

Notice of Proposed Rulemaking
Department of Environmental Protection
Environmental Quality Board
(25 Pa. Code, Chapters 287 and 290)
Beneficial Use of Coal Ash

Preamble

The Environmental Quality Board (Board) proposes to amend Article IX (relating to residual waste management) by adding Chapter 290 (relating to beneficial use of coal ash) to read as set forth in Annex A.

The proposed rulemaking consists of amendments to Chapter 287 (relating to residual waste management – general provisions) and the addition of Chapter 290 (relating to the beneficial use of coal ash). New Chapter 290 contains the standards, procedures and requirements that apply to the beneficial use of coal ash, which are further modified by four defined terms in §287.1 (relating to definitions). Proposed Chapter 290 includes regulations that currently exist in Subchapter H (relating to beneficial use), §§287.661 - 287.666 (relating to beneficial use of coal ash), along with recent additions. Proposed Chapter 290 adopts recommendations from the National Academy of Sciences' 2006 report, *Managing Coal Combustion Residues in Mines* and the Department of Environmental Protection's (Department) amended policies, "Certification Guidelines for the Chemical and Physical Properties of Coal Ash Beneficially Used at Mines," Document Number 563-2112-224 and "Mine Site Approval for the Beneficial Use of Coal Ash," Document Number 563-2112-225. Incorporating appropriate recommendations and policy provisions into regulations clarifies for the Department, regulated community and public the procedures and standards that apply to coal ash and will be enforced by the Department.

This proposal was adopted by the Board at its meeting on _____, 2009.

A. Effective Date

This proposed rulemaking will be effective upon final-form publication in the *Pennsylvania Bulletin*.

B. Contact Persons

For further information, contact Stephen Socash, Chief, Division of Municipal and Residual Waste, P.O. Box 8472, Rachel Carson State Office Building, Harrisburg, PA 17105-8472, (717) 787-7381, or Susan Seighman, Assistant Counsel, Bureau of Regulatory Counsel, P.O. Box 8464, Rachel Carson State Office Building, Harrisburg, PA 17105-8464, (717) 787-7060. Information regarding submitting comments on this proposal appears in Section J of this preamble. Persons with a disability may use the AT&T Relay Service by calling 1-800-654-5984 (TDD users) or 1-800-654-5988 (voice users). This proposal is available electronically through the Department of Environmental Protection's (Department) Web site at www.depweb.state.pa.us (select Public Participation).

C. Statutory Authority

This proposed rulemaking is being made under the authority of the following:

The Solid Waste Management Act (SWMA) (35 P.S. §§6018.101 - 6018.1003), which in Section 105(a) (35 P.S. §6018.105(a)) grants the Board the power and duty to adopt the rules and regulations of the Department to accomplish the purposes and carry out the provisions of the SWMA. Sections 102(4) and 104(6) of SWMA (35 P.S. §§6018.102 and 104), which provide the Department with the power and duty to regulate the storage, collection, transportation, processing, treatment and disposal of solid waste to protect the public health, safety and welfare. Section 508 of SWMA (35 P.S. §6018.508), which provides the Department with the authority to regulate the beneficial use of coal ash, including establishing siting criteria and design and operating standards governing the storage of coal ash prior to beneficial use and the use and certification of coal ash as structural fill, soil substitutes and soil additives.

The Clean Streams Law (CSL) (52 P.S. § 691.1 - 691.1001), which in Section 5 (35 P.S. §691.5(b)) grants the Department the authority to formulate, adopt, promulgate and repeal the rules and regulations that are necessary to implement the provisions of the CSL. Section 402 (35 P.S. §691.402), which grants the Department the authority to adopt rules and regulations that require permits or conditions under which an activity shall be conducted when an activity creates a danger of pollution to waters of the Commonwealth or regulation of an activity is necessary to avoid pollution.

Section 4.2(a) of the Surface Mining Conservation and Reclamation Act (SMCRA), (52 P.S. § 1396.4b(a)), which authorizes the Board to adopt regulations the Department deems necessary to fulfill the purposes and provisions of SMCRA. Section 4(a) of SMCRA (52 P.S. § 1396.4(a)), which authorizes the Department to charge and collect a reasonable filing fee from persons submitting applications for a surface mining permit in order to cover the costs of reviewing and administering such permits. Section 3.2 of the Coal Refuse Disposal Control Act (52 P.S. § 30.53b) (CRDA), which grants the Board the power and duty to adopt regulations to accomplish the purposes of the CRDA.

The Administrative Code of 1929 (71 P.S. §§510-1 - 510-27), which at Section 1917-A (71 P.S. §510-17) authorizes and requires the Department to protect the people of this Commonwealth from unsanitary conditions and other nuisances, including any condition that is declared to be a nuisance by any law administered by the Department. Section 1920-A (71 P.S. 510-20), which grants the Board the power and duty to formulate, adopt, and promulgate such rules and regulations as may be determined by the Board for the proper performance of the work of the Department.

D. Background and Purpose

This proposed rulemaking incorporates the key provisions of the Department's policies and procedures on the beneficial use of coal ash into the Department's regulations. The key provisions address the general and specific operating requirements for beneficial use, which include certification guidelines for the chemical and physical properties of coal ash beneficially used at

active and abandoned mine sites. These provisions also relate to water quality monitoring and the storage of coal ash in piles and surface impoundments. This proposed rulemaking also adopts recommendations by the National Academy of Sciences in their 2006 report, *Managing Coal Combustion Residues in Mines*.

Pennsylvania has hundreds of thousands of acres of mine lands that need to be reclaimed. These lands contain many dangerous pits and highwalls that have caused the deaths of numerous citizens over the years. The use of coal ash to reclaim these mines eliminates the dangers associated with the open pits and highwalls and restores a safe environment. Reclamation also restores positive drainage to watersheds by allowing rain water to flow on the surface to streams, rather than infiltrating into deep mines into which it discharges as acid mine drainage. Reclamation of these lands cannot be accomplished fully through federal and state funds. Therefore, a program that allows for the beneficial use of coal ash for mine reclamation in an environmentally responsible manner can aid in closing the gap between available and necessary resources.

The Department has been involved successfully with mine reclamation using coal ash for approximately 25 years. Information on several mine reclamation projects is contained in the 2006 report on the collaboration between the Department and the Materials Research Institute at the Pennsylvania State University, entitled *Coal Ash Beneficial Use in Mine Reclamation and Drainage Remediation in Pennsylvania*.

In addition to unreclaimed mines, more than two billion tons of waste coal piles are scattered across the Anthracite and Bituminous Coal Regions of the Commonwealth. These piles can cause several different types and degrees of adverse impacts on the environment. Waste coal piles produce some of the most significant mine drainage in the state, often having a pH less than 3.0 and acidity in the hundreds to thousands of milligrams per liter and are also a troublesome source of sediment that has impacted hundreds of miles of stream. Stormwater runoff from waste coal piles also carries large loads of metals including iron, manganese, zinc, nickel, arsenic and cadmium. Finally, waste coal piles can catch fire and produce noxious fumes.

The use of waste coal to fuel power plants has assisted in the elimination of these waste coal piles and remedied the potentially harmful conditions resulting from the continued existence of the piles. To date, 145 million tons of waste coal has been used to fuel power plants. Annually ten percent of Pennsylvania's power is produced from power plants burning waste coal. The ash that is generated from the waste coal has been used to reclaim thousands of acres of abandoned mines. ARIPPA places a value of \$90 million on the reclamation that has been achieved at abandoned mine sites by the coal and power industries through the burning of waste coal and subsequent reclamation with the coal ash that was generated. Additionally, the Department has observed numerous instances where removal of the piles and reclamation has significantly reduced pollutant loads for metals, such as arsenic, zinc, nickel, iron and manganese.

Prior to this proposed rulemaking, the beneficial use of coal ash, including abandoned and active mine reclamation, was managed through existing residual waste regulations and Department technical guidance. In 2008, the Department proposed amendments to the technical guidance documents "Mine Site Approval for the Beneficial Use of Coal Ash," Document Number 563-2112-225 and "Certification Guidelines for the Chemical and Physical Properties of

Coal Ash Beneficially Used at Mines,” Document Number 563-2112-224. The most frequent comment received during the public comment period on these amendments was that the content of the technical guidance should be placed in regulations rather than Department technical guidance. The Board agrees with the commentators and has included the key provisions of the technical guidance in this proposed rulemaking and further enhanced the existing residual waste regulations related to the beneficial use of coal ash.

This proposed rulemaking includes operating requirements for the beneficial use of coal ash in a general nature and more specifically for use: as structural fill; a soil substitute or soil additive; at active and nonactive coal mine sites; and other beneficial uses, including the manufacture of concrete, extraction or recovery of materials within the coal ash, stabilized product, antiskid material, raw material for a commercial product, drainage material or pipe bedding, and mine subsidence control, mine fire control and mine sealing. The general requirements incorporate the chemical and physical characteristics of the certification process. A chemical analysis must demonstrate that the coal ash does not exceed any of the maximum acceptable leachate levels established under that process. Similarly, the physical characteristics must be met for the intended use. These requirements also provide that a water quality monitoring plan must be developed when more than 10,000 tons of coal ash per acre is to be used on a project or more than 100,000 tons in total on a project.

The specific sections include notification and other operating requirements. At least 60 days prior to beneficial use, the Department must be notified by the person proposing the beneficial use. The Department publishes a summary of each notice in the Pennsylvania Bulletin. Public notice by the person proposing to beneficially use coal ash as structural fill, at a coal mine activity site and at an abandoned mine are included in this proposed rulemaking. Public notice will be accomplished through a series of newspaper advertisements and applies to structural fill and abandoned mine requests above the identified threshold amounts. Public notice at coal mining activity sites is a current requirement under the mining regulations. The Board believes public notification to be an integral part of implementing this program.

The notification process to the Department requires that construction plans be submitted, along with a stability analysis if necessary, as prepared by a professional engineer. Engineering requirements related to lift and compaction rates have been added for mine reclamation and structural fill. The engineering requirements were carried over from the technical guidance documents to ensure that the coal ash will form a stable structure. Insufficient structural stability of coal ash placed more than 50 years ago led to a landslide in Forward Township in 2005. Although regulations were not in effect at the time of placement, this landslide illustrates the need for proper engineering when placed at mine sites or when used as structural fill.

The certification guidelines for certifying coal ash for beneficial use at mine sites have been transferred into the regulations. The guidelines that must be followed to receive a certification set the chemical leaching levels and testing standards for physical characteristics that must be met for beneficial use. Parameters have been added to these guidelines to account for changes in the combustion process and to incorporate the recommendations of the National Academy of Sciences. The bulk chemistry ash analysis contains additional parameters for Ag, Be, Co, TI, V,

Ca, Mg, K, and S. The leaching chemistry analysis has added parameters for Ag, Be, Co, TI, V, NO₂, NO₃, Ca, Mg, K, Na, SO₄, Cl and F.

The proposed rulemaking also includes expanded water quality requirements. Water quality monitoring has been required for many years at permitted coal mining activity sites that use coal ash for reclamation purposes. The Board believes water quality monitoring is appropriate at sites where large quantities of coal ash are placed to ensure that no water quality degradation occurs. The proposed regulations expand water quality monitoring to any site where large quantities of coal ash are beneficially used. It also requires water quality monitoring at all coal ash storage impoundments.

Although contamination of groundwater and surface water has not been observed, coal ash may contain metals at levels above normal soil background levels. To further address this issue, several provisions have been added. A minimum of twelve monthly background samples from each monitoring point is required prior to placement of coal ash. The following chemical parameters have been incorporated for monitoring: Ag, B, Ba, Be, Co, Mo, Sb, TI, V, Na, Cl, Ca, Mg and K. Additionally, monitoring requirements have been included for water elevations and flow, upgradient monitoring points, and at least three downgradient monitoring points. The requirement for a complete water monitoring analysis has been increased from annually to quarterly for five years after placement and annually for years 6 through 10. If water monitoring shows the potential for contamination of groundwater, a groundwater assessment is required to determine whether groundwater degradation has occurred. If degradation of groundwater quality is detected at a site, an abatement plan must be submitted and implemented.

Finally, the proposed rulemaking includes design and operating standards for the storage of coal ash in piles and surface impoundments. Isolation distances are provided to ensure that storage is prohibited within certain areas. These standards aid in protecting groundwater and surface water. Further protection is afforded through the permit requirement imposed upon impoundments under the Department's Dams and Waterways program.

E. Summary of Regulatory Requirements

§ 287.1

The proposed rulemaking adds a definition to § 287.1 (relating to definitions) for "water table" and amends definitions for "coal ash," solid waste" and "structural fill" to provide clarity.

§§ 287.661-287.666

The proposed rulemaking deletes §§ 287.661-287.666 (relating to beneficial use of coal ash) and replaces these sections with proposed Chapter 290, Subchapter B.

Subchapter A. General

Proposed § 290.1

Subsection (a) establishes that this chapter applies to the beneficial use of coal ash.

Subsection (b) specifies that beneficial use of coal ash mixed with residual waste or ash produced by co-firing coal and alternative fuels must be authorized by a residual waste permit and meet the requirements of this chapter.

Subsection (c) specifies that beneficial use of coal ash mixed with construction and demolition waste must be authorized by a municipal waste permit and meet the requirements of this chapter.

Subsection (d) specifies that coal ash mixed with municipal waste, other than construction and demolition waste, shall not be beneficially used by direct placement into the environment. Other beneficial uses may be authorized by a municipal waste permit.

Subsection (e) establishes that beneficial use of coal ash under this chapter does not require a disposal permit.

Subchapter B. Beneficial Use of Coal Ash

Proposed § 290.101

Subsection (a) establishes that use of coal ash that is not consistent with this chapter is considered disposal and requires a disposal permit.

Subsection (b) specifies that maximum leachate levels and sampling and analysis requirements for certification in Subchapter C apply to all beneficial uses of coal ash. For other uses under § 290.106(1)-(3), the Department may waive or modify this requirement.

Subsection (c) specifies that the physical characteristics required for certification for the intended beneficial use of the coal ash in Subchapter C must be met.

Subsection (d) establishes that a water quality monitoring plan is required for any project involving use of more than 10,000 tons of coal ash per acre or more than 100,000 tons. The Board seeks comment on the appropriateness of these threshold quantities for triggering monitoring.

Subsection (e) specifies that coal ash may not be placed within 8 feet of the water table. It allows the Department to approve placement within 8 feet at mining activity sites if it can be demonstrated that groundwater contamination will not occur.

Subsection (f) specifies that coal ash may not be used in ways that may cause water pollution.

Proposed § 290.102

Subsection (a) establishes the notification requirements for coal ash to be used as structural fill. This notification includes a description of the project, including maps, estimated project starting and completion dates, construction plans, estimated volume of coal ash to be utilized, chemical analysis and landowner consent. The landowner consent is a recordable document for projects

involving use of more than 10,000 tons of coal ash per acre. The Board seeks comment on the appropriateness of this threshold quantity for triggering recording.

Subsection (b) establishes that the Department will publish a notice in the Pennsylvania Bulletin of each notification received for use of coal ash as structural fill.

Subsection (c) specifies that notices in local newspapers must be published for coal ash structural fill projects involving use of more than 10,000 tons of coal ash per acre or more than 100,000 tons. The notice shall include name and business address, a brief description of location and scope of the project, and the Departmental office location where the request was sent. The Board seeks comment on the appropriateness of these threshold quantities for triggering monitoring.

Subsection (d) establishes additional requirements for coal ash used as structural fill, including, compaction and layer thickness, runoff minimization and storm water management, surface water diversion, cover, minimum compaction and dust minimization. Specifies coal ash must be either spread and compacted within 24 hours or stored in accordance with Subchapter E. The Board seeks comment on the appropriateness of the pH range, 6.0 – 9.0, for coal ash used as structural fill.

Subsection (e) establishes siting restrictions for structural fill, including distances from streams, water sources, bedrock outcrops, sinkholes and areas draining into sinkholes, floodplains and wetlands.

Subsection (f) establishes annual reports required for projects involving use of more than 10,000 tons of coal ash per acre. The report will include contact information, site location, identity of each source of coal ash and the volume and weight of coal ash from each source. The Board seeks comment on the appropriateness of this threshold quantity for triggering recording.

Proposed § 290.103

Subsection (a) establishes that coal ash may be beneficially used as a soil substitute or soil amendment without a permit if the user complies with this section.

Subsection (b) establishes the notification requirements for coal ash to be used as a soil substitute or soil amendment. This notification includes a description of the project, including maps, estimated project starting and completion dates, construction plans, estimated volume of coal ash to be utilized, chemical analysis of the coal ash and soil at placement site, an analysis showing the coal ash will be beneficial to productivity or soil properties and landowner consent.

Subsection (c) establishes that the Department will respond to the notifier as to whether their proposed use is consistent with this section.

Subsection (d) establishes additional requirements for coal ash used as a soil substitute or soil amendment, including coal ash and soil pH, calcium carbonate equivalency, surface runoff minimization and storm water management, surface water diversion, application rate, protection of

biota and dust minimization. It specifies that coal ash must be either incorporated within 24 hours or stored in accordance with Subchapter E. The Board seeks comment on the appropriateness of the pH range, 6.5 – 8.0, for coal ash used as a soil substitute or soil amendment.

Subsection (e) establishes siting restrictions for coal ash used as a soil substitute or soil amendment, including distances from streams, water sources, occupied dwellings, sinkholes and areas draining into sinkholes and wetlands.

Subsection (f) establishes cumulative contaminant loading rates for coal ash used as a soil substitute or soil amendment.

Proposed § 290.104

Subsection (a) establishes the laws and regulations upon which this section is based.

Subsection (b) establishes the procedures for requesting beneficial use of certified coal ash at a specific mine site.

Subsection (c) establishes the amount of the permit filing fee for permits that will be beneficially using coal ash and where the money will be deposited.

Subsection (d) establishes the requirement for public notice.

Subsection (e) establishes appropriate beneficial uses for coal ash at active coal mine sites.

Subsection (f) establishes operational requirements for beneficial use of coal ash at active coal mines.

Subsection (g) establishes operational requirements for beneficial use of coal ash when used as a soil substitute or soil additive.

Subsection (h) establishes operational requirements for the beneficial use of coal ash at coal refuse disposal sites.

Subsection (i) establishes the requirement for mine site monitoring of coal ash.

Subsection (j) establishes annual reporting requirements pertaining to the amount and sources of ash used at a mine site.

Proposed 290.105

Subsection (a) establishes procedures and requirements for proposals to use coal ash at abandoned coal surface mine sites.

Subsection (b) establishes the elements required to submit a request for a proposal to use coal ash at an abandoned coal surface mine site. This includes a requirement to publish a notice in

local newspapers of the proposed use of coal ash at an abandoned coal surface mine site involving use of more than 10,000 tons of coal ash per acre or more than 100,000 tons in total at any project.

Subsection (c) establishes that the Department may issue contracts for the reclamation of abandoned coal surface mine sites that include the beneficial use of coal ash. Contracts that include the beneficial use of coal ash shall be based on the requirements and conditions established in this section.

Subsection (d) establishes that the Department will publish a notice in the Pennsylvania Bulletin of each approved use of coal ash at abandoned coal surface mine sites.

Subsection (e) establishes additional requirements for coal ash used at abandoned coal surface mine sites including: pH range of the ash; maximum slope of the reclaimed area; compaction and layer thickness; runoff minimization and storm water management; surface water diversion; cover; minimum compaction; dust minimization; minimum distances for ash placement from streams, water sources, sinkholes and areas draining into sinkholes; floodplains; and requirements for the beneficial use of coal ash as a soil substitute or soil additive at abandoned coal surface mine sites.

Subsection (f) establishes the reporting requirements pertaining to the amount and sources of ash used at abandoned coal mine sites.

Proposed § 290.106

Subsection (a) specifies that the section applies to other uses of coal ash not covered under §§ 290.102-290.105.

Subsection (b) identifies specific other uses of coal ash and requirements for storage and use. These other uses of coal ash are use in concrete, extraction or recovery of materials and chemicals from coal ash, use of fly ash as a stabilized product, use of bottom ash or boiler slag as antiskid or surface preparation material, use of coal ash as a raw material for a product with commercial value, use as pipe bedding or drainage material and use for mine subsidence control, mine fire control and mine sealing.

Proposed § 290.107

Subsection (a) allows the Department to request documentation and information to demonstrate compliance with this subchapter.

Subsection (b) establishes that 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 Certification

Proposed § 290.201

Subsection (a) establishes the chemical and physical certification standards for coal ash to meet beneficial use requirements. Chemical leaching standards are established. Low permeability standards are established for ashes that will be used as low permeability material. Minimum calcium carbonate equivalence standards are established for ashes that will be used for alkaline addition.

Subsection (b) establishes certification exceptions for ashes that meet primary MCL parameters, but fail to meet a secondary MCL parameter.

Subsection (c) establishes informational requirements to be provided by the ash generator, including sampling and analysis of the ash.

Subsection (d) establishes that the Department will provide written notification to the generator of the Department's decision on whether the generator's coal ash is certified. If the certification requirements are met, the Department will provide the certification identity number.

Subsection (e) establishes coal ash monitoring requirements.

Subsection (f) requires the generator of the coal ash and person beneficially using the coal ash to notify the Department of any changes that may affect the coal ash certification.

Proposed § 290.202

Subsection (a) establishes procedures for revoking coal ash certification for coal ashes that fail to meet certification requirements.

Subsection (b) establishes that a revoked coal ash certification cannot be used at mine sites.

Subsection (c) establishes the procedures for re-certifying a revoked coal ash, including resampling and establishing adequacy of chemical and physical properties.

Proposed § 290.203

This section establishes procedures when exceedances of certification standards occur.

Subchapter D. Water Quality Monitoring

Proposed § 290.301

Subsection (a) establishes that water quality monitoring plans submitted to the Department for approval must contain the location and design of upgradient and downgradient monitoring points, provisions for background sampling prior to placement of coal ash, and quarterly sampling after approval.

Subsection (b) establishes sources of quality assurance/quality control procedures for sampling and in the laboratory.

Subsection (c) establishes sources of analytical methods used for water quality monitoring and that the laboratory must be accredited.

Subsection (d) specifies the non-metal parameters to be determined in water monitoring samples.

Subsection (e) specifies the metal parameters to be determined in water monitoring samples and that water elevation at monitoring point be recorded.

Subsection (f) gives the Department the ability to require additional parameters based on site conditions.

Subsection (g) specifies the minimum frequency and duration of water quality monitoring and allows the Department to require more frequent and a longer duration monitoring if results indicate contamination may be occurring.

Subsection (h) specifies that water quality monitoring data is to be submitted quarterly to the Department.

Subsection (i) establishes that attainment with groundwater remediation standards must be demonstrated if there is water degradation due to placement of coal ash.

Proposed § 290.302

Subsection (a) establishes location and number of upgradient and downgradient groundwater monitoring points and that surface water monitoring points must be approved by the Department.

Subsection (b) establishes that the number, location and depth of monitoring wells must be representative of water quality and located so as not to interfere with site operations. The subsection also specifies the maximum distance from the coal ash placement site.

Subsection (c) establishes that upgradient monitoring points be located where they will not be affected by coal ash placement.

Subsection (d) establishes that downgradient monitoring points be located where they will not be affected by coal ash placement.

Subsection (e) establishes that well drillers must be licensed.

Subsection (f) specifies that well construction materials be decontaminated prior to installation.

Proposed § 290.303

Subsection (a) establishes well standards, including casing, diameter, screening, filter packing, viability above ground, and angular space sealing and must be designed to prevent cross contamination. The section also allows alternative casing designs for wells located in stable formations.

Subsection (b) establishes standards for protective casings around well casings, including strength, length above and below surface of ground, collar and grouting, labeling, protrusion above well casing, locked cap and material of construction.

Proposed § 290.304

Subsection (a) establishes when an assessment plan is to be submitted based on monitoring data or data from public or private water supplies.

Subsection (b) establishes that assessment is not required if resampling shows degradation is not occurring or if degradation is a result of seasonal variation or activities unrelated to coal ash placement.

Subsection (c) establishes the elements of an assessment plan, including monitoring point location, design and construction information, sampling and analytical methods to be used, an implementation schedule, and identification of the abatement standard.

Subsection (d) establishes Department approval and notification of public and private water supplies.

Subsection (e) establishes contents of a report after assessment is completed, including data, analysis, and recommendations.

Subsection (f) establishes procedures if an abatement plan is not required.

Subsection (g) establishes that the Department may require abatement or water supply replacement prior to or concurrent with the assessment.

Proposed § 290.305

Subsection (a) requires that an abatement plan be submitted to the Department when certain conditions exist. An abatement plan is required when an assessment plan shows groundwater or surface water degradation and the analysis under subsection (c) indicates that an abatement standard will not be met. A plan is also required when data from the Department or other person from one or more compliance points indicates an abatement standard has been exceeded.

Subsection (b) establishes the elements of an abatement plan, including identification of the specific methods or techniques to be used to abate degradation and to prevent future degradation, and an implementation schedule.

Subsection (c) establishes standards for abatement.

Subsection (d) allows compliance point for secondary contaminants to be set beyond that for contaminants with statewide health standards.

Subsection (e) establishes a time limit for completion and submittal of abatement plans.

Subsection (f) establishes that the Department may modify inadequate plans.

Subsection (g) establishes a timeframe for implementation of the abatement plan after approval.

Subsection (h) establishes orders that may be issued by the Department if an abatement plan is found to be inadequate after approval or implementation.

Proposed § 290.306

This section establishes recordkeeping requirements for water quality monitoring data.

Subchapter E. Coal Ash Storage

Proposed § 290.401

Subsection (a) establishes that best engineering design and construction practices are to be used for all phases of construction and operation.

Subsection (b) specifies that coal ash storage is not to exceed the design capacity of the storage facility.

Subsection (c) specifies that the Department may require a water quality monitoring system to be installed if coal ash storage has the potential to cause groundwater degradation.

Subsection (d) specifies that the person storing coal ash must periodically inspect the storage facility for evidence of failure and take any necessary immediate corrective actions. Records of inspections and corrective actions are to be maintained for 3 years.

Proposed § 290.402

Subsection (a) specifies a general maximum storage time limit at the site of beneficial use for uses not having a specific time limit in subsection (b) or (c).

Subsection (b) specifies a maximum storage time limit for bottom ash and requires a significant quantity to be utilized annually, stored on a pad or floor, and stored either in an enclosed building or in an area where runoff is collected and treated.

Subsection (c) specifies maximum storage time limits for storage at other areas dependant on the percentage of coal ash being used and manner of storage.

Subsection (d) establishes that storage contrary to subsections (a)-(c) is presumed to be disposal.

Subsection (e) establishes operational record storage retention to overcome the presumption of disposal in subsection (d).

Subsection (f) specifies that this section does not supersede other regulations and requirements that specify shorter storage time limits.

Proposed § 290.403

Subsection (a) specifies minimization of surface water runoff from storage areas and storm water management.

Subsection (b) specifies minimization of surface water run-on to storage areas.

Subsection (c) specifies that coal ash is not to be stored in a manner to cause degradation of groundwater.

Proposed § 290.404

Subsection (a) establishes siting restrictions for coal ash storage, other than in surface impoundments. Restrictions include distances from streams, water sources, bedrock outcrops, sinkholes and areas draining into sinkholes and wetlands.

Subsection (b) establishes siting restrictions for coal ash storage in surface impoundments. Restrictions include distances from floodplains, streams, water sources, bedrock outcrops, occupied dwellings, property lines, sinkholes and areas draining into sinkholes, wetlands, schools, parks, and playgrounds, and areas underlain by limestone or carbonate formations or areas serving as habitat for endangered or threatened flora or fauna.

Proposed § 290.405

Subsection (a) establishes a requirement to prevent dispersion of coal ash from storage piles.

Subsection (b) establishes separation distance from water table for coal ash stored in piles.

Subsection (c) establishes a requirement for berms around storage piles, collection of runoff and leachate, and when necessary, treatment of runoff and leachate.

Subsection (d) establishes that the Department may require groundwater monitoring for coal ash storage piles without liner systems or pads.

Proposed § 290.406

Subsection (a) establishes that this section applies to storage of coal ash on liners or pads.

Subsection (b) establishes performance and design criteria for the liner system or pad and addresses leachate migration and collection, chemical and physical compatibility, integrity of liner or pad, permeability, constructed so there is no contact with groundwater or surface water, constructed of non-waste and non-coal ash materials, inspection during construction and installation, and, if required by the Department, have a monitoring system capable of detecting whether coal ash or leachate has penetrated the liner or pad.

Proposed § 290.407

Subsection (a) establishes that storage piles with a pad or liner system must have leachate and runoff collection and a leachate storage system.

Subsection (b) establishes design requirements for the leachate storage system that must consist of tanks or impoundments. The requirements address sizing, chemical compatibility, strength, cleanouts, and sealing.

Subsection (c) establishes that leachate treatment or disposal be in accordance with the Clean Streams Law.

Proposed § 290.408

Subsection (a) establishes that this section and §§ 290.409-290.413 apply to surface impoundments used to store coal ash prior to beneficial use.

Subsection (b) establishes that this section and §§ 290.409-290.413 apply to surface impoundments used to store only stormwater.

Subsection (c) establishes a definition of stormwater for this section.

Proposed § 290.409

This section establishes that a coal ash surface impoundment must be permitted under the Clean Streams Law and comply with Chapter 105 requirements.

Proposed § 290.410

This section establishes design criteria for coal ash storage impoundments. The criteria include the linear system, subbase location in relation to water table, subbase performance criteria, leachate detection zone, liner performance criteria, protective cover performance criteria, leachate collection system performance criteria, leachate storage system, leachate collection and handling, and design, construction, operation and maintenance.

Proposed § 290.411

Subsection (a) establishes minimum distance to be maintained between the bottom of the liner system's subbase and the water table.

Subsection (b) specifies marking the edge of the liner.

Subsection (c) establishes that a fence or barrier be maintained around the impoundment and the leachate collection and treatment system.

Subsection (d) establishes fugitive air containment control measures for impoundments.

Subsection (e) establishes that water quality monitoring is required for impoundments.

Subsection (f) establishes coal ash removal performance requirements for impoundments and includes removal without damage to the impoundment, liner inspection, providing for the beneficial use of removed coal ash, and ensuring coal ash is not accumulated speculatively.

Proposed § 290.412

Subsection (a) establishes procedures and Department notification if impoundment fails.

Subsection (b) establishes procedures to restore to service impoundments that have failed.

Subsection (c) establishes closure for failed impoundments that cannot be cleaned up in a manner satisfactory to the Department.

Proposed § 290.413

This section establishes that the Department will inspect coal ash storage impoundments.

Proposed § 290.414

This section establishes closure of storage areas, including removal of coal ash and, if required by the Department, regrading and revegetation.

F. Benefits, Costs and Compliance

Benefits

The largest volume proportion of coal ash under the beneficial use program is utilized in abandoned mine placement for reclamation and mixed with coal refuse for reclamation. Coal ash used in this way to reclaim mine lands that would not otherwise be reclaimed saves the Commonwealth and the Federal government millions of dollars each year towards reclamation. Utilizing ash to stabilize coal refuse and neutralize acid mine drainage prevents a future acid mine drainage pollution source that would cost millions of dollars per year in perpetual treatment across the state. For over 20 years, the Department has seen no significant pollution events that would require abatement related to coal ash beneficial use and has documented many

successfully reclaimed sites. Among the greatest successes environmentally have been coal refuse reprocessing sites, where waste coal is used by power plants to generate electricity and steam. Un-reclaimed, these piles produce acid mine drainage, catch on fire and billow noxious fumes, and erode silt into local streams. The alkaline ash generated by the power plants is returned to the waste coal site. The Department has seen dramatic improvements in water quality at these sites, with 90% reduction of some pollutants.

The public will be better served by the following aspects that this proposed rulemaking will enable:

- Increased coal ash monitoring to ensure coal ash meets certification criteria;
- Increased water quality monitoring for a longer duration to create a robust dataset to facilitate the evaluation and documentation of water quality at sites where coal ash is beneficially used;
- Requirement for minimum number of monitoring wells to characterize the groundwater or other water quality points;
- Requirement for recording a landowner consent for placement of coal ash for beneficial use;
- Improved reporting requirements to track volumes and location of sites where coal ash is beneficially used;
- Consistent operational and monitoring standards for all types of beneficial use;
- A centralized process to certify coal ash for beneficial use at mine sites;
- An annual fee payable to the Department to offset its costs for coal ash and water quality sampling and testing at mine sites where coal ash is beneficially used;
- Requirements for the storage of coal ash including provisions for design and operations.

Compliance Costs

The Department has already implemented many of the measures that would be required in the regulations. Guidance documents have implemented the increased monitoring requirements, including sampling frequency, additional chemical parameters to be tested, and additional pre-ash placement and post-ash placement monitoring. Thus, most costs that would be associated with the regulations are already part of the Department's program.

The regulated community will be required to complete four water samples per year for each monitoring point. Typically, two to four monitoring points exist for each site resulting in a water monitoring cost of \$2400-\$4800 per year. Four ash dry weight/leachate samples are required every year from the generation site. This results in a cost of approximately \$2000 per source. Compaction tests for use of coal ash as a structural fill and for mine reclamation must be conducted two times per year at a cost of approximately \$150 per test.

These proposed regulations impose an annual assessment of a permit filing fee of \$2000. This fee is required to assure that the Department has funds to conduct comparative sampling of the coal ash and water quality related to individual coal ash beneficial use sites. This fee amount covers the cost of one ash sample (~\$500) and five water samples (~\$300 x 5) per year.

Sampling requirements have increased from the previous regulations, and the filing fee adds these additional costs. These costs are justified in order to assure protection of human health and aquatic life and to ensure operational and performance standards for beneficial use of coal ash. More than 11 million tons of coal ash has been beneficially used for mine reclamation each of the past several years. The estimated cost of disposing this material at a landfill would be at least \$275 million per year. Costs of placement at mine sites are on the order of \$55 million per year. Use of coal ash at mine sites as opposed to land filling the material is a savings to the industry of at least \$220 million per year.

Additional costs incurred to state government are exclusively to the Department of Environmental Protection. Costs include additional staff time for review of beneficial use applications and source certification requests. The proposed rulemaking mandates reviews that will take more time compared to previous reviews to account for additional information requirements, recordkeeping and inspection. This increased staff time will be absorbed by current staff. Additional comparative sampling costs are reimbursed, for the most part, through the yearly permit filing fee. This does not include unforeseen samples necessary in cases of potential degradation.

Compliance Assistance Plan

The Department intends to educate and assist the public and regulated community in understanding the newly revised requirements and how to comply with them. Fact sheets explaining the changes will be developed and made available on the Department's Web site.

Paperwork Requirements

The proposed rulemaking continues the current practice of notifying the Department prior to use of coal ash as structural fill, soil substitute or soil additive, at a mining activity site, at an abandoned mine site, as a stabilized product, as drainage material or pipe bedding, or for mine subsidence control, mine fire control and mine sealing. For use as structural fill in § 290.102(f), this shall be by a written notice that includes a description and map of the project, estimated start and end dates for the project, construction plans, estimated volume of coal ash to be used, chemical analysis and landowner consent. For use as a soil substitute or soil additive, the written notice in § 290.103(b) shall include a description of the use and storage, a map of the project, estimated start and end dates for the project, estimated volume of coal ash to be used for the proposed application rate, chemical analysis of the coal ash and soil at the application site, an analysis showing how the application will be beneficial to the productivity or properties of the soil and landowner consent.

For use at a mining activity site in § 290.104(b), a request for mining permit modification shall include the permit filing fee, a description of the use and storage, a map of the project, estimated start and end dates for the project, estimated volume of coal ash to be used, identity of the generator and the certification number, landowner consent and a coal ash monitoring plan. When used at an abandoned mine site, the notice shall either be through a contract with the Department under § 290.105(c), or a written request under § 290.105(b) that includes a description of the use and storage, a map of the project, estimated start and end dates for the project, estimated volume of

coal ash to be used, identity of the generator and the certification number, landowner consent and, if required, a coal ash monitoring plan.

For other beneficial uses, § 290.106(b)(6) requires advanced written notice to the Department with an evaluation of pH and chemical analysis when coal ash is used as drainage material or pipe bedding. When used as a stabilized product or for mine subsidence control, mine fire control and mine sealing, § 290.106(b)(3) and (7) only requires advanced written notice to the Department.

Public notice by the person proposing to beneficially use coal ash as structural fill at a coal mine activity site and at an abandoned mine are included in this proposed rulemaking in §§ 290.102(c), 290.104(d) and 290.105(b)(6). Public notice will be accomplished through a series of newspaper advertisements and applies to structural fill and abandoned mine requests above the identified threshold amounts. Public notice at coal mining activity sites is a current requirement under §§ 86.31 and 86.54.

The proposed rulemaking includes annual reporting requirements in § 290.102(f) for persons using more than 10,000 tons of coal ash per acre as structural fill and §§ 290.104(j) and 290.105(f) for coal ash used at mining activity sites or abandoned mine sites. The person beneficially using coal ash will have to submit an annual report that includes contact information and the identity and the volume in cubic yards and the weight in dry tons for each source. For use as structural fill, the location of the site where the coal ash was utilized must be included in the report. For use at a mining activity site, the report shall include the mining permit number and the certification of the coal ash. For use at an abandoned mine site, the report shall include the identity of the reclamation contract with the Department or approval by the Department and the certification of the coal ash.

The Department is required under §§ 290.102(b) and 290.105(d) in the proposed rulemaking to publish a notice in the *Pennsylvania Bulletin* of each notice for use of coal ash as structural fill or at an abandoned mine site. (Note: The Department already is required to publish a notice in the *Pennsylvania Bulletin* under § 86.39(b)(2) for mining activity sites.)

The proposed rulemaking requires generators whose coal ash will be used at a coal mining activity site or an abandoned mine site to submit a request to the Department for certification of their coal ash. The request under § 290.201(c) must include contact information, identification of the beneficial uses for which certification is sought, a description of the generation process, fuel sources, chemical analysis and physical testing of the coal ash, and the physical and chemical characteristics of any material added to the coal ash. The proposed rulemaking also requires § 290.201(e) quarterly submittals by the generators that include chemical analysis are required in the proposed rulemaking and anytime there is a change in fuel source or in operation of the combustion unit and an annual report with coal ash volumes and locations where sent for beneficial use are required for the coal ash to remain certified. Both the generator of the coal ash and the person using it are required in the proposed rulemaking to report changes in information used to certify the coal ash and any evidence that it may no longer meet the certification requirements. The proposed rulemaking in § 290.201(d) requires the Department to notify the generator of their coal ash certification number or the reason it was not certified for beneficial use.

The proposed rulemaking in § 290.301(a) requires a water quality monitoring plan to be submitted by the person proposing to beneficially use or store coal ash for those uses or storage that requires water quality monitoring. The plan shall include the location and design of monitoring points, background samples, and quarterly monitoring. The proposed rulemaking requires in § 290.301(h) quarterly submittal of the water quality monitoring data to the Department and in § 290.306 to retain water quality monitoring data and evaluations for at least 3 years after water quality monitoring ceases.

The proposed rulemaking requires an assessment plan to be submitted to the Department by the user of coal ash when a triggering event in § 290.304(a) occurs. The assessment plan is to include the number type, design and location of assessment points, sampling and analytical methods to be employed, the evaluation procedures to be utilized, an implementation schedule and the abatement standard that will be met. After implementation of an assessment plan, § 290.304(e) in the proposed rulemaking requires submission of a report to the Department that includes the data collected and its analysis and recommendations on abatement.

The proposed rulemaking requires an abatement plan to be submitted to the Department by the user of coal ash when a triggering event in § 290.305(a) occurs. The plan shall include the methods or techniques to abate water degradation and to prevent further degradation, and a schedule for implementation.

G. Pollution Prevention

The Federal Pollution Prevention Act of 1990 established a national policy that promotes pollution prevention as the preferred means for achieving state environmental protection goals. DEP encourages pollution prevention, which is the reduction or elimination of pollution at its source, through the substitution of environmentally-friendly materials, more efficient use of raw materials, or the incorporation of energy efficiency strategies. Pollution prevention practices can provide greater environmental protection with greater efficiency because they can result in significant cost savings to facilities that permanently achieve or move beyond compliance.

This proposed rulemaking will continue to assure that the citizens and the environment of this Commonwealth experience the advantage of our beneficial coal ash program. The proposed regulations move and expand the environmentally-friendly reuse of coal ash from a policy driven program to a program with a regulatory framework.

The proposed regulations include an enhanced coal ash certification standard. The water monitoring criteria for storage, reclamation and engineering sites that utilize coal ash have been expanded. Groundwater assessment procedures are provided and the requirements of an abatement plan have been outlined. Further, the regulations establish loading rates for coal ash as a soil amendment and engineering criteria for use as structural fill.

H. Sunset Review

This regulation will be reviewed in accordance with the sunset review schedule published by the Department to determine whether the regulation effectively fulfills the goals for which it was intended.

I. Regulatory Review

In accordance with Section 5(a) of the Regulatory Review Act (71 P.S. §§ 745.5(a)), on _____, 2009, the Department submitted a copy of the proposed amendments to the Independent Regulatory Review Commission (IRRC) and the Chairpersons of the House and Senate Environmental Resources and Energy Committees. In addition to submitting the proposed amendments, the Department has provided IRRC and the Committees with a copy of a detailed regulatory analysis form prepared by the Department. A copy of this material is available to the public upon request.

Under Section 5(g) of the Regulatory Review Act, IRRC may convey any comments, recommendations or objections to the proposed rulemaking within 30 days after the close of the public comment period. The comments, recommendations or objections shall specify the regulatory review criteria that have not been met. The Regulatory Review Act specifies detailed procedures for review of these issues by the Department, the General Assembly and the Governor prior to final publication of the regulations.

J. Public Comments

Written Comments - Interested persons are invited to submit comments, suggestions or objections regarding the proposed rulemaking to the Environmental Quality Board, P.O. Box 8477, Harrisburg, PA 17105-8477 (express mail: Rachel Carson State Office Building, 16th Floor, 400 Market Street, Harrisburg, PA 17101-2301). Comments submitted by facsimile will not be accepted. Comments, suggestions, or objections must be postmarked by _____, 2009, (within _____ days of publication in the *Pennsylvania Bulletin*). Interested persons may also submit a summary of their comments to the Board. The summary may not exceed one page in length and must also be received by _____, 2009 (within _____ days following publication in the *Pennsylvania Bulletin*). The one-page summary will be provided to each member of the Board in the agenda packet distributed prior to the meeting at which the final regulation will be considered.

Electronic Comments - Comments may be submitted electronically to the Board at RegComments@state.pa.us and must also be received by the Board by _____, 2009, (within _____ days of publication in the *Pennsylvania Bulletin*). A subject heading of the proposal and a return name and address must be included in each transmission. If an acknowledgement of electronic comments is not received by the sender within 2 working days, the comments should be retransmitted to the Board to ensure receipt.

K. Public Hearings

The Board will hold three public hearings for the purpose of accepting comments on this proposed rulemaking. The hearings will be held as follows:

INSERT HEARING DATES

Persons wishing to present testimony at a hearing are requested to contact the Environmental Quality Board, P.O. Box 8477, Harrisburg, PA 17105-8477, (717) 787-4526, at least 1 week in advance of the hearing to reserve a time to present testimony. Oral testimony is limited to 10 minutes for each witness. Witnesses are requested to submit three written copies of their oral testimony to the hearing chairperson at the hearing. Organizations are limited to designating one witness to present testimony on their behalf at each hearing.

Persons in need of accommodations as provided for in the Americans With Disabilities Act of 1990 should contact the Board at (717) 787-4526 or through the Pennsylvania AT&T Relay Service at (800) 654-5984 (TDD) to discuss how the Department may accommodate their needs.

BY:

JOHN HANGER
Chairperson
Environmental Quality Board