# CHAPTER 287. RESIDUAL WASTE MANAGEMENT— GENERAL PROVISIONS

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## § 287.1. Definitions.

The following words and terms, when used in this article, have the following meanings, unless the context clearly indicates otherwise:

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*Coal ash*—Fly ash, bottom ash or boiler slag resulting from the combustion of coal, that is or has been beneficially used, reused or reclaimed for a commercial, industrial or governmental purpose. The term includes such materials that are stored, processed, transported or sold for beneficial use, reuse or reclamation. **[For purposes of this article, the term also includes fly ash, bottom ash or boiler slag resulting from the combustion of coal, that is not and has not been beneficially used, reused or reclaimed for a commercial, industrial or governmental purpose.]**

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*Solid waste*—Waste, including, but not limited to, municipal, residual or hazardous waste, including solid, liquid, semisolid or contained gaseous materials. The term does not include coal ash that is beneficially used under **Chapter 290 [Subchapter H]** (relating to beneficial use **of coal ash**) or drill cuttings.

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*Structural fill*—The engineered use of **[coal ash] material** as a base or foundation for a construction activity that is completed promptly after the placement of the **[coal ash] material**, including the use **[of coal ash]** as **[a]** backfill **[material]** for retaining walls, foundations, ramps or other structures. The term does not include valley fills or the use of **coal ash or** solid waste to fill open pits from coal or noncoal mining.

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***Water table*—the top of the saturated zone. The term includes the regional groundwater table, perched water tables, seasonal high water table, and the surface of mine pools.**

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# Subchapter H. BENEFICIAL USE

## SCOPE

Sec.



## GENERAL PERMITS FOR PROCESSING OR BENEFICIAL USE, OR BOTH, OF RESIDUAL WASTE OTHER THAN CERTAIN USES OF COAL ASH AUTHORIZATION AND LIMITATIONS



## ISSUANCE OF GENERAL PERMITS



## CONTENT OF GENERAL PERMITS AND WAIVERS



## REGISTRATION AND DETERMINATION OF APPLICABILITY

## COMPLIANCE



## [BENEFICIAL USE OF COAL ASH]



## SCOPE

### § 287.601. Scope.

(a) This subchapter sets forth requirements for the processing and beneficial use of residual waste**[, including coal ash, and sets forth requirements for certain beneficial uses of coal ash]**. Sections 287.611, 287.612, 287.621—287.625, 287.631, 287.632, 287.641—287.644, 287.651 and 287.652 establish procedures and standards for general permits for the beneficial use or processing of residual waste **[other than certain uses of coal ash, and § § 287.661—287.666 (relating to beneficial use of coal ash) establish procedures and standards for certain beneficial uses of coal ash]**.

(b) An operation that is approved by or under this subchapter does not require an individual processing or disposal permit under this article. The requirements of Chapter 287, Subchapters A—G and Chapters 288, 289, 291, 293, 295, 297 and 299 are applicable to the extent required in § 287.632 (relating to waiver and modification of requirements).

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## [BENEFICIAL USE OF COAL ASH]

### § 287.661. [Use of coal ash as structural fill.] Reserved.

**[ (a) Coal ash may be beneficially used as a structural fill without a permit from the Department under the act if the person or municipality proposing the use complies with this section. Use of coal ash as a structural fill that is not consistent with this section requires a disposal permit from the Department under the act and the regulations promulgated thereunder.**

**(b) At least 60 days before using coal ash as a structural fill, the person or municipality proposing the use shall submit a written notice to the Department. The notice shall contain, at a minimum:**

**(1) A description of the nature, purpose and location of the project, including a topographic map showing the project and available soils maps of the area of the project.**

**(2) The estimated beginning and ending dates for the project.**

**(3) Construction plans for the structural fill, including a stability analysis when necessary, which shall be prepared by a registered professional engineer in accordance with sound engineering practice and which shall be signed and sealed by the engineer.**

**(4) An estimate of the volume of coal ash to be used for the project.**

**(5) A chemical and leaching analysis for the coal ash to be used in the project. If the coal ash was generated at a facility for which the Department has previously approved a chemical and leaching analysis, the person or municipality may submit a copy of the analysis that was approved.**

**(6) A signed statement by the owner of the land on which the structural fill is to be placed, acknowledging and consenting to the use of coal ash as structural fill.**

**(c) The Department will publish a summary of each notice in the *Pennsylvania Bulletin*.**

**(d) After receiving the information required by subsection (b), the Department may inform the person or municipality that provided the information whether the proposed structural fill is consistent with this section.**

**(e) Coal ash used as a structural fill will not be considered a beneficial use unless the following requirements are met:**

**(1) The person or municipality has provided to the Department the information required by subsection (b) at least 60 days before using coal ash as a structural fill.**

**(2) The pH of the coal ash shall be in the range of 6.0 to 9.0, unless otherwise approved by the Department.**

**(3) The slope of a structural fill may not be greater than 2.5 horizontal to 1.0 vertical. The Department may approve a greater slope based on a demonstration of structural stability.**

**(4) Coal ash shall be spread uniformly and compacted in layers not exceeding 2 feet in thickness.**

**(5) Surface runoff form the fill area shall be minimized during filling and construction activity. Collection of surface runoff shall be managed in accordance with The Clean Streams Law and the regulations promulgated thereunder.**

**(6) Surface water shall be diverted away from the disturbed area during filling and construction activity.**

**(7) Coal ash shall be covered with 12 inches of soil, unless infiltration is prevented by other cover material.**

**(8) Coal ash may not be placed in contact with the seasonal high water table.**

**(9) Coal ash may not be placed within 8 feet of the regional groundwater table.**

**(10) Coal ash may not be used as a structural fill in a way that causes water pollution.**

**(f) Structural fills may not be located:**

**(1) Within 100 feet of an intermittent or perennial stream, unless the structural fill is otherwise protected by a properly engineered diversion or structure that is permitted by the Department under the Dam Safety and Encroachments Act (32 P. S. § § 693.1—693.27).**

**(2) Within 300 feet of a water source unless the operator obtains a waiver from the water source's owner, allowing for another distance.**

**(3) Within 25 feet of a bedrock outcrop, unless the outcrop is properly treated to minimize infiltration into fractured zones.**

**(4) Within 100 feet of a sinkhole or area draining into a sinkhole.**

**(5) Within a 100-year floodplain of a water of this Commonwealth, unless a properly engineered dike, levee or other structure that can protect the structural fill from a 100-year flood is permitted by the Department in a manner that is consistent with the Flood Plain Management Act (32 P. S. § § 679.101—679.601), the Storm Water Management Act (32 P. S. § § 680.1—680.17) and the Dam Safety and Encroachments Act (32 P. S. § § 693.1—693.27).**

**(6) In or within 100 feet of a wetland.]**

**§ 287.662. [Use of coal ash as a soil substitute or soil additive.] Reserved.**

**[ (a) Coal ash may be beneficially used as a soil substitute or soil additive without a permit from the Department under the act if the person or municipality proposing the use complies with this section.**

**(b) At least 60 days before using coal ash as a soil substitute or soil additive, the person or municipality proposing the use shall submit a written notice to the Department. The notice shall contain, at a minimum:**

**(1) A description of the nature, purpose and location of the project, including a topographic map showing the project area and available soils maps of the project area. The description shall include an explanation of how coal ash will be stored prior to use, how the soil will be prepared for the application of coal ash, how coal ash will be spread and, when necessary, how coal ash will be incorporated into the soil.**

**(2) The estimated beginning and ending dates for the project.**

**(3) An estimate of the volume of coal ash to be used for the project, the proposed application rate and a justification for the proposed application rate.**

**(4) A chemical and leaching analysis for the coal ash to be used in the project. If the coal ash was generated at a facility for which the Department has previously approved a chemical and leaching analysis, the person or municipality may submit a copy of the analysis that was approved.**

**(5) A chemical analysis of the soil on which the coal ash is proposed to be placed.**

**(6) An analysis showing how the application of coal ash will be beneficial to the productivity or properties of the soil to which it is proposed to be applied. The analysis shall be prepared and signed by an expert in soils science.**

**(7) A signed statement by the owner of the land on which the coal ash is to be placed, acknowledging and consenting to the use of coal ash as a soil substitute or soil additive.**

**(c) After receiving the information required by subsection (b), the Department may inform the person or municipality that provided the information whether the proposed use of coal ash as a soil substitute or soil additive is consistent with this section.**

**(d) Coal ash used as a soil substitute or soil additive may not be considered a beneficial use unless the following requirements are met:**

**(1) The person or municipality has provided to the Department the information required by subsection (b) at least 60 days before using coal ash as a soil substitute or soil additive.**

**(2) The pH of the coal ash and the pH of the soil shall be in the range of 6.5 to 8.0 when mixed together in the manner required by the project, as shown by field and laboratory testing. Lime addition may be used to raise pH.**

**(3) Surface runoff from the project area shall be controlled during the project. Collection of surface runoff shall be controlled in accordance with The Clean Streams Law and the regulations promulgated thereunder.**

**(4) Diversion ditches, terraces and other runoff control structures shall be utilized to control erosion on the disturbed area of the project.**

**(5) The person or municipality conducting the activity shall have a Department-approved erosion and sedimentation control plan under Chapter 102 (relating to erosion control).**

**(6) Coal ash may not be placed in contact with the seasonal high water table.**

**(7) Coal ash may not be placed within 8 feet of the regional groundwater table.**

**(8) Coal ash may not be used in a way that causes water pollution.**

**(9) Coal ash shall be incorporated into the soil within 48 hours of application, unless otherwise approved by the Department. The coal ash shall be incorporated into the top 1-foot layer of surface soil. If 1 foot of surface soil is not present, coal ash may be combined with the surface soil that is present until the layer of combined surface soil and coal ash is 1 foot. The coal ash required for the beneficial use is limited to the amount necessary to enhance soil properties or plant growth.**

**(10) Coal ash shall be applied at a rate per acre that will protect public health, public safety and the environment.**

**(11) Coal ash may not be applied to soil being used for agriculture where the soil pH is less than 5.5.**

**(12) Coal ash may not be applied if resultant chemicals or physical soil conditions would be detrimental to biota.**

**(e) Coal ash may not be used as a soil substitute or soil additive:**

**(1) Within 100 feet of an intermittent or perennial stream, or a wetland other than an exceptional value wetland.**

**(2) Within 300 feet of a water source unless the operator obtains a waiver from the water source's owner, allowing for another distance.**

**(3) Within 100 feet of a sinkhole or area draining into a sinkhole.**

**(4) Within 300 feet measured horizontally from an occupied dwelling, unless the current owner thereof has provided a written waiver consenting to the activities closer than 300 feet. The waiver shall be knowingly made and separate from a lease or deed unless the lease or deed contains an explicit waiver from the current owner.**

**(5) In or within 300 feet of an exceptional value wetland.]**

**§ 287.663. [Beneficial use of coal ash at coal mining activity sites as coal mining activities are defined in § 86.1.] Reserved.**

**[ (a) *Coal ash approval at coal mining activity sites.* Coal ash approval at coal mining activity sites shall, at a minimum, be based on the following:**

**(1) Coal ash may be used for beneficial use at coal mining activity sites if the use complies with this section, The Clean Streams Law and the regulations promulgated thereunder, the Surface Mining Conservation and Reclamation Act (52 P. S. § § 1396.1—1396.19a), the Coal Refuse Disposal Control Act (52 P. S. § § 30.51—30.66), the applicable provisions of Chapters 86—90, the Coal Ash Certification Guidelines (Certificate Guidelines) developed under this section and other applicable environmental statutes and regulations promulgated thereunder.**

**(2) The Department will develop Certification Guidelines that identify the acceptable physical and chemical characteristics of coal ash for beneficial uses. A generator of coal ash shall demonstrate that the coal ash quality meets the chemical and physical characteristics identified in the Certification Guidelines for the intended uses. The demonstration shall be reviewed and approved by the Department prior to a beneficial use.**

**(3) The Department will develop a technical guidance document to facilitate review of beneficial uses of coal ash at coal mining activities.**

**(b) *Request.* The request for use at coal mining activity sites shall be addressed in the reclamation plan of the mining activities permit and shall contain the following and shall be reviewed and approved by the Department:**

**(1) A narrative description of the project, including an explanation of how coal ash will be placed, where and how coal ash will be stored prior to placement, identification of the sources of coal ash and an estimate of the cubic yards of coal ash to be used. For the beneficial use of coal ash as a soil substitute or additive, the proposed application rate and justification for the application rate shall also be included.**

**(2) If the coal ash has not been certified under subsection (a)(2) by the Department, a statement signed by the generator of the coal ash including supporting data which demonstrates that the coal ash quality meets the chemical and physical characteristics identified in the Certification Guidelines for the intended use. If the coal ash has been certified in accordance with subsection (a)(2), information that identifies the generator and the certification number.**

**(3) A signed statement by the owner of the land on which the coal ash is to be placed, acknowledging and consenting to the placement of coal ash.**

**(c)** ***Operating requirements.*** **The use of coal ash as part of the mining reclamation activity shall be designed to achieve an overall improvement in water quality or shall be designed to prevent the degradation of water quality. Coal ash may be beneficially used for reclamation in the following situations:**

**(1) The pit or area from which coal is extracted under a surface coal mining permit.**

**(2) Abandoned coal mining areas located within the surface coal mining permit area.**

**(3) Coal refuse disposal sites.**

**(4) Other beneficial uses that are part of the approved reclamation plan of the coal mining activity.**

**(d)** ***Additional operating requirements for the placement of coal ash at coal surface mining and coal refuse reprocessing sites.*** **The following applies to placement of coal ash at coal surface mining and coal refuse reprocessing sites:**

**(1) Coal ash placed at a coal mining activity site may not exceed the volume of coal, coal refuse, culm or silt removed from the site by the active mining operation on a cubic yard basis unless more coal ash is needed to complete the reclamation plan of the surface mining activity permit.**

**(2) Placement of coal ash can be accomplished by mixing with spoil material or by spreading in horizontal layers. The reclamation plan of the approved permit shall address the placement of the coal ash.**

**(3) Groundwater monitoring at coal mining activity sites for the coal ash shall be in accordance with applicable provisions of Chapters 86—90.**

**(4) For coal refuse pile reprocessing sites where refuse material is presently deposited in large surface piles, the piles may not be rebuilt with coal ash. The placement of coal ash shall be accomplished in a manner which blends into the**

**general surface configuration, and complements the surface drainage pattern of the surrounding landscape.**

**(5) For multiple refuse pile reprocessing projects, the Department may allow at an individual refuse pile reprocessing site more coal ash used than coal refuse removed if:**

**(i) A single operator will control a project involving the coordinated use of multiple coal refuse sites.**

**(ii) A reclamation plan is approved for each of the sites and identifies the total cubic yards of coal ash that may be placed at each site.**

**(iii) The total cubic yards of coal ash placed on the sites is less than the total cubic yards of refuse, culm or silt removed from the sites. Only coal ash from the integrated project can be used.**

**(iv) The integrated project shall be designed to achieve an overall improvement of surface water or groundwater quality at each site, where acid mine drainage is evident. For instances in which there is no acid mine drainage, the project will be so designed to achieve no degradation of the surface or groundwater quality.**

**(v) The integrated project shall be accomplished in a manner which blends into the general surface configuration and complements the surface drainage pattern of the surrounding landscape.**

**(6) The coal ash may not be placed within 8 feet of the regional groundwater table unless the Department approves placement within 8 feet based upon a demonstration that groundwater contamination will not occur or that the Department approves this placement as part of a mine drainage abatement project.**

**(7) The coal ash shall meet the physical and chemical characteristics identified in the Certification Guidelines for the intended use.**

**(8) The operator shall maintain information concerning the sources and the cubic yards of coal ash used.**

**(e)** ***Additional operating requirements for the beneficial use of coal ash as a soil substitute or soil additive.*** **The following apply to the beneficial use of coal ash as a soil substitute or soil additive:**

**(1) Coal ash shall be applied at a rate per acre that will protect public health, safety and the environment.**

**(2) The coal ash that is applied will be part of the approved reclamation plan of the coal mining activity in order to increase the productivity or properties of the soil.**

**(f)** ***Additional operating requirements for the beneficial use of coal ash at coal refuse disposal sites.*** **The following apply to the beneficial use of coal ash at coal refuse disposal sites:**

**(1) Placement of coal ash as part of coal refuse disposal operations which are permitted under Chapters 86—90 shall be considered beneficial use if the following conditions are met:**

**(i) The cubic yards of coal ash does not exceed the total cubic yards of coal refuse to be disposed based on uncompacted volumes of materials received at the site, and only amounts necessary to meet subparagraph (iii) may be used.**

**(ii) The Department may allow cubic yards of coal ash to exceed the cubic yards of coal refuse to be disposed if the approved reclamation plan would require the additional cubic yards of coal ash to improve the quality of leachate generated by the coal refuse.**

**(iii) The coal ash has physical and chemical characteristics which:**

**(A) Improve compaction and stability within the fill.**

**(B) Reduce infiltration of water into coal refuse.**

**(C) Improve the quality of leachate generated by the coal refuse.**

**(iv) Groundwater monitoring shall be in accordance with the applicable provisions of Chapters 86—90.**

**(v) The coal ash may not be placed within 8 feet of the regional groundwater table, unless the Department approves placement within 8 feet based upon a demonstration that groundwater contamination will not occur.]**

**§ 287.664. [Coal ash beneficial use at abandoned coal and abandoned noncoal surface mine sites.]** **Reserved.**

**[ (a)** ***Approval by Department.*** **Coal ash may be beneficially used at abandoned coal and abandoned noncoal surface mine sites if the reclamation work is approved by the Department or is performed under a contract with the Department. Coal ash approval shall, at a minimum, be based on the following:**

**(1) Beneficial use of the coal ash shall comply with this section, and the applicable environmental statutes and regulations promulgated thereunder.**

**(2) The Department will develop Coal Ash Certification Guidelines (Certification Guidelines) that identify the acceptable physical and chemical characteristics for beneficial uses of coal ash. A generator of coal ash shall demonstrate that the coal ash quality meets the chemical and physical characteristics identified in the Certification Guidelines for the intended uses. The demonstration shall be reviewed and approved by the Department prior to a beneficial use.**

**(3) The Department will develop a technical guidance document to facilitate review of beneficial uses of coal ash at abandoned mine sites.**

**(b) *Request.* The request for the use of coal ash at abandoned mine sites shall be addressed in the reclamation plan submitted to the Department and shall contain the following:**

**(1) A narrative description of the project, including an explanation of how coal ash will be placed, where and how coal ash will be stored prior to placement, identification of the sources of coal ash and an estimate of the cubic yards of coal ash to be used. For the beneficial use of coal ash as a soil substitute or additive, the proposed application rate and justification for the application rate shall also be included.**

**(2) If the coal ash has not been certified under subsection (a)(2) by the Department, a statement signed by the generator of the coal ash including supporting data which demonstrates that the coal ash quality meets the chemical and physical characteristics identified in the certification guidelines for the intended use. If the coal ash has been certified in accordance with subsection (a)(2) information that identifies the generator and the certification number.**

**(3) A signed statement by the owner of the land on which the coal ash is to be placed, acknowledging and consenting to the placement of coal ash.**

**(c) *Operating requirements.* The use of coal ash as part of the reclamation activity shall be designed to achieve an overall improvement in water quality or shall be designed to prevent the degradation of water quality or be designed to treat mine drainage or function as a soil substitute or soil additive.**

**(1) The cubic yards of coal ash to be used at any reclamation activity at an abandoned mine site will be determined by the Department. Consideration may be given to using up to the total volume needed to accomplish reclamation of the entire affected site, so that the final contours resulting from the project blend with the surrounding topography, promote positive surface water runoff and protect surface and groundwater quality.**

**(2) The necessity for water quality monitoring will be determined by the Department where the information is needed to evaluate the success of the reclamation project.**

**(3) The coal ash will not be placed within 8 feet of the regional groundwater table, unless the Department approves placement within 8 feet based upon a demonstration that groundwater contamination will not occur.**

**(4) For use of coal ash as a soil substitute or soil additive, the coal ash shall be applied at the rate per acre in order to increase the productivity or properties of the soil and to protect public health, safety and the environment.]**

**§ 287.665. [Other beneficial uses of coal ash.] Reserved.**

**[ (a) This section sets forth beneficial uses of coal ash other than use as a structural fill, soil substitute or soil additive.**

**(b) The following uses of coal ash are deemed to be beneficial and do not require a permit from the Department under the act as long as the uses are consistent with the requirements of this section:**

**(1) The use of coal ash in the manufacture of concrete.**

**(2) The extraction or recovery of one or more materials and compounds contained within the coal ash.**

**(i) Storage of coal ash before and after extraction or recovery shall be subject to Chapter 299 (relating to storage and transportation of residual waste).**

**(ii) Disposal of the unrecovered fraction of coal ash shall be subject to the applicable requirements for residual waste.**

**(3) The use of fly ash as a stabilized product. Other uses of fly ash in which physical or chemical characteristics are altered prior to use or during placement shall be considered a beneficial use under this section if the following are met:**

**(i) The person or municipality proposing the use has first given advance written notice to the Department.**

**(ii) The coal ash is not mixed with solid waste, unless otherwise approved in writing by the Department prior to the use.**

**(iii) The use of the coal ash results in a demonstrated reduction of the potential of the coal ash to leach constituents into the environment.**

**(4) The use of bottom ash or boiler slag as an antiskid material or road surface preparation material, if the use is consistent with Department of Transportation specifications or other applicable specifications. The use of fly ash as an antiskid material or road surface preparation material is not deemed to be a beneficial use.**

**(5) The use of coal ash as raw material for a product with commercial value, including the use of bottom ash in construction aggregate. Storage of coal ash prior to processing is subject to § 299.153 (relating to storage and containment of coal ash).**

**(6) The use of coal ash for mine subsidence control, mine fire control and mine sealing, if the following requirements are met:**

**(i) The person or municipality proposing the use gives advance written notice to the Department.**

**(ii) The pH of the coal ash is in a range that will not cause or allow the ash to contribute to water pollution.**

**(iii) Use of the coal ash in projects funded by or through the Department is consistent with applicable Departmental requirements and contracts.**

**(7) The use of coal ash as a drainage material or pipe bedding, if the person or municipality proposing the use has first given advance written notice to the Department, and has provided to the Department an evaluation of the pH of the coal ash and a chemical analysis of the coal ash that meets the requirements of § 287.132 (relating to chemical analysis of waste).]**

**§ 287.666. [Requests for information.] Reserved.**

**[ (a) The Department may request documents and other information from a person or municipality that are necessary to show whether the person or municipality is conducting or proposing to use coal ash in a manner that is consistent with this subchapter.**

**(b) Failure to have documentation of compliance with this subchapter available after initiation of a claimed beneficial use will give rise to a presumption that the person or municipality is disposing of residual waste without a permit.]**

**(*Editor's Note*: This chapter is new and is printed in regular type to enhance readability.)**

# CHAPTER 290. BENEFICIAL USE OF COAL ASH



# Subchapter A. GENERAL



## § 290.1. Scope.

(a) This chapter sets forth requirements for beneficial use of coal ash.

(b) If coal ash is mixed with residual waste or ash produced by co-firing coal or waste coal with an alternative fuel, the beneficial use must be authorized by a permit issued under this article and the requirements of this chapter must be met.

(c) If coal ash is mixed with construction and demolition waste, the beneficial use must be authorized under a permit issued under Article VIII and the requirements of this chapter must be met.

(d) Coal ash mixed with municipal waste, other than construction and demolition waste, shall not be beneficially used by direct placement into the environment. Other types of beneficial use of coal ash mixed with municipal waste may be authorized by a permit issued under Article VIII

(relating to municipal waste) and any applicable requirements of this chapter must be met.

(e) Beneficial use activities that are subject to and meet the requirements of this chapter are not required to obtain an individual disposal permit under this article.

# Subchapter B. BENEFICIAL USE OF COAL ASH

Sec.



### § 290.101. General requirements for the beneficial use of coal ash.

(a) Coal ash may be beneficially used without a permit from the Department under the act if the person proposing the use complies with this chapter. Use of coal ash that is not consistent with this chapter is considered disposal and must be authorized under a disposal permit from the Department under the act and the regulations promulgated thereunder.

(b) Chemical analysis must demonstrate that the coal ash does not exceed any of the maximum acceptable leachate levels in § 290.201(a) (relating to coal ash qualification). The minimum sampling and analysis procedures must satisfy the requirements in § 290.201(c) (relating to coal ash qualification). The Department may waive or modify this requirement for uses under § 290.106(b)(1)-(3) (relating to other beneficial uses of coal ash).

(c) The coal ash must satisfy the physical characteristics for the intended use in § 290.201(a) (relating to coal ash qualification).

(d) A water quality monitoring plan in accordance with § 290.301 (relating to water quality monitoring) and, if applicable, Chapters 86—90 must be developed and implemented if either more than 10,000 tons of coal ash per acre is to be used on a project or more than 100,000 tons of

coal ash in total will be used at a project. Contiguous projects will be considered a single project for purposes of this section. The Department may require a water quality monitoring plan for projects involving lesser quantities of coal ash where site conditions warrant. The Department may waive or modify this requirement for uses under § 290.106(b)(1)-(6) (relating to other beneficial uses of coal ash).

(e) Coal ash may not be placed within 8 feet of the water table, unless the Department approves placement within 8 feet at a coal mining activity site based upon a demonstration that groundwater contamination will not occur.

(f) Coal ash may not be used in a way that causes water pollution.

## § 290.102. Use of coal ash as structural fill.

(a) At least 60 days before using coal ash as structural fill, the person proposing the use shall submit a written notice to the Department. The notice must contain, at a minimum, the following information:

(1) A description of the nature, purpose and location of the project, including a topographic map showing the project and available soils maps of the area of the project.

(2) The estimated beginning and ending dates for the project.

(3) Construction plans for the structural fill, including a stability analysis when necessary, which shall be prepared by a registered professional engineer in accordance with sound engineering practices and which shall be signed and sealed by the engineer.

(4) An estimate of the volume of coal ash to be used for the project.

(5) A bulk chemical and leaching analysis for the coal ash to be used in the project. If the coal ash was generated at a facility for which the Department has previously approved a chemical and leaching analysis and the analysis is not older than 1 year, the person may submit a copy of the analysis that was approved.

(6) A signed statement by the owner of the land on which the structural fill is to be placed, acknowledging and consenting to the use of coal ash as structural fill.

(7) This statement by the landowner in (6) shall be a recordable document for any project, or set of contiguous projects involving placement of more than 10,000 tons of coal ash per acre. Prior to

beneficial use of more than 10,000 tons of coal ash per acre under this section, the statement by the landowner shall be recorded at the office of the recorder of deeds in the county in which the proposed coal ash beneficial use will take place.

(b) The Department will publish a summary of each notice in the *Pennsylvania Bulletin*.

(c) A person proposing to use coal ash as structural fill where more than 10,000 tons of coal ash per acre is to be used on a project or more than 100,000 tons of coal ash in total will be used at a project shall place at the time of filing a request with the Department, an advertisement in a local newspaper of general circulation in the locality of the proposed coal ash beneficial use activities at least once a week for 3 consecutive weeks. Contiguous projects will be considered a single project for purposes of this section. The Department may require public notice for projects involving less than 10,000 tons of coal ash per acre if the Department determines that the proposed beneficial use activities are of significant interest to the public or site conditions warrant. At a minimum, the notice must contain the following information:

(1) The name and business address of the person proposing to beneficially use coal ash.

(2) A brief description of the location and scope of the proposed beneficial use.

(3) The location of the public office where a copy of the request that is being or was sent to the Department is available for public inspection.

(d) For coal ash to be beneficially used as a structural fill, the following additional requirements must be satisfied:

(1) The pH of the coal ash as placed must be in the range of 6.0 to 9.0, unless otherwise approved by the Department. Lime may be added to raise pH.

(2) The slope of a structural fill may not be greater than 2.5 horizontal to 1.0 vertical. The Department may approve a greater slope based on a demonstration of structural stability.

(3) Coal ash shall be spread uniformly and compacted in layers not exceeding 2 feet in thickness. The coal ash shall be spread and compacted within 24 hours of its delivery to the site unless stored in accordance with Subchapter E (relating to coal ash storage).

(4) Surface runoff from the fill area shall be minimized during filling and construction activity. Storm water shall be managed in accordance

with The Clean Streams Law (35 P.S. §§ 691.1-691.1001) and the regulations promulgated thereunder.

(5) Surface water shall be diverted away from the disturbed area during filling and construction activity.

(6) Coal ash shall be covered with 12 inches of soil, unless infiltration is prevented by other cover material.

(7) Coal ash must achieve a minimum compaction of 90 % of the maximum dry density as determined by the Modified Proctor Test, or 95 % of the maximum dry density as determined by the Standard Proctor Test. Ash from each source must be tested individually. The Proctor Test must be conducted by a certified laboratory.

(8) The offsite dispersion of dust from coal ash and other materials shall be minimized.

(e) Coal ash used as structural fill may not be located:

(1) Within 100 feet of an intermittent or perennial stream, unless the structural fill is otherwise protected by a properly engineered diversion or structure that is permitted by the Department under the Dam Safety and Encroachments Act (32 P. S. §§ 693.1—693.27).

(2) Within 300 feet of a water supply unless the person obtains, in a form acceptable to the Department, a written waiver from the owner of the water supply, allowing for another distance.

(3) Within 25 feet of a bedrock outcrop, unless the outcrop is properly treated to minimize infiltration into fractured zones or otherwise approved by the Department.

(4) Within 100 feet of a sinkhole or area draining into a sinkhole.

(5) Within a 100-year floodplain of a water of this Commonwealth, unless a properly engineered dike, levee or other structure that can protect the structural fill from a 100-year flood is permitted by the Department in a manner that is consistent with the Flood Plain Management Act (32 P. S. §§ 679.101—679.601), the Storm Water Management Act (32 P. S. §§ 680.1—680.17) and the Dam Safety and Encroachments Act.

(6) In or within 100 feet of a wetland, other than an exceptional value wetland.

(7) In or within 300 feet of an exceptional value wetland.

(f) Prior to January 31, any person that placed more than 10,000 tons of coal ash per acre at any project or contiguous projects in the previous calendar year shall submit a report for the previous calendar year to the Department that includes contact information, the location of the site where the coal ash was utilized, the identity of each source of coal ash, and the volume in cubic yards and the weight in dry tons for each source.

## § 290.103. Use of coal ash as a soil substitute or soil additive.

(a) Coal ash may be beneficially used as a soil substitute or soil additive without a permit from the Department under the act if the person proposing the use complies with this section.

(b) At least 60 days before using coal ash as a soil substitute or soil additive, the person proposing the use shall submit a written notice to the Department. The notice must contain, at a minimum, the following information:

(1) A description of the nature, purpose and location of the project, including a topographic map showing the project area and available soils maps of the project area. The description must include an explanation of how coal ash will be stored prior to use, how the soil will be prepared for the application of coal ash, how coal ash will be spread and, when necessary, how coal ash will be incorporated into the soil.

(2) The estimated beginning and ending dates for the project.

(3) An estimate of the volume of coal ash to be used for the project, the proposed application rate and a justification for the proposed application rate.

(4) A chemical and leaching analysis and pH for the coal ash to be used in the project. If the coal ash was generated at a facility for which the Department has previously approved a chemical and leaching analysis and the analysis is not older than 1 year, the person may submit a copy of the analysis that was approved.

(5) A chemical analysis of the soil on which the coal ash is proposed to be placed.

(6) An analysis showing how the application of coal ash will be beneficial to the productivity or properties of the soil to which it is proposed to be applied. The analysis shall be prepared and signed by an expert in soil science.

(7) A signed statement by the owner of the land on which the coal ash is to be placed, acknowledging and consenting to the use of coal ash as a soil substitute or soil additive.

(c) After receiving the information required by subsection (b), the Department will inform the person that provided the information whether the proposed use of coal ash as a soil substitute or soil additive is consistent with this section.

(d) Coal ash used as a soil substitute or soil additive may not be considered a beneficial use unless the following requirements are met:

(1) The pH of the coal ash and the pH of the soil must be in the range of 6.5 to 8.0 when mixed together in the manner required by the project, as shown by field and laboratory testing. Lime may be added to raise pH.

(2) Chemical analysis demonstrates the coal ash satisfies the minimum calcium carbonate equivalency requirement in § 290.201(a) (relating to coal ash qualification).

(3) Surface runoff from the project area shall be controlled during the project. Storm water shall be managed in accordance with The Clean Streams Law (35 P.S. §§ 691.1-691.1001) and the regulations promulgated thereunder.

(4) Coal ash shall be incorporated into the soil within 48 hours of application, unless otherwise approved by the Department. The coal ash shall be incorporated into the top 1-foot layer of surface soil. If 1 foot of surface soil is not present, coal ash may be combined with the surface soil that is present until the layer of combined surface soil and coal ash is 1 foot. The coal ash required for the beneficial use is limited to the amount necessary to enhance soil properties or plant growth.

(5) Coal ash shall be applied at a rate per acre that will protect public health, public safety and the environment.

(6) Coal ash may not be applied to soil being used for agriculture where the soil pH is less than 5.5.

(7) Coal ash may not be applied if resultant chemicals or physical soil conditions would be detrimental to biota.

(8) The offsite dispersion of dust from coal ash and other materials shall be minimized.

(e) Coal ash may not be used as a soil substitute or soil additive:

(1) Within 100 feet of an intermittent or perennial stream, or a wetland other than an exceptional value wetland.

(2) In or within 300 feet of an exceptional value wetland.

(3) Within 300 feet of a water supply unless the person obtains, in a form acceptable to the Department, a written waiver from the owner of the water supply, allowing for another distance.

(4) Within 100 feet of a sinkhole or area draining into a sinkhole.

(5) Within 300 feet measured horizontally from an occupied dwelling, unless the current owner has provided a written waiver consenting to the activities closer than 300 feet. The waiver shall be knowingly made and separate from a lease or deed unless the lease or deed contains an explicit waiver from the current owner.

(f) Coal ash must not be used as a soil substitute or soil amendment in amounts that exceed the following maximum cumulative loading rates:

| **Contaminant** | **Cumulative Contaminant Loading Rate** | | |
|---|---|---|---|
| arsenic | 36 | lbs/acre | (41 kg/hectare) |
| boron | 60 | lbs/acre | (67.2 kg/hectare) |
| cadmium | 34 | lbs/acre | (38 kg/hectare) |
| chromium | 2672 | lbs/acre | (3014 kg/hectare) |
| copper | 1320 | lbs/acre | (1490 kg/hectare) |
| lead | 264 | lbs/acre | (296 kg/hectare) |
| mercury | 15 | lbs/acre | (17 kg/hectare) |
| molybdenum | 16 | lbs/acre | (18 kg/hectare) |
| nickel | 370 | lbs/acre | (420 kg/hectare) |
| selenium | 88 | lbs/acre | (99 kg/hectare) |
| zinc | 2464 | lbs/acre | (2780 kg/hectare) |

## § 290.104. Beneficial use of coal ash at coal mining activity sites.

(a) *Coal ash approval at coal mining activity sites.* Approval for the beneficial use of coal ash at coal mining activity sites as defined in § 86.1 (relating to definitions) will, at a minimum, be based on the following:

(1) Compliance with this section, The Clean Streams Law (35 P.S. §§ 691.1-691.1001) and the regulations promulgated thereunder, the Surface Mining Conservation and Reclamation Act (52 P. S. §§ 1396.1—1396.19a), the Coal Refuse Disposal Control Act (52 P. S. §§ 30.51—30.66), the applicable provisions of Chapters 86—90 (relating to surface and underground coal mining: general, surface mining of coal, anthracite coal, underground mining of coal and coal preparation facilities, and coal

refuse disposal), and other applicable environmental statutes and regulations promulgated thereunder.

(2) Qualification under § 290.201 (relating to coal ash qualification) by the Department for the intended beneficial uses.

(3) Approval of a request submitted pursuant to subsection (b).

(b) *Request.* A person shall submit to the Department a request to beneficially use the qualified coal ash at a specific coal mining activity site as part of the reclamation plan under the mining permit. This request must contain the permit filing fee in subsection (c) and, at a minimum, the following:

(1) A narrative description of the project, including an explanation of how coal ash will be placed, where and how coal ash will be stored prior to placement, identification of the sources of coal ash and an estimate of the cubic yards of coal ash to be used. For the beneficial use of coal ash as a soil substitute or additive, the proposed application rate and justification for the application rate shall also be included.

(2) Information demonstrating that the coal ash has been qualified for its intended use in accordance with § 290.201, including the identity of the generator and the qualification number.

(3) A signed statement by the owner of the land on which the coal ash is to be placed, acknowledging and consenting to the placement of coal ash. This statement by the landowner shall be a recordable document. Prior to beneficial use of coal ash under this section, the statement by the landowner shall be recorded at the office of the recorder of deeds in the county in which the proposed beneficial use of coal ash will take place.

(4) A monitoring plan that meets the requirements of §§ 290.301 - 290.306.

(c) *Permit filing fee.*

(1) A non-refundable permit filing fee payable to the "Commonwealth of Pennsylvania" for the beneficial use of coal ash at a coal mining activity site is to be paid annually in the amount of $2,000. This annual filing fee is to be paid until final bond release for the coal mining activity site.

(2) Money received from the permit filing fee for the beneficial use of coal ash will be deposited in the Surface Mining Conservation and Reclamation Fund and will be used by the Department for the cost of reviewing, administering and enforcing the requirements of the authorization for beneficial use of coal ash under the coal mining activity permit.

(3) The Department will review the adequacy of the fees established in this section at least once every three years and provide a written report to the Environmental Quality Board. The report shall identify any disparity between the amount of program income generated by the fees and the costs to administer these programs, and it shall contain recommendations to adjust fees to eliminate the disparity, including recommendations for regulatory amendments to adjust program fees.

(d) *Public notice.* A person proposing to use coal ash at coal mining activity sites shall provide public notice pursuant to §§ 86.31 (relating to public notices of filing of permit applications ) or 86.54; (relating to public notice of permit revision).

(e) *Operating requirements.* The beneficial use of coal ash for reclamation purposes at a coal mining activity site shall be designed to achieve an overall improvement in water quality or shall be designed to prevent the degradation of water quality. Coal ash shall only be beneficially used for reclamation at the following locations:

(1) The pit or area from which coal is extracted under a surface coal mining permit.

(2) Abandoned coal mining areas located within the surface coal mining permit area.

(3) Coal refuse disposal sites and coal refuse reprocessing sites.

(4) Other beneficial uses that are part of the approved reclamation plan at the coal mining activity site.

(f) *Additional operating requirements for the placement of coal ash at coal surface mining and coal refuse reprocessing sites.* The following applies to placement of coal ash at coal surface mining and coal refuse reprocessing sites:

(1) The volume of coal ash placed at the site may not exceed the volume of coal, coal refuse, culm or silt removed from the site by the active mining operation on a cubic yard basis unless approved by the Department.

(2) Placement of coal ash shall be accomplished by mixing with spoil material or by spreading in horizontal layers no greater than 2 feet thick unless otherwise approved by the Department. The reclamation plan of the approved mining permit must address the placement of the coal ash.

(3) The coal ash shall be spread and compacted within 24 hours of its delivery to the site unless stored in accordance with Subchapter E (relating to coal ash storage).

(4) Coal ash must achieve a minimum compaction of 90 % of the maximum dry density as determined by the Modified Proctor Test, or 95 % of the maximum dry density as determined by the Standard Proctor Test. Ash from each source must be tested individually. The Proctor Test must be conducted by a certified laboratory on a semiannual basis unless the Department requires more frequent testing.

(5) For coal refuse reprocessing sites where refuse material is presently deposited in large surface piles, the piles must not be rebuilt with coal ash. The placement of coal ash shall be accomplished in a manner that blends into the general surface configuration, and complements the surface drainage pattern of the surrounding landscape.

(6) For a project involving multiple refuse reprocessing sites, the Department may allow a greater volume of coal ash to be placed at an individual site than the volume of coal refuse removed from that site if the following conditions are met:

(i) A single person shall control a project involving the coordinated use of multiple coal refuse reprocessing sites.

(ii) A reclamation plan is approved for each of the sites and each plan identifies the total cubic yards of coal ash that may be placed at each site.

(iii) The total cubic yards of coal ash placed on the sites is less than the total cubic yards of refuse, culm or silt removed from the sites. Only coal ash from the integrated project can be used.

(iv) The integrated project shall be designed to achieve an overall improvement of surface water or groundwater quality at each site, where acid mine drainage is evident. If acid mine drainage is not evident, the project shall be designed to prevent degradation of the surface or groundwater quality.

(v) The integrated project shall be accomplished in a manner that blends into the general surface configuration and complements the surface drainage pattern of the surrounding landscape.

(7) The person shall maintain information identifying the sources and the volume in cubic yards and the weight in dry tons of coal ash used.

(8) The site shall be monitored in accordance with the requirements of §§ 290.301 - 290.306.

(9) The offsite dispersion of dust from coal ash and other materials shall be minimized.

(g) *Additional operating requirements for the beneficial use of coal ash as a soil substitute or soil additive.* The following apply to the beneficial use of coal ash as a soil substitute or soil additive:

(1) Coal ash shall be applied at a rate per acre that will protect public health, public safety and the environment.

(2) The coal ash that is applied will be part of the approved reclamation plan of the coal mining activity in order to increase the productivity or properties of the soil.

(3) The coal ash is not used in amounts that exceed the maximum cumulative loading rates in § 290.103(f) (relating to use of coal ash as a soil substitute or soil additive).

(4) The offsite dispersion of dust from coal ash and other materials shall be minimized.

(h) *Additional operating requirements for the beneficial use of coal ash at coal refuse disposal sites.* The following apply to the beneficial use of coal ash at coal refuse disposal sites:

(1) Placement of coal ash as part of coal refuse disposal operations permitted under Chapters 86—90 (relating to surface and underground coal mining: general, surface mining of coal, anthracite coal, underground mining of coal and coal preparation facilities, and coal refuse disposal) must meet the following:

(i) The cubic yards of coal ash does not exceed the total cubic yards of coal refuse to be disposed based on uncompacted volumes of materials received at the site.

(ii) The coal ash has physical and chemical characteristics that meet the following requirements:

(A) Improve compaction and stability within the fill.

(B) Reduce infiltration of water into coal refuse.

(C) Improve the quality of leachate generated by the coal refuse.

(2) The offsite dispersion of dust from coal ash and other materials shall be minimized.

(i) *Additional coal ash sampling.* A person using coal ash at a coal mining activity site shall, each quarter that coal ash is being used at the site, sample the ash after it has been placed at the site and such sample shall be analyzed in accordance with section 290.201(b)(5). The results of the analysis shall be submitted quarterly to and in the format required by the Department.

(j) *Annual Report*. Prior to January 31, the permittee of a coal mining activity site where coal ash was placed in the previous calendar year shall submit a report for the previous calendar year to the Department that includes permit number, mining company contact information, the identity of each source of coal ash and its qualification number, and the volume in cubic yards and the weight in dry tons for each source of coal ash that was placed at the site.

## § 290.105. Coal ash beneficial use at abandoned coal surface mine sites.

(a) *Department Approval.* Coal ash may be beneficially used at abandoned coal surface mine sites if the reclamation work is approved in writing by the Department. The beneficial use of coal ash at abandoned coal surface mine sites will, at a minimum, be based on the following:

(1) Beneficial use of the coal ash shall comply with this section, and the applicable environmental statutes and regulations promulgated thereunder.

(2) The coal ash is qualified under § 290.201 (relating to coal ash qualification) by the Department for the intended use.

(b) *Request.* The request for the use of coal ash at abandoned mine sites must contain the following:

(1) A narrative description of the project, including an estimated beginning date and ending date for the project, an explanation of how coal ash will be placed, where and how coal ash will be stored prior to placement, identification of the sources of coal ash and an estimate of the cubic yards of coal ash to be used. For the beneficial use of coal ash as a soil substitute or additive, the proposed application rate and justification for the application rate shall also be included.

(2) Information demonstrating that the coal ash has been qualified for its intended use in accordance with § 290.201 (relating to coal ash qualification), including the identity of the generator and the qualification identity number.

(3) Reclamation plans, including a stability analysis, when necessary, prepared by a registered professional engineered in accordance with sound engineering practice and signed and sealed by the engineer.

(4) A signed statement by the owner of the land on which the coal ash is to be placed, acknowledging and consenting to the placement of coal ash. This statement by the landowner shall be a recordable document. Prior to beneficial use of coal ash under this section, the statement by the landowner shall be recorded at the office of the recorder of deeds in the county in which the proposed coal ash beneficial use will take place.

(5) If applicable, water quality monitoring plan.

(6) A person proposing to use coal ash for reclamation involving use of more than 10,000 tons of coal ash per acre on a project or more than 100,000 tons of coal ash in total at any project shall place at the time of filing a request with the Department, an advertisement in a local newspaper of general circulation in the locality of the proposed coal ash beneficial use activities at least once a week for 3 consecutive weeks. Contiguous projects will be considered a single project for purposes of this section. The Department may require public notice for projects involving lesser amounts of coal ash if the Department determines that the proposed beneficial use activities are of significant interest to the public or site conditions warrant. At a minimum, the notice must contain the following information:

(i) The name and business address of the person proposing to beneficially use coal ash.

(ii) A brief description of the location and scope of the proposed beneficial use.

(iii) The location of the public office where a copy of the request that is being or was sent to the Department is available for public inspection.

(c) *Approved under contract.* Contracts issued by the Department for the reclamation of abandoned coal surface mine sites may include the beneficial use of coal ash. The beneficial use of coal ash for the reclamation of abandoned coal surface mine sites will, at a minimum, be based on the conditions established in § 290.105(a).

(d) *Department notification.* The Department will publish a summary of each request or contract in the *Pennsylvania Bulletin*.

(e) *Operating requirements.* The use of coal ash as part of the reclamation activity at abandoned coal surface mine sites must satisfy the following additional requirements:

(1) The pH of the coal ash as placed must be in the range of 6.0 to 9.0, unless otherwise approved by the Department. Lime may be added to raise pH.

(2) The slope of the reclaimed area may not be greater than 2.5 horizontal to 1.0 vertical. The Department may approve a greater slope based on a demonstration of stability.

(3) Coal ash shall be spread uniformly and compacted in layers not exceeding 2 feet in thickness. The coal ash shall be spread and compacted within 24 hours of its delivery to the site unless stored in accordance with Subchapter E (relating to coal ash storage).

(4) Surface runoff from the reclamation area shall be minimized during construction activity. Storm water shall be managed in accordance with The Clean Streams Law (35 P.S. §§ 691.1-691.1001) and the regulations promulgated thereunder.

(5) Surface water shall be diverted away from the disturbed area during construction activity.

(6) Coal ash shall be covered with 12 inches of soil, unless infiltration is prevented by other cover material.

(7) Coal ash must achieve a minimum compaction of 90 % of the maximum dry density as determined by the Modified Proctor Test, or 95 % of the maximum dry density as determined by the Standard Proctor Test. Ash from each source must be tested individually. The Proctor Test must be conducted by a certified laboratory.

(8) The offsite dispersion of dust from coal ash and other materials shall be minimized.

(9) Coal ash used for reclamation may not be located:

(i) Within 100 feet of an intermittent or perennial stream, unless the reclamation area is otherwise protected by a properly engineered diversion or structure that is permitted by the Department under the Dam Safety and Encroachments Act (32 P. S. §§ 693.1—693.27) or the ash has been placed as a low permeability material to function as an aquatard as part of an engineered stream channel restoration.

(ii) Within 300 feet of a water supply unless the person obtains, in a form acceptable to the Department, a written waiver from the owner of the water supply, allowing for another distance.

(iii) Within 100 feet of a sinkhole or area draining into a sinkhole.

(iv) Within a 100-year floodplain of a water of this Commonwealth, unless a properly engineered dike, levee or other structure that can protect the reclamation area from a 100-year flood is permitted by the Department in a manner that is consistent with the Flood Plain Management Act (32 P. S. §§ 679.101—679.601), the Storm Water Management Act (32 P. S. §§ 680.1—680.17) and the Dam Safety and Encroachments Act.

(v) In or within 100 feet of a wetland, other than an exceptional value wetland.

(vi) In or within 300 feet of an exceptional value wetland.

(10) The following apply to the beneficial use of coal ash as a soil substitute or soil additive:

(i) Coal ash shall be applied at a rate per acre that will protect public health, public safety and the environment.

(ii) The coal ash that is applied will be part of the approved reclamation plan in order to increase the productivity or properties of the soil.

(iii) The coal ash is not used in amounts that exceed the maximum cumulative loading rates in § 290.103(f) (relating to use of coal ash as a soil substitute or soil additive).

(f) *Annual Report*. Prior to January 31, any person that placed coal ash at an abandoned mine site in the previous calendar year shall submit a report for the previous calendar year to the Department that includes company contact information, the identity of the reclamation contract with the Department or approval by the Department, the identity of each source of coal ash and its qualification identity number, and the volume in cubic yards and the weight in dry tons for each source of coal ash that was placed at the site.

## § 290.106. Other beneficial uses of coal ash.

(a) This section sets forth beneficial uses of coal ash other than use as a structural fill, soil substitute or soil additive.

(b) The following uses of coal ash are deemed to be beneficial and do not require a permit from the Department under the act provided the uses are consistent with the requirements of this section:

(1) The use of coal ash in the manufacture of concrete. The coal ash shall be utilized within 24 hours of its delivery to the site unless stored in accordance with Subchapter E (relating to coal ash storage).

(2) The extraction or recovery of one or more materials and compounds contained within the coal ash if the following conditions are met:

(i) Storage of coal ash before and after extraction or recovery shall be subject to Subchapter E (relating to coal ash storage).

(ii) Disposal of the unrecovered fraction of coal ash shall be subject to the applicable requirements for residual waste.

(3) The use of fly ash as a stabilized product. Other uses of fly ash in which physical or chemical characteristics are altered prior to use or during placement will be considered a beneficial use under this section if the following conditions are met:

(i) The person proposing the use has first given advance written notice to the Department.

(ii) The coal ash is not mixed with solid waste, unless otherwise approved, in writing, by the Department prior to the use.

(iii) The use of the coal ash results in a demonstrated reduction of the potential of the coal ash to leach constituents into the environment.

(4) The use of bottom ash or boiler slag as an antiskid material or road surface preparation material, if the use is consistent with Department of Transportation specifications or other applicable specifications. The use of fly ash as an antiskid material or road surface preparation material is not deemed to be a beneficial use.

(5) The use of coal ash as raw material for a product with commercial value, including the use of bottom ash in construction aggregate. Storage of coal ash prior to processing is subject to Subchapter E (relating to coal ash storage).

(6) The use of coal ash as a drainage material or pipe bedding, if the person proposing the use has first given advance written notice to the Department, and has provided to the Department an evaluation of the pH of the coal ash and a chemical analysis of the coal ash.

(7) The use of coal ash for mine subsidence control, mine fire control and mine sealing, if the following requirements are met:

(i) The person proposing the use gives advance written notice to the Department.

(ii) The pH of the coal ash is in a range that will not cause or allow the ash to contribute to water pollution.

(iii) Use of the coal ash in projects funded by or through the Department is consistent with applicable Departmental requirements and contracts.

(iv) The coal ash shall be utilized within 24 hours of its delivery to the site unless stored in accordance with Subchapter E (relating to coal ash storage).

### § 290.107. Requests for information.

(a) The Department may request documents and other information from a person to demonstrate that the person is conducting or proposing to use coal ash in a manner that is compliant with this subchapter.

(b) Failure to have documentation of compliance with this subchapter may lead to a presumption that the person is disposing of residual waste without a permit.

# Subchapter C. COAL ASH QUALIFICATION

Sec.



### § 290.201. Coal ash qualification.

(a) Qualification standards are as follows:

(1) Maximum acceptable leachate levels for qualification:

(i) For metals and other cations, 25 times the waste classification standard for a contaminant.

(ii) For contaminants other than metals and cations, the waste classification standard for a contaminant.

(2) The pH of the coal ash must be above 7.0 for mine backfilling, alkaline addition, or use as low-permeability material.

(3) For coal ash used as an alkaline additive, whether as a placement fill or as an alkaline soil additive, the calcium carbonate equivalency, as determined by the Neutralization Potential Test in the Department's *Overburden Sampling and Testing Manual* (Noll, et al., 1988) or other method approved by the Department, must be a minimum of 100 parts per thousand (10 % by weight).

(4) For coal ash used as a low permeability material, the hydraulic conductivity (permeability) of the coal ash must be $1.0 \times 10^{-6}$ cm/sec or less based on hydraulic conductivity testing using ASTM D 5084 (Standard Test Method for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Perimeter) or other method approved by the Department. An additive may be used with the coal ash to meet this hydraulic conductivity. Hydraulic conductivity testing should use compaction and other preparation techniques that will duplicate the expected conditions at the mine site.

(b) Qualification may be granted for use of a coal ash not meeting all the appropriate standards in subsection (a) if the following conditions are met:

(1) The coal ash will be used only at a specified mine site(s). The coal ash qualification is limited for use only at the specified site.

(2) Only standards based on secondary MCLs (aluminum, chloride, iron, manganese, sulfate, silver and zinc) are exceeded. All other limits shall be met.

(3) The mine site operator can demonstrate that use of the coal ash at these levels will not adversely impact the surface water or groundwater quality and that the use of the coal ash will achieve an overall benefit in groundwater quality.

(c) A request for coal ash qualification must contain the following information on a form provided by the Department:

(1) The name and location of the generator of the coal ash.

(2) Designation of the beneficial use or uses for which qualification is requested

(3) A description of the coal ash generation process specific to the generator, including the combustion and pollution control processes, the fuel sources utilized, and the expected percentages of coal ash derived from different processes that will be incorporated into the final coal ash stream to be delivered to the beneficial use site.

(4) A description of the physical properties and chemical characteristics of any material mixed with the coal ash, the extent of mixing, and the mixing methods used.

(5) A detailed chemical analysis on at least four (4) representative samples spaced throughout a 2- 6-month sampling period within the last year that fully characterizes the composition of the coal ash. This analysis must include:

(i) Total and leachable concentrations for aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, molybdenum, nickel, potassium, selenium, silver, sodium, sulfate, thallium, vanadium and zinc and leachable concentrations for ammonia, chloride, fluoride, nitrate and nitrite using methods found in EPA's ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods'' (EPA Publication No. SW-846) or comparable methods approved by the Department. Leachate concentrations shall be determined using EPA Method 1312, the Synthetic Precipitation Leaching Procedure, or another leaching procedure approved by the Department.

(ii) Information to show that the laboratory making a chemical analysis for the application is in compliance with 27 Pa. C.S. Chapter 41 (relating to environmental laboratory accreditation).

(6) A laboratory analysis for optimum moisture content and dry density (Standard or Modified Proctor Test).

(7) An analysis of permeability reported in cm/sec.

(8) A determination of neutralization potential as determined by the Neutralization Potential Test in the Department's *Overburden Sampling and Testing Manual* (Noll, et al., 1988) or other method approved by the Department.

(9) A detailed description of the sampling methodology used, date the samples were taken, and name and contact information of the person performing the sampling.

(10) Other physical testing results, if required in subsection (a) for the particular beneficial uses being proposed.

(d) The Department will review the qualification request and notify the generator in writing of the qualification identity number or the reason that the source was not qualified for beneficial use.

(e) If the coal ash is qualified, a representative of the coal ash source generator shall submit regular monitoring information to demonstrate that the coal ash continues to meet the requirements for qualification. This information shall be submitted on dates specified by and on forms provided by the Department. At a minimum, monitoring requirements shall consist of the following:

(1) At least one representative sample analysis of the coal ash submitted every three months.

(2) A representative sample analysis collected whenever there is a change in operation of the combustion unit generating the coal ash or a significant change in the fuel source.

(3) Prior to January 31, a yearly report, that includes the volume in cubic yards and the weight in dry tons of ash produced for beneficial use in the previous calendar year and the locations, such as mine sites, where the ash was delivered.

(f) The coal ash generator and the person beneficially using the coal ash must notify the Department of any changes to the information filed in the qualification application or of any evidence that the coal ash may not meet qualification requirements.

**§ 290.202. Revocation of qualification.**

(a) The Department will revoke qualification for a source of coal ash if any of the following occur:

(1) The generator fails to comply with monitoring requirements as described in § 290.201(e).

(2) The results from the analyses of the coal ash consistently exceed the qualification criteria.

(3) There are physical or chemical characteristics that make the coal ash unsuitable for beneficial use.

(b) If qualification is revoked, the coal ash cannot be used at a coal mining activity site or an abandoned coal surface mine site in the Commonwealth unless the coal ash generator requests re-qualification under subsection (c) and the coal ash is re-qualified by the Department.

(c) The generator of coal ash that had its qualification revoked may request re-qualification. For qualification to be reinstated, the generator shall demonstrate to the Department's satisfaction that:

(1) A detailed chemical analysis on three recent monthly representative samples establish that the coal ash meets the qualification requirements.

(2) There are no other physical or chemical characteristics that make the coal ash unsuitable for beneficial use.

**§ 290.203. Exceedance of qualification requirements.**

If the coal ash sample analysis results exceed any qualification requirement, this source may continue to be used if the person can demonstrate to the Department's satisfaction that the exceedance was a rare event and is not a typical representation of the coal ash as a whole. This demonstration shall include comparisons with prior coal ash analyses, a new sampling strategy and new sample analyses. The demonstration shall explain the cause of any high value and how this type of event will be avoided in the future.

# Subchapter D. WATER QUALITY MONITORING

Sec.



**§ 290.301. Water quality monitoring.**

(a) A water quality monitoring plan shall be submitted to the Department for approval prior to placement or storage of coal ash at the sites identified in §§ 290.101(d), 290.104, 290.405(d) or 290.411(e) (relating to general requirements for the beneficial use of coal ash, storage piles – operating requirements and surface impoundments - operating requirements). At a minimum, the plan must include the following information:

(1) The location and design of downgradient and upgradient monitoring points.

(2) A minimum of 12 background samples from each monitoring point taken at monthly intervals prior to placement of coal ash, unless a different number or frequency is approved by the Department.

(3) Samples to be taken quarterly after approval from each monitoring point, unless a different number or frequency is approved by the Department.

(b) The person taking the samples and the laboratory performing the analysis required by subsection (a) shall employ the quality assurance/quality control procedures described in the EPA's "Handbook for Analytical Quality Control in Water and Wastewater Laboratories" (EPA 600/4-79-019) or "Test Methods for Evaluating Solid Waste" (SW-846).

(c) The analytical methodologies used to meet the requirements of subsection (a) must be those in the most recent edition of the EPA's "Test Methods for Evaluating Solid Waste" (SW-846), "Methods for Chemical Analysis of Water and Wastes" (EPA 600/4-79-020), "Standard Methods for Examination of Water and Wastewater," prepared and published jointly by the American Public Health Association, American Waterworks Association, and Water Pollution Control Federation or a comparable method approved by the EPA or the Department. The laboratory making any chemical analysis for water quality monitoring must be in compliance with 27 Pa. C.S. Chapter 41 (relating to environmental laboratory accreditation).

(d) All samples shall be analyzed for pH (determined in the field), temperature (determined in the field), specific conductance (at 25° C; determined in the field), alkalinity, acidity, sulfate, chloride, fluoride, nitrate, nitrite, ammonia, and total suspended solids without filtration.

(e) All samples shall be analyzed for total and dissolved aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, molybdenum, nickel, potassium, selenium, silver, sodium, thallium, vanadium, and zinc. In addition, the static water elevation for monitoring wells and the flow for springs, seeps and mine discharges must be measured.

(f) Additional parameters may be required by the Department based on conditions at the site.

(g) Water quality monitoring shall continue quarterly for a minimum of 5 years after final placement or storage of coal ash at the site, and annually thereafter from the end of year 5 through 10 years after final placement or storage of coal ash at the site. The Department may require more frequent or longer water quality monitoring if the results of water quality monitoring indicate that contamination may be occurring.

(h) Water quality monitoring data shall be submitted quarterly to and in the format required by the Department.

(i) The person required to develop and implement a water quality monitoring plan in accordance with § 290.101(d) (relating to water quality monitoring) shall demonstrate attainment with applicable groundwater remediation standards as required in the event of groundwater degradation attributable to the placement of the coal ash. The applicable groundwater remediation standards are identified in §§ 290.304 and 290.305 (relating to groundwater assessment plan; and abatement plan).

## § 290.302. Number, location and depth of monitoring points.

(a) The water quality monitoring system shall accurately characterize groundwater flow, groundwater chemistry and flow systems on the site and adjacent area. The system must consist of the following:

(1) At least one monitoring well at a point hydraulically upgradient from the coal ash placement area in the direction of increasing static head that is capable of providing representative data of groundwater not affected by placement of coal ash, except when the coal ash placement area occupies the most upgradient position in the flow system. In that case, sufficient downgradient monitoring points shall be placed to determine the extent of adverse effects on groundwater from the coal ash placement.

(2) At least three groundwater monitoring points hydraulically downgradient in the direction of decreasing static head from the area in which coal ash has been or will be placed. The Department at its discretion may accept two downgradient monitoring points on small sites that can be well represented by two points. The Department may allow one or more springs, seeps and mine discharges to substitute for wells if these points are hydraulically downgradient from the area in which coal ash has been or will be placed and if these points will be as effective or more effective at monitoring the ash placement area than wells. Downgradient monitoring points must be hydrologically connected to the area of ash placement, and must be located and constructed so as to detect any chemical influence of the ash placement area. The downgradient points must be proximate enough to detect contaminants within the life of the placement operation. All monitoring points must be developed and protected in a manner approved by the Department. In addition to groundwater monitoring points the Department may require downstream monitoring where downstream monitoring is likely to show any chemical influence that the ash placement area may have on the hydrologic regime.

(3) Surface water monitoring points approved by the Department.

(b) The upgradient and downgradient monitoring wells shall be:

(1) Sufficient in number, location and depth to be representative of water quality.

(2) Located so as not to interfere with routine operations at the site.

(3) Located within 200 feet of the coal ash placement area, except as necessary to comply with subsection (c), and located at the points of compliance.

(c) In addition to the requirements of subsection (b), upgradient monitoring wells shall be located so that they will not be affected by effects on groundwater from the ash placement area.

(d) In addition to the requirements of subsection (b), downgradient monitoring points shall be located so that they will provide early detection of effects on groundwater from the coal ash placement area.

(e) Wells drilled under this section shall be drilled by drillers licensed under the Water Well Drillers License Act (32 P. S. §§ 645.1—645.13).

(f) The well materials shall be decontaminated prior to installation.

### § 290.303. Standards for wells and casing of wells.

(a) A monitoring well shall be cased as follows:

(1) The casing shall maintain the integrity of the monitoring well borehole and shall be constructed of material that will not react with the groundwater being monitored.

(2) The minimum casing diameter shall be 4 inches unless otherwise approved by the Department in writing.

(3) The well shall be constructed with a screen that meets the following requirements:

(i) The screen shall be factory-made.

(ii) The screen may not react with the groundwater being monitored.

(iii) The screen shall maximize open area to minimize entrance velocities and allow rapid sample recovery.

(4) The well shall be filter-packed with chemically inert clean quartz sand, silica or glass beads. The material shall be well-rounded and dimensionally stable.

(5) The casing shall be clearly visible and protrude at least 1 foot aboveground, unless the Department has approved flush mount wells.

(6) The annular space above the sampling depth shall be sealed to prevent contamination of samples and the groundwater.

(7) The casing shall be designed and constructed to prevent cross contamination between surface water and groundwater.

(8) Alternative casing designs for wells in stable formations may be approved by the Department.

(b) Monitoring well casings shall be enclosed in a protective casing that must:

(1) Be of sufficient strength to protect the well from damage by heavy equipment and vandalism.

(2) Be installed for at least the upper 10 feet of the monitoring well, as measured from the well cap, with a maximum stick up of 3 feet, unless otherwise approved by the Department in writing.

(3) Be grouted and placed with a concrete collar at least 3 feet deep to hold it firmly in position.

(4) Be numbered for identification with a label capable of withstanding field conditions and painted in a highly visible color.

(5) Protrude above the monitoring well casing.

(6) Have a locked cap.

(7) Be made of steel or other material of equivalent strength.

## § 290.304. Groundwater assessment plan.

(a) A person shall prepare and submit to the Department a groundwater assessment plan within 60 days after one of the following occurs:

(1) Data obtained from monitoring by the Department or the person indicates a significant change in the quality of groundwater or surface water from background levels determined under § 290.301(a)(2) (relating to water quality monitoring) at any downgradient monitoring point.

(2) Laboratory analysis of one or more public or private water supplies indicates groundwater or surface water contamination that could reasonably be attributed to the coal ash placement.

(b) The person is not required to conduct an assessment under this section if one of the following applies:

(1) Within 10 working days after receipt of sample results indicating groundwater degradation, the person resamples the affected monitoring points and analysis from resampling shows, to the Department's satisfaction, that groundwater degradation has not occurred.

(2) Within 20 working days after receipt of sample results indicating groundwater degradation, the person demonstrates that the degradation was caused entirely by seasonal variations or activities unrelated to coal ash placement.

(c) The groundwater assessment plan shall specify the manner in which the person will determine the existence, quality, quantity, areal extent and depth of groundwater degradation and the rate and direction of migration of contaminants in the groundwater. A groundwater assessment plan shall be prepared and sealed by an expert in the field of hydrogeology who is a licensed professional geologist in the Commonwealth. The plan must contain the following information:

(1) For wells, lysimeters, borings, pits, piezometers, springs, seeps, mine discharges and other assessment structures or devices, the number, location, size, casing type and depth, as appropriate. If the assessment points are wells, they shall be constructed in accordance with §§ 290.302 and 290.303 (relating to number location and depth of monitoring points; and standards for wells and casing of wells).

(2) The sampling and analytical methods for the parameters to be evaluated.

(3) The evaluation procedures, including the use of previously gathered groundwater quality and quantity information, to determine the concentration, rate and extent of groundwater degradation from the facility.

(4) An implementation schedule.

(5) Identification of the abatement standard that will be met.

(d) The groundwater assessment plan shall be implemented upon approval by the Department in accordance with the approved implementation schedule, and shall be completed in a reasonable time not to exceed 6 months, unless otherwise approved by the Department. If the Department determines that the proposed plan is inadequate, it may modify the plan and approve the plan as modified. If the groundwater assessment indicates that contamination is leaving the coal ash placement site, the person shall notify, in writing, each owner of a private or public water supply that is located within 1/2-mile downgradient of the coal ash placement area that an assessment has been initiated.

(e) Within 45 days after the completion of the groundwater assessment plan, the person shall submit a report containing the new data collected, analysis of the data and recommendations on the necessity for abatement.

(f) If the Department determines after review of the groundwater assessment report that implementation of an abatement plan is not required by § 290.305 (relating to abatement plan), the person shall submit a revised groundwater monitoring plan to the Department for approval that contains any necessary changes to the plan and an application for permit modification, if applicable. The person shall implement the modifications within 30 days of the Department's approval.

(g) This section does not prevent the Department from requiring or the person from conducting groundwater abatement or water supply replacement concurrently with or prior to implementation of the assessment.

## § 290.305. Abatement plan.

(a) The person that is required to conduct groundwater monitoring as part of coal ash beneficial use or storage shall prepare and submit to the Department an abatement plan whenever one of the following occurs:

(1) The groundwater assessment plan prepared and implemented under § 290.304 (relating to groundwater assessment plan) shows the presence of groundwater degradation for one or more contaminants at one or more monitoring points and the analysis under § 290.304(c) indicates that an abatement standard under subsection (c) will not be met.

(2) Monitoring by the Department or person shows the presence of an abatement standard exceedance from one or more compliance points as indicated in subsection (c) even if a groundwater assessment plan has not been completed. The person is not required to implement an abatement plan under this paragraph if the following apply:

(i) Within 10 days after receipt of sample results showing an exceedance of an abatement standard at a point of compliance described in subsection (c), the person resamples the affected monitoring points.

(ii) Analysis from resampling shows to the Department's satisfaction that an exceedance of an abatement standard has not occurred.

(b) An abatement plan shall be prepared and sealed by an expert in the field of hydrogeology who is a licensed professional geologist in the Commonwealth. The plan shall contain the following information:

(1) The specific methods or techniques to be used to abate groundwater degradation at the facility.

(2) The specific methods or techniques to be used to prevent further groundwater degradation from the facility.

(3) A schedule for implementation.

(c) If abatement is required in accordance with subsection (a), the person shall demonstrate compliance with one or more of the following standards at the identified compliance points:

(1) For constituents for which statewide health standards exist, the statewide health standard for that constituent at and beyond 500 feet of the perimeter of the permitted coal ash placement area or at and beyond the property boundary, whichever is closer.

(2) The background standard for constituents at and beyond 500 feet of the perimeter of the permitted coal ash placement area or at and beyond the property boundary, whichever is closer. Load-based standards at groundwater discharge points are acceptable if the permit was issued under Chapter 87, Subchapter F or Chapter 88, Subchapter G (relating to surface coal mines: minimum requirements for remining areas with pollutional discharges; and anthracite surface mining activities and anthracite bank removal and reclamation activities: minimum requirements for remining areas with pollutional discharges).

(3) For constituents for which no primary MCLs under the Federal and State Safe Drinking Water Acts (42 U.S.C.A. §§ 300f—300j-18; and 35 P. S. §§ 721.1—721.17) exist, the risk-based standard at and beyond 500 feet of the perimeter of the permitted coal ash placement area or at and beyond the property boundary, whichever is closer, if the following conditions are met:

(i) The risk assessment used to establish the standard assumes that human receptors exist at the property boundary.

(ii) The level is derived in a manner consistent with Department guidelines for assessing the health risks of environmental pollutants.

(iii) The level is based on scientifically valid studies conducted in accordance with good laboratory practice standards (40 CFR Part 792 (relating to good laboratory practice standards)) promulgated under the Toxic Substances Control Act (15 U.S.C.A. §§ 2601—2692) or other scientifically valid studies approved by the Department.

(iv) For carcinogens, the level represents a concentration associated with an excess lifetime cancer risk level of $1 \times 10^{-5}$ at the property boundary.

(d) For measuring compliance with secondary contaminants under subsections (c)(1) or (c)(3), the Department may approve a compliance point beyond 500 feet on land owned by the owner of the coal ash placement area.

(e) The abatement plan shall be completed and submitted to the Department for approval within 90 days of the time the obligation arises under this section unless the date is otherwise modified, in writing, by the Department.

(f) If the Department determines that the proposed plan is inadequate, the Department may modify the plan and approve the plan as modified or require the submission of an approvable modification.

(g) The abatement plan shall be implemented within 60 days of approval by the Department in accordance with the approved implementation schedule.

(h) If, after plan approval or implementation, the Department finds that the plan is incapable of achieving the groundwater protection contemplated in the approval, the Department may issue one or more of the following:

(1) An order requiring the person to submit proposed modifications to the abatement plan.

(2) An order requiring the person to implement the abatement plan as modified by the Department.

(3) Another order the Department deems necessary to aid in the enforcement of the acts.

**§ 290.306. Recordkeeping.**

A person subject to the requirements of this subchapter shall retain records of analyses and evaluations of monitoring data and groundwater elevations required under this subchapter for a minimum of 3 years after water quality monitoring ceases and shall make the records available to the Department upon request.

# Subchapter E. COAL ASH STORAGE

Sec.

## § 290.401. Design and operation.

(a) A person storing coal ash shall employ best engineering design and construction practices for all phases of construction and operation.

(b) A person may not store coal ash in a manner that exceeds the design capacity of the storage facility.

(c) The Department may require a person to install a water quality monitoring system in accordance with Subchapter D (relating to water quality monitoring) if storage of the coal ash has the potential to cause groundwater degradation.

(d) A person storing coal ash shall routinely inspect the facility, its equipment and the surrounding area for evidence of failure and shall immediately take necessary corrective actions. The person shall maintain records of inspections and corrective actions that were taken for a minimum of 3 years, and make the records available to the Department upon request.

## § 290.402. Duration of storage.

(a) Except as provided in subsection (b) or (c), coal ash may not be stored at the immediate area where it will be put to beneficial use for a longer period of time than necessary to complete the project or 90 days, whichever is less, unless the Department approves a different period in writing.

(b) Bottom ash being stored for use as antiskid material may be stored in areas adjacent to roads or highways for a period of more than 90 days without Department approval if the following conditions are met:

(1) A significant quantity of the bottom ash is used annually for antiskid material.

(2) Bottom ash is stored on an impermeable floor or pad, and it is stored either in an enclosed facility or an area where runoff is collected or treated. The Department may waive or modify, in writing, this requirement if there is no runoff from the storage.

(c) Coal ash may not be stored at another area as follows:

(1) For more than 1 year unless a minimum of 75% of the volume of the ash being stored is processed for beneficial use in the previous year.

(2) For more than 90 days unless it is stored on an impermeable floor or pad and either in an enclosed facility or in an area where runoff is collected and treated. The Department may waive or modify, in writing, this requirement if there is no runoff from the storage.

(d) The Department will presume that a person storing coal ash contrary to subsection (a) is operating a waste disposal facility and is subject to the applicable requirements of the act and regulations thereunder for waste disposal.

(e) A person that stores coal ash shall maintain for a minimum of 3 years accurate operational records that are sufficiently detailed to demonstrate to the Department that coal ash is being stored under subsection (a). The records shall be made available to the Department upon request. The presumption in subsection (b) may be overcome by the operational records required by this subsection.

(f) Nothing in this section supersedes a regulation or other requirement providing for a storage period of less than 1 year.

### § 290.403. Surface and groundwater protection.

(a) Surface water runoff from storage areas shall be minimized. Storm water shall be managed in accordance with The Clean Streams Law (35 P.S. §§ 691.1-691.1001) and the regulations promulgated thereunder.

(b) Surface water run-on to storage areas shall be minimized.

(c) Coal ash may not be stored in a manner that causes groundwater degradation.

### § 290.404. Areas where coal ash storage is prohibited.

(a) Coal ash storage areas, other than storage impoundments, may not be operated as follows, unless otherwise authorized by the Department in writing:

(1) Within 100 feet of an intermittent or perennial stream.

(2) Within 300 feet of a groundwater water source.

(3) Within 1,000 feet upgradient of a surface drinking water source.

(4) Within 25 feet of a bedrock outcrop, unless the outcrop is properly treated to minimize infiltration into fractured zones.

(5) Within 100 feet of a sinkhole or area draining into a sinkhole.

(6) Within 100 feet of a wetland, other than an exceptional value wetland.

(7) In or within 300 feet of an exceptional value wetland.

(b) Coal ash storage impoundments may not be operated as follows:

(1) In the 100-year floodplain of waters of this Commonwealth.

(2) In or within 100 feet of a wetland other than an exceptional value wetland.

(3) In or within 300 feet of an exceptional value wetland.

(4) In an area where the operation would result in the elimination, pollution or destruction of a portion of an intermittent stream or perennial stream.

(5) Within 100 feet of an intermittent stream or perennial stream.

(6) In areas underlain by limestone or carbonate formations, where the formations are greater than 5 feet thick and present at the topmost geologic unit. These areas include areas mapped by the Pennsylvania Geological Survey as underlain by these formations, unless competent geologic studies demonstrate the absence of limestone and carbonate formations under the site.

(7) Within 900 feet measured horizontally from an occupied dwelling, unless the owner of the dwelling has provided a written waiver consenting to the coal ash storage impoundment being closer than 900 feet. A waiver shall be knowingly made and separate from a lease or deed unless the lease or deed contains an explicit waiver from the owner. A closed coal

ash storage impoundment that submits an application to reopen and expand shall also be subject to this paragraph.

(8) Within 100 feet of a property line, unless the current owner has provided a written consent to the coal ash storage impoundment being closer than 100 feet. The waiver shall be knowingly made and separate from a lease or deed unless the lease or deed contains an explicit waiver from the current owner.

(9) Within ¼ mile upgradient, and within 300 feet downgradient, of a private or public water source, except that the Department may waive or modify these isolation distances if the person demonstrates and the Department finds, in writing, that the following conditions have been met:

(i) The owners of the public or private water sources in the isolation area have consented, in writing, to the location of the proposed the coal ash storage impoundment.

(ii) The person storing coal ash and each water source owner have agreed, in writing, that the person will construct and maintain at the person's expense a permanent alternative water supply of like quantity and quality at no additional cost to the water source owner if the existing source is adversely affected by the coal ash storage impoundment.

(iii) The person storing coal ash has demonstrated that a replacement water source is technically and economically feasible and readily available for every public or private water source in the isolation area.

(10) *School, park or playground.*

(i) Within 900 feet of the following:

(A) A building that is owned by a school district or school and used for instructional purposes.

(B) A park.

(C) A playground.

(ii) The current property owner of a school building, park or playground may waive the 900-foot prohibition by signing a written waiver.

(11) In areas that serve as habitat for fauna or flora listed as "threatened" or "endangered" under the Endangered Species Act of 1973 (7 U.S.C.A. § 136; 16 U.S.C.A. §§ 4601-9, 460k-1, 668dd, 715i, 715a, 1362, 1371,

1372, 1402 and 1531-1543), the Wild Resource Conservation Act (32 P. S. §§ 5301-5314), 30 Pa.C.S. (relating to the Fish and Boat Code) or 34 Pa.C.S. (relating to the Game and Wildlife Code), unless the applicant demonstrates compliance with applicable Federal and State requirements that would allow operations in such areas.

### § 290.405. Storage piles—general requirements.

(a) A person storing coal ash in piles shall prevent the dispersal of coal ash by wind or water erosion.

(b) The coal ash being stored shall be separated from the water table by at least 4 feet without the use of a groundwater pumping system. The Department may waive, in writing, this requirement.

(c) A person storing coal ash in a pile shall design, install and maintain berms around the storage area and other structures or facilities to collect and, when necessary, treat runoff or leachate, or both, from the storage area. The Department may waive, in writing, the berm requirement when other collection methods are in place.

(d) For storage piles without a liner system or storage pad, the Department may require the person to install and implement water quality monitoring in accordance with Subchapter D (relating to water quality monitoring)where site conditions warrant.

### § 290.406 Storage piles—storage pad or liner system.

(a) A person that installs a storage pad or liner system to prevent groundwater degradation shall meet the requirements of this section. This section does not preclude a person from using other means to prevent groundwater degradation, such as enclosure in a building.

(b) The storage pad or liner system must meet the following requirements:

(1) Prevent the migration of leachate through the storage pad or liner system.

(2) May not be adversely affected by the physical or chemical characteristics of coal ash, coal ash constituents or leachate from the coal ash storage piles.

(3) Shall be designed, constructed and maintained to protect the integrity of the pad or liner during the storage of coal ash.

(4) Shall be designed to collect leachate and runoff.

(5) Must be constructed of non-solid waste and non-coal ash material.

(6) Must be no less permeable than 1 x 10-7 cm/sec., as demonstrated by field and laboratory testing.

(7) Shall be inspected for uniformity, damage and imperfections during construction and installation.

(8) The person shall install and operate a monitoring system capable of verifying whether coal ash or leachate has penetrated the pad or liner, if required by the Department.

(9) Coal ash may not be stored where continuous or intermittent contact could occur between the coal ash and groundwater or surface water.

### § 290.407. Storage piles—leachate and runoff control.

(a) A person that installs a storage pad or liner system shall collect leachate and runoff from the coal ash pile and divert it into a leachate storage system.

(b) A leachate storage system must consist of a collection tank or surface impoundment. The tank or impoundment must be:

(1) Sized for the anticipated leachate and runoff flow, including a 30-day reserve capacity.

(2) Chemically compatible with the leachate.

(3) Of sufficient strength to withstand expected loads.

(4) Equipped with cleanouts, if necessary.

(5) Sealed to prevent the loss of leachate and runoff.

(c) Collected leachate shall be treated or disposed in a manner that complies with the act, The Clean Streams Law(35 P.S. §§ 691.1-691.1001), and the regulations promulgated thereunder.

### § 290.408. Storage impoundments—scope.

(a) This section and §§ 290.409-290.413 apply to persons that store coal ash in surface impoundments prior to beneficial use.

(b) This section and §§ 290.408-290.413 do not apply to the storage impoundments that are designed for the express purpose of storing stormwater runoff and that store runoff composed entirely of stormwater. Impoundments that store stormwater runoff must comply with the applicable requirements of The Clean Streams Law (35 P.S. §§ 691.1-691.1001), section 13 of the Stormwater Management Act (32 P. S. § 680.13) and Chapters 92, 102 and 105 (relating to national pollutant discharge elimination system permitting, monitoring and compliance; erosion and sediment control; and dam safety and waterway management).

(c) For purposes of this section, ‘‘stormwater’’ means drainage runoff from the surface of the land resulting from precipitation or snow or ice melt.

## § 290.409. Storage impoundments—general requirements.

A person that operates a storage impoundment to hold coal ash shall meet the following conditions:

(1) Hold a valid permit from the Department for the storage under The Clean Streams Law (35 P.S. §§ 691.1-691.1001) or Pennsylvania Safe Drinking Water Act (35 P. S. §§ 721.1—721.17) and shall comply with the permit.

(2) Comply with Chapter 105 (relating to dam safety and waterway management).

## § 290.410. Storage impoundments—design requirements.

Impoundments used to store coal ash shall meet the following minimum design criteria:

(1) The liner system for a coal ash storage impoundment shall include the following elements:

(i) The subbase, which is the prepared layer of soil or earthen material upon which the remainder of the liner system is constructed.

(ii) The leachate detection zone, which is a prepared layer placed on top of the subbase and upon which the liner is placed, and in which a leachate detection system is located.

(iii) The composite liner, which is a continuous layer of synthetic material over earthen material, placed on the leachate detection zone. The upper component is no more permeable than $1.0 \times 10^{-7}$ cm/sec. based on laboratory testing. The composite component is no more permeable than $1.0 \times 10^{-6}$ cm/sec., based on laboratory testing and field testing.

(iv) The protective cover and leachate collection zone, which is a prepared layer placed over the liner in which a leachate collection system is located.

(2) The bottom of the subbase of the liner system cannot be in contact with the water table without the use of groundwater pumping systems.

(3) The subbase must meet the following performance standards. The subbase must:

(i) Bear the weight of the liner system, coal ash, and equipment operating on the coal ash storage impoundment without causing or allowing a failure of the liner system.

(ii) Accommodate potential settlement without damage to the liner system.

(iii) Be a barrier to the transmission of liquids.

(iv) Cover the bottom and sidewalls of the coal ash storage impoundment.

(4) The leachate detection zone shall meet the following performance standards. The leachate detection zone shall:

(i) Rapidly detect and collect liquid entering the leachate detection zone, and rapidly transmit the liquid to the leachate treatment system.

(ii) Withstand chemical attack from coal ash or leachate.

(iii) Withstand anticipated loads, stresses and disturbances from overlying coal ash and equipment operation.

(iv) Function without clogging.

(v) Prevent the liner from puncturing, cracking, tearing, stretching or otherwise losing its physical integrity.

(vi) Cover the bottom and sidewalls of the coal ash storage impoundment.

(5) The liner shall meet the following standards of performance:

(i) The liner shall prevent the migration of leachate through the liner to the greatest degree that is technologically possible.

(ii) The effectiveness of the liner in preventing the migration of leachate may not be adversely affected by the physical or chemical characteristics of the coal ash or leachate from the coal ash storage impoundment.

(iii) The liner shall be resistant to physical failure, chemical failure, and other failure.

(iv) The liner shall cover the bottom and sidewalls of the coal ash storage impoundment.

(6) The protective cover shall meet the following performance standards. The protective cover shall:

(i) Protect the primary liner from physical damage from stresses and disturbances from overlying coal ash and equipment operation.

(ii) Protect the leachate collection system within the protective cover from stresses and disturbances from overlying coal ash and equipment operation.

(iii) Allow the continuous and free flow of leachate into the leachate collection system within the protective cover.

(iv) The protective cover shall cover the bottom and sidewalls of the coal ash storage impoundment.

(7) The leachate collection system within the protective cover shall meet the following performance standards. The leachate collection system shall:

(i) Ensure that free flowing liquids and leachate will drain continuously from the protective cover to the leachate treatment system.

(ii) Withstand chemical attack from leachate.

(iii) Withstand anticipated loads, stresses and disturbances from overlying coal ash and equipment operation.

(iv) Function without clogging.

(v) Cover the bottom and sidewalls of the coal ash storage impoundment.

(8) An onsite leachate storage system shall be part of each leachate treatment method used by the person. The storage system shall contain impoundments or tanks for storage of leachate. The tanks or impoundments shall have a storage capacity at least equal to the maximum expected production of leachate for a 30-day period. No more than 25% of the total leachate storage capacity may be used for flow equalization on a regular basis. Leachate storage capacity may not be considered to include leachate that may have collected in or on the liner system.

(9) Leachate may be collected and handled by one of the following:

(i) Onsite treatment and discharged into a receiving stream under a permit issued by the Department under The Clean Streams Law (35 P.S. §§ 691.1-691.1001) and regulations thereunder, if the Department approves this method in the permit.

(ii) Direct discharge into a permitted publicly-owned treatment works, following pretreatment, if pretreatment is required by Federal, State or local law or by discharge into another permitted treatment facility.

(iii) Transport to an offsite treatment facility that is operating in compliance with The Clean Streams Law (35 P.S. §§ 691.1-691.1001) and regulations thereunder, and is otherwise capable of accepting and treating leachate from the coal ash storage impoundment.

(10) Impoundments shall be designed, constructed, operated and maintained in accordance with the following:

(i) An impoundment shall have sufficient freeboard to prevent overtopping, including overtopping caused by the 24-hour precipitation event in inches to be expected once in 25 years. The freeboard may not be less than 2 feet.

(ii) The dike shall have sufficient structural integrity to prevent failure. The liner system of the impoundment may not be considered in determining the structural integrity of the dike.

(iii) The inside slope shall be designed and constructed with sufficient protective cover to prevent wind and water erosion, and to preserve the structural integrity of the dike.

(iv) The dike shall be capable of withstanding anticipated static and dynamic loadings with a minimum safety factor for the most critical failure surface of 1.5 for static loading and 1.2 for dynamic loading.

(v) The outside slopes of the dike may not exceed 25% unless the following requirements are met:

(A) A horizontal terrace with a minimum width of 10 feet is constructed at each 20-foot vertical rise of the slope, or the Department approves in the permit a terrace with different dimensions.

(B) Surface water on the terrace is collected and discharged so that it does not erode or otherwise adversely affect the stability of the dike.

(C) The final slope does not exceed 50%.

(vi) Dikes and berms shall be free of burrowing mammals and plants with root systems capable of displacing earthen materials upon which the structural integrity of the dikes or berms is dependent.

(vii) An impoundment shall be surrounded by structures sufficient to prevent surface runoff from a 25-year, 24-hour precipitation event from entering the impoundment.

### § 290.411. Storage impoundments—operating requirements.

(a) At least 8 feet shall be maintained between the bottom of the subbase of the liner system and the top of the confining layer or the shallowest level below the bottom of the subbase where groundwater occurs as a result of upward leakage from natural or other preexisting causes. The integrity of the confining layer may not be compromised by excavation.

(b) The edge of the liner shall be clearly marked.

(c) A fence or other suitable barrier shall be maintained around the coal ash storage area, including impoundments, leachate collection and treatment systems sufficient to prevent unauthorized access, unless the Department approves, in the permit, an alternative means of protecting access to the area that afford an equivalent degree of protection.

(d) The person shall implement fugitive air contaminant control measures and otherwise prevent and control air pollution in accordance with the Air Pollution Control Act (35 P. S. § § 4001—4015); Article III (relating to air resources) and § 289.228 (relating to nuisance minimization and control). Minimization and control measures shall include the following:

(1) Ensuring that operation of the coal ash storage impoundment will not cause or contribute to an exceedance of an ambient air quality standard under § 131.3 (relating to ambient air quality standards).

(2) Minimizing the generation of fugitive dust emissions from the coal ash storage impoundment.

(e) The person shall implement water quality monitoring, as required under Subchapter D.

(f) A person that stores coal ash in a coal ash storage impoundment shall remove coal ash from the impoundment as follows:

(1) Without damage to the impoundment.

(2) Inspect the liner to ensure its integrity, and make necessary repairs prior to returning the impoundment to service.

(3) Provide for the beneficial use of the removed coal ash in accordance with this Chapter.

(4) The removal from the impoundment shall be sufficient such that the coal ash is not accumulated speculatively.

## § 290.412. Storage impoundments—failure.

(a) If a coal ash storage impoundment fails, the person storing coal ash shall immediately:

(1) Stop adding coal ash to the impoundment.

(2) Contain any discharge that has occurred or is occurring.

(3) Empty the impoundment in a manner approved by the Department, if leaks cannot be stopped.

(4) Notify the Department of the failure of the impoundment and the measures taken to remedy the failure.

(b) A coal ash storage impoundment that has been removed from service due to failure may not be restored to service unless the following conditions are met:

(1) The impoundment has been repaired.

(2) The repair has been certified to the Department, in writing, by a registered professional engineer.

(3) The Department has approved, in writing, the restoration of the impoundment to service.

(c) If a storage impoundment fails and the impoundment or surrounding area cannot be cleaned up in a manner that is satisfactory to the Department, the impoundment shall be closed in accordance with this section.

## § 290.413. Storage areas—closure.

Upon cessation of coal ash storage, the person storing coal ash shall remove coal ash and materials containing coal ash, and shall provide for the beneficial use or disposal of the coal ash under the act and the

regulations promulgated thereunder. The person shall also regrade and revegetate the site as required by the Department.

## § 290.414. Storage impoundments—inspections.

The Department will inspect storage impoundments in accordance with the Dam Safety and Encroachments Act (32 P. S. § § 693.5, 693.7, 693.10, 693.11 and 693.17).