Monitoring System**

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The Agency proposes substantive changes to the language Ameren proposed in its Section 840.110. A requirement for Agency review and approval of the planning for the groundwater monitoring system was not contained in Ameren's proposed rule, but has been added by the Agency as part of the closure plan. This 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. The Agency also proposes a new Subsection 840.112(b). The language proposed by the Agency allows the option of expanding the monitoring system that currently exists at appropriate locations, if required, to demonstrate compliance with applicable groundwater standards under this rule. The Agency believes the monitoring system's functionality should not be limited by including only the existing monitoring system. The Agency's changes to Ameren's proposal are intended to assure that a monitoring system capable of collecting the data required to demonstrate compliance with Ash Pond D closure and post-closure requirements is planned and operated, without adding unnecessary cost. To that end, the Agency has not proposed the elimination of individual monitoring wells in operation since 1999 as part of an overall monitoring well system provided those wells will assist in meeting the requirements of this Section. To 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 this a separate submittal.

The Agency has also stricken Subsection 840.112(d). As proposed by Ameren, this Subsection provides general guidelines for the use of appropriate sample collection and analysis procedures. However, the Agency believes discussion of the Groundwater Monitoring System should be limited to monitoring well characteristics, such as the number of wells, construction

details and placement. Therefore, the Agency has added more detailed language on sample collection, preservation and analysis in Section 840.114.

**Section 840.114 Groundwater Monitoring Program**

The Agency proposes significant changes to the Section 840.114 groundwater monitoring program language Ameren proposed in its Section 840.112. In order to ensure that the groundwater monitoring program is consistent with the requirements of Section 840.114 and related requirements, the Agency proposes to include the groundwater monitoring program in the closure plan, just as it did with the hydrogeologic assessment and the groundwater monitoring system. It is the Agency's 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. The Agency has proposed amendments to Ameren's language in the opening paragraph of Section 840.114 and in Subsection 840.114(a) to reflect these changes.

The Agency also proposes a quarterly monitoring frequency for all of the contaminants included in 35 Ill. Adm. Code 620.410(a) and (d) (except radium 226 and radium 228). Ameren lists the same contaminants in its proposed Sections 840.112(a) and (b). Monitoring all contaminants on the same schedule eliminates most of Ameren's proposed 840.112(b), which proposed annual monitoring for inorganic constituents exceeding "Class I groundwater quality standards." The contaminants contained in Ameren's 840.112(a) are good indicator parameters for ash impacts. For example, Boron is abundant in coal ash, mobile in groundwater and would be an excellent contaminant for impact assessment. There is however, no dispute that an impact exists. Ameren has presented abundant documentation in the technical support document for this rule that Ash Pond D has impacted groundwater both on-site and off-site at the Hutsonville Station. The purpose of the proposed rule is the closure of Ash Pond D, which will provide a

final remedy for on-going groundwater contamination. To accomplish the remedy, the rule provides means to limit further groundwater impact with a low permeability cover, an extraction trench, and monitoring and analysis of the data to identify trends and assure compliance with applicable groundwater standards. Given the length of time Ash Pond D was in service (1968 to approximately 2000), contaminants found in coal ash, other than the indicator contaminants, could have impacted groundwater. Therefore, a full assessment of contaminants that may be present in groundwater is needed to adequately characterize and protect the resource. The Agency's proposal allows Ameren to discontinue monitoring any contaminant, except boron, iron, manganese, sulfate, TDS and pH (the indicator contaminants), after one year if the contaminant has been below the detection limit four consecutive quarters or is not statistically above background concentrations in the down-gradient wells of the monitoring system installed pursuant to Section 840.112. The comparison of contaminant concentrations to background concentrations is critical, and is discussed in detail in Mr. Cobb's testimony. A minimum of four quarters of monitoring is proposed to account for seasonal variation in groundwater quality. Additional monitoring events may be required to determine statistical significance for some contaminants, but non-detected contaminants could be proposed for elimination in the first annual report pursuant to Section 840.144. In addition, the Agency added Section 840.114(d) to ensure that sampling and analysis data are provided to the Agency in a timely manner consistent with Ameren's proposed Section 840.142(a). Under the Agency's proposal, after one year Ameren will only be required to monitor the indicator contaminants to track the success of the remedial activities and any other contaminants that are, or have the potential to, impact groundwater.

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In its proposal at Subsections 840.114(b) and (c) the Agency includes conditions under which Ameren may reduce their monitoring frequency. The Ameren proposal contains these conditions in Subsections 840.112(a)(1) and (2), but the Agency's proposed requirement for review and approval before implementation or modifications to the post-closure care plan necessitates some language changes. Additionally, the Agency proposes in Subsection 840.114(c) to eliminate the option of moving to an annual monitoring schedule after 15 years unless the conditions for monitoring reduction can be met. The Agency believes 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 Section 840.118, should continue as long as required to assure the protection of the off-site water resource.

The Agency proposes a new Subsection 840.114(e). As proposed by Ameren, this rule contained only general guidelines for appropriate sample collection and analytical procedures. To provide more direction, the Agency proposes language that parallels the monitoring and analytical requirements of 35 Ill. Adm. Code 620.510, which identifies specific documents that address these issues. The methods and procedures listed by the Agency are proposed for incorporation by reference at Section 840.108.

The Agency included a requirement to establish a quality assurance program as part of the overall Groundwater Monitoring Program at Subsection 840.114(f). This requirement was proposed by Ameren, but the Agency moved the requirement to Section 840.114, as the Agency

believes a quality assurance program for sample collection, preservation and analysis more directly relates to the Groundwater Monitoring Program.

This concludes my testimony. I will be happy to address any questions.

Attachment 1

Curriculum Vitae  
Of  
Lynn E. Dunaway

**Lynn E. Dunaway**  
516 South Cherokee  
Taylorville, Illinois 62568  
Phone (H) 217/391-6766 (W) 217/785-2762

## **Professional Experience**

**Illinois Environmental Protection Agency**  
**Bureau of Water**  
**Division of Public Water Supplies**  
**Groundwater Section**  
Springfield, Illinois

**February 1988 to Present**

### **Environmental Protection Specialist III**

**April, 1991 to Present**

**Duties include:** Currently in this position: provide hydrogeologic review and technical input to all Bureau of Water Programs and Office of Emergency Response on groundwater issues; regularly respond to questions concerning the Illinois Environmental Protection Act (Act) and associated regulations, from the public, press, other governmental bodies and industry; review and respond to documents submitted pursuant to the regulations; remedial project management at facilities under Bureau of Water permits and unpermitted sites; assist with the development of regulations in support of the (Act) including testimony before the Illinois Pollution Control Board (Board); provide technical input for special projects requiring geologic expertise, including pre-trial documents and testimony in court and before the Board; design and routine maintenance of tracking logs and data bases for the support of various groundwater programs; assist in the preparation of routine reports concerning various aspects of the States groundwater protection programs; assist in the design of a data base to track and enhance compliance with the regulations under the Act; Participate as mentor in the Graduate Public Service Internship (GPSI) program and the Governor's Environmental Corp (GEC) program.

### **Environmental Protection Specialist II**

**June, 1989 to April, 1991**

**Duties include:** the quality control process used for the Sections ambient groundwater monitoring programs before entry into the SAFE system for periodic transfer to the STORET data base; use the SAFE System; use of the STORET System; assist with the development of regulations in support of the Illinois Groundwater Protection Act (Act); regularly respond to questions concerning the Act; provide technical review of assessments submitted to the Section; provide technical input for special projects requiring geologic expertise; lead worker for the Agency's first Draft submittal for approval of the (WHPP); assist in the preparation of routine combined section 106/319 grant reports; design and routine maintenance of tracking logs and data bases for the support of various groundwater programs; assist in the preparation of routine reports concerning various aspects of the States groundwater protection programs.

### **Environmental Protection Specialist I**

**February, 1988 to June, 1989**

**Duties include:** learn the quality control process used for the Sections ambient groundwater monitoring programs before entry into the SAFE System for periodic transfer to the STORET data base; learn to use the SAFE System; occasionally respond to questions concerning the Act; provide technical input for special projects requiring geologic expertise; routine maintenance of tracking logs for the support of various groundwater programs; assist in the preparation of routine reports concerning various aspects of the States groundwater protection programs.

**Analytical Logging Inc.**  
**Shreveport Louisiana**  
**South Texas District**  
Corpus Christi, Texas

**August, 1982 to January, 1986**

**Lead Well Site Geologist**

**March, 1984 to January, 1986**

**Duties Included:** over site of a two or three man team; provide daily progress reports summarizing drilling activities and important hydrocarbon detections to field office and home office geologists and engineers; correlation and interpretation of geophysical logs; geologic evaluation of lithologic samples to determine geologic formation and hydrocarbon potential; packed column gas chromatography for hydrocarbon analysis; evaluation techniques to predict high pressure zones; routine maintenance of all systems utilized; creating a graphical representation correlating the geology, drilling parameters and hydrocarbon detections for each well.

**Well Site Geologist**

**August, 1982 to February, 1984**

**Duties Included:** correlation and interpretation of geophysical logs; geologic evaluation of lithologic samples to determine geologic formation and hydrocarbon potential; assist with packed column gas chromatography for hydrocarbon analysis; learn evaluation techniques to predict high pressure zones; learn routine maintenance of all systems utilized; creating a graphical representation correlating the geology, drilling parameters and hydrocarbon detections for each well.

## **Other Work Experience**

<b>Grain/ Livestock Farm Hand</b>	<b>February 1986 to July 1986 and October 1987 to December 1987</b>
<b>Shipping/Receiving Clerk</b>	<b>August 1986 to November 1986</b>
<b>Agrichemical Service Company Laborer</b>	<b>March 1987 to June 1987</b>
<b>Meat Packing Company Laborer</b>	<b>July 1987 to September 1987</b>

## **Education and Training**

<b>Bradley University</b> Peoria, Illinois Bachelor of Science; Geology	<b>August, 1978 to May, 1982</b>
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<b>Northern Illinois University</b> Dekalb, Illinois Post-graduate work; Field Mapping of the Black Hills Region, South Dakota	<b>June, 1982 to July, 1982</b>
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<b>USEPA Groundwater Monitoring and Restoration</b> Short course on behavior of DNAPLs in the subsurface and case studies	<b>June 1 &amp; 2, 1993</b>
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<b>USEPA Risk Assessment Guidance for Superfund</b> Environmental response training and case studies	<b>October 18-21, 1993</b>
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<b>Computer Modeling for Groundwater Systems</b> Basis of groundwater models, Dr. Larry Barrows, Illinois State University	<b>August 21, to December 16, 1995</b>
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<b>Applied Ground Water Statistics for Landfills Short Course</b> Statistical techniques for detection and compliance monitoring	<b>July 8 &amp; 9, 1997</b>
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<b>Statistical Methods in Water Resources</b> Application of statistical methods, University of Illinois, Springfield	<b>August 6-10, 2001</b>
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<b>Ozark Underground Laboratory Karst Short Course</b> Unique features and case studies in karst geologic settings	<b>March 12, 2003</b>
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<b>Aqueous Geochemistry for Environmental Regulators</b> Short Course by Dr. Stephen Van der Hoven, Illinois State University	<b>March 9 &amp; 10, 2004</b>
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<b>Overview of Environmental Geophysics</b> Review of common equipment advantages/disadvantages, by USEPA and Tetra Tech.	<b>May 6, 2004</b>
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<b>Geotechnology for Non-Engineers</b> Key principles and concepts of Geotechnology, by Dr. Timothy Stark, University of Illinois	<b>April 20, 2005</b>
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<b>Fate and Transport Processes and Models</b> Key elements of transport, models & assumptions, by Dr. Atul Salhotra, RAM, Inc.	<b>March 29 &amp; 30, 2006</b>
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**Introduction to ArcGIS I**

**March 10 & 11, 2008**

Introduction to the features and functions of ArcGIS and use thereof, by Carmen Maso', USEPA

**Forty Hour Safety Training with Annual Eight Hour Refresher per 29 CFR 1910.120**

Last refresher 2/26/2009

**Licenses**

**Licensed Professional Geologist (Illinois)**

**March 31, 1998**

License Number: 196-000608

Expiration Date: March 31, 2011

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF: )  
 )  
AMEREN ASH POND CLOSURE RULES ) R09-21  
(HUTSONVILLE POWER STATION) : ) (Rulemaking – Land)  
PROPOSED 35 ILL. ADM. CODE 840.101 )  
THROUGH 840.144 )

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

My name is Richard P. Cobb. I am a licensed professional geologist and the Deputy Manager of the Division of Public Water Supplies of the Illinois Environmental Protection Agency's ("Illinois EPA" or "Agency") Bureau of Water ("BOW"). My primary responsibilities include managing the Groundwater and Source Water Protection, Field Operations, and the Administrative Sections of the Division. Further, I assist with administering the public water supervision program under the federal Safe Drinking Water Act ("SDWA"). Additionally, my responsibility includes the integration of source water protection with traditional water supply engineering and treatment practices, and to further assist with linking Clean Water Act, SDWA, and groundwater programs. I also directly manage the BOW's Groundwater Section. The Groundwater Section applies Geographic Information System ("GIS") programs, global positioning system technology, hydrogeologic models (including, 3D geologic visualization, vadose zone, groundwater flow, particle tracking, solute transport, and geochemical models), and geostatistical programs for groundwater protection and remediation. I represent the BOW on Illinois EPA's Contaminant Evaluation Group, Strategic Management Planning Team, Environmental Justice Committee, Information Management Steering Committee, GIS Steering Committee and the Lead. Since 1985 I have worked on the development of legislation, rules, and regulations. I have also served as a primary Agency witness at Illinois Pollution Control Board

("Board") proceedings in the matter of groundwater quality standards, technology control regulations, regulated recharge areas, maximum setback zones, clean-up regulations, and water well setback zone exceptions. Furthermore, I have served as a primary Agency witness in enforcement cases under these laws and regulations.

For further details on my qualifications I have enclosed a copy of my Curriculum Vitae in Attachment VII. This testimony and attachments I – VI included with this testimony describe the basis for the Illinois EPA's proposed changes to the applicable groundwater quality standards in AMEREN ENERGY GENERATING COMPANY's ("Ameren") proposed site-specific rules for the closure of Ash Pond D at the Hutsonville Power Station. Specifically, my testimony addresses Ameren's proposed Sections 840.114 and 840.116. However, because of the Agency's proposed addition of a new Section 840.108 for incorporations by reference and the resulting renumbering of the existing sections, my testimony will refer to these sections (and others) using the section numbers proposed in the Agency's amendments, 840.116 and 840.118, unless otherwise specified.

The purpose of my testimony is to start the panel of Illinois EPA witness testimony with the discussion regarding the sections that drive the site-specific rulemaking for Ameren's Hutsonville Ash Pond D, Ameren's proposed Sections 840.114 Compliance Zones and 840.116 Demonstration of Compliance. These sections and topics are central to the proposal and the Agency's proposed amendments because Ameren has presented abundant documentation in the technical support documents for this rule that Ash Pond D has impacted groundwater both on-site and off-site at the Hutsonville facility. (see Attachments I through III) The purpose of the proposed rule is the final closure of Ash Pond D, and, in the Agency's opinion, this should include a return to compliance with the groundwater quality standards of 35 Ill. Adm. Code 620 to the

extent practicable. Therefore, I start with the Agency's proposed Sections 840.116 and 840.118 because the rest of the proposal primarily addresses how these standards will be achieved.

**Brief Comparison of Groundwater Quality Standards and Compliance**

Ameren has proposed in its Section 840.114 two compliance zones consisting of Zones A and B, with Zone A described as the "upper migration zone underlying Pond D" and Zone B described 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." Ameren's Statement of Reasons ("SOR"), p. 28; Ameren Proposal §§ 840.114, 840.104. Within these zones, "concentrations of parameters as monitored" would be "authorized," and no groundwater quality standards would apply including those in 35 Ill. Adm. Code 620 ("Part 620"). SOR at 28; Ameren Proposal § 840.114(a). In other words, upon adoption of Ameren's proposal and thereafter, there will be no limits on concentrations of contaminants within these zones.

Within Zone B, facility compliance will be determined by an annual trend analysis of the monitoring data. *Id.* at 28; §§ 840.114(b), 840.116(a) – (c). 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 I groundwater quality standards for a period of five years." Ameren Proposal § 840.112(a)(3). Thus, compliance could be monitored at the downgradient boundaries of Zone B where "Class I groundwater quality standards" would be achieved with no increasing trend. However, corrective action would be complete, and no groundwater quality standards would apply

within Zones A and B, with any “concentrations of parameters as monitored” deemed acceptable within these areas regardless of future occurrences or sources of contamination.

The Agency’s view is that an approach similar to the Board’s rules for groundwater management zones (“GMZ”) in 35 Ill. Adm. Code 620 is generally acceptable for the Hutsonville site itself, 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 as discussed later in my testimony. Compliance with any off-site standards is further complicated because the Agency believes the lower migration zone in Ameren’s proposed Zone B also has been contaminated by constituents from Ash Pond D at levels below the numerical Class I groundwater quality standards of 35 Ill. Adm. Code 620.410 but above the Class I nondegradation standard at 35 Ill. Adm. Code 620.401 and 620.Subpart C. Moreover, 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. Therefore, the Agency has proposed in its Sections 840.116 and 840.118: 1) Groundwater quality standards for both on-site and off-site contamination that more consistently reflect the existing Board standards; 2) elimination of the compliance zone concepts of Zones A and B with substitution of the down-gradient boundaries of the Hutsonville site as the compliance point for both on-site and off-site contamination; and 3) appropriate methods of demonstrating compliance with the proposed standards at the proposed compliance points. The remainder of my testimony describes these changes and the underlying reasons in more detail.

**Section 840.116 Groundwater Quality Standards**

In its Section 840.116(a), the Illinois EPA proposes, 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 numerical groundwater quality standards (“standards”) at 35 Ill. Adm. Code 620.410. The Illinois EPA recommends that the existing concentrations, as determined by groundwater monitoring, apply during closure and post-closure to prevent causing or allowing any further degradation to occur as consistent with Section 12(a) of the Act (415 ILCS 5/12(a)). After 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 the three conditions specified in subsections 840.116(a)(1) through (a)(3) are satisfied. These conditions are similar to those required when winding down GMZs in which a return to full compliance has not been achieved by the corrective action. 35 Ill. Adm. Code 620.450(a)(4).

In its Section 840.116(b), the Illinois EPA proposes that the groundwater quality standards that apply off-site at all times are as provided in 35 Ill. Adm. Code 620.401, 620.410 and 620.Subpart C -- the Class I numerical and nondegradation standards. The Agency believes these standards reflect current law. It 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. However, because existing contamination already exceeds these standards, the Agency proposes 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). The Agency has not proposed that the nondegradation standard apply in the upper migration zone off-site to remain consistent with the

Board's requirement at subsection 620.302(c).<sup>2</sup> Ameren's modeling shows that the final cover system, the groundwater collection trench and the groundwater discharge system, if permitted, should combine to achieve a return to off-site compliance with the Agency's proposed standards over a period of approximately 25 years. (see Attachment IV) Technical Support Document ("TSD"), Chap. 8, p. 534, Fig. 17D.

The Agency's proposed Section 840.116(b) offers the alternative of establishing an off-site GMZ as provided in 35 Ill. Adm. Code 620.250 with the written permission of the property owner(s). This 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. However, the Agency has always required the written permission of affected property owners for the establishment of off-site GMZs, so the details for the GMZ off-site alternative would have to be worked out at a later time. The Agency's proposed amendment simply provides this option as an alternative to strict compliance with the numerical and nondegradation standards as described above.

The issue of whether the upper and lower aquifers (*i.e.*, 20 foot fine-grained alluvium underlain by 70 feet of coarse grained sands and gravels), described by Ameren as separate units, 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. The Illinois EPA recommends that the upper and lower aquifers should be considered one hydrologic unit, especially in the southeast corner where monitoring well ("MW") 14 is showing contamination

<sup>2</sup> "If a contaminant exceeds a standard set forth in Section 620.410 . . . , the appropriate remedy is corrective action and Sections 630.305 and 620.310 do not apply." 35 Ill. Adm. Code 620.302(c).

(TSD, Chapter 5, p. 51) (see Attachment II). Ameren asserts that this lower aquifer is under confined conditions, but also indicates on Page 13 of the SOR that contamination is occurring in the lower aquifer above background in MW 14. The deep alluvial aquifer is hydraulically connected to the fine-grained alluvium in some areas of the site, as can be seen in the potentiometric surface<sup>3</sup> maps (TSD, Chapter 5, Fig. 2-9, p. 40) (see Attachment V) confirmed by groundwater quality data (TSD, Chapter 5, pp. 51-52) (see Attachments II, III). Potentiometric surface maps in this exhibit show nested wells MW-7 (fine-grained shallow alluvium) and MW-7D (coarse grained deep alluvium) with identical water levels, or near identical levels with a slight downward gradient (TSD, Chap. 6, Fig. 2, p. 214) (see Attachment VI). This hydraulic connection is further reflected by the boron, sulfate, manganese, pH and total dissolved solids ("TDS") contamination (boron, sulfate, TDS, pH) seen in the coarse grained deep alluvial well MW-14.<sup>4</sup> It should be noted that this represents an exceedence of the Board's nondegradation standards. Based on the hydraulic connection, 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. This issue is not critical on-site.

<sup>3</sup> "Potentiometric surface" means a surface that represents the level to which water will rise in tightly cased wells. If head varies significantly with depth in the aquifer, there may be more than one potentiometric surface. The water table is a particular potentiometric surface for an unconfined aquifer.

<sup>4</sup> In addition, the Agency has requested, and Ameren has consented to provide results of, an enriched tritium analysis at MW 14 as a further indication of whether the upper and lower migration zones are one hydrologic unit. Tritium concentrations in groundwater provide a useful method for determining the degree of confinement of an aquifer. The naturally occurring tritium level in rainwater (pre-bomb) is estimated at 5 to 10 tritium units (TU). However, the amount of tritium in the atmosphere was greatly increased as a result of nuclear weapons testing causing recharge waters to be "tagged" with excess tritium beginning in about 1954. Nuclear weapons testing resulted in atmospheric tritium levels in excess of 1000 TU. Modern day values have declined to levels between 50 and 100 TU with the decline attributed to the elimination of atmospheric nuclear weapons testing and radioactive decay. Tritium analysis is used to estimate the time since recharge to the groundwater system occurred and the susceptibility of the groundwater system to contamination. Groundwater systems with recharge occurring prior to the 1950s will have a tritium level decreased by radioactive decay to levels at or below one TU. These groundwater systems are considered "confined." Conversely, groundwater systems which have been recharged after the early 1950s will contain tritium levels at, or significantly above, the natural "pre-bomb" background concentrations and are considered "unconfined."

Further, Ameren indicates that it considers the contaminant concentrations in the lower part of the aquifer to be insignificant because the levels found did not exceed the numerical standards:

Groundwater within the deep alluvial aquifer complies with Class 1 groundwater quality standards and reflects only nominal impacts in the deep alluvial aquifer from Pond D in only one of the five wells. The lack of significant groundwater impacts in the deep alluvial aquifer after more than 40 years of Pond D operation provides further evidence that the silts and shales separating the upper migration zone of the from the deep aquifer are an effective confining layer. (Emphasis added)

TSD, Chap 5, p. 18. Contamination in the lower zone appears to 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 groundwater flow to the southeast. TSD, Chap. 5, p. 40, Fig. 2-9. (see Attachment V) Moreover, the irrigation well is screened in the lower zone of the aquifer. There maybe 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.

The Illinois EPA reiterates that the nondegradation requirements of the Act (415 ILCS 5/12(a) and 12(d)), and the Board groundwater quality standards (35 Ill. Adm. Code 620.401, 620.Subpart C) apply to off-site groundwater down-gradient of Ash Pond D in the lower zone of the unconsolidated aquifer. Although the site-specific rule proposed by Ameren does not recognize the nondegradation requirements under the Act and Board regulations, results from monitoring well MW 14, located in the lower zone of the aquifer, show exceedences of the Board's nondegradation standards. Thus, the concentrations in the lower aquifer do not comply with the Class I standards:

Groundwaters must meet the standards appropriate to the groundwater's class as specified in this Subpart and the nondegradation provisions of Subpart C. (Emphasis added)

35 Ill. Adm. Code 620.401.

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Since I have personally been involved in the promulgation, implementation and enforcement of the groundwater quality standards since the middle 1980's, I think it is important to briefly review some of the history of the nondegradation standard, especially since it frequently is not acknowledged and may arise in other coal ash impoundment closure scenarios. Since the inception of the Act in 1970, it has been the policy of the State of Illinois to restore, protect, and enhance the groundwater of the State as a natural and public resource. Groundwater has an essential and pervasive role in the social and economic well-being of Illinois, and it is vitally important to general health, safety, and welfare. Groundwater resources should be utilized for beneficial and legitimate purposes; waste and degradation of the resource should be prevented; and the underground water resource should be managed to allow for maximum benefit of the State. Groundwater used as drinking water is one of the highest beneficial uses of the groundwater resource. Another beneficial use that is covered under Class I groundwater is irrigation. Therefore, the off-site migration of boron from this site is specifically relevant due to the off-site irrigation well. The Illinois Groundwater Protection Act ("IGPA") defines "resource groundwater" as groundwater that is presently being or in the future capable of being put to beneficial use by reason of being of suitable quality (415 ILCS 55/3(j)).

The Illinois Supreme Court, in upholding a previous Board decision, determined the following for this very site prior to Ameren's ownership:

The Board, at the outset, disagrees with CIPS' interpretation of the definition of water pollution in the Act. The Board argues that the Act treats water as a resource, and that pollution occurs whenever contamination is likely to render water unusable. Under the Board's interpretation there is no need to show that actual harm will occur, only that harm would occur if the contaminated water were to be used. Since the Board is charged with administering the Environmental Protection Act, its interpretation of the statute is entitled to deference. (Citations omitted) Under the Board's view any contamination which prevents the State's water resources from

being usable would constitute pollution, thus allowing the Board to protect those resources from unnecessary diminishment. CIPS' interpretation, on the other hand would mean that water rendered unusable would not be polluted so long as use of the water ceased subsequent to contamination. We find the Board's interpretation preferable to CIPS' interpretation, especially considering the deference we must accord to the Board. (Italics original; underlining added)

*Central Illinois Public Service Company v. Pollution Control Board*, 116 Ill.2d 397, 409 – 10.

Additionally, the Board's opinion, in regard to *Water Quality Standards Revisions* (#R71-14), and *Water Quality Standards for Intrastate Waters* (SWB-14) (#R71-20) indicated the following:

203 General Standards. Today's revision is based upon the principle that all waters should be protected against nuisances and against health hazards to those near them; that all waters naturally capable of supporting aquatic life, with the exception of a few highly industrialized streams consisting primarily of effluents in the Chicago area, should be protected to support such life; and that waters that are used for public water supply should be clean enough that ordinary treatment processes will assure their potability...

...Since general criteria apply to all waters designated for public water supply, the present regulation omits separate requirements for those parameters whose general standards are tight enough to protect public water supplies: boron, chromium, copper, fluoride, mercury, silver and zinc. The remaining standards are based largely upon Public Health Service standards, as amplified by the Green Book and by McKee and Wolf. While the PHS explicitly states that its standards are intended to prescribe the quality of finished rather than of raw water, it is clear from the evidence that many of the metals and other contaminants here listed are not substantially affected by ordinary water supply treatment, and therefore, as the Green Book recommends, the raw water must itself meet the standard to assure satisfactory finished water. (Emphasis added)

The phrase "ordinary treatment processes," emphasized in the Board's opinion<sup>6</sup>, applied to the lowest common denominator of a private drinking water system<sup>7</sup> well or future use by such a well, is one of the keys to understanding Illinois' nondegradation requirements for groundwater.

<sup>6</sup> Board's opinion, in regard to *Water Quality Standards Revisions* (#R71-14), and *Water Quality Standards for Intrastate Waters* (SWB-14) (#R71-20)

<sup>7</sup> A private drinking water system is defined as a system that serves an owner occupied single family dwelling (415 ILCS 55/9(a)).

First, it is important to note that there is a significant difference between what is considered ordinary treatment processes for surface water versus groundwater sources of drinking water. All community water systems (“CWS”) using surface water apply coagulation, sedimentation, filtration, disinfection, and treatment for taste and odor. Private drinking water systems do not use surface water as a source of drinking water due to the inherent vulnerability of surface water resources to contamination and the associated cost for treating such water. Secondly, there is a significant difference between what is considered ordinary treatment processes for a small CWS using groundwater versus a private drinking water system well. The small CWS using groundwater has more treatment infrastructure resources available than the owner of a private well. Lastly, a private well owner typically only has to chlorinate his or her well to use the groundwater for potable uses. Thus, this defines the lowest common denominator of what “ordinary treatment processes” means to the protection of Class I: Potable Resource Groundwater. In other words, the Act<sup>8</sup> and Board regulations prohibit a person for 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. For example, a plume of boron at a concentration above background or naturally occurring levels, moving toward a private drinking water system well, is considered a threat to diminishing the existing Class I groundwater resource, since boron can only be removed by advanced treatment processes. This diminishment of resource groundwater (415 ILCS 55/3(j)) may lead to preclusion of the use of the well if the private well owner chooses not to use it (e.g., suitability) due to the contamination.<sup>9</sup>

<sup>8</sup> Section 12(a) of the Act (415 ILCS 5/12(a) provides that: “No person shall: (a) cause, threaten or allow the discharge of contaminants into the environment in any State so as to cause or tend to cause water pollution in Illinois, either alone or in combination with matter from other sources, or so as to violate regulations or standards adopted by the Pollution Control Board under this Act.” (Emphasis added)

<sup>9</sup> As the Illinois Supreme Court noted in the CIPS-Hutsonville case:

The Illinois EPA framed and the Board adopted the following after the legal cornerstones detailed above:

- a) No person shall cause, threaten or allow the release of any contaminant to a resource groundwater such that:
  - 1) Treatment or additional treatment is necessary to continue an existing use or to assure a potential use of such groundwater; or
  - 2) An existing or potential use of such groundwater is precluded.

35 Ill. Adm. Code 620.301 (General Prohibition against Use Impairment of Resource Groundwater) (Emphasis added).

To summarize, the Illinois EPA is not recommending that the nondegradation requirements be applied to concentrations on-site that already exceed background and Class I numerical standards. However, the Illinois EPA is recommending that those existing concentrations not be increased. This is addressed in more detail in my discussion of the Agency's proposed Section 840.118(c) below. Moreover, contaminants in off-site groundwater must not cause, threaten or allow contamination above existing concentrations. This would constitute continuing degradation off-site. The contaminant transport modeling conducted by Ameren shows that these concentrations in the upper migration zone of the aquifer will decrease over time in response to the interceptor trench and capping. TSD, Chap. 8, p. 534, Fig. 17D. (see Attachment IV) The Illinois EPA believes that, if the concentration in the upper zone of the aquifer is decreased by the corrective action measures, it 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.

The Board also notes that the long period of potential contamination makes prediction of future water needs difficult. The geological make-up of the area makes future use as a water supply desirable, even if, with the exception of CIPS' wells, there is currently no need for water-supply wells in the immediate area. The Board found that it was "difficult to project \* \* \* what land uses might be even 20 years from now . . . ."

*Central Illinois Public Service Company v. Pollution Control Board*, 116 Ill.2d at 411-12.

**Section 840.118 Demonstration of Compliance**

As noted above, Ameren has proposed that 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 I groundwater quality standards for a period of five years.” Ameren Proposal § 840.112(a)(3). Because the Agency has proposed that groundwater quality standards will apply to the Hutsonville site and off-site properties affected by groundwater contamination from Ash Pond D, it also has proposed compliance points and demonstrations of compliance that differ from Ameren’s and are suitable for the Agency’s proposed standards.

The Agency’s proposed Section 840.118(a) sets forth the circumstances in which compliance will be achieved both on-site and off-site. Subsection (a)(1) provides that compliance with the on-site standard in Section 840.116(a) will be achieved when monitoring at the down-gradient boundaries of the Hutsonville site after a change to an annual monitoring frequency shows no statistically significant increasing trend for four consecutive years. Given the monitoring frequencies established in Section 840.114, the soonest on-site compliance could be achieved would be fourteen years after monitoring begins. If there are no increasing trends, then steady state conditions or decreasing trends will signify that the conditions for on-site compliance in Section 840.116(a) have been satisfied. Subsection (a)(2) 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

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to an annual monitoring frequency, and 2) compliance with the upper and lower migration zone groundwater quality standards set forth in Section 840.116(b).

The first point to note about Section 840.116(a) is that, with the elimination of Zones A and B, the Hutsonville property boundary downgradient of Ash Pond D is the applicable vertical plane of compliance for both on-site and off-site groundwater quality standards. Even 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. Moreover, the practical outcome is that it appears that the final cover system, interceptor trench and discharge system is 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.

Section 840.118(b)(1) provides that on-site compliance with Section 840.118(a)(1) 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 I numerical standards of Section 620.410. 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 as provided in Section 840.116(a)(1). Subsection (b)(2) also relies on the trend analysis to demonstrate off-site compliance with the decreasing trend requirement as well as requiring monitoring data to demonstrate strict compliance with the groundwater quality standards proposed in Section 840.116(b) for the upper and lower migration zones.

As an alternative to the requirements of Sections 840.116(b), 840.118(a)(2) and 840.118(b)(2) for achievement and demonstrations of off-site compliance, the establishment of an off-site GMZ under Section 840.116(b) would enable Ameren and the Agency to develop

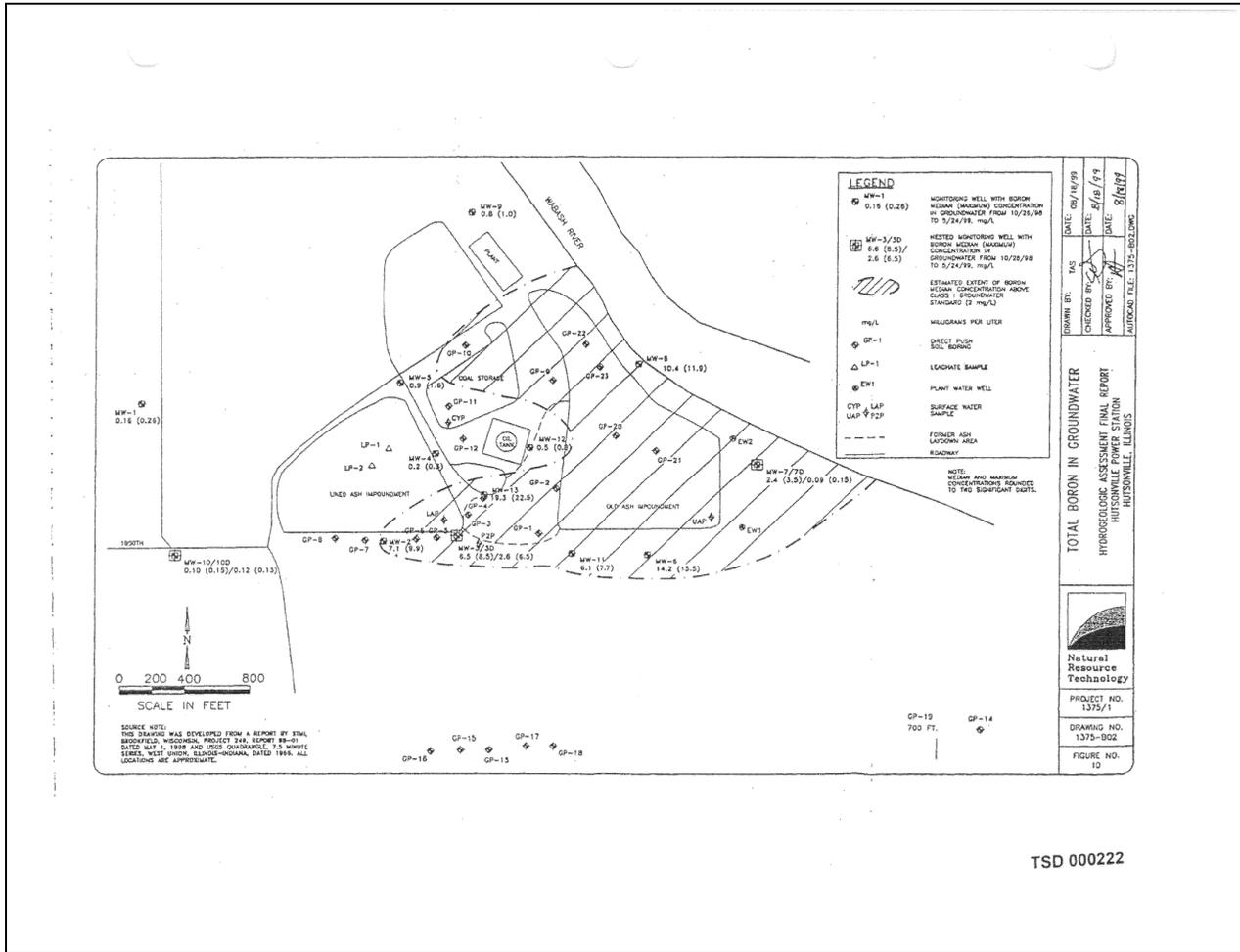
alternative groundwater quality standards, compliance points and demonstration requirements as provided in 35 Ill. Adm. Code 620 and to the extent appropriate at this site.

Section 840.118(c) uses the trend analysis concept to identify increasing trends that would indicate that the final cover system, interceptor trench and discharge system are not working as planned or that other causes of contamination are interfering with the results of these structures and operations. In effect, an increasing trend will indicate further degradation of the groundwater quality that will require additional investigation pursuant to subsections (c)(1) and (c)(2) and possibly further corrective actions pursuant to subsection (c)(3) to mitigate the increasing trends.

Section 840.118(d) provides reporting requirements for the trend analyses required for demonstrations of compliance and related matters.

This concludes my testimony. I will be happy to address any questions.

Attachment I



TSD 000222

Attachment II

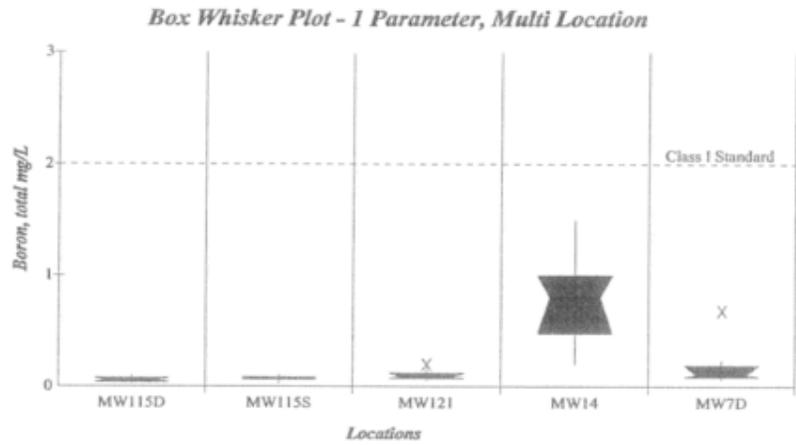


Figure 2-19a. Box-whisker plot showing boron concentrations in the deep alluvial aquifer from 2002 through 2008.

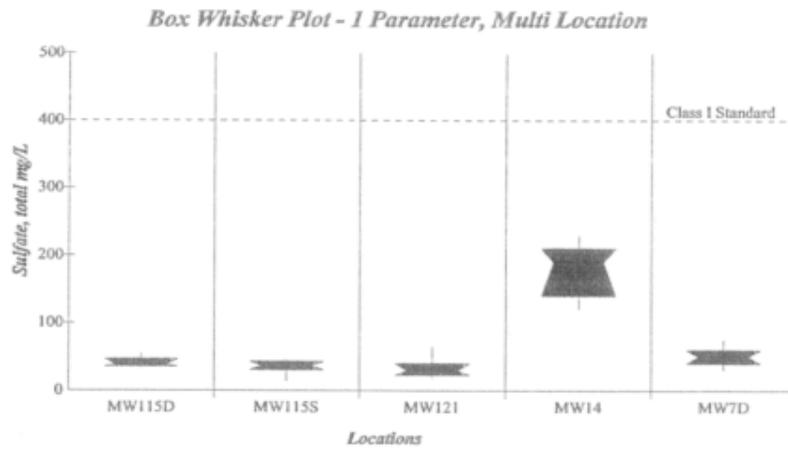


Figure 2-19b. Box-whisker plot showing sulfate concentrations in the deep alluvial aquifer from 2002 through 2008.

Attachment III

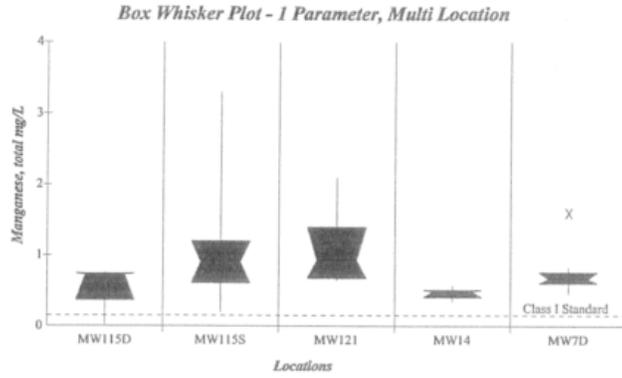


Figure 2-19c. Box-whisker plot showing manganese concentrations in the deep alluvial aquifer from 2002 through 2008.



Figure 2-19d. Box-whisker plot showing TDS concentrations in the deep alluvial aquifer from 2002 through 2008.

Attachment IV

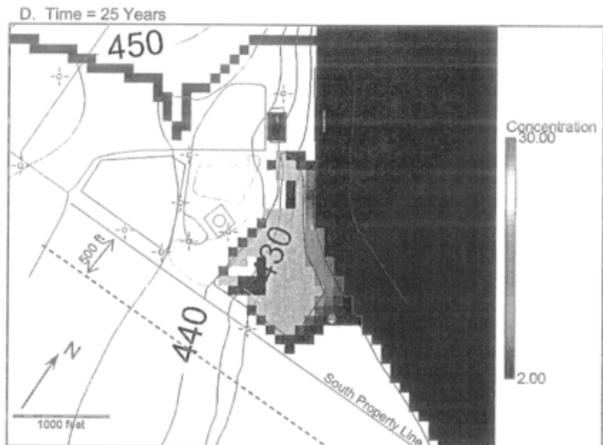
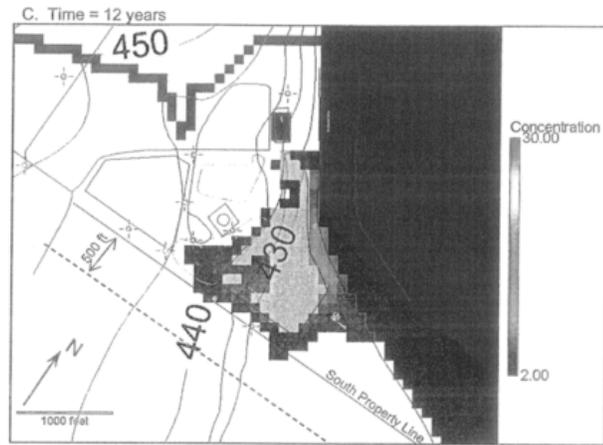
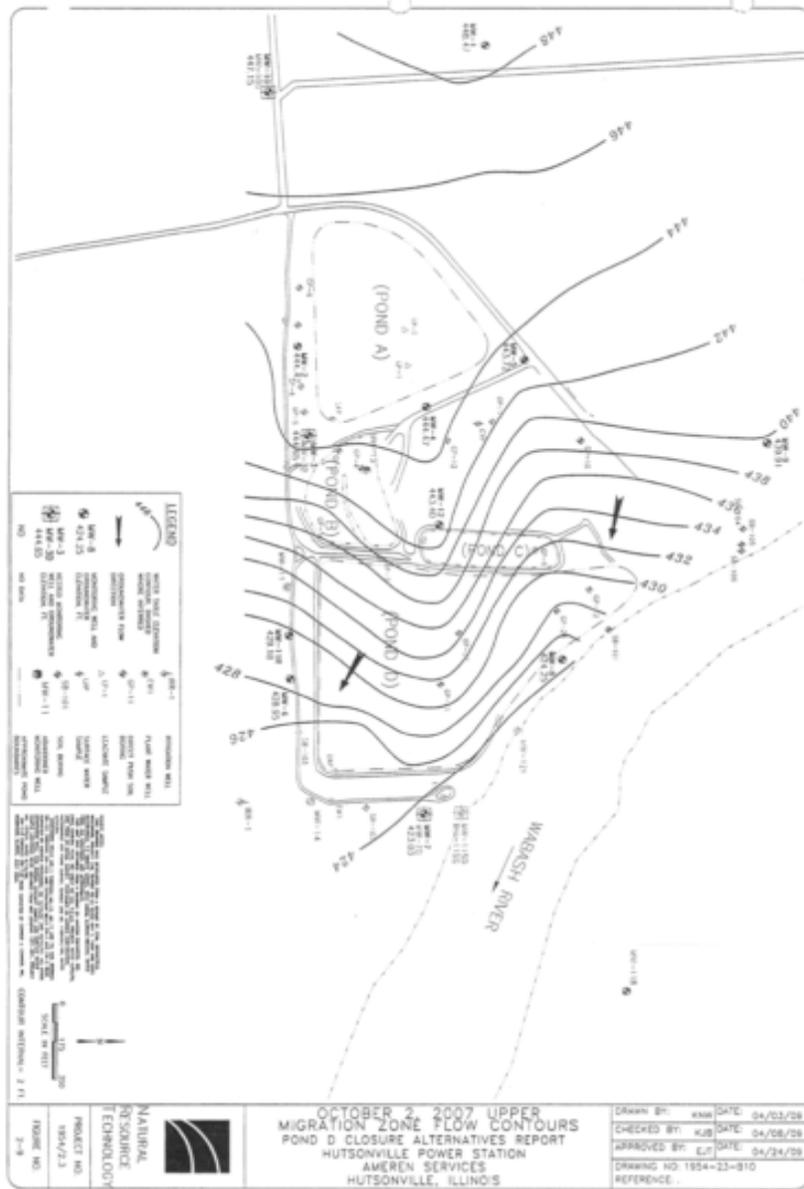


Figure 17C-D. Pond D Closure Scenario Model Head and Concentration Results



TSD 000534

Attachment V



Attachment VI

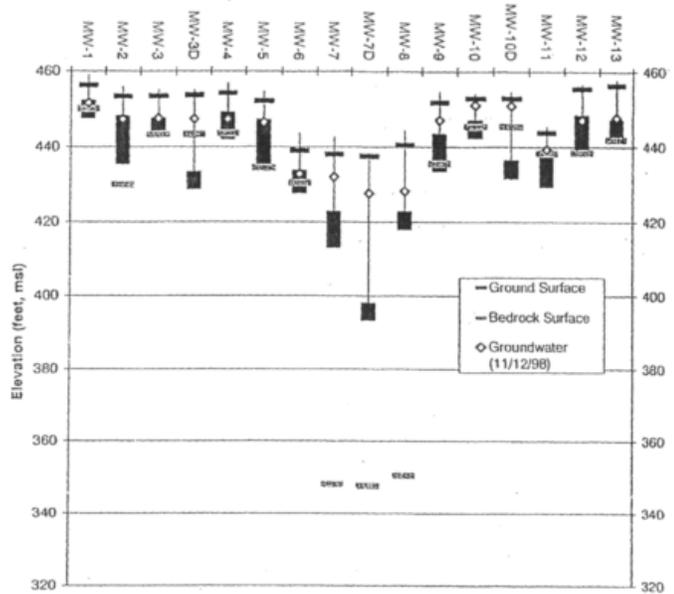


Figure 2. Elevation of well screens, ground surface, bedrock surface, and groundwater. Bedrock surface depths for MW-7, MW-7D, and MW-8 are estimated.



TSD 000214

**ATTACHMENT VII - CURRICULUM VITAE of  
RICHARD P. COBB, P.G.**

**Work Experience**

***Deputy Manager, Division of Public Water Supplies (DPWS)***, Bureau of Water (BOW), Illinois Environmental Protection Agency (EPA). (5/02- Present) My primary responsibilities include managing the: Groundwater Section, Field Operation Section, and the Administrative Support Unit of the Division. Further, I assist with administering the public water supervision program under the federal Safe Drinking Water Act (“SDWA”) and the Wellhead Protection Program (“WHPP”) approved by the United States Environmental Protection Agency (“U.S. EPA”). Additionally, my responsibility includes the integration of source water protection with traditional water supply engineering and treatment practices, and to further assist with linking Clean Water Act and SDWA programs. I also directly manage the BOW’s Groundwater Section. The Groundwater Section applies Geographic Information System (“GIS”) programs, global positioning system (“GPS”) technology, hydrogeologic models (3D geologic visualization, vadose zone, groundwater flow, groundwater particle tracking, solute transport, and geochemical models), and geostatistical programs for groundwater protection and remediation projects. The Groundwater Section also continues to operate a statewide ambient groundwater monitoring program for the assessment of groundwater protection and restoration programs. I also do extensive coordination with federal, state and local stakeholders including the Governor appointed Groundwater Advisory Council (“GAC”), the Interagency Coordinating Committee on Groundwater (“ICCG”), four Priority Groundwater Protection Planning Committees, Illinois Source Water Protection Technical and Citizens Advisory Committee, and with the Ground Water Protection Council (“GWPC”), Association of State Drinking Water Administrators (“ASDWA”), and the Association of State and Interstate Water Pollution Control Administrators (“ASWIPCA”) to develop and implement groundwater protection policy, plans, and programs. I represent the BOW on Illinois EPA’s: Contaminant Evaluation Group (“CEG”); Strategic Management Planning Team; Environmental Justice Committee; GIS Steering Committee; Information Management Steering Committee; and Leadership in Energy and Environmental Design for Existing Building (“LEED-EB”) Committee. Since starting with Illinois EPA in 1985, I have worked on the development of legislation, rules and regulations. I have also served as a primary Illinois EPA witness before Senate and House legislative committees, and at Illinois Pollution Control Board (“Board”) proceedings in the matter of groundwater quality standards, technology control regulations, cleanup regulations, regulated recharge areas, maximum setback zone, and water well setback zone exceptions. Furthermore, I have served as primary Illinois EPA witness in enforcement matters.

***Manager, Groundwater Section***, DPWS, BOW, Illinois EPA. (9/92-5/02) My primary responsibilities included development and implementation of Illinois statewide groundwater quality protection, USEPA approved WHPP, and source water protection program. The Groundwater Section worked with the United States Geological Survey (“USGS”) to refine Illinois EPA’s ambient groundwater monitoring network using a random stratified probability based design. The Groundwater Section continued to operate a statewide ambient groundwater monitoring program for the assessment of groundwater protection and restoration programs based on the new statistically-based design. I co-authored a *Guidance Document for Conducting Groundwater Protection Needs Assessments* with the Illinois State Water and Illinois State Geological Surveys. I also continued to conduct extensive coordination with federal, state and

local stakeholders including the Governor appointed GAC, the ICCG, four Priority Groundwater Protection Planning Committees, Illinois Source Water Protection Technical and Citizens Advisory Committee, and at the national level as Co-chair of the GWPC Ground Water Division to develop and implement groundwater protection policy, plans, and programs. I also served periodically as Acting Manager for the Division of Public Water Supplies. Additionally, the Groundwater Section provided hydrogeologic technical assistance to the BOW Permit Section and Mine Pollution Control Program to implement source water protection, groundwater monitoring and aquifer evaluation and remediation programs. I continued to work on the development of legislation, rules and regulations. I also served as a primary Illinois EPA witness at Board proceedings in the matter of groundwater quality standards, technology control regulations, regulated recharge areas and water well setback zone exceptions. Furthermore, I served as an Agency witness in enforcement matters.

***Acting Manager, Groundwater Section***, DPWS, BOW, Illinois EPA. (7/91-9/92) My responsibilities included continued development and implementation of Illinois statewide groundwater quality protection, U.S. EPA approved WHPP, and ambient groundwater monitoring program. The Groundwater Section developed the Illinois EPA's WHPP pursuant to Section 1428 of the SDWA and was fully approved by U.S. EPA. Illinois EPA was the first state in U. S. EPA Region V to obtain this approval. I performed extensive coordination with state and local stakeholders including the Governor appointed GAC, the ICCG to develop and implement groundwater protection, plans, policy, and programs. Developed and implemented the establishment of Illinois' Priority Groundwater Protection Planning Committees. Developed and implemented Pilot Groundwater Protection Needs Assessments. The Groundwater Section also provided hydrogeologic technical assistance to the BOW Permit Section and Mine Pollution Control Program staff to develop groundwater monitoring and aquifer evaluation, remediation and/or groundwater management zone programs. I also served as a primary Agency witness at Board proceedings in the matter of groundwater quality standards and technology control regulations. Additionally, I served as an Agency total quality management ("TQM") facilitator, and TQM trainer.

***Manager of the Hydrogeology Unit***, Groundwater Section, DPWS, Illinois EPA (7/88-7/91) Managed a staff of geologists and geological engineers that applied hydrogeologic and groundwater modeling principals to statewide groundwater protection programs. Developed, and integrated the application of GIS, GPS, geostatistical, optimization, vadose zone, solute transport, groundwater flow and particle tracking computer hardware/software into groundwater protection and remediation projects. Conducted extensive coordination with state and local stakeholders including the Governor appointed GAC and ICCG to develop and implement groundwater protection policy, plans, and programs. Developed and implemented a well site survey program to inventory potential sources of contamination adjacent to community water supply wells. Additionally, I worked on the development of rules to expand setback zones based on the lateral area of influence of community water supply wells. Furthermore, I provided administrative support to the Section manager in coordination, planning, and supervision of the groundwater program. I also assisted with the development of grant applications and subsequent management of approved projects. In addition, I assisted the section manager with regulatory and legislative development in relation to the statewide groundwater quality protection program. I also served on the Illinois EPA's Cleanup Objectives Team ("COT").

***Environmental Protection Specialist I, II, and III, Groundwater Section***, DPWS, Illinois EPA. (7/85-7/88) I was the lead worker and senior geologist in the development and implementation of Illinois statewide groundwater quality protection program. I worked on the development of Illinois EPA's ambient groundwater monitoring network, and field sampling methods and procedures with the USGS. I published the first state-wide scientific paper on volatile organic compound occurrence in community water supply wells in Illinois. In addition, I assisted with the development of *A Plan for Protecting Illinois Groundwater*, and the legislation that included the *Illinois Groundwater Protection Act*.

***Consulting Well Site Geologist***, Geological Exploration (GX) Consultants, Denver Colorado. (3/81-12/83) I worked as a consulting well site geologist in petroleum exploration and development for major and independent oil companies. I was responsible for the geologic oversight of test drilling for the determination and presence of petroleum hydrocarbons. Prepared geologic correlations and performed analysis of geophysical logs, drilling logs and drill cuttings. Supervised and analyzed geophysical logging. Made recommendations for conducting and assisted with the analysis of drill stem tests and coring operations. In addition, I provided daily telephone reports and final written geologic reports to clients.

***Undergraduate Teaching Assistant***, Geology Department, Illinois State University. (3/79-3/81) I was responsible for teaching and assisting with lecture sessions, lab sessions, assignment preparation and grading for Petrology, Stratigraphy and Geologic Field Technique courses.

### **Undergraduate Education**

***B.S Geology***, 1981, Illinois State University ("ISU"). Classes included field geology at South Dakota School of Mines and Technology, and Marine Ecology Paleocology at San Salvador Field Station, Bahamas

### **Post Graduate Education**

***Applied Hydrogeology***, 1984, ISU Graduate Hydrogeology Program

***Engineering Geology***, 1984, ISU Graduate Hydrogeology Program

***Geochemistry for Groundwater Systems***, 1986, USGS National Training Center

***Hydrogeology of Waste Disposal Sites***, 1987, ISU Hydrogeology Program

***Hydrogeology of Glacial Deposits in Illinois***, 1995, ISU Graduate Hydrogeology Program

***MODFLOW, MODPATH and MT3D groundwater modeling***, 1992, USGS National Training Center

***24 Hour Occupational Health & Safety Training***, 1994

*Computer Modeling of Groundwater Systems*, 1995, ISU Graduate Hydrogeology Program

*Introduction to Quality Systems Requirements and Basic Statistics*, 2001, U.S. EPA

*Source Water Contamination Prevention Measures*, 2001, U.S.EPA, Drinking Water Academy

*Fate and Transport Processes and Models*, 2006, Risk Assessment and Management Group, Inc.,

*National Response Plan (NRP), an Introduction* IS-00800.A, 2007, EMI

*National Incident Management System (NIMS) an Introduction* IS-00700, 2006, Emergency Management Institute (EMI),

*Intermediate ICS for Expanding Incidents* IS-00300, 2008, EMI

*ICS for Single Resources and Initial Action Incidents* IS-00200, 2006, EMI,

*Introduction to the Incident Command System (ICS)* IS-00100, 2006, EMI

### License

*Licensed Professional Geologist* 196-000553, State of Illinois, expires 3/31/2011

### Certification

*Certified Professional Geologist* 7455, Certified by the American Institute of Professional Geologists 4/88

*Certified Total Quality Management Facilitator*, 5/92, Organizational Dynamics Inc.,

### Summary of Computer Skills

I have utilized the following computer programs ARC VIEW, Aqtesolv, SURFER, WHPA, DREAM, AQUIFEM, MODFLOW, MODPATH, and MT3D.

### Professional Representation

Illinois EPA liaison to the *GAC* and representative on the *ICCG* (1988 – present)

*Senate Working Committee on Geologic Mapping.*

Illinois EPA representative and subcommittee chairman, *State Certified Crop Advisory Board*, and *Ethics and Regulatory Subcommittee* established in association with the American Society of Agronomy/American Registry of Certified Professionals in Agronomy, Crops and Soils (1995 – 2001)

*Illinois groundwater quality standards regulations technical work group* (1988 – 1991).

*ICCG State Pesticide Management Plan Subcommittee* for the protection of groundwater.

Illinois EPA representative, *State task group involved with developing the siting criteria for a low level radioactive waste site in Illinois.*

*Fresh Water Foundation's Groundwater Information System (GWIS)* project in the great lakes basin.

Illinois EPA technical advisor, *four priority regional groundwater protection planning committees* designated by the Director to advocate groundwater protection programs at the local level (1991 – present)

*Groundwater Subcommittee of the National Section 305(b) Report, of the Clean Water Act Consistency Workgroup.*

*Ground Water Protection Council's Wellhead Protection Subcommittee.*

Co-Chair, *Groundwater Division of the GWPC* on (September 1997 to 2003)

Chairman, *Illinois' Source Water Protection Technical and Citizens Advisory Committee.*

*United States Environmental Protection Agency National Ground Water Report Work Group.*

One of 10 state representatives serving on a work group sponsored by U.S. EPA headquarters charged with development of a national report to be submitted to the U.S. Congress on the status and needs for groundwater protection programs across the country. (January 1999 to July 2000)

Illinois EPA representative, *Northeastern Illinois Planning Commission Water Supply Task Force.* The purpose of this task force is to assist the Commission in the development of a Strategic Plan for Water Resource Management. (March 1999 to 2001)

*GWPC/U.S. EPA Futures Forum Work Group* providing input on source water protection for the next 25 years. (January 1999 to 2001)

*GWPC/ASDWA work group providing input into the U.S. EPA Office of Ground and Drinking Water Strategic Plan for Source Water Protection.* June 2000 to March 2005.

Co-Chair, *U.S. EPA Headquarters/GWPC/ASDWA/ASWIPCA workgroup to develop the second Ground Water Report to Congress.* March 2002 –present.

Chair, *ICCG Groundwater Contamination Response Subcommittee* responsible for developing a new strategy for responding to groundwater contamination and the subsequent notification of private well owners. March 2002 – April 2002.

Illinois EPA representative, *ICCG Water Quantity Planning Subcommittee* working on development of a surface and groundwater quantity- planning program for Illinois. June 2002 – January 2003

Chair, *ICCG Right-to-Know (RTK) Subcommittee*, 2006

*GWPC, Groundwater Science and Research Advisory Board*, 2007

### **Professional Affiliation**

American Institute of Professional Geologists

Illinois Groundwater Association

Ground Water Protection Council

National Groundwater Association -Association of Groundwater Scientists and Engineers

*Sigma Xi* – The Scientific Research Society

### **Honors**

*Sigma Xi* - Elected to *Sigma Xi* The Scientific Research Society for undergraduate research conducted and presented to the Illinois Academy of Science. 4/81

*Director's Commendation Award* - Participation in the development of the City of Pekin, Il. Groundwater Protection Program and commitment to the protection of Illinois groundwater. 7/95

*Certificate of Appreciation* - Outstanding contribution to the development of the Ground Water Guidelines for the National Water Quality Inventory 1996 Report to Congress from the United States Environmental Protection Agency Office of Ground Water and Drinking Water. 8/96

*Groundwater Science Achievement Award* - Illinois Groundwater Association for outstanding leadership and service in the application of groundwater science to groundwater protection in Illinois and in the development of the wellhead protection program and pertinent land-use regulations. 11/97

*Certificate of Appreciation* - GWPC for distinguished service, remarkable dedication, valuable wisdom and outstanding contribution as a GWPC member, division co-chair and special committee member. 9/99

*Drinking Water Hero Recognition* - United States Environmental Protection Agency Administrator Carol Browner at the 25<sup>th</sup> Anniversary of the Federal Safe Drinking Water Act Futures Forum in Washington D.C. 12/99.

*Certificate of Recognition* - United States Environmental Protection Agency Region V Administrator Fred Lyons for outstanding achievements in protecting Illinois' groundwater resources. 12/99

*Exemplary Systems in Government (ESIG) Award* - Nomination by the Governor's Office of Technology from the Urban and Regional Information Systems Association (URISA) for the Illinois EPA's Source Water Assessment and Protection Internet Geographic Information System. 6/01

**Expert Witness Experience**

IN THE MATTER OF: GROUNDWATER QUALITY STANDARDS (35 ILL. ADM. CODE 620), R89-14(B) (Rulemaking). Subject: I served as the principal witness recommending adoption of this Illinois EPA Agency proposal. R89-14(B) was adopted by the Board. The standards became effective January 1991.

STATE OIL COMPANY vs. DR. KRONE, McHENRY COUNTY and ILLINOIS EPA, PCB 90-102 (Water Well Exception). Subject: This case involved obtaining an exception from the owner of a non-community water supply well for placing new underground gasoline storage tanks within the 200-foot setback zone of well. I served as the principal witness for Illinois EPA on this case. The Board granted the exception with conditions.

People vs. AMOCO OIL COMPANY and MOBIL CORPORATION, Case no. 90-CH-79, Tenth Judicial Court, Tazewell County, Illinois. Subject: Groundwater contamination resulting from releases at above ground bulk petroleum storage terminals resulting in violation of Illinois' Groundwater Quality Standards Regulations (35 Illinois Administrative Code 620). I served as the principal Illinois EPA witness on this case. The case was settled with a penalty of \$125,000 and the requirement of a comprehensive corrective action program.

IN THE MATTER OF: GROUNDWATER PROTECTION: REGULATIONS FOR EXISTING AND NEW ACTIVITIES WITHIN SETBACK ZONES AND REGULATED RECHARGE AREAS (35 ILL. ADM. CODE 601, 615, 616 and 617), R89-5 (Rulemaking). Subject: I served as the principal Illinois EPA witness supporting adoption of this Agency proposal. R89-5 was adopted by the Board and became effective January 1992.

HOUSE BILL 171 METHYL TERTIARY BUTYL ETHER (MTBE) ELIMINATION ACT, House Environmental and Energy Committee. Subject: This law required the phase out MTBE within 3 years of enactment. I served as a principal Illinois EPA witness in support of the proposed legislation. The legislation was adopted as Public Act 92-0132 on July 24 2001. PA 92-132 required the ban of MTBE within three years.

IN THE MATTER OF: GROUNDWATER QUALITY STANDARDS (35 ILL. ADM. CODE 620), R93-27 (Rulemaking). Subject: I served as the principal Illinois EPA witness recommending amendments of new constituent standards in this Agency proposal.

SHELL OIL COMPANY vs. COUNTY of DuPAGE and THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY, PCB 94-25 (Water Well Setback Exception). Subject: A new underground gasoline storage tank was seeking an exception from the Illinois Pollution Control Board in relation to a private drinking water supply well setback zone. The DuPage County and the Illinois EPA held that the tank would be a significant hazard and opposed the exception. I

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served as the principal Illinois EPA witness. Shell withdrew the petition from the Board after hearings were held.

People ex rel. Ryan v. STONEHEDGE, INC., 288 Ill.App.3d 318, 223 Ill.Dec. 764, 680 N.E.2d 497 (Ill.App. 2 Dist. May 22, 1997). Subject: The State brought Environmental Protection Act action against company engaged in business of spreading deicing salt, alleging that salt stored on company's industrial property leaked into area's groundwater supply, thereby contaminating it. The Circuit Court, McHenry County, James C. Franz, J., granted company's motion for summary judgment. State appealed. The Appellate Court, Colwell, J., held that: (1) wells existing before Illinois Water Well Construction Code was enacted are not "grandfathered" in as being in compliance with Code, so as to be automatically subject to testing for groundwater contamination, and (2) fact issues precluded summary judgment on claim arising from alleged deposit of at least 50,000 pounds of salt in pile within 200 feet of two existing water supply wells. Affirmed in part and reversed in part; cause remanded.

People vs. STONEHEDGE INC. Case no. 94-CH-46, Circuit Court of the 19<sup>th</sup> Judicial Circuit, McHenry County. Subject: This case involved a violation of the potable well setback zone provisions of Section 14.2 of the Illinois Environmental Protection Act. Stonehedge Inc. placed a salt pile of greater than 50,000 pounds within the 200 foot setback of multiple private drinking water supply wells. I served as an Agency principal witness. Stonehedge Inc. was found to be guilty of violating the setback prohibition in this case and was assessed a penalty of \$1,500 and attorneys fees of \$4,500.

SALINE VALLEY CONSERVANCY DISTRICT vs. PEABODY COAL COMPANY, Case No. 99-4074-JLF, United States District Court for the Central District of Illinois. Subject: Groundwater contamination from the disposal of 12.8 million tons of coarse coal refuse, slurry and gob. Witness for the Illinois EPA. This is an on-going case.

IN THE MATTER OF: PROPOSED REGULATED RECHARGE AREAS FOR PLEASANT VALLEY PUBLIC WATER DISTRICT, PROPOSED AMENDMENTS TO (35 ILL. ADM. CODE 617), R00-17 (Rulemaking). Subject: I served as the principal Illinois EPA witness supporting adoption of this Agency proposal. The proposal was adopted on July 26, 2001 and became effective September 1, 2001.

IN THE MATTER OF: PROPOSED AMENDMENTS TO TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES (35 Ill. Adm. Code 742), (R00-19(A) and R00-19(B)) (Rulemaking). Subject: I served as a supporting Illinois EPA witness recommending inclusion of MTBE in this Agency proposal.

IN THE MATTER OF: NATURAL GAS-FIRED, PEAK-LOAD ELECTRICAL GENERATION FACILITIES (PEAKER PLANTS), R01-10 (Informational Hearing) Subject: I served as a supporting Illinois EPA witness to discuss the impact of peaker plants on groundwater.

IN THE MATTER OF: GROUNDWATER QUALITY STANDARDS AND COMPLIANCE POINT AMENDMENTS (35 ILL. ADM. CODE 620), R01- 14 (Rulemaking). Subject: I served as the principal Illinois EPA witness recommending amendments of a groundwater standard for

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MTBE and compliance point determinations in this Agency proposal. The Board adopted the proposal unanimously on January 24, 2002.

TERESA LeCLERCQ; AL LeCLERCQ; JAN LeCLERCQ; WALT LeCLERCQ, individually; and on behalf of all persons similarly situated vs. THE LOCKFORMER COMPANY, a division of MET-COIL SYSTEMS CORPORATION, Case no. 00 C 7164, United States District Court, Northern District of Illinois. Subject: I was called as a witness by Lockformer Company to testify about a Well Site Survey prepared and published in 1989 by the Illinois EPA for Downers Grove community water supply.

TERESA LeCLERCQ; AL LeCLERCQ; JAN LeCLERCQ; WALT LeCLERCQ, individually; and on behalf of all persons similarly situated vs. THE LOCKFORMER COMPANY, a division of MET-COIL SYSTEMS CORPORATION, Case no. 00 C 7164, United States District Court, Northern District of Illinois. Subject: I was called as a witness by Lockformer Company to testify about groundwater contamination in the Lisle and Downers Grove area.

HOUSE BILL 4177 PRIVATE WELL TESTING PROPERTY TRANSFER and DISCLOSURE ACT, House Environmental and Energy Committee. Subject: Legislation to require volatile organic chemical contamination testing of private wells at the time of property transfer and reporting to the Illinois Department of Public Health and the Illinois EPA. I served as a principal Illinois EPA witness in support of the proposed legislation. The legislation was not supported due to the opposition from the realtors association.

MATTER OF PEOPLE vs. PEABODY COAL, PCB 99-134 (Enforcement). Subject: the State of Illinois developed an amended complaint against Peabody Coal Company (PCC) for violation of the groundwater quality standard for total dissolved solids, chloride, iron, manganese, and sulfate. I developed testimony to address PCC's affirmative defense of challenging the basis for the groundwater quality standards for these contaminants.

IN THE MATTER OF: PROPOSED AMENDMENTS TO TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES (35 Ill. Adm. Code 742) (TACO), (Rulemaking). Subject: I served as the Illinois EPA witness supporting amendments TACO to include wellhead protection areas. September 2004.

MAXMIUM SETBACK ZONES FOR MARQUETTE HEIGHTS PUBLIC WATER SUPPLY (35 ILL. ADM. CODE 618), R05-09 (Rulemaking). Subject: Pursuant to request by the Village of Marquette Heights the Illinois EPA developed a maximum setback zone for the Marquette Heights community water supply wells. I served as Illinois EPA's principal witness. The proposal was adopted on May 4, 2006.

IN THE MATTER OF: STANDARDS AND REQUIREMENTS FOR POTABLE WATER WELL SURVEYS AND FOR COMMUNITY RELATIONS ACTIVITIES PERFORMED IN CONJUNCTION WITH AGENCY NOTICES OF THREATS FROM CONTAMINATION UNDER P.A. 94-134 (35 Ill. Adm. Code 1505), R06-023 (Rulemaking), JANUARY 2006. I served as an Agency panel witness to support the adoption of the RTK regulation.

IN THE MATTER OF: PROCEDURES REQUIRED BY P. A. 94-849 FOR REPORTING RELEASES OF RADIONUCLIDES AT NUCLEAR POWER PLANTS: NEW 35 Ill. Adm. Code 1010, R07-20. I served as the Agency primary witness in this proceeding.

IN THE MATTER OF: GROUNDWATER QUALITY STANDARDS (35 ILL. ADM. CODE 620), R08-18 (Rulemaking). Subject: I served as the principal witness recommending amendments and updates to the exiting regulation. These regulatory amendments are still pending before the Board.

### **Publications**

Cobb, R.P., 1980. *Petrography of the Houx Limestone in Missouri*. Transactions of the Illinois Academy of Science Annual Conference, Illinois Wesleyan, Bloomington, IL.

*A Plan for Protecting Illinois Groundwater*, 1986, Illinois Environmental Protection Agency, January. 65 p.

Cobb, R.P., and Sinnott, C.L., 1987. *Organic Contaminants in Illinois Groundwater*. Proceedings of the American Water Resources Association, Illinois Section, Annual Conference, Champaign, IL, April 28-29, p. 33-43.

Clarke, R.P., and Cobb, R.P., 1988. *Winnebago County Groundwater Study*. Illinois Environmental Protection Agency. 58 pp.

*Groundwater in Illinois: A Threatened Resource, A Briefing Paper Regarding the Need for Groundwater Protection Legislation*, April 1987, Governors Office and Illinois Environmental Protection Agency, 34 pp.

Clarke, R.P., Cobb, R.P. and C.L. Sinnott, 1988. *A Primer Regarding Certain Provisions of the Illinois Groundwater Protection Act*. Illinois Environmental Protection Agency. 48 pp.

Cobb, R.P., etal, 1992. *Pilot Groundwater Protection Needs Assessment for the City of Pekin*. Illinois Environmental Protection Agency. 111 pp.

Cobb, R.P., 1994. *Briefing Paper and Executive Summary on the Illinois Groundwater Protection Act and Groundwater Protection Programs with Recommendations from the Illinois Environmental Protection Agency Regarding the Siting of a Low Level Radioactive Waste Site*. Presented to the Low Level Radioactive Waste Task Force on December 9, 1994 in Champaign-Urbana.

Cobb, R.P., 1994. ***Measuring Groundwater Protection Program Success***. In the proceedings of a national conference on Protecting Ground Water: Promoting Understanding, Accepting Responsibility, and Taking Action. Sponsored by the Terrene Institute and the United States Environmental Protection Agency in Washington D.C., December 12-13, 1994.

Cobb, R.P., Wehrman, H.A., and R.C. Berg, 1994. ***Groundwater Protection Needs Assessment Guidance Document***. Illinois Environmental Protection Agency. +94 pp.

Cobb, R.P., and Dulka, W.A., 1995. ***Illinois Prevention Efforts: The Illinois Groundwater Protection Act Provides a Unified Prevention-Oriented Process to Protect Groundwater as a Natural and Public Resource***, The AQUIFER, Journal of the Groundwater Foundation, Volume 9, Number 4, March 1995. 3pp.

Cobb, R.P., 1995. ***Integration of Source Water Protection into a Targeted Watershed Program***. In the proceedings of the Ground Water Protection Council's Annual Ground Water Protection Forum in Kansas City Missouri.

Dulka, W.A., and R.P. Cobb, 1995. ***Grassroots Group Forges Groundwater Protection Law***. American Water Works Association, Opflow, Vol. 21 No. 3. 2pp.

Cobb, R.P., 1996. ***A Three Dimensional Watershed Approach: Illinois Source Water Protection Program***. In the proceedings of the Ground Water Protection Council's Annual Ground Water Protection Forum in Minneapolis Minnesota.

Cobb, R.P., and W.A. Dulka, 1996. ***Discussion Document on the Development of a Regulated Recharge Area for the Pleasant Valley Public Water District***. Illinois Environmental Protection Agency. pp 28.

Cobb, R.P., 1996. ***Illinois Source Water Protection Initiatives-Groundwater Perspective***. In the proceedings of the American Water Works Association's Annual Conference and Exposition in Toronto Canada. pp 585- 594.

Cobb, R.P., and Dulka, W.A., 1996. ***Illinois Community Examines Aquifer Protection Measures***. American Water Works Association Journal. p10.

Cobb, R.P., etal. October 1999, ***Ground Water Report to Congress***, United States Environmental Protection Agency.

Cobb, R.P., December 2001. ***Using An Internet Geographic Information System (GIS) to Provide Public Access to Hydrologic Data***, Association of Groundwater Scientists and Engineers, National Groundwater Association, National Conference Proceedings, Nashville, Tennessee.

Cobb, R.P., September 2001, ***Regulated Recharge Area Proposal for the Pleasant Valley Public Water District***, Ground Water Protection Council Annual Forum Proceedings, Reno Nevada, 13 pp.

Wilson, S., Cobb, R.P., and K. Runkle, January 2002. *Arsenic in Illinois Groundwater*. Illinois State Water Survey, Illinois Environmental Protection Agency, and Illinois Department of Public Health. <http://www.epa.state.il.us/water/groundwater/publications/arsenic/index.html>, 7 pp.

R.P., Cobb, August 2002, *Development of Water Quantity Planning and Protection in Illinois – A New Direction*, Proceedings of the Annual Ground Water Protection Council Technical Forum, San Francisco, California, 10pp.

P.C. Mills, K.J. Halford, R.P. Cobb, and D.J. Yeskis, 2002. *Delineation of the Troy Bedrock Valley and evaluation of ground-water flow by particle tracking, Belvidere, Illinois*, U.S. Geological Survey Water-Resources Investigations Report 02-4062, 46 pp.

Illinois Environmental Protection Agency's *Homeland Security Strategy*, March 2003, 20pp.

Illinois Environmental Protection Agency' *Strategic Plan, Bureau of Water Section*, September 2003, pp.

*Opinions and Conclusions of Richard Cobb for the Matter of People v. Peabody Coal*, PCB 99-134 (Enforcement), May 23, 2003. 60 pp.

Cobb, R.P., Fuller, C., Neibergall, K., and M. Carson, February 2004. *Community Water Supply Well Shooting/Blasting near the Hillcrest Subdivision Lake County, Illinois Fact Sheet*. Illinois Environmental Protection Agency. 4 pp.

#### **Additional Legislative Publications that I Participated in Developing**

*A Plan for Protecting Illinois Groundwater*, Illinois Environmental Protection Agency, January 1986. 65 p.

*Groundwater in Illinois: A Threatened Resource, A Briefing Paper Regarding the Need for Groundwater Protection Legislation*, Governors Office and Illinois Environmental Protection Agency, April 1987. 34 pp.

*Illinois Groundwater Protection Act*, Public Act 85-0863, September 1987. 68 pp.

Public Act 92-0132 (*MTBE Elimination Act*), July 24 2001.

*Executive Order #5* - requires the ICCG to designate a subcommittee to develop an integrated groundwater and surface water resources agenda and assessment report. The report shall analyze the burden's on Illinois finite water resources, quantify Illinois' water resources, and prioritize an agenda to plan for the protection of these water resources. The Director of the Department of Natural Resources chaired this subcommittee. The ICCG and GAC shall use the subcommittee's agenda and report to establish a water-quantity planning procedure for the State. The Governor signed executive order #5 on Earth Day April 22, 2001.

**Amendments to Sections 2, 3 and 4 of the Illinois Groundwater Protection Act** 415 ILCS 55/2 to establish a Groundwater and Surface Water Quantity Protection Planning Program, January 2002, 3 pp. These amendments were never adopted due to opposition from the Illinois Farm Bureau.

**Public Act 92 –652 (Senate Bill 2072)**- Amends the Illinois Groundwater Protection Act to require the Environmental Protection Agency to notify the Department of Public Health, unless notification is already provided, of the discovery of any volatile organic compound in excess of the Board's Groundwater Quality Standards or the Safe Drinking Water Act maximum contaminant level. The Governor signed this into law as Public Act 29-652 (effective July 25, 2002).

**House Bill 4177** - Amends the Illinois Groundwater Protection Act. Provides that before property that has a well used for drinking water on it can be sold, the owner must have the well water tested for volatile organic chemical groundwater contaminants. Provides that if the well water does not meet the Illinois Pollution Control Board's Groundwater Quality Standards (35 Il Adm Code Part 620), the owner shall notify the Illinois Department of Public Health (IDPH) and the prospective buyer of the property. The realtors association July 2002 opposed House Bill 4177.

**House Resolution 1010** - The resolution drafted by in cooperation with Senator Patrick Dunn' staff urge the Illinois Environmental Protection Agency to further strengthen its public outreach efforts by developing, after negotiations with individuals representing areas affected by contamination and other relevant State agencies, a procedure to notify property owners whenever the Agency has confirmed an exceedence of applicable health and safety standards, using scientifically credible data and procedures under Illinois regulations. HR 1010 was adopted by voice vote on June 1, 2004.

**Public Act 94-314 (Senate Bill 0214)** – This is referred to as Right-to-Know (RTK) law. The law includes providing the Illinois EPA with administrative order authority (AO), information order authority, and established the requirements for providing notices to residents or business exposed or potentially exposed to contamination. The Illinois EPA had been seeking this type of AO authority for the past 35 years. Senate Bill 0214 was unanimously passed by both the Senate and the House May 2005. The legislation was signed into law by the Governor July 27, 2005.

**Public Act 94-849 (House Bill 1620)** - Amends the Environmental Protection Act. Requires the owner or operator of a nuclear power plant to report to the Environmental Protection Agency any unpermitted release of a contaminant within 24 hours. The bill was sign by the Governor on June 12, 2006.

**House Bill 4020 (Crestwood Bill)** - Amends the Environmental Protection Act. This bill requires the owners and operators of community water systems to maintain certain documents and to make those documents available to the Agency for inspection during normal business hours. Provides that the Agency shall provide public notice within 2 days after it refers a matter for enforcement under Section 43 or issues a seal order under subsection (a) of Section 34. Further, the bill provides that the Agency must provide notice to the owners and operators of the community water system within 5 days after taking one of these actions. Moreover, the bill requires that within 5 days after receiving that notice, the owner or operator of the community water system must send a copy of the notice to all residents and owners of premises connected to the community water

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system. In addition, indirect notification of institutional residents is provided. Requires the owner or operator of the community water system to provide the Agency with proof that the notices have been sent. Sets forth similar notice requirements that must be complied with when groundwater contamination poses a threat of exposure to the public above the Class I groundwater quality standards. The bill creates a civil penalty for violations of these notice requirements, and makes it a felony to make certain false, fictitious, or fraudulent statements. The bill passed both houses on May 30, 2009. The bill was sent to the Governor for signature on June 26, 2009.

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF: )  
 )  
AMEREN ASH POND CLOSURE RULES ) R09-21  
(HUTSONVILLE POWER STATION) : ) (Rulemaking – Land)  
PROPOSED 35 ILL. ADM. CODE 840.101 )  
THROUGH 840.144 )

PREFILED TESTIMONY OF CHRISTIAN J. LIEBMAN ON AMEREN'S PROPOSAL AND  
THE AGENCY'S PROPOSED AMENDMENTS AT SECTIONS 840.124 THROUGH 840.130,  
840.134, 840.136 AND 840.146

My name is Christian J. Liebman. I am the manager of the Solid Waste Unit in the Permit Section within the Bureau of Land of the Illinois Environmental Protection Agency. I have been in my current position since February 1999. From June 1985, until I assumed my current position, I was a permit reviewer in the unit I now manage. In 1984, I received a B.S. in Geological Engineering from the University of Missouri at Rolla and in May 2002, I received an M.S. in Civil Engineering from Southern Illinois University at Carbondale. I am licensed in the State of Illinois as both a Professional Engineer and a Professional Geologist. My resume is attached as Attachment 1.

Today, I will be testifying in support of the amendments recommended by the Illinois Environmental Protection Agency (the Agency), regarding the new 35 Ill. Adm. Code Part 840 regulations proposed by Ameren Energy Generating Company (Ameren) for closure and post-closure care of Pond D at its Hutsonville Power Station. Specifically, I will be testifying in support of the Agency's recommended amendments to Ameren's proposed Sections 840.122, 840.124, 840.126, 840.128, 840.132, and 840.134. However, because of the Agency's proposed addition of a new Section 840.108 for incorporations by reference and the resulting renumbering of the existing sections, my testimony will refer to these sections (and others) using the section numbers proposed in the Agency's amendments, 840.124, 840.126, 840.128, 840.130, 840.134,

and 840.136, unless otherwise specified. In addition, I will testify in support of the Agency's newly proposed Section 840.146.

**Section 840.124 Final Slope and Stabilization**

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. With the modification of 840.124(c) and the addition of 840.124(d), the amendments proposed by the Agency would limit the volume of additional coal combustion waste that could be used to construct the final waste contours and would restrict the area of its use. The 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.

**Section 840.126 Final Cover System**

Section 840.126 describes how the final cover system for Pond D must be constructed and Subsection 840.126(a)(1) provides thickness and hydraulic conductivity specifications for the geosynthetic membrane that will serve as the low permeability layer of the final cover system. As proposed by Ameren, the hydraulic conductivity specification is essentially meaningless. Virtually all geosynthetic membranes have hydraulic conductivities several orders of magnitude lower than  $1 \times 10^{-7}$  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. The modification to 840.126(a)(1) recommended by the Agency would make Pond D's low permeability layer equivalent to that of a solid waste landfill subject to Part 811.

Subsection 840.126(c) requires the final cover system to be constructed according to a

construction quality assurance (CQA) program. Ameren's version of this subsection states that the operator must designate a CQA officer and includes a brief description of the CQA officer's duties. The Agency is recommending the addition of an entire section (840.146), prescribing a more robust CQA program (which will be discussed more fully later in this testimony). In 840.126(c), the Agency deletes mention of the CQA officer's responsibilities specific to the final cover system and simply references the CQA program required by 840.146.

**Section 840.128      Closure Plan**

The Agency is recommending no modifications to this section beyond clarifying that submission of the plan to the Agency is for the purpose of review and approval and changing the section number from 840.126 to 840.128.

**Section 840.130      Contents of Closure Plan**

Section 840.130 describes the information and documents that must be contained in the closure plan for Pond D. The Agency is recommending the following changes to 840.130:

1. In Subsection 840.130(a)(4), the requirement that the site map must depict the Zone A and Zone B is deleted, consistent with the Agency's recommendation to eliminate of these terms, as explained in Rick Cobb and Bill Buscher's testimony.
2. In Subsection 840.130(d), the reference to Section 840.108 is changed to Section 840.110 in accordance with the regulatory structure recommended by the Agency.
3. In Subsection 840.130(e), the reference to Section 840.116 is changed to Section 840.118 in accordance with the regulatory structure recommended by the Agency.
4. In Subsection 840.130(f), the phrase "plans, specifications and drawings" replaces "description" to make more clear the type of information needed to accurately depict the groundwater monitoring program, the reference to Section 840.110 is changed to Section

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840.112 in accordance with the regulatory structure recommended by the Agency, and a quality assurance program requirement for groundwater sample collection, preservation and analysis is added consistent with the language originally in Ameren's proposed Section 840.110(c)(2) and now located in the Agency's proposed 840.114(f).

5. In Subsection 840.130(g), the reference to Section 840.112 is changed to Section 840.114 in accordance with the regulatory structure recommended by the Agency.

6. In Subsection 840.130(h), the reference to Section 840.116 is changed to Section 840.118 in accordance with the regulatory structure recommended by the Agency.

7. Subsection 840.130(i) is added requiring plans, specifications and drawings for the groundwater collection trench and discharge system.

8. Subsection 840.130(j) is added requiring plans, specifications and drawings for the final slope design and construction and demonstration of compliance with the stability criteria.

9. In Subsection 840.130(k), the phrase "plans, specifications and drawings" replaces "description" to make more clear the type of information needed to accurately depict the final cover system.

10. In Subsection 840.130(l), the phrase "including an estimate of the time required for hydrostatic equilibrium of groundwater beneath Ash Pond D" is inserted.

11. Subsection 840.130(m) is added requiring a proposal for a groundwater management zone, if applicable, and plans, specifications and drawings for any structures or devices that must be constructed or installed for it.

12. Subsection 840.130(n) is added requiring a description of the Construction Quality Assurance program.

13. Subsection 840.130(o) is added requiring a description of actions proposed to mitigate increasing trends in accordance with Section 840.118(c) including plans, specifications and drawings for any structures or devices that must be constructed.

14. Subsection 840.130(p) is added requiring the signature and seal of the professional engineer supervising the preparation of the closure plan.

The changes and additions to this section, recommended by the Agency, 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.

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

Section 840.134 describes the requirements for completion of closure, including the closure report and certification of completion of closure. The Agency is recommending the following changes to this section:

1. Subsection 840.134(a) is added to provide a deadline of eighteen months, after the closure plan is approved by the Agency, for closure to be completed. Completing 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. Eighteen months, after the closure plan is approved, should provide sufficient time for Ameren to complete closure.

2. In Subsection 840.134(b), Ameren's proposed language is modified to state that the closure plan must be approved by the Agency and to specify the type of documentation that must be provided with the closure report. The changes and additions

to this section, recommended by the Agency, will help ensure that the closure activities are expeditiously carried out, in conformance with the closure plan, and that this conformance is adequately documented.

**Section 840.136 Post-Closure Maintenance of Cover System**

Section 840.136 describes how the final cover system must be maintained. The Agency is recommending the following changes to the section:

1. The introductory sentence is modified to state 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.
2. In Subsection 840.136(a), Ameren's language proposing to inspect the final cover system annually is modified to require that final cover inspection be performed at the same time, and in the same frequency, that samples are collected for routine groundwater monitoring.
3. In Subsection 840.136(b), the phrase "identified during the inspection" is deleted to indicate this is a continuing obligation.
4. In Subsection 840.136(c), the phrase "identified during inspections" is deleted to indicate this is a continuing obligation.
5. In Subsection 840.136(e), the phrase "that had previously been vegetated" is deleted to maintain consistency with Section 840.126(b)(5).
6. In Subsection 840.136(c), the phrase "if necessary" is deleted since such repairs generally will be necessary.
7. Subsection 840.136(g), which requires prevention of the growth of woody species on the protective layer, is added.

The changes and additions to this section, recommended by the Agency, will result in better, more frequent final cover inspections and in a better maintained and more functional final cover system.

**Section 840.146 Construction Quality Assurance Program**

The Agency is recommending the addition of this section, which expands on the construction quality assurance (CQA) program proposed by Ameren in its section concerning the final cover system. The CQA program, recommended by the Agency, addresses installation of the groundwater collection trench and discharge system, compaction of the subgrade and foundation for the final cover system, application of the final cover system and construction of the surface water control structures. Section 840.146 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. Just 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.

In closing, I would like to thank the Board for its consideration of the changes that the Agency is recommending to Ameren's proposal.

ATTACHMENT 1

RESUME OF

**CHRISTIAN J. LIEBMAN**

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Springfield, Illinois 62974-9276  
(217) 524-3294

**EDUCATION**

M.S., May 2002, Civil Engineering from Southern Illinois University-Carbondale, Carbondale, IL, Major: Civil Engineering

B.S., May 1984, University of Missouri - Rolla, Rolla, MO, Major: Geological Engineering

**RELEVANT WORK EXPERIENCE**

**02/99 -- Present**     *Solid Waste Unit Manager in the Illinois Environmental Protection Agency's Bureau of Land, Division of Land Pollution Control, Permit Section. The job consists of supervising the 11 engineers who are responsible for reviewing the permit applications for all the solid waste landfills and clean construction or demolition debris fill operations, in the State of Illinois, subject to the permit programs administered by the Bureau of Land. The primary job objective of this position is to ensure that these permit applications are given consistent, high-quality reviews in a timely manner.*

**06/85 -- 02/99**     *Permit Reviewer in the Illinois Environmental Protection Agency's Bureau of Land, Division of Land Pollution Control, Permit Section, advancing from an Environmental Protection Engineer I to Environmental Protection Engineer III. The job entailed reviewing permit applications for solid waste landfills, transfer stations and waste composting facilities, comparing the proposals made in the applications to the regulatory and statutory requirements and then drafting preliminary responses (either permits with conditions or denials) for management approval*

**PROFESSIONAL LICENSES**

Licensed Professional Engineer in the State of Illinois (License No. 062-049263).

Licensed Professional Geologist in the State of Illinois (License No. 196-000989).

**BEFORE THE ILLINOIS POLLUTION CONTROL BOARD**

IN THE MATTER OF: )  
)  
AMEREN ASH POND CLOSURE RULES ) R09-21  
(HUTSONVILLE POWER STATION) : ) (Rulemaking – Land)  
PROPOSED 35 ILL. ADM. CODE 840.101 )  
THROUGH 840.144 )

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

My name is Stephen F. Nightingale. I am the manager of the Permit Section of the Bureau of Land at the Illinois Environmental Protection Agency ("Agency"). The Bureau of Land Permit Section is generally responsible for the permitting and day-to-day activities associated with the state (solid waste), RCRA (hazardous waste), and underground injection control (UIC) programs when dealing with waste treatment, storage and disposal.

I graduated from the University of Missouri at Rolla in 1982 with a B.S. degree in Civil Engineering. Following graduation I spent four years employed by the Missouri Pacific/Union Pacific Railroad Company as a staff engineer. My work included activities in the mechanical, construction, and environmental fields. Since June of 1986 I have been employed by the Agency in a variety of positions including my current position as Bureau of Land Permit Section Manager. I assumed this position in April of 2000. I am registered as a Professional Engineer in Illinois. I have approximately twenty-five years experience in the environmental engineering field. A brief summary of my education and work experience is included as Attachment 2.

Today I will be testifying in support of the proposed site-specific rule establishing 35 Ill. Adm. Code 840.Subpart A, as amended by Agency testimony. My testimony will be limited to the Agency's proposed Section 840.152, which is identified as "Resource Conservation and Recovery Act," as well as testimony requesting the Illinois Pollution Control Board to consider a temporary moratorium on future requests for additional site-specific rules related to closure requirements for surface impoundments containing coal combustion waste.

**Section 840.152**            **Resource Conservation and Recovery Act**

This Section contains a provision intended by the Agency to maintain consistency with programs adopted under the federal Resource Conservation and Recovery Act (P.L. 94-480) ("RCRA"), as amended. The provision would guide interpretation of rules adopted in 35 Ill. Adm. Code 840, Subpart A to maintain consistency with any RCRA requirements applicable to Ash Pond D. If 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. This also 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.

The Agency believes this is an appropriate provision for the following reasons. It has been widely published in environmental and trade publications and confirmed by federal officials that the United States Environmental Protection Agency ("U.S. EPA") is reviewing its approach to the management of coal combustion waste ("CCW") -- management that has been left mostly to the states. It has been reported that the promulgation of comprehensive federal rules pursuant to Subtitles C or D of RCRA is under consideration. To date we have not been able to find out

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any specifics of what will be in the proposed regulations. However, in recent conversations with U.S. EPA I have been made aware that they are on schedule in meeting the end of year deadline to publish proposed rules in the *Federal Register*. Based on this intent alone we feel it is important to include a provision to address the possibility of future regulations.

The Board has adopted, and the Agency administers, waste management rules in our delegated program under Subtitle C and approved program under Subtitle D. To 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. While 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, the Agency's view is that including its proposed Section 840.152 is a reasonable precaution that could relieve the strain on Board and Agency resources to amend Subpart A should it become clear that a conflict exists between federal rules and provisions of Subpart A as applicable to Ash Pond D.

The language proposed for Section 840.152 reflects language used in other contexts in the Act for a similar purpose -- to create or preserve state consistency with federal requirements under RCRA. Maintaining equivalence and consistency with RCRA waste management requirements is a consistent theme running through waste management provisions of the Act. A few locations where this is clearly a concern are found at Sections 3.485, 3.500, 22.4(a) – (b) and (d), 35(a), 39(d) and 39.2(i). 415 ILCS 5/3.485, 3.500, 22.4(a) – (b), (d), 35(a), 39(d), 39.2(i). Moreover, Sections 20(a)(5) through (a)(8) and (a)(11) through (a)(14) clearly state the legislature's intention that that federal approval for such programs be secured and maintained.

415 ILCS 5/20(a)(5) – (a)(8), (a)(11) – (a)(14). Given the clearly stated intention of the legislature and the resources necessary to open and amend rules should a conflict develop, the Agency urges the Board to consider adoption of proposed Section 840.152.

**Request for Moratorium on Additional Site-Specific Rules for Closure of Coal Combustion Waste Impoundments**

The Agency is requesting that the Illinois Pollution Control Board consider initiating a temporary moratorium on future site-specific rules for the closure of surface impoundments containing coal combustion waste. We are requesting this moratorium for two reasons. First, as I previously stated, the U.S. EPA is intending to public notice a set of draft regulations for the management of coal combustion waste by the end of the 2009 calendar year. And secondly, at this time and in the foreseeable future the Agency does not have the resources to deal with the potentially 70 additional requests for site-specific rulemakings for the other surface impoundments containing coal combustion waste which may also need to be addressed under this process. See Attachment 1 for a list of other CCW surface impoundments.

A temporary moratorium will allow time for all those potentially affected by the new federal regulations to understand how the U.S. EPA plans to regulate coal combustion waste in the future. Waiting will prevent industry, the Agency, and the Illinois Pollution Control Board from wasting scarce and valuable resources on developing regulations that may be superseded in the near future. Also, until the U.S. EPA's regulations are revealed and finalized, any industry obtaining a site-specific rule could end up expending substantial money and resources only to find they are subject to additional and/or different closure requirements for these units.

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If a temporary moratorium is not implemented and there are additional requests for site-specific rules, the Agency is concerned it will find itself in a position where it will be unable to have adequate time and/or resources to review the proposals and provide necessary comments. Currently the Bureau of Land Permit Section staff is down eight members (six engineers and two geologists). We have been informed we may have to reduce our staff levels even more over the upcoming state fiscal year to meet our proposed budget.

The Agency acknowledges there is limited legal authority in the Act for a temporary moratorium. Section 28(a) (415 ILCS 5/28(a)) at least arguably would allow the Board to schedule such proposals no sooner than six months after the hearing on a preceding proposal, and the Board may perceive that it has inherent authority to control its docket such that longer delays for good cause might be appropriate. Nonetheless, the policy reasons are compelling. Diverting already limited resources to site-specific rules more than once or twice per year would substantially detract from the Bureau of Land's additional responsibilities. More than three to four site-specific rules per year probably would paralyze both the Agency and the Board from a resource standpoint and even at this rate would take over fifteen years to work through the currently existing impoundments. Just for the Agency's response to this proposal, additional resources have been provided by the Bureau of Water, but this is viewed only as a stop-gap measure since similar limitations also affect that Bureau.

The Bureau of Land is still reviewing its options on how to deal with the 70 other surface impoundments which will undoubtedly have to close at some point in the future. While in operation these sites are generally regulated under 35 Ill. Adm. Code 309 and therefore permitted by the Agency's Bureau of Water. However, once plans are made to close these surface

impoundments with waste in place, we anticipate the Bureau of Land will be assigned the responsibility of administering the closure and post-closure care activities. We feel that once U.S. EPA's intentions are known the Agency will be in a better position to determine how to proceed. At this point, if there are no regulations established by the U.S. EPA, or if they don't apply to the closure and post-closure activities of the surface impoundments, we feel that pursuing a general rule for the remaining surface impoundments would be a more efficient approach than to deal with each site on a site-specific basis.

However, the approach of pursuing a general rule does not go without concern. It should be pointed out that pursuing a general rule also is a time and resource consuming endeavor, and faced with the current staffing conditions, along with the potential for additional staff reduction, the Agency is very concerned with taking on such a daunting task. But until the U.S. EPA's intentions are fully known, probably at the adoption of a final rule, we cannot make a well informed decision on how to proceed. For the above reasons the Agency feels that a temporary moratorium is the most prudent approach to take at this time.

This concludes my testimony. I will be happy to address any questions.

## ATTACHMENT 1

Facility	City	Number of Ash Ponds
Midwest Generation – Will County Station	Romeoville	4
Midwest Generation – Waukegan Station	Waukegan	2
Midwest Generation - Powerton	Pekin	3
Midwest Generation – Joliet 29	Joliet	3
Midwest Generation – Joliet 9	Joliet	1
Midwest Generation – Crawford	Chicago	1
Electric Energy Inc.	Joppa	2
Dynergy Midwest – Baldwin Energy Inc.	Baldwin	7
Dynergy Midwest – Havana Station	Havana	3
Dynergy Midwest – Hennepin Station	Hennepin	3
Dynergy Midwest – Wood River Station	Alton	2
Dynergy Midwest – Vermilion Station	Oakwood	3
Ameren – Newton Station	Newton	2
Ameren – Edwards Station	Bartonville	1
Ameren – Duck Creek Station	Canton	6
Ameren – Coffeen Station	Coffeen	4
Ameren – Meredosia Station	Meredosia	5
Ameren – Hutsonville Station	Hutsonville	5
Ameren – Venice	Venice	2
Ameren – Grand Tower	Grand Tower	1
Ameren – Kincaid Generation	Kincaid	1
Prairie Power Inc. – Soyland Power Cooperative Inc.	Pearl	1
City Water Light and Power	Springfield	2
Southern Illinois Power Co-Op.	Marion	7

**ATTACHMENT 2**

**RESUME**

**STEPHEN F. NIGHTINGAL, PE.  
MANAGER, PERMIT SECTION  
BUREAU OF LAND  
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY**

**EDUCATION**  
1982

**UNIVERSITY OF MISSOURI AT ROLLA  
B. S. CIVIL ENGINEERING**

**EXPERIENCE**

**4/06 - PRESENT**

**MANAGER, PERMIT SECTION, BUREAU OF LAND -  
RESPONSIBLE FOR STATE (SOLID WASTE), RCRA (HAZARDOUS  
WASTE), AND UNDERGROUND INJECTION CONTROL  
PERMITTING ACTIVITIES.**

**4/00 - 4/06**

**MANAGER, RCRA UNIT, PERMIT SECTION, BUREAU OF LAND -  
RESPONSIBLE FOR PERMITTING ACTIVITIES RELATED TO RCRA  
(HAZARDOUS WASTE) AND UNDERGROUND INJECTION  
CONTROL PERMITTING**

**2/95 - 4/00**

**MANAGER, INDUSTRIAL UNIT, PERMIT SECTION, BUREAU OF  
WATER - RESPONSIBLE FOR STATE AND NPDES PERMITS FOR  
INDUSTRY.**

**6/86 - 2/95**

**ENVIRONMENTAL PROTECTION ENGINEER I, II, III, IV,  
INDUSTRIAL UNIT, PERMIT SECTION BUREAU OF WATER -  
RESPONSIBLE FOR EVALUATING PERMIT APPLICATIONS AND  
DEVELOPING STATE AND NPDES PERMITS FOR INDUSTRY  
BASED ON STATE AND FEDERAL REGULATIONS.**

**4/82 - 05/06**

**STAFF ENGINEER, MISSOURI PACIFIC/UNION PACIFIC -  
RESPONSIBLE FOR ACTIVITIES RELATED TO ENGINEERING IN  
THE FIELDS OF MECHANICAL, CONSTRUCTION AND  
ENVIRONMENTAL FIELDS.**

**REGISTERED AS PROFESSIONAL ENGINEER IN ILLINOIS**

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF: )  
)  
AMEREN ASH POND CLOSURE RULES ) R09-21  
(HUTSONVILLE POWER STATION) : ) (Rulemaking – Land)  
PROPOSED 35 ILL. ADM. CODE 840.101 )  
THROUGH 840.144 )

AGENCY’S MOTION TO WAIVE FILING REQUIREMENT

THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY (“Illinois EPA”), pursuant to 35 Ill. Adm. Code 101.500, moves that the Hearing Officer waive the filing requirement for the incorporations by reference contained in the Illinois EPA’s proposed amendments to the Ameren Energy Generating Company’s proposed 35 Ill. Adm. Code 840.Subpart A.

In support of its motion, the Illinois EPA states, and the Board’s technical staff has confirmed, that the titles for which this motion seeks relief from the filing requirement are already in the Board’s possession. Therefore, preparing and submitting additional copies of these documents would serve no purpose and would be unnecessarily costly and burdensome.

WHEREFORE, the Illinois EPA seeks relief from the filing requirement for the following titles:

“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 on-line 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

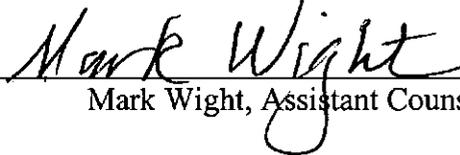
"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," USEPA Publication No. SW-846, as amended by Updates I, II, IIA, IIB, III, IIIA, and IIIB (Doc. No. 955-001-00000-1), (available on-line at <http://www.epa.gov/epaoswer/hazwaste/test/main.htm>).

"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).

Respectfully submitted,

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

By: \_\_\_\_\_



Mark Wight, Assistant Counsel

DATED: August 18, 2009

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STATE OF ILLINOIS )  
 )  
COUNTY OF SANGAMON )

**PROOF OF SERVICE**

I, the undersigned, on oath state that I have served the Illinois Environmental Protection Agency's attached **Agency's Proposed Amendments to Ameren's Proposal, Testimony of Richard P. Cobb, Testimony of William E. Buscher, Testimony of Lynn E. Dunaway, Testimony of Stephen F. Nightingale, Testimony of Christian J. Liebman, and Motion to Waive Filing Requirement** upon the persons to whom they are directed, by procedures specified by the Illinois Pollution Control Board or by placing a copy of each in an envelope addressed to:

John T. Therriault, Clerk  
Illinois Pollution Control Board  
James R. Thompson Center  
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100 W. Randolph  
Chicago, Illinois 60601  
**(Electronic Filing)**

Virginia Yang  
General Counsel  
Illinois Dept. of Natural Resources  
One Natural Resources Way  
Springfield, Illinois 62702-1271  
**(First Class Mail)**

Matthew J. Dunn, Chief  
Office of the Attorney General  
Environmental Bureau, North  
69 West Washington St., Suite 1800  
Chicago, Illinois 60602  
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Tim Fox, Hearing Officer  
Illinois Pollution Control Board  
James R. Thompson Center  
Suite 11-500  
100 W. Randolph  
Chicago, Illinois 60601  
**(Electronic filing)**

**(Attached Service List – First Class Mail)**

and sending or mailing them, as applicable, from Springfield, Illinois on August 18, 2009, and with sufficient postage affixed as indicated above.

Mark Wight  
Brenda Boehner

SUBSCRIBED AND SWORN TO BEFORE ME

This 18<sup>th</sup> day of August, 2009.

Cynthia L. Wolfe  
Notary Public



SERVICE LIST FOR PCB R2009-21

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