DEPARTMENT OF THE INTERIOR

Office of Surface Mining Reclamation and Enforcement

30 CFR Parts 700, 701, 773, 774, 777, 779, 780, 783, 784, 785, 800, 816, 817, 824, and 827

RIN 1029–AC63

[Docket ID: OSM–2010–0018; S1D1S SS08011000 SX064A000 156S180110; S2D2S SS08011000 SX064A000 15X501520]

Stream Protection Rule

AGENCY: Office of Surface Mining Reclamation and Enforcement, Interior.

ACTION: Proposed rule.

SUMMARY: We, the Office of Surface Mining Reclamation and Enforcement (OSMRE or OSM), are proposing to revise our regulations, based on, among other things, advances in science, to improve the balance between environmental protection and the Nation's need for coal as a source of energy. This proposed rule would better protect streams, fish, wildlife, and related environmental values from the adverse impacts of surface coal mining operations and provide mine operators with a regulatory framework to avoid water pollution and the long-term costs associated with water treatment. We propose to revise our regulations to clearly define ''material damage to the hydrologic balance outside the permit area'' and require that each permit specify the point at which adverse mining-related impacts on groundwater and surface water would reach that level of damage; collect adequate premining data about the site of the proposed mining operation and adjacent areas to establish an adequate baseline for evaluation of the impacts of mining and the effectiveness of reclamation; adjust monitoring requirements to enable timely detection and correction of any adverse trends in the quality or quantity of surface water and groundwater or the biological condition of streams; ensure protection or restoration of perennial and intermittent streams and related resources; ensure that permittees and regulatory authorities make use of advances in science and technology; ensure that land disturbed by mining operations is restored to a condition capable of supporting the uses that it was capable of supporting before mining; and update and codify the requirements and procedures for protection of threatened or endangered species and designated critical habitat. The proposed changes would apply to both surface mines and the surface effects of underground mines. The majority of the proposed revisions update our regulations to incorporate or reflect the best available science and experience gained over the last 30 years. Approximately thirty percent of the proposed rule consists of editorial revisions and organizational changes intended to improve consistency, clarity, accuracy, and ease of use.

DATES: *Electronic or written comments:* We will accept electronic or written comments on the proposed rule, the draft environmental impact statement, and the draft regulatory impact analysis on or before September 25, 2015.

ADDRESSES: You may submit comments by any of the following methods:

Federal eRulemaking Portal: http://www.regulations.gov. The Docket ID for the proposed rule is OSM–2010–0018, while the Docket ID for the draft environmental impact statement is OSM–2010–0021 and the docket ID for the draft regulatory impact analysis is OSM–2015–0002. Please follow the online instructions for submitting comments.

Mail/Hand-Delivery/Courier: Office of Surface Mining Reclamation and Enforcement, Administrative Record, Room 252 SIB, 1951 Constitution Avenue NW., Washington, DC 20240. Please include the appropriate Docket ID: OSM–2010–0018 for the proposed rule, OSM–2010–0021 for the draft environmental impact statement, or OSM–2015–0002 for the draft regulatory impact analysis.

If you wish to comment on the information collection aspects of this proposed rule, submit your comments to the Department of the Interior Desk Officer at OMB—OIRA, via email at *OIRA_Submission@omb.eop.gov*, or via facsimile at (202) 395–5806. Also, send a copy of your comments to John A. Trelease, Office of Surface Mining Reclamation and Enforcement, 1951 Constitution Ave. NW., Room 203 SIB, Washington, DC 20240, or via email at *jtrelease@osmre.gov*.

You may review the proposed rule, the draft environmental impact statement, and the draft regulatory impact analysis online at *www.osmre.gov*. You also may review these documents in person at the location listed below and at the addresses listed in Part XII under **SUPPLEMENTARY INFORMATION**. You may also review the information collection requests at *http://www.reginfo.gov/public/do/PRAMain*.

Office of Surface Mining Reclamation and Enforcement, Administrative Record, Room 101 SIB, 1951 Constitution Avenue NW., Washington, DC 20240, 202–208–4264.

FOR FURTHER INFORMATION CONTACT:

For the proposed rule: Dennis G. Rice, Office of Surface Mining Reclamation and Enforcement, U.S. Department of the Interior, 1951 Constitution Avenue NW., Washington, DC 20240. Telephone: 202–208–2829.

For the draft environmental impact statement: Robin T. Ferguson, Office of Surface Mining Reclamation and Enforcement, U.S. Department of the Interior, 1951 Constitution Avenue NW., Washington, DC 20240. Telephone: 202–208–2802.

For the draft regulatory impact analysis: Mark Gehlhar, Office of Surface Mining Reclamation and Enforcement, U.S. Department of the Interior, 1951 Constitution Avenue NW., Washington, DC 20240. Telephone: 202–208–2716.

For information collection matters: John A. Trelease, Office of Surface Mining Reclamation and Enforcement, U.S. Department of the Interior, 1951 Constitution Avenue NW., Washington, DC 20240. Telephone: 202–208–2716.

SUPPLEMENTARY INFORMATION:

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I. Executive Summary

Significant advances in scientific knowledge and mining and reclamation techniques have occurred in the more than 30 years that have elapsed since the enactment of the Surface Mining Control and Reclamation Act of 1977 (SMCRA or the Act) [1] and the adoption of federal regulations implementing that law. The proposed rule seeks to acknowledge the advancements in science, technology, policy, and the law that impact coal communities and natural resources, based on our experience and engagement with state regulatory authorities, industry, non-governmental organizations, academia, citizens, and other stakeholders.

The primary purpose of this proposed rule is to reinforce the need to minimize the adverse impacts [2] of surface coal mining operations on surface water, groundwater, fish, wildlife, and related environmental values, with particular emphasis on protecting or restoring streams and aquatic ecosystems. The proposed rule, if adopted as final, also will enhance public health by reducing exposure to contaminants from coal mining in drinking water. The proposed rule has the following seven major elements:

- First, the proposed rule defines the term ''material damage to the hydrologic balance outside the permit area'' and requires that each permit establish the point at which adverse mining-related impacts on groundwater and surface water reach an unacceptable level; *i.e.,* the point at which adverse impacts from mining would cause material damage to the hydrologic balance outside the permit area.
- Second, the proposed rule sets forth how to collect adequate premining data about the site of the proposed mining operation and adjacent areas to establish a comprehensive baseline that will

[1] 30 U.S.C. 1201 *et seq.*

[2] Impacts include loss of headwater streams, long-term degradation of water quality in streams downstream of a mine, displacement of native species, fragmentation of large blocks of mature hardwood forests, compaction and improper construction of postmining soils that inhibit the reestablishment of native plant communities and adverse impacts on watershed hydrology where coal mining occurs.

facilitate evaluation of the effects of mining operations.

• Third, the proposed rule outlines how to conduct effective, comprehensive monitoring of groundwater and surface water during and after both mining and reclamation and during the revegetation responsibility period to provide real-time information documenting mining-related changes in water quality and quantity. Similarly, the proposed rule addresses the need to require monitoring of the biological condition of streams during and after mining and reclamation to evaluate changes in aquatic life. Proper monitoring would enable timely detection of any adverse trends and allow timely implementation of any necessary corrective measures.

• Fourth, the proposed rule promotes the protection or restoration of perennial and intermittent streams and related resources, especially the headwater streams that are critical to maintaining the ecological health and productivity of downstream waters.

• Fifth, the proposed rule is intended to ensure that permittees and regulatory authorities make use of advances in information, technology, science, and methodologies related to surface and groundwater hydrology, surface-runoff management, stream restoration, soils, and revegetation, all of which relate directly or indirectly to protection of water resources.

• Sixth, the proposed rule is intended to ensure that land disturbed by surface coal mining operations is restored to a condition capable of supporting the uses that it was capable of supporting before mining. Soil characteristics and the degree and type of revegetation have a significant impact on surface-water runoff quantity and quality as well as on aquatic life and the terrestrial ecosystems dependent upon perennial and intermittent streams. The proposed rule also would require revegetation of reclaimed minesites with native species unless and until a conflicting postmining land use, such as intensive agriculture, is implemented.

• Seventh, the proposed rule would update and codify requirements and procedures to protect threatened and endangered species and designated critical habitat under the Endangered Species Act of 1973.[3] It also would better explain how the fish and wildlife protection and enhancement provisions of SMCRA should be implemented.

This proposed rule would more completely implement SMCRA's permitting requirements and performance standards, provide regulatory clarity to operators and stakeholders while better achieving the purposes of SMCRA as set forth in section 102 of the Act.[4] In particular, the proposed rule would more completely realize the purposes in paragraphs (a), (c), (d), and (f) of that section, which include establishing a nationwide program to protect society and the environment from the adverse effects of surface coal mining operations and assuring that surface coal mining operations are conducted in an environmentally protective manner and are not conducted where reclamation is not feasible. Furthermore, the proposed rule is intended to address recent court decisions, mitigate legal challenges, and strike the appropriate balance between environmental protection, agricultural productivity and the Nation's need for coal as an essential source of energy, while providing greater regulatory certainty to the mining industry.

Apart from the procedural determinations in Part XIII, this document does not discuss the benefits and costs of the proposed rule in detail. Please refer to the draft regulatory impact analysis for an in-depth analysis of projected benefits and costs of the proposed rule and other alternatives under consideration.

II. Why are we proposing to revise our regulations?

Our primary purpose in proposing this rule is to strike a better balance between ''protection of the environment and agricultural productivity and the Nation's needs for coal as an essential source of energy.'' [5] Specifically, the proposed rule is designed to minimize the adverse impacts of surface coal mining operations on surface water, groundwater, and site productivity, with particular emphasis on protecting or restoring streams, aquatic ecosystems, riparian habitats and corridors, native vegetation, and the ability of mined land to support the uses that it was capable of supporting before mining. Our proposed changes reflect our experience during the more than three decades since adoption of the existing regulations, as well as advances in scientific knowledge and mining and reclamation techniques during that time. The proposed rule would more completely implement sections 515(b)(24) and 516(b)(11) of SMCRA, which provide that, to the extent possible using the best technology currently available, surface coal mining and reclamation operations must be conducted to minimize disturbances and adverse impacts on fish, wildlife, and related environmental values and to achieve enhancement of those resources where practicable.[6] It also would update our regulations concerning compliance with the Endangered Species Act of 1973.[7] In addition, we propose to revise and reorganize our regulations for clarity, to make them more user-friendly, to remove obsolete and redundant provisions, and to implement plain language principles.

Coal mining operations continue to have adverse impacts on streams, fish, and wildlife despite the enactment of SMCRA and the adoption of federal regulations implementing that law more than 30 years ago. Those impacts include loss of headwater streams, long-term degradation of water quality in streams downstream of a mine, displacement of pollution-sensitive species of fish and insects by pollution-tolerant species, fragmentation of large blocks of mature hardwood forests, replacement of native species by highly competitive non-native species that inhibit reestablishment of native plant communities, and compaction and improper construction of postmining soils that result in a reduction of site productivity and adverse impacts on watershed hydrology.

Impacts on Aquatic Ecology

Headwater streams consist of first-order through third-order streams [8] under the Strahler stream-order system, which is the generally-accepted geographical classification system for ranking streams by size.[9] Headwater streams are the small swales, creeks, and streams that connect to form larger streams and rivers. They trap floodwaters, recharge groundwater, remove pollution, provide fish and wildlife habitat, and sustain the health of downstream rivers, lakes, and bays. These streams support diverse biological communities of aquatic invertebrates, such as insects, and

[3] 16 U.S.C. 1531 *et seq.*

[4] 30 U.S.C. 1202.

[5] 30 U.S.C. 1202(f).

[6] See 30 U.S.C. 1265(b)(24) and 1266(b)(11).

[7] 16 U.S.C. 1531 *et seq.*

[8] The U.S. Geological Survey sometimes characterizes only first-order and second-order streams as headwater streams. See, *e.g.,* Argue, D. M., Pope, J. P., and Dieffenbach, Fred. 2012. Characterization of major-ion chemistry and nutrients in headwater streams along the Appalachian National Scenic Trail and within adjacent watersheds, Maine to Georgia: U.S. Geological Survey Scientific Investigations Report 2011–5151, 63 p., plus CD–ROM, p. 4. Also available at *http://pubs.usgs.gov/sir/2011/5151* (last accessed February 27, 2015).

[9] See *http://geography.about.com/od/physicalgeography/a/streamorder.htm* (last accessed January 29, 2015). A first-order stream has no tributaries. When two first-order streams join, they form a second-order stream. When two second-order streams join, they form a third-order stream.

vertebrates, including fish and salamanders, that are often distinct from the species found further downstream. Headwater streams function as sources of sediment, water, nutrients, and organic matter for downstream systems. Riparian vegetation provides organic matter to headwater streams in the form of dropped leaves and other plant parts. This organic matter fuels the aquatic food web.[10] According to the U.S. Environmental Protection Agency (EPA), headwater streams that flow only seasonally or in response to precipitation events; *i.e.,* intermittent and ephemeral streams, comprise approximately 53 percent of the total stream miles in the continental United States.[11]

Headwater streams are the streams most likely to be directly disturbed or impacted by coal mining activities. The EPA estimates that SMCRA permits in existence between 1992 and 2002 authorized the destruction of 1,208 miles of headwater streams.[12] This total included approximately 2 percent of the total stream miles and 4 percent of the first-order and second-order stream miles in the central Appalachian coalfields.[13]

Our proposed rule would address loss of stream miles in two ways. First, we propose to amend the standards governing excess spoil and coal mine waste to minimize both the generation of excess spoil and the placement of excess spoil and coal mine waste in perennial or intermittent streams. Second, we propose to adopt standards that would minimize mining through perennial and intermittent streams. When mining through a perennial or an intermittent stream does occur, our revised standards would require that the permittee restore both the hydrological form and the ecological function of the mined-through stream segment.

Midwestern studies of reconstructed stream segments demonstrate that restoration of hydrological form and ecological function after mining through a stream is technologically feasible and attainable. In Illinois, case studies documented that streams flowing through channels reconstructed after mining can approach the regional biological diversity found in streams in unmined watersheds in that region.[14] Another Illinois study focused on 25 miles of low-gradient perennial streams with moderately disturbed premining watersheds. Those stream segments were relocated in the 1980s to facilitate mining and then were restored in their approximate premining location, although two of the three streams were routed through permanent pit impoundments for part of their length. In general, the study found that the premining hydrological form and ecological function of the streams have been successfully restored, based on a comparison with relatively undisturbed segments of those streams that are upstream of the mining operations.[15] The exception is fish abundance and diversity, which is substantially lower, perhaps, the authors suggest, because of the lack of mature riparian timber and instream woody debris.[16] In addition, monitoring of habitat, water chemistry, and biological parameters of a low-gradient stream in Indiana that flows through a channel reconstructed after mining has demonstrated rapid recovery of the stream's ecological function.[17]

The general consensus is that reconstruction and restoration of high-gradient streams after mining is more challenging. However, a 2012 EPA publication notes that ''restoration of high-gradient, very small intermittent and ephemeral channels as part of stream mitigation projects is common in coalmining regions.'' [18] This statement appears in the context of a discussion of improving existing degraded stream channels as mitigation for the adverse impacts of coal mining elsewhere, but the principles set forth in the publication also should apply to functional restoration of stream channels newly constructed or reconstructed as part of surface coal mining and reclamation operations. Appendix B of the publication describes a scenario in which high-gradient stream channels devoid of aquatic life on an abandoned minesite in West Virginia may be restored to biological health in an estimated 10 years.[19]

Most adverse impacts of surface coal mining operations on water quality occur as a result of the excavation and fracturing of the rock layers above the coal seam. The mining process converts mostly solid rock, which has few pore spaces and thus offers little opportunity for chemical reaction with air and water, into highly fragmented mine spoil, which contains a vastly greater number and volume of pore spaces and thus offers much greater opportunity for chemical reaction with air and water. Surface water and groundwater infiltrate the pore spaces in mine spoil placed in the backfilled area of a mine or in an excess spoil fill and react with air and the surfaces of the rock fragments to produce drainage with high ionic concentrations. Specifically, water percolating through an excess spoil fill or the backfilled area of a mine typically contains substantially higher concentrations of sulfate, bicarbonate, calcium, and magnesium ions, as well as some trace metals, compared to the concentrations of those ions and metals in groundwater discharges and surface runoff from areas undisturbed by mining.[20]

[10] Palmer, Margaret A. and Emily S. Bernhardt. 2009. Mountaintop Mining Valley Fills and Aquatic Ecosystems: A Scientific Primer on Impacts and Mitigation Approaches. p. 12.

[11] See *http://water.epa.gov/type/rsl/streams.cfm* (last accessed January 12, 2015).

[12] U.S. Environmental Protection Agency. 2011. A Field-Based Aquatic Life Benchmark for Conductivity in Central Appalachian Streams (Final Report). Office of Research and Development, National Center for Environmental Assessment, Washington, DC. EPA/600/R–10/023F, p. 16.

[13] *Id.* However, the fact that the mining plan in the permit authorized destruction of a stream segment does not necessarily mean that the destruction occurred. In some cases, the permittee may have decided not proceed with mining or to alter mining plans subsequent to permit issuance. An unknown amount of the habitat destruction was offset through the section 404 permitting process of the U.S. Army Corps of Engineers, which requires mitigation of loss or degradation of waters of the United States.

[14] Nawrot, J., W.G. O'Leary, and P. Malone. 2009. Illinois stream restoration—opportunities for habitat enhancement: policy, principles, and practices. Pages 183–195 *in* Proceedings of the 2009 Geomorphic Reclamation and Natural Stream Design at Coal Mines: A Technical Interactive Forum, 28–30 April 2009. Bristol, VA, 226 pp.

[15] Williard, Karl, B. Borries, T. Straub, D. Rosenboom, C. Nielson, and V. Kelly. 2013. Stream restoration—long term performance: a reassessment. Final report for Office of Surface Mining Cooperative Agreement S11AC20024 AS.

[16] *Id.* at 77–78. The restored streams have a relative lack of minnows and benthic invertivores along with an abundance of sunfish. Lentic species replaced lotic species in the two streams that were routed through permanent pit impoundments.

[17] ENVIRON International Corporation. September 10, 2010. Report for Fish and Macroinvertebrate Sampling for 2010 Bioassessment Monitoring of West Fork Busseron Creek. Prepared for Peabody Energy, Evansville, Indiana.

[18] Harman, W., R. Starr, M. Carter, K. Tweedy, M. Clemmons, K. Suggs, C. Miller. 2012. *A Function-Based Framework for Stream Assessment and Restoration Projects.* U.S. Environmental Protection Agency, Office of Wetlands, Oceans, and Watersheds, Washington, DC EPA 843–K–12–006, p. 230.

[19] *Id.* at 336–339.

[20] See, *e.g.,* Lindberg. T.T., E.S. Bernhardt, *R. Bier, A. Helton,* R. Merola, A. Vengosh, and R.T. Di Giulio. 2011. Cumulative impacts of mountaintop mining on an Appalachian watershed. *Proceedings of the National Academy of Sciences* 108: 20929–20934, 20929. The researchers state that typical specific conductance levels in low order streams in West Virginia range from 13 to 253 microSiemens per centimeter (μS/cm). Specific conductance levels in streams impacted by mining range from 502 to 2,540 μS/cm. (Specific conductance is a measure of electrical conductivity. High specific conductance readings are a strong indicator of land disturbance, such as agriculture, urbanization, or mining. See Pond, G.J., M.E. Passmore, F.A. Borsuk, L. Reynolds, and C.J. Rose. 2008..Downstream effects of mountaintop coal mining: comparing biological

When sulfate is the dominant anion in those discharges, the result can be acid mine drainage, which mobilizes metals such as iron, manganese, aluminum, and zinc that are directly toxic to fish at high levels.[21] But high concentrations of sulfate ions do not necessarily result in acid mine drainage because groundwater discharges and surface runoff from backfilled areas and excess spoil fills often also contain elevated concentrations of alkaline ions (especially calcium, magnesium, and carbonate ions), which neutralize the acidic sulfate ions, thus preventing the formation of acid mine drainage.[22]

However, alkaline ions also can have negative impacts on water quality and aquatic life. Elevated concentrations of alkaline ions in mine drainage may result in significant increases in the pH and electrical conductivity of streams that receive discharges from mined areas.[23] Elevated concentrations of both these ions and sulfate ions are highly correlated with elevated electrical conductivity in streams, which is highly correlated with the loss or absence of pollution-sensitive species of aquatic insects and fish even when in-stream habitat downstream of the mining activity is otherwise intact.[24] The adverse impacts may extend far downstream. One study found that adverse impacts from both surface and underground mines on water quality in Appalachian streams extended an average of 6.2 miles downstream from the mine.[25]

The EPA has established an aquatic life benchmark of 300 microsiemens per centimeter (µS/cm) for electrical conductivity, based on a scientific determination that maintaining conductivity at or below this level should prevent the extirpation of 95 percent of invertebrate genera, such as mayflies, dragonflies, damselflies, and aquatic beetles, in central Appalachian streams.[26] In other words, mining activities that cause an increase in the electrical conductivity of a stream to no more than 300 µS/cm would be expected to result in the extirpation of no more than 5 percent of the invertebrate genera present in the stream before mining. A recent study suggests that a similar benchmark for fish would be somewhat higher because adverse impacts on the populations and diversity of fish species begin to appear at conductivity readings between 600 and 1,000 µS/cm.[27]

Elevated electrical conductivity in streams can persist for many years after the completion of mining and land reclamation.[28] This water quality characteristic can prevent or restrict recolonization by the species of fish [29] and insects [30] that inhabited the affected stream segment before mining began in the watershed. Studies in Appalachia of existing minesites have not found any ecologically significant improvement in electrical conductivity with either time or the extent of reforestation of the minesite.[31] However, a recent study of test plots on a surface mine in Kentucky found that the quality of water emanating from plots that used the Forestry Reclamation Approach [32] to soil reconstruction improved dramatically within 3 to 9 years after spoil placement, with electrical conductivity apparently stabilizing at levels 50 percent below those recorded during the first 3 years.[33] Our proposed rule would address the conductivity issue by requiring that backfilling techniques consider impacts on electrical conductivity, by requiring that excess spoil fills be constructed in compacted lifts, and by incorporating elements of the Forestry Reclamation Approach into our soil reconstruction and revegetation rules.

Selenium Impacts

In locations with geological formations that contain selenium, mining has sometimes resulted in elevated levels of selenium in streams downgradient of the minesite. Mining exposes elemental selenium to air, thus facilitating oxidation to selenite and selenate, which are soluble in water. Selenium bioaccumulates [34] in fish tissues, causing reproductive problems, physical deformities, and, in extreme cases, mortality in fish in the affected streams.[35] Selenium is beneficial to animals, including humans, when ingested in small amounts, but toxic when ingested in amounts ranging from 0.1 to 10 mg/kg of food.[36] Humans have a dietary requirement estimated to be 0.04 to 0.10 mg/kg of food, but ingestion of selenium in amounts as low as 0.07 mg per day has been shown to have deleterious effects similar to arsenic poisoning.[37] Thus, selenium concentrations in streams may be a human health concern when the stream serves as a drinking water supply or

conditions using family- and genus-level macroinvertebrate bioassessment tools. J. N. Am. Benthol. Soc., 2008, 27(3): 717–737, 720.)

[21] Williard, *op. cit.* at 4.

[22] Palmer, M.A. and E.S. Bernhardt. 2009. Mountaintop Mining Valley Fills and Aquatic Ecosystems: A Scientific Primer on Impacts and Mitigation Approaches, p. 14.

[23] *Id.*

[24] *Id.* at 3, 14–15.

[25] Petty, T., K. Fulton, M. Strager, G. Merovich, J. Stiles, and P. Ziemkiewicz. 2010. Landscape indicators and thresholds of stream ecological impairment in an intensively mined Appalachian watershed. *Journal of the North American Benthological Society* 29(4): 1292–1309.

[26] U.S. Environmental Protection Agency. 2011. A Field-Based Aquatic Life Benchmark for Conductivity in Central Appalachian Streams (Final Report). Office of Research and Development, National Center for Environmental Assessment, Washington, DC. EPA/600/R–10/023F, p. 41. EPA states that this benchmark applies to parts of West Virginia and Kentucky and that it may be applicable to Ohio, Tennessee, Pennsylvania, Virginia, Alabama, and Maryland in Ecoregions 68, 69, and 70 because the salt matrix and background (calcium and magnesium cations and sulfate and bicarbonate anions at circum-neutral pH) is expected to be similar throughout those ecoregions. EPA further states that this benchmark also may be appropriate for other nearby regions, but that it may not apply when the relative concentrations of dissolved ions are different.

[27] Hitt, N.P. and D.B. Chambers. 2014. Temporal changes in taxonomic and functional diversity of fish assemblages downstream from mountaintop mining. *Freshwater Science* 33(3):000–000. Published online June 30, 2014, in unpaginated form.

[28] See, *e.g.,* Lindberg. T.T., E.S. Bernhardt, *R. Bier, A. Helton,* R. Merola, A. Vengosh, R.T. Di Giulio. 2011. *Cumulative impacts of mountaintop mining on an Appalachian watershed. Proceedings of the National Academy of Sciences* 108: 20929–20934, 20931. Available at *http://www.pnas.org/cgi/doi/10.1073/pnas.1112381108* (last accessed January 29, 2015).

[29] Hitt and Chambers, *op. cit.*

[30] Pond, G.J., M.E. Passmore, N.D. Pointon, J.K. Felbinger, C.A. Walker, K.J.G. Krock, G.B. Fulton, and W.L. Nash. 2014. Long-Term Impacts on Macroinvertebrates Downstream of Reclaimed Mountaintop Mining Valley Fills in Central Appalachia. *Environmental Management 54*(4), 919–933.

[31] *Id.*

[32] The Forestry Reclamation Approach is a set of five steps for reclaiming mined sites to encourage native forest regeneration. These steps are: (1) Prepare a suitable growth medium, (2) minimize compaction, (3) minimize competition from groundcover, (4) plant early- and late-successional tree species, and (5) use proper tree-planting techniques. See *http://arri.osmre.gov/FRA/FRApproach.shtm* (last accessed January 6, 2015).

[33] Sena, Kenton L., ''Influence of Spoil Type on Afforestation Success and Hydrochemical Function on a Surface Coal Mine in Eastern Kentucky'' (2014). *Theses and Dissertations—Forestry.* Paper 16, pp. 39 and 60. See *http://uknowledge.uky.edu/forestry_etds/16* (last accessed January 6, 2015). Electrical conductivity during the first 3 years averaged between 829 and 1224 µS/cm, depending upon whether the soil consisted of brown sandstone, gray sandstone, or a mix. Electrical conductivity in the last year of the study averaged between 421 and 564 µS/cm.

[34] Bioaccumulation means an increase in the concentration of a chemical in a biological organism over time, compared to the chemical's concentration in the environment. Compounds accumulate in living things any time they are taken up and stored faster than they are broken down (metabolized) or excreted. See *extoxnet.orst.edu/tibs/bioaccum.htm* (last accessed January 6, 2015).

[35] Hitt and Chambers, op. cit., suggest that an aquatic life benchmark for total dissolved selenium concentrations using the criteria that EPA relied upon to establish a benchmark for electrical conductivity would be between four and seven micrograms per liter, at least for fish.

[36] U.S. Environmental Protection Agency, ''Quality Criteria for Water'' (1976), p. 200.

[37] *Id.*

when fish in the stream are used for human consumption.

The proposed rule would address the environmental and human health concerns related to selenium by requiring collection of baseline hydrologic and geologic information on this element. If selenium is present in any of the overburden to be removed as part of the mining process, the proposed rule would require that the permit include limits on selenium discharges to prevent material damage to the hydrologic balance outside the permit area. The hydrologic reclamation plan and toxic materials handling plan must address selenium and the surface water and groundwater monitoring plans must include selenium.

Impacts on Stream Flow Regime and Flooding

In addition to the water quality impacts discussed above, mining may affect the flow regime of streams by removing springs and otherwise causing changes in base flow, water temperature, seasonal variations in flow, and fluctuations in flow in response to storm events. Reclaimed minesites generally exhibit both reduced evapotranspiration (as a result of forest loss due to mining) and reduced infiltration of rainfall (as a result of soil compaction during reclamation), compared to unmined areas. A 2009 study of flood response in Virginia watersheds found that flood magnitude increased with the amount of surface-mined land within the watershed. In contrast, logging operations that removed most forest cover in similar Virginia watersheds increased overall water yield within the watershed without increasing flood volume, a difference that the authors of the study attributed to the soil compaction associated with typical surface mine reclamation. Another study in Maryland found that the volume of surface runoff as a result of a storm in a watershed influenced by surface mining was significantly higher than the volume of runoff from an undisturbed forested watershed as a result of the same-size storm. The authors attributed this difference to soil compaction on the mined land, which reduced infiltration rates to less than 1 cm/hr, compared to 30 cm/hr in the undisturbed watershed. Increased surface runoff in response to storms increases the potential for flood damage and may adversely impact the hydrological function of the stream by causing stream channelization.[38] Our proposed rule would address this issue by minimizing soil compaction and maximizing reforestation.

Impacts on Topography and Microclimates

Mining impacts on the terrestrial environment include a loss of topographic complexity; *i.e.,* regraded minesites generally are flatter and more uniform in terms of surface elevation and configuration when compared with the premining topography. U.S. Geological Survey studies of central Appalachia found that surface coal mining reduced ridgetop elevations by an average of 112 feet, raised valley floor elevations by an average of 174 feet, reduced slope steepness by 9.5–11 percent, and changed slope aspect[39] by 38–41 degrees.[40] Changes are less dramatic in areas with flatter topography, but the same principle of greater uniformity and less topographic diversity after mining and regrading still applies. Regraded minesites usually lack the small drainageways and variations in slope and other topographical features found prior to mining. Therefore, they also lack the microclimates and associated ecosystems found prior to mining. Landsat data from 2007–2009 for the area containing a large mountaintop removal mining operation in West Virginia indicate that surface temperatures of areas disturbed by mining were warmer and more variable in all seasons except winter.[41] Surface temperatures influence the type of vegetation that can survive on mined land and the extent and rate at which the premining plant community and associated fauna can recolonize the site.

Impacts on Soils, Vegetation, and Terrestrial Wildlife

Other terrestrial impacts include forest fragmentation (loss of large blocks of contiguous mature interior forest and increases in forest edge and grassland habitat), loss of native forests, changes in species composition and biodiversity of both plants and animals, and loss or severe compaction of soil horizons and organic matter. At least temporarily, mining of previously forested areas adversely impacts species that prefer or require interior forest (for example, the cerulean warbler, the ovenbird, and the scarlet tanager) and favors species that prefer or require edge habitat (for example, the cardinal, the brown-headed cowbird, and many species of sparrows).

Furthermore, conventional reclamation techniques typically result in heavily compacted soils that offer a hostile environment for native plant species and soil microorganisms, which means that minesites reclaimed by those techniques often are either planted with or colonized by nonnative species and remain in a state of arrested ecological succession. Both soil compaction and competitive herbaceous ground covers inhibit the establishment of native forests similar to those that occupied the area prior to mining. Soil compaction also reduces the site indices for tree growth, which means that the reclaimed minesite is not capable of supporting a forest with a productivity equal to that of the forest that either existed or could have existed prior to mining.

Our proposed rule would address terrestrial impacts in a variety of ways, including a requirement for restoration of the premining drainage pattern to the extent possible and incorporation of elements of the Forestry Reclamation Approach. Use of that approach would minimize soil compaction and maximize reforestation and restoration of site productivity. Our proposed rule emphasizes revegetation with native species, restoration of natural plant communities whenever there is no conflict with implemented postmining land uses, and the protection or establishment of riparian corridors along streams to promote protection, restoration, and enhancement of fish, wildlife, and related environmental values. It also would modify the standards for approval of exceptions to the approximate original contour restoration requirement by limiting exceptions to those necessary to implement the postmining land use within the revegetation responsibility period.

Draft Environmental Impact Statement (EIS)

The draft EIS for this proposed rule contains an expanded discussion of the impacts of mining on the environment. Almost all the literature surveys and studies reviewed for this rulemaking process have been published since the adoption in 1983 of our principal regulations concerning protection of the hydrologic balance[42] and protection of fish, wildlife, and related environmental

[38] Sena at 27.

[39] Aspect is the compass direction that a slope faces. It has a significant effect on the soils and microclimate of the slope and hence on the plant and animal life found there, as well as the site's productivity.

[40] Wickham, James, Petra Bohall Wood, Matthew C. Nicholson, William Jenkins, Daniel Druckenbrod, Glenn W. Suter, Michael P. Strager, Christine Mazzarella, Walter Galloway, and John Amos. The overlooked terrestrial impacts of mountaintop mining. *BioScience* 63, no. 5 (2013): 335–348, 338–339.

[41] *Id.* at 338.

[42] 48 FR 43956 (Sept. 26, 1983).

values,[43] which underscores the need to update our regulations to reflect new scientific understanding of impacts associated with coal mining.

Relationship to 2009 MOU

This proposed rule helps fulfill our responsibilities under a memorandum of understanding (MOU) that the Secretary of the Department of the Interior, the Administrator of the EPA, and the Acting Assistant Secretary of the Army (Civil Works) entered into on June 11, 2009. This MOU implemented an interagency action plan designed to significantly reduce the harmful environmental consequences of surface coal mining operations in six Appalachian states and ensure that future mining is conducted consistent with federal law. Specifically, Part III.A. of the MOU provides that we will review our ''existing regulatory authorities and procedures to determine whether regulatory modifications should be proposed to better protect the environment and public health from the impacts of Appalachian surface coal mining.'' It also provides that, at a minimum, we will consider revisions to the stream buffer zone rule published December 12, 2008,[44] and our existing regulatory requirements concerning approximate original contour. Ultimately, we determined that development of a comprehensive, nationally applicable stream protection rule would be the most appropriate and effective method of achieving the purposes and requirements of SMCRA, as well as meeting the goals set forth in the MOU.[45]

III. What needs does this proposed rule address?

All versions of the stream buffer zone rule that we have adopted over the years, including the version now in effect, focused primarily on activities in or within 100 feet of the stream itself.[46] Yet, mining activities beyond the 100-foot stream buffer zone can adversely impact the quality and quantity of water in streams by disturbing aquifers, by altering the physical and chemical nature of recharge zones as well as surface-water runoff and infiltration rates and drainage patterns, and by modifying the topography and vegetative composition of the watershed. Thus, there are many components of our regulations that could be revised to improve implementation of SMCRA with regard to protection of streams in particular and the hydrologic balance in general. We have identified six specific areas in which we propose to revise our regulations to better protect streams and associated environmental values.

First, while ephemeral streams derive their flow from surface runoff from precipitation events, perennial and intermittent streams derive their flow from both groundwater discharges and surface runoff from precipitation events. Therefore, there is a need to clearly define the point at which adverse mining-related impacts on both groundwater and surface water reach an unacceptable level; that is, the point at which adverse impacts from mining cause material damage to the hydrologic balance outside the permit area. Neither SMCRA nor the existing regulations define the term ''material damage to the hydrologic balance outside the permit area'' or establish criteria for determining what level of adverse impacts would constitute material damage. In particular, there is no requirement that the SMCRA regulatory authority establish a specific standard for conductivity or selenium, both of which can have deleterious effects on aquatic life at elevated levels.

Second, there is a need to collect adequate premining data about the site of the proposed mining operation and adjacent areas to establish a comprehensive baseline that will facilitate evaluation of the effects of mining. The existing rules require data only for a limited number of water-quality parameters rather than the full suite needed to establish a complete baseline against which the impacts of mining can be compared. The existing rules also contain no requirement for determining the biological condition of streams within the proposed permit and adjacent areas, so there is no assurance that the permit application will include baseline data on aquatic life.

Third, there is a need for effective, comprehensive monitoring of groundwater and surface water during and after both mining and reclamation and during the revegetation responsibility period to provide real-time information documenting mining-related changes in the values of the parameters being monitored. Similarly, there is a need to require monitoring of the biological condition of streams during and after mining and reclamation to evaluate changes in aquatic life. Proper monitoring will enable timely detection of any adverse trends and timely implementation of any necessary corrective measures. The existing rules require monitoring of only water quantity and a limited number of water-quality parameters, not all parameters necessary to evaluate the impact of mining and reclamation. The existing rules do not ensure that the number and location of monitoring points will be adequate to determine the impact of mining and reclamation. They also allow discontinuance or reduction of water monitoring too early to ascertain the impacts of mining and reclamation on water quality with a reasonable degree of confidence, especially for groundwater.

Fourth, there is a need to ensure protection or restoration of streams and related resources, including the headwater streams that are important to maintaining the ecological health and productivity of downstream waters. The existing rules have not always been applied in a manner sufficient to ensure protection or restoration of streams, especially with respect to the ecological function of streams. Maintenance, restoration, or establishment of riparian corridors or buffers, comprised of native species, for streams is a critical element of stream protection. In forested areas, riparian buffers for streams moderate the temperature of water in the stream, provide food (in the form of fallen leaves and other plant parts) for the aquatic food web, roots that stabilize stream banks, reduce surface runoff, and filter sediment and nutrients in surface runoff.

Fifth, there is a need to ensure that permittees and regulatory authorities make use of advances in information, technology, science, and methodologies related to surface and groundwater hydrology, surface-runoff management, stream restoration, soils, and revegetation, all of which relate directly or indirectly to protection of water resources.

Sixth, there is a need to ensure that land disturbed by surface coal mining operations is restored to a condition capable of supporting the uses that it was capable of supporting before any mining, including both those uses dependent upon stream protection or restoration and those uses that promote or support protection and restoration of

[43] 48 FR 30312 (Jun. 30, 1983).

[44] The U.S. District Court for the District of Columbia vacated the 2008 stream buffer zone rule on February 20, 2014, in *National Parks Conservation Ass'n* v. *Jewell,* 2014 U.S. Dist. LEXIS 152383 (D.D.C. Feb. 20, 2014). See also 79 FR 76227–76233 (Dec. 22, 2014).

[45] In keeping with our commitment in the MOU, we considered making revisions to our approximate original contour regulations. Ultimately, we decided not to propose any major changes to our permitting requirements and performance standards concerning approximate original contour restoration at this time because of cost concerns and perceived difficulty of implementation. However, we are proposing revisions to our regulations governing exceptions to the requirement to restore the approximate original contour.

[46] The 2008 rule was somewhat broader in that it also included provisions intended to minimize the creation of excess spoil and to limit the footprint of excess spoil fills.

streams and related environmental values. Existing rules and permitting practices have focused primarily on the land's suitability for a single approved postmining land use and they have not always been applied in a manner that results in the construction of postmining soils that provide a growth medium suitable for restoration of premining site productivity. A corollary need is to ensure that reclaimed minesites are revegetated with native species unless and until a conflicting postmining land use, such as intensive agriculture, is implemented. Soil characteristics and the degree and type of revegetation have a major impact on surface-water runoff quantity and quality as well as on aquatic life and the terrestrial ecosystems dependent upon perennial and intermittent streams. Under the existing rules, sites with certain postmining land uses have been revegetated with non-native species even when the postmining land use is not implemented prior to final bond release and even on those portions of the site where non-native species are not necessary to achieve the postmining land use.

The proposed rule would address these needs in the manner described in Part IX of this preamble. As mentioned in Part II of this preamble, we determined that improved protection of the hydrologic balance, especially streams, and related environmental values would benefit all regions of the country, not just Appalachia. In addition, one of the reasons SMCRA was enacted was to ensure a minimum level of environmental protection nationwide by establishing national surface coal mining and reclamation standards to prevent competition for coal markets from undermining the ability of states to maintain adequate regulatory programs for coal mining operations within their borders. See section 101(g) of SMCRA, 30 U.S.C. 1201(g). Thus, we concluded that a nationwide rule is required to clearly articulate a minimum standard for protection of the hydrologic balance, especially streams, and related environmental values that strikes an appropriate balance between environmental protection and the Nation's need for coal.

IV. What Clean Water Act programs protect streams?

The goal of the Clean Water Act is to ''restore and maintain the chemical, physical, and biological integrity of the Nation's waters.'' [47] To achieve that objective, section 301 of the Clean Water Act [48] prohibits the discharge of pollutants from point sources into waters of the United States unless consistent with the requirements of the Act. Section 402 of the Clean Water Act [49] governs the discharge of pollutants other than dredged or fill material, while section 404 [50] governs the discharge of dredged or fill material into waters of the United States.

Section 303 Water Quality Standards

Section 303 of the Clean Water Act [51] requires states to adopt water quality standards applicable to their intrastate and interstate waters. Water quality standards assist in maintaining the physical, chemical, and biological integrity of a water body by designating uses, setting water quality criteria to protect those uses, and establishing provisions to protect water quality from degradation. Water quality standards established by states [52] are subject to EPA review. 40 CFR 131.5; 33 U.S.C. 1313(c). EPA may object to state-adopted water quality standards and may require changes to the state-adopted water quality standards and, if the state does not respond to EPA's objections, EPA may promulgate federal standards. 33 U.S.C. 1313(c)(3)–(4); 40 CFR 131.5, 131.21.

Water quality criteria may be expressed numerically and implemented in permits through specific numeric limitations on the concentration of a specific pollutant in the water (*e.g.,* 0.1 milligrams of chromium per liter) or by more general narrative standards applicable to a wide set of pollutants. To assist states in adopting water quality standards that will meet with EPA's approval, Congress authorized EPA to develop and publish recommended criteria for water quality that accurately reflect ''the latest scientific knowledge.'' 33 U.S.C. 1314(a). Water quality standards are not self-implementing; they are implemented through permits, such as the section 402 permit or the section 404 permit. 33 U.S.C. 1311(b)(1)(C); 40 CFR 122.44(d), 230.10(b).

Section 401 Water Quality Certification

State water quality standards are incorporated into all federal Clean Water Act permits through section 401, which requires each applicant to submit a certification from the affected state that the discharge will be consistent with state water quality requirements. 33 U.S.C. 1341(a)(1). Thus, section 401 provides states with a veto over federal permits that may allow exceedances of state water quality standards. It also empowers states to impose and enforce water quality standards that are more stringent than those required by federal law. 33 U.S.C. 1370.

Section 402 National Pollutant Discharge Elimination System (NPDES)

Section 402 of the Clean Water Act governs discharges of pollutants other than dredged or fill material into waters of the United States. Permits issued under the authority of section 402 are known as NPDES permits. They typically contain numerical limits called effluent limitations that restrict the amounts of specified pollutants that may be discharged. NPDES permits must contain technology-based effluent limits and any more stringent water quality-based effluent limits necessary to meet applicable state water quality standards. 33 U.S.C. 1311(b)(1)(A) and (C), 33 U.S.C. 1342(a); 40 CFR 122.44(a)(1) and (d)(1). Water quality-based effluent limitations are required for all pollutants that the permitting authority determines ''are or may be discharged at a level [that] will cause, have the reasonable potential to cause, or contribute an excursion above any [applicable] water quality standard, including State narrative criteria for water quality.'' 40 CFR 122.44(d)(1)(i). The procedure for determining the need for water quality-based effluent limits is called a reasonable potential analysis, or ''RPA.''

Section 402 permits are issued by EPA unless the state has an approved program whereby the state issues the permits, subject to EPA oversight. 33 U.S.C. 1342(b)(e); 551 U.S. 644, 650–651 (2007). The state must submit draft permits to EPA for review, and EPA may object to a proposed permit that is not consistent with the Clean Water Act and federal regulations. 33 U.S.C. 1342(d); 40 CFR 123.43 and 123.44. If the state does not adequately address EPA's objections, EPA may assume the authority to issue the permit. 33 U.S.C. 1342(d)(4). EPA's procedures for the review of state-issued permits are set forth in regulations at 40 CFR 123.44 and in memoranda of agreement with the states.

Section 404 Permits

Section 404(a) of the Clean Water Act authorizes the Secretary of the Army, acting through the U.S. Army Corps of Engineers (ACE or the Corps), to ''issue

[47] 33 U.S.C. 1251(a).

[48] 33 U.S.C. 1311.

[49] 33 U.S.C. 1342.

[50] 33 U.S.C. 1344.

[51] 33 U.S.C. 1313.

[52] EPA may treat an eligible federally-recognized Indian tribe in the same manner as a state for implementing and managing certain environmental programs, including under the Clean Water Act.

permits . . . for the discharge of dredged or fill material into the navigable waters at specified disposal sites.'' 33 U.S.C. 1344(a). By this authority, the ACE regulates discharges of dredged and fill material into waters of the United States in connection with surface coal mining and reclamation operations. The ACE's regulations governing section 404 permit procedures are set forth at 33 CFR part 325.

Although the ACE is the permitting authority under section 404, EPA has an important role in the permitting process. Section 404(b) of the Clean Water Act requires that permitting decisions comply with guidelines developed by EPA in conjunction with the ACE. These guidelines, which are referred to as the ''404(b)(1) Guidelines,'' are codified in 40 CFR part 230. Among other things, the 404(b)(1) Guidelines prohibit the discharge of fill if it would cause or contribute to a violation of a water quality standard or cause or contribute to significant degradation of the waters of the United States. 40 CFR 230.10(b), (c)(1) through (c)(3). The 404(b)(1) Guidelines require the ACE to analyze more than 15 different factors that could be impacted by the proposed action, including substrate, suspended particulates, turbidity, water quality, water circulation, water level fluctuations, salinity gradients, threatened and endangered species, aquatic organisms in the food web, other wildlife special aquatic sites, water supplies, fisheries, recreation, aesthetics, and parks. 40 CFR 230(c) through (f). The 404(b)(1) Guidelines provide that the ACE must ensure that the proposed discharges would not cause or contribute to significant adverse effects on human health or welfare, aquatic life, or aquatic ecosystems. 40 CFR 230.10(c)(1) through (c)(3).

Before the ACE may issue a section 404 permit, it must provide notice to the public, EPA, and other resource agencies, which may provide comments to the ACE for consideration. 33 CFR 325.3(d). In addition, the ACE and EPA have entered into a Memorandum of Agreement (MOA) as directed by section 404(q) of the Clean Water Act, 33 U.S.C. 1344(q), that expressly recognizes that ''the EPA has an important role in the Department of the Army Regulatory Program under the Clean Water Act[.]'' The MOA provides that ''[p]ursuant to its authority under section 404(b)(1) of the Clean Water Act, the EPA may provide comments to the Corps identifying its views regarding compliance with the section 404(b)(1) Guidelines'' and ''[t]he Corps will fully consider EPA's comments when determining [compliance] with the National Environmental Policy Act, and other relevant statutes, regulations, and policies.'' *Id.*

In addition, section 404(c) of the Clean Water Act provides EPA with the authority to prohibit, withdraw, deny, or restrict the specification of disposal sites that would otherwise be authorized by a section 404 permit. This provision is often referred to as EPA's permit veto authority.

The ACE reviews individual permit applications under section 404(a) of the Clean Water Act on a case-by-case basis. 33 U.S.C. 1344(a). Individual permits may be issued or denied after a review involving, among other things, site-specific documentation and analysis, opportunity for public hearing, public interest review, and a formal determination that the permit is lawful and warranted. 33 CFR parts 320, 323, and 325.

Not every discharge is of such significance that an individual evaluation of the discharge's environmental effects is necessary. Instead, section 404(e) of the Clean Water Act authorizes the Secretary of the Army to issue general permits for categories of activities involving discharges of dredged or fill material that, as a group, have only minimal impacts on the waters of the United States. The ACE can issue these general permits (as well as individual permits) on a state, regional, or nationwide basis. The ACE refers to general permits issued on a nationwide basis as ''nationwide permits'' (NWP). NWPs must be reviewed reissued every 5 years to remain valid. The ACE last reissued the NWPs on February 21, 2012 (77 FR 10184).

NWP 21, Surface Coal Mining Activities, provides authorization for the discharge of dredged or fill material into waters of the United States when those discharges are associated with surface coal mining activities. The permittee must submit a preconstruction notification to the ACE district engineer and receive written authorization prior to commencing the activity. The ACE review of preconstruction notifications under NWP 21 is focused on the individual and cumulative adverse effects to the aquatic environment and on determining appropriate mitigation should mitigation be necessary. The ACE review does not extend to upland areas or the mining operation as a whole.

To qualify for NWP 21, an activity must meet all of the following criteria:

(1) The activities are already authorized or are currently being processed by a SMCRA-approved state program or an integrated permit processing procedure by the Department of the Interior.

(2) The discharge will not cause the loss of more than ½ acre of non-tidal waters of the United States, including the loss of no more than 300 linear feet of streambed, unless, for intermittent and ephemeral streambeds, the ACE district engineer waives the 300-linear-foot limit by making a written determination concluding that the discharge will result in minimal individual and cumulative adverse effects.

(3) The discharge is not associated with the construction of valley fills which are fill structures associated with surface coal mining activities that are typically constructed within valleys associated with steep, mountainous terrain.

Any surface mining activity that does not meet all three criteria must apply for an individual permit instead unless the activity qualifies for NWP 49 as discussed below.

Two other NWPs may apply to coal mining activities under SMCRA.

NWP 49, Coal Remining Activities, applies to discharges of dredged or fill material into non-tidal waters of the United States when those discharges are associated with the remining and reclamation of lands that were previously mined for coal. The activities must already be authorized by the SMCRA regulatory authority or be in process as part of an integrated permit processing procedure under SMCRA.

The permittee may conduct new coal mining activities in conjunction with the remining activities when he or she clearly demonstrates to the ACE that the overall mining plan will result in a net increase in aquatic resource functions. The ACE will consider the SMCRA regulatory authority's decision regarding the amount of currently undisturbed adjacent lands needed to facilitate the remining and reclamation of the previously mined area. The total area disturbed by new mining must not exceed 40 percent of the total acreage covered by both the remined area and the additional area necessary to carry out the reclamation of the previously mined area. The permittee must submit a pre-construction notification and a document describing how the overall mining plan will result in a net increase in aquatic resource functions to the district engineer and receive written authorization prior to commencing the activity.

NWP 50, Underground Coal Mining Activities, applies to discharges of dredged or fill material into non-tidal waters of the United States when those discharges are associated with the remining and reclamation of lands that were previously mined for coal. The activities must already be authorized by the SMCRA regulatory authority or be in process as part of an integrated permit processing procedure under SMCRA.

The discharge must not cause the loss of greater than ½ acre of non-tidal waters of the United States, including the loss of no more than 300 linear feet of stream bed, unless, for intermittent and ephemeral streambeds, the ACE district engineer waives the 300-linear-foot limit by making a written determination concluding that the discharge will result in minimal adverse effects. This NWP does not authorize coal preparation and processing activities outside the minesite or discharges into nontidal wetlands adjacent to tidal waters. The permittee must submit a pre-construction notification to the ACE district engineer and receive written authorization prior to commencing the activity.

V. What provisions of SMCRA provide legal authority for the proposed rule?

This proposed rule would more completely implement SMCRA's permitting requirements and performance standards and better achieve the purposes of SMCRA as set forth in section 102 of the Act.[53] It is intended to balance all relevant purposes of the Act, which include ensuring that surface coal mining operations are conducted in a manner that protects the environment, establishing a nationwide program to protect society and the environment from the adverse effects of surface coal mining operations, and ensuring a coal supply adequate for our Nation's energy needs.

Our proposed rule is intended to address the adverse impacts and needs discussed in Parts II and III of this preamble by adding specificity to and otherwise revising our existing regulations to more completely implement various provisions of SMCRA, including, but not limited to:

Section 101(c),[54] in which Congress finds that ''many surface coal mining operations result in disturbances of surface areas that burden and adversely affect commerce and the public welfare by * * * polluting the water, by destroying fish and wildlife habitats, by impairing natural beauty, * * * and by counteracting governmental programs and efforts to conserve soil, water, and other natural resources.''

Section 102(a),[55] which provides that one of the purposes of the Act is to ''establish a nationwide program to protect society and the environment from the adverse effects of surface coal mining operations.''

Section 102(d),[56] which provides that one of the purposes of the Act is to ''assure that surface coal mining operations are so conducted as to protect the environment.''

Section 102(f),[57] which provides that one of the purposes of the Act is to ''strike a balance between protection of the environment and agricultural productivity and the Nation's need for coal as an essential source of energy.''

Section 102(m),[58] which provides that the Secretary, wherever necessary, ''exercise the full reach of Federal constitutional powers to insure the protection of the public interest through effective control of surface coal mining operations.''

Section 201(c)(2),[59] which provides that the Secretary, acting through OSMRE, will ''publish and promulgate such rules and regulations as may be necessary to carry out the purposes and provisions of this Act.''

Section 510(b)(2),[60] which provides that the regulatory authority may not approve a permit application unless it first finds that ''the applicant has demonstrated that reclamation as required by this Act and the State or Federal program can be accomplished under the reclamation plan contained in the permit application.''

Section 510(b)(3),[61] which provides that the regulatory authority may not approve a permit application unless it first finds that the proposed operation ''has been designed to prevent material damage to the hydrologic balance outside the permit area.''

Section 515(b)(2),[62] which requires that the permittee restore land affected by surface coal mining and reclamation operations ''to a condition capable of supporting the uses which it was capable of supporting prior to mining.'' This paragraph also allows restoration to a condition capable of supporting ''higher or better uses of which there is reasonable likelihood,'' provided certain conditions relating to public health or safety, water pollution, and consistency with land use policies, plans, and legal requirements are met.

Section 515(b)(10),[63] which requires that surface coal mining and reclamation operations ''minimize the disturbances to the prevailing hydrologic balance at the mine site and in associated offsite areas and to the quality and quantity of water in surface and ground water systems both during and after surface coal mining operations and during reclamation.'' Section 516(b)(9)[64] contains similar provisions applicable to underground mining operations.

Section 515(b)(19),[65] which requires that surface coal mining and reclamation operations ''establish on the regraded areas, and all other lands affected, a diverse, effective, and permanent vegetative cover of the same seasonal variety native to the area of land to be affected and capable of self-regeneration and plant succession at least equal in extent of cover to the natural vegetation of the area; except that introduced species may be used in the revegetation process where desirable and necessary to achieve the approved postmining land use plan.'' Section 516(b)(6)[66] contains generally similar provisions applicable to underground mining operations.

Section 515(b)(22)(A),[67] which requires that all excess spoil material be ''transported and placed in a controlled manner in position for concurrent compaction and in such a way to assure mass stability and to prevent mass movement.''

Section 515(b)(23),[68] which requires that surface coal mining and reclamation operations ''meet such other criteria as are necessary to achieve reclamation in accordance with the purposes of this Act, taking into consideration the physical, climatological, and other characteristics of the site.''

Section 515(b)(24),[69] which provides that surface coal mining and reclamation operations must, ''to the extent possible using the best technology currently available, minimize disturbances and adverse impacts of the operation on fish, wildlife, and related environmental values, and achieve enhancement of such resources where practicable.'' Section 516(b)(11)[70] contains similar

[53] 30 U.S.C. 1202.

[54] 30 U.S.C. 1201(c).

[55] 30 U.S.C. 1202(a).

[56] 30 U.S.C. 1202(d).

[57] 30 U.S.C. 1202(f).

[58] 30 U.S.C. 1202(m).

[59] 30 U.S.C. 1211(c)(2).

[60] 30 U.S.C. 1260(b)(2).

[61] 30 U.S.C. 1260(b)(3).

[62] 30 U.S.C. 1265(b)(2).

[63] 30 U.S.C. 1265(b)(10).

[64] 30 U.S.C. 1266(b)(9).

[65] 30 U.S.C. 1265(b)(19).

[66] 30 U.S.C. 1266(b)(6).

[67] 30 U.S.C. 1265(b)(22)(A).

[68] 30 U.S.C. 1265(b)(23).

[69] 30 U.S.C. 1265(b)(24).

[70] 30 U.S.C. 1266(b)(11).

provisions for underground mining operations.

Finally, section 702(a) of SMCRA [71] provides that ''[n]othing in this Act shall be construed as superseding, amending, modifying, or repealing'' the Clean Water Act, any rule or regulation adopted under the Clean Water Act, or any state laws enacted pursuant to the Clean Water Act. While this provision does not provide rulemaking authority, it does place limits on rulemaking under SMCRA.

VI. What is the history of our regulation of coal mining in relation to buffer zones for streams?

The U.S. House of Representatives first passed a bill (H.R. 6482) to regulate surface coal mining operations in 1972. Section 9(a) of that bill included a flat prohibition on mining within 100 feet of any ''body of water, stream, pond, or lake to which the public enjoys use and access, or other private property.'' However, the bill never became law and the provision did not appear in either the House or Senate versions of the bills that ultimately became SMCRA. Therefore, nothing in SMCRA specifically establishes or requires a buffer zone for streams, although sections 515(b)(24) and 516(b)(11) of SMCRA [72] require that mining operations minimize disturbances and adverse impacts on fish, wildlife, and related environmental values to the extent possible using the best technology currently available. We have consistently interpreted those and other provisions of SMCRA as meaning that protection of perennial and intermittent streams, with their intrinsic value to fish and wildlife, is an important element of the environmental protection regime that SMCRA established. Since the enactment of SMCRA, we have adopted four sets of regulations, which we discuss below, that included the concept of a buffer zone for streams.

The 1977 Stream Buffer Zone Rule

In 1977, we published initial regulatory program regulations providing that no land within 100 feet of an intermittent or perennial stream could be disturbed by surface coal mining and reclamation operations unless the regulatory authority specifically authorizes those operations. See 30 CFR 715.17(d)(3) and 717.17(d), as published at 42 FR 62639, 62686, 62697 (Dec. 13, 1977). We stated that we adopted that rule as a means ''to protect stream channels from abnormal erosion'' from nearby upslope mining activities.[73] However, that rule, which applies only to the now-limited subset of surface coal mining and reclamation operations subject to the initial regulatory program, does not specify the conditions under which the regulatory authority may authorize surface coal mining operations within the buffer zone.

The 1979 Stream Buffer Zone Rule

In 1979, we published the original version of our permanent regulatory program regulations. Those regulations, as codified at 30 CFR 816.57 and 817.57, provided that, with the exception of stream diversions, the surface of land within 100 feet of a perennial stream or a non-perennial stream with a biological community could not be disturbed by surface mining activities or surface operations and facilities associated with an underground mine unless the regulatory authority specifically authorized mining-related activities closer to or through the stream. Under the regulations, the regulatory authority could grant that authorization only after making a finding that the original stream channel would be restored and that, during and after the mining, the water quantity and quality in the section of the stream within 100 feet of the mining activities would not be adversely affected.

Paragraph (c) of these rules provided that a biological community existed if, at any time, the stream contained an assemblage of two or more species of arthropods or molluscan animals that were adapted to flowing water for all or part of their life cycle, dependent upon a flowing water habitat, reproducing or could reasonably be expected to reproduce in the water body where they are found, and longer than two millimeters at some stage of the part of their life cycle spent in the flowing water habitat. See 44 FR 14902, 15175 (Mar. 13, 1979).

The preamble to the 1979 rules explains that the purpose of the revised rules was to implement paragraphs (b)(10) and (b)(24) of section 515 of the Act.[74] It states that ''[b]uffer zones are required to protect streams from the adverse effects of sedimentation and from gross disturbance of stream channels,'' but that ''if operations can be conducted within 100 feet of a stream in an environmentally acceptable manner, they may be approved.'' [75] In addition, it states that ''[t]he 100-foot limit is based on typical distances that should be maintained to protect stream channels from sedimentation,'' but that, while the 100-foot standard provides a simple rule for enforcement purposes, ''site-specific variation should be made available when the regulatory authority has an objective basis for either increasing or decreasing the width of the buffer zone.'' [76]

The 1983 Stream Buffer Zone Rule

In 1983, we revised 30 CFR 816.57 and 817.57 by deleting the requirement to restore the original stream channel. We also replaced the biological community criterion for determining which non-perennial streams are protected under the rule with a requirement for protection of all perennial and intermittent streams. We redefined an intermittent stream as a stream or reach of a stream that (a) drains a watershed of at least one square mile or (b) is below the local water table for at least some part of the year and obtains its flow from both surface runoff and groundwater discharge. Finally, we replaced the 1979 finding with a requirement that the regulatory authority find that the proposed mining activities would not cause or contribute to a violation of applicable state or federal water quality standards and would not adversely affect the quantity or quality of the water in the stream or the other environmental resources of the stream. See 48 FR 30312, 30327–30328 (Jun. 30, 1983).

In 1983, we also adopted revised performance standards for coal preparation plants not located within the permit area of a mine. At that time, we decided not to apply the stream buffer zone rule to those preparation plants. See 30 CFR 827.12 and the preamble to those rules at 48 FR 20399 (May 5, 1983).

The preamble to the 1983 stream buffer zone rules reiterates the general rationale for adoption of a stream buffer zone rule that we specified in the preamble to the 1979 rules. In addition, it identifies the reason for replacing the biological community criterion with the intermittent stream threshold as a matter of improving the ease of administration and eliminating the possibility of applying the rule to ephemeral streams:

> The biological-community standard was confusing to apply since there are areas with ephemeral surface waters of little biological or hydrologic significance which, at some time of the year, contain a biological community as defined by previous § 816.57(c). Thus, much confusion arose when operators attempted to apply the previous rule's standards to springs, seeps,

[71] 30 U.S.C. 1292(a).

[72] 30 U.S.C. 1265(b)(24) and 1266(b)(11).

[73] *Id.* at 62652.

[74] *Id.* at 15176.

[75] *Id.*

[76] *Id.* at 15176–15177.

ponding areas, and ephemeral streams. While some small biological communities which contribute to the overall production of downstream ecosystems will be excluded from special buffer-zone protection under final § 816.57(a), the purposes of Section 515(b)(24) of the Act will best be achieved by providing a buffer zone for those streams with more significant environmental-resource values.[77]

Referring to those streams that would not be protected by 30 CFR 816.57, *i.e.,* ephemeral streams, the preamble further states that ''[i]t is impossible to conduct surface mining without disturbing a number of minor natural streams, including some which contain biota.'' [78] Referring to those streams that would be protected by 30 CFR 816.57, *i.e.,* perennial and intermittent streams, the preamble also states that ''surface coal mining operations will be permissible as long as environmental protection will be afforded to those streams with more significant environmental-resource value.'' [79] The preamble further provides that the revised rules ''also recognize that intermittent and perennial streams generally have environmental-resource values worthy of protection under Section 515(b)(24) of the Act.'' [80] In addition, the preamble notes that ''[a]lthough final § 816.57 is intended to protect significant biological values in streams, the primary objective of the rule is to provide protection for the hydrologic balance and related environmental values of perennial and intermittent streams''.[81] It further states that ''[t]he 100-foot limit is used to protect streams from sedimentation and help preserve riparian vegetation and aquatic habitats.'' [82]

We also stated that we removed the requirement to restore the original stream channel in deference to the stream-channel diversion requirements of 30 CFR 816.43 and 817.43 and to clarify that there does not have to be a stream diversion for mining to occur inside the buffer zone.[83]

Finally, the preamble states that we expanded the finding in 30 CFR 816.57(a)(1) to include environmental resources of the stream other than water quantity and quality to clarify ''that regulatory authorities will be allowed to consider factors other than water quantity and quality in making buffer-zone determinations'' and ''to provide a more accurate reflection of the objectives of Sections 515(b)(10) and 515(b)(24) of the Act.'' [84] In fact, the language of the revised finding not only allowed regulatory authorities to consider environmental resources of the stream other than water quantity and quality, it required that they do so.

The National Wildlife Federation challenged this regulation as being inconsistent with sections 515(b)(10) and (24) of the Act, primarily because it deleted the biological community criterion for non-perennial stream protection. However, the court rejected that challenge, finding without elaboration that the ''regulation is not in conflict with either section 515(b)(10) or 515(b)(24).'' [85] The court also noted that the Secretary had properly justified the rule change on the grounds that the previous rule was confusing and difficult to apply without protecting areas of little biological significance.

Industry also challenged the 1983 version of 30 CFR 817.57(a) to the extent that it included all underground mining activities. However, industry withdrew its challenge when the Secretary stipulated that the rule would apply only to surface lands and surface activities associated with underground mining.[86]

Historically, we and some state regulatory authorities applied the 1983 stream buffer zone rule in a manner that allowed the placement of excess spoil fills, refuse piles, slurry impoundments, and sedimentation ponds in intermittent and perennial streams within the permit area. However, as discussed at length in the preamble to a 2004 proposed rule,[87] which we never finalized, there has been considerable controversy over the proper interpretation of both the Clean Water Act and our 1983 rules as they apply to the placement of fill material in or near perennial and intermittent streams.

One interpretation of the 1983 stream buffer zone rules appears in our annual oversight reports for West Virginia for 1999 and 2000, which state that the stream buffer zone rule does not apply to the footprint of a fill placed in a perennial or intermittent stream as part of a surface coal mining operation. On June 4, 1999, in *West Virginia Highlands Conservancy* v. *Babbitt,* Civ. No. 1:99CV01423 (D.D.C.), the plaintiffs challenged the validity of that interpretation, alleging that it constituted rulemaking in violation of the Administrative Procedure Act.

However, on August 9, 1999, OSMRE, the U.S. Army Corps of Engineers, EPA, and the West Virginia Division of Environmental Protection (WVDEP) signed a memorandum of understanding (MOU) in which all four agencies in effect agreed to an interpretation that allowed valley fills in intermittent or perennial streams to be approved only if the buffer zone findings were made for the filled stream segments. The MOU also stated that the Clean Water Act Section 404(b)(1) Guidelines at 40 CFR part 230 contain requirements comparable to the findings required by the combination of OSMRE's 1983 stream buffer zone rule and the West Virginia stream buffer zone rule. Consequently, the MOU found that, ''where a proposed fill is consistent with the requirements of the Section 404(b)(1) Guidelines and applicable requirements for Section 401 certification of compliance with water quality standards, the fill would also satisfy the criteria for granting a stream buffer zone variance under SMCRA and WVDEP regulations.'' [88] As a result of the signing of the MOU, the court approved an unopposed motion to dismiss the case mentioned above [89] as moot in an order filed September 23, 1999.

In a lawsuit filed in the U.S. District Court for the Southern District of West Virginia in July 1998, plaintiffs asserted that the 1983 stream buffer zone rule should be interpreted to allow mining activities through a perennial or intermittent stream or within the buffer zone for a perennial or intermittent stream only if the activities are minor incursions.[90] They argued that the rule did not allow substantial segments of a perennial or intermittent stream to be buried underneath excess spoil fills or other mining-related structures.[91] On October 20, 1999, the district court ruled in favor of the plaintiffs on this

[77] 48 FR 30313 (Jun. 30 1983). Based upon additional scientific information developed over the last 30 years, we no longer concur with this characterization of the significance of ephemeral streams.

[78] *Id.*

[79] *Id.*

[80] *Id.* at 30312.

[81] *Id.* at 30313. However, as discussed in Part II and elsewhere in this preamble, implementation of the 1983 rule has not resulted in uniform or consistent achievement of this primary objective.

[82] *Id.* at 30314.

[83] *Id.*

[84] *Id.* at 30316.

[85] *In re: Permanent Surface Mining Regulation Litigation II-Round II,* 21 ERC 1725, 1741–1742 (D.D.C. 1984).

[86] See footnote 21, *id.* at 1741.

[87] See 69 FR 1038–1042 (Jan. 7, 2004).

[88] Memorandum Of Understanding among the U.S. Office of Surface Mining, U.S. Environmental Protection Agency, U.S. Army Corps of Engineers, and West Virginia Division Of Environmental Protection for the Purpose of Clarifying the Application of Regulations Related to Stream Buffer Zones under the Surface Mining Control and Reclamation Act for Surface Coal Mining Operations that Result in Valley Fills, August 9, 1999, p. 4.

[89] *West Virginia Highlands Conservancy* v. *Babbitt,* Civ. No. 1:99CV01423 (D.D.C.).

[90] See *Bragg* v. *Robertson,* 72 F. Supp. 2d 642, 660–663 (S.D. W. Va. 1999).

[91] *Id.*

point, holding that the West Virginia version of the stream buffer zone rule applies to all segments of a stream, including those segments within the footprint of an excess spoil fill, not just to the stream as a whole.[92] The court stated that the construction of fills in perennial or intermittent streams is inconsistent with the language of the West Virginia counterpart to 30 CFR 816.57(a)(1), which provides that the regulatory authority may authorize surface mining activities within a stream buffer zone only after making certain findings, including a finding that the proposed activities would not ''adversely affect the normal flow or gradient of the stream, adversely affect fish migration or related environmental values, materially damage the water quantity or quality of the stream . . . .'' [93] The court also concluded that, contrary to the August 1999 MOU, satisfaction of the Section 404(b)(1) Guidelines is not equivalent to satisfaction of the SMCRA buffer zone rule.[94]

On appeal, the U.S. Court of Appeals for the Fourth Circuit vacated the judgment of the district court and remanded the case with instructions to dismiss the counts concerning the stream buffer zone rule as barred by the Eleventh Amendment to the U.S. Constitution. See *Bragg* v. *West Virginia Coal Ass'n,* 248 F.3d 275, 296 (4th Cir. 2001), *cert. denied,* 534 U.S. 1113 (2002). While the Fourth Circuit did not interpret the 1983 version of the stream buffer zone rule, the brief for the federal appellants in that case included another interpretation of the regulation in their brief. In sum, the federal appellants supported an interpretation based on the district court decision and stated that 30 CFR 816.57 ''prohibits the burial of substantial portions of intermittent and perennial streams beneath excess mining spoil.'' [95]

In a different case related to the issuance of a nationwide section 404 permit under the Clean Water Act, the U.S. District Court for the Southern District of West Virginia stated in an opinion that SMCRA and the 1983 stream buffer zone rule do not authorize disposal of overburden in streams: ''SMCRA contains no provision authorizing disposal of overburden waste in streams, a conclusion further supported by the buffer zone rule.'' [96] Yet, on appeal, the U.S. Court of Appeals for the Fourth Circuit rejected the district court's conclusion, stating that ''SMCRA does not prohibit the discharge of surface coal mining excess spoil in waters of the United States.'' [97] The court further stated that ''it is beyond dispute that SMCRA recognizes the possibility of placing excess spoil material in waters of the United States even though those materials do not have a beneficial purpose.'' [98]

In subsequent litigation, the federal appellants stated that ''OSM has historically interpreted its 'stream buffer zone' rule . . . to allow for the construction of valley fills in intermittent and perennial streams, even if such fills cover a stream segment. The traditional interpretation of the [stream buffer zone] is in harmony with this Court's decision in *Rivenburgh*.'' [99] Additionally, the U.S. Court of Appeals for the Fourth Circuit has discussed SMCRA's role in the regulation of valley fills in the context of a challenge to individual permits under section 404 of the Clean Water Act.[100] See *Ohio Valley Envtl. Coal.* v. *Aracoma Coal Co.,* 556 F.3d 177, 195 (4th Cir. 2009) (''Congress clearly contemplated that the regulation of the disposal of excess spoil and the creation of valley fills falls under the SMCRA rubric.'').

The 2008 Rule

In 2004, we proposed a rule to revise the 1983 version of the stream buffer zone rule in order ''to clarify the circumstances in which mining activities such as the construction of excess spoil fills may be allowed within the [stream buffer zone]''.[101] Although we abandoned this proposed rule, we proposed another rule in 2007, in part ''to end the ambiguity in interpretation of the stream buffer zone rules and to ensure that regulatory authorities, mine operators, other governmental entities, landowners, and citizens all can have a common understanding of what the stream buffer zone rules do and do not require, consistent with underlying statutory authority.'' [102]

We subsequently adopted a final rule that revised the circumstances under which mining activities may be conducted in or near perennial or intermittent streams and established new requirements for the creation and disposal of excess spoil and coal mine waste. Among other things, the rule required that mining operations be designed to minimize the creation of excess spoil and that permit applicants consider a range of reasonable alternatives to the disposal of excess spoil and coal mine waste in perennial or intermittent streams or their buffer zones and select the alternative with the least overall adverse impact on fish, wildlife, and related environmental values. With respect to activities in the stream itself, it replaced the findings in the 1983 rule with a requirement for a finding that avoiding disturbance of the stream is not reasonably possible. It also required a demonstration of compliance with the Clean Water Act before the permittee initiates mining activities in a perennial or intermittent stream if those activities require authorization or certification under the Clean Water Act. With respect to activities confined to the stream buffer zone, the rule replaced the findings in the 1983 rule with a requirement for a finding that avoiding disturbance of land within 100 feet of the stream either is not reasonably possible or is not necessary to meet the fish and wildlife and hydrologic balance protection requirements of the regulatory program. That rule, which we refer to in this preamble as the 2008 rule, took effect January 12, 2009. For a more detailed history of the 2008 rule, please refer to the discussion in the preamble to that rule.[103]

Litigation Concerning the 2008 Rule

Shortly after publication of the 2008 rule, ten environmental organizations challenged the validity of the rule. See *Coal River Mountain Watch* v. *Salazar* (''*Coal River*''), No. 08–2212 (D.D.C., filed Dec. 22, 2008) and *National Parks Conservation Ass'n* v. *Salazar* (''*NPCA*''), No. 09–115 (D.D.C., filed Jan. 16, 2009).

In *NPCA,* the Federal Government filed a motion on April 27, 2009, for voluntary remand and vacatur of the 2008 rule. The motion was based on the Secretary's determination that OSMRE

[92] *Id.*

[93] *Id.* at 650–653, 661. In a related matter, a consent decree filed on January 3, 2000, and approved on February 17, 2000, stated that the West Virginia stream buffer zone rules only apply downstream from the toes of downstream faces of embankments of sediment control structures in perennial and intermittent streams. *Bragg* v. *Robertson,* 83 F. Supp. 2d 713, 718 n.4 (S.D. W. Va. 2000).

[94] *Id.* at 660.

[95] Brief for Federal Appellants at 2, *Bragg* v. *West Virginia Coal Ass'n,* 248 F.3d 275 (4th Cir. 2001) (No. 99–2683) (footnote omitted).

[96] *Kentuckians for the Commonwealth, Inc.* v. *Rivenburgh,* 204 F. Supp. 2d 927, 942 (S.D. W. Va. 2002).

[97] *Kentuckians for the Commonwealth, Inc.* v. *Rivenburgh,* 317 F.3d 425, 442 (4th Cir. 2003).

[98] *Id.* at 443. The preamble to a proposed rule, which we published on January 7, 2004, but which we never adopted in final form, contains additional discussion of litigation and related matters arising from the 1983 stream buffer zone rule through 2003. See especially Part I.B.1. at 69 FR 1038–1040.

[99] Corrected Brief for Federal Appellants at 9 n.2, *Ohio Valley Envtl. Coal.* v. *Bulen,* 556 F.3d 177 (4th Cir. 2009) (Nos. 04–2129 (L), 04–2137, 04–2402) (footnote omitted).

[100] 33 U.S.C. 1344.

[101] 69 FR 1039–1040 (Jan. 7, 2004).

[102] 72 FR 48890, 48892 (Aug. 24, 2007).

[103] See 73 FR 75814, 75816–75818 (Dec. 12, 2008).

erred in failing to initiate consultation with the U.S. Fish and Wildlife Service (FWS or the Service) under section 7(a)(2) of the Endangered Species Act, 16 U.S.C. 1536(a)(2), to evaluate possible effects of the 2008 rule on threatened and endangered species. In *Coal River,* the Federal Government filed a motion on April 28, 2009, to dismiss the complaint as moot if the court granted the motion in *NPCA.*

On August 12, 2009, the court denied the Federal Government's motion in *NPCA,* holding that, absent a ruling on the merits, significant new evidence, or consent of all the parties, a grant of vacatur would allow the government to improperly bypass the procedures set forth in the Administrative Procedure Act, 5 U.S.C. 551 *et seq.,* for repealing an agency rule. On the same date, the court denied the Federal Government's motion to dismiss in *Coal River.* See *Nat'l Parks Conservation Ass'n* v. *Salazar,* 660 F. Supp. 2d 3, 4 (D.D.C. 2009).

On March 19, 2010, the parties involved in the *NPCA* and *Coal River* litigation signed a settlement agreement in which the Secretary agreed to make best efforts to sign a proposed rule to amend or replace the 2008 rule within a year and sign a final rule within approximately 18 months. On April 2, 2010, the court granted the parties' motion to hold in abeyance further judicial proceedings concerning the 2008 rule to allow time for us to conduct this rulemaking. However, for a variety of reasons, the Secretary had not yet published a proposed rule as of the beginning of 2013. Given this delay, on March 19, 2013, the court granted the plaintiffs' motions to resume the litigation.

On February 20, 2014, the court vacated the 2008 rule because ''OSM's determination that the revisions to the stream protection rule encompassed by the 2008 Rule would have no effect on threatened and endangered species or critical habitat was not a rational conclusion'' and that therefore our failure to initiate consultation on the 2008 rule was a violation of section 7(a)(2) of the Endangered Species Act. *NPCA* v. *Jewell,* 2014 U.S. Dist. LEXIS 152383, at * 13–* 14 (D.D.C. Feb. 20, 2014).[104] Given the court's ruling in *NPCA,* the court determined that ''there is no further relief that the court can grant'' in *Coal River* and dismissed that case. *Coal River* v. *Jewell,* No. 08–2212, Memorandum Decision and Order of Dismissal at 2.

The court in *NPCA* remanded the vacated rule to us for further proceedings consistent with the decision.[105] The court's decision also stated that vacatur of the 2008 rule resulted in reinstatement of the rule in effect before the vacated rule took effect.[106] In response, OSMRE published a notice of vacatur in the **Federal Register**.[107] Therefore, the proposed rule that we are publishing today uses the pre-2008 rules as the baseline for all proposed changes.

The 2009 Memorandum of Understanding

As mentioned above, on June 11, 2009, the Secretary, the Administrator of the EPA, and the Acting Assistant Secretary of the Army (Civil Works) entered into an MOU[108] implementing an interagency action plan designed to significantly reduce the harmful environmental consequences of surface coal mining operations in six Appalachian states,[109] while ensuring that future mining remains consistent with federal law. Among other things, in the MOU we committed to review our ''existing regulatory authorities and procedures to determine whether regulatory modifications should be proposed to better protect the environment and public health from the impacts of Appalachian surface coal mining.'' It also provides that, at a minimum, we will consider revisions to the 2008 rule and our regulatory requirements concerning approximate original contour.[110]

The proposed rule that we are publishing today is, in part, the result of our review of existing regulatory authorities and procedures as promised in the MOU. The proposed rule would replace the vacated 2008 rule and the reinstated pre-2008 rules. However, we have decided not to propose any major changes to our permitting requirements and performance standards concerning approximate original contour restoration at this time because of cost concerns and perceived difficulty of implementation.[111]

The Advance Notice of Proposed Rulemaking (ANPRM)

On November 30, 2009 (74 FR 62664–64668), we published an advance notice of proposed rulemaking, consistent with the MOU and *National Parks Conservation Association* v. *Salazar,* 660 F. Supp. 2d 3, 4 (D.D.C. 2009). Specifically, the notice described ten alternatives for revising the 2008 rule and related rules and invited the public to comment on those alternatives and to suggest other ways that the 2008 rule should be revised to better protect streams and implement the MOU. We also invited the public to identify provisions of our regulations other than the 2008 rule that should be revised to better protect the environment and the public from the impacts of Appalachian surface coal mining. We received approximately 32,750 comments during the 30-day comment period.

After evaluating the comments that we received on the ANPRM, re-examining the 2008 rule, and re-examining practices in and outside Appalachia, we determined that development of a comprehensive stream protection rule would be the most appropriate and effective method of better achieving the purposes and requirements of SMCRA as well as the goals set forth in the MOU and the ANPRM. Consequently, we are proposing a rule that would identify measures that mine operators and SMCRA regulatory authorities must take to prevent or minimize mining-related impacts on streams and fish, wildlife and related environmental values.

Thus, the scope of this proposed rule is broader than the scope of the 2008 rule, which focused primarily on excess spoil handling, coal mine waste disposal, and activities conducted in or near streams. Consistent with the broader scope of the proposed rule, we are preparing a new EIS, rather than supplementing the EIS prepared for the 2008 rule. We also are consulting with the U.S. Fish and Wildlife Service as required by section 7 of the Endangered Species Act. Furthermore, if we determine that adoption of this proposed rule may affect species under the jurisdiction of the National Marine Fisheries Service (NMFS), we will consult with NMFS, which is

[104] Pursuant to Federal Rule of Civil Procedure 25(d), S.M.R. ''Sally'' Jewell was automatically substituted for Ken Salazar as Secretary of the Interior.

[105] *NPCA* v. *Jewell,* U.S. Dist. LEXIS 152383 at * 22.

[106] *Id.* at * 19.

[107] See 79 FR 76227–76233 (Dec. 22, 2014).

[108] The MOU can be viewed online at *www.osmre.gov/resources/mou/ASCM061109.pdf* (last accessed August 1, 2014).

[109] Kentucky, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia.

[110] The MOU also stated that we would develop guidance clarifying how the 1983 stream buffer zone rule would be applied to reduce adverse impacts on streams if the court granted the Government's motion in *NPCA* for remand and vacatur of the 2008 rule. However, the court in *NPCA* did not grant the specific motion mentioned in the MOU. See *Nat'l Parks Conservation Ass'n* v. *Salazar,* 660 F. Supp. 2d 3, 4 (D.D.C. 2009).

[111] The draft EIS and draft regulatory impact analysis for this rulemaking evaluate potential changes to approximate original contour requirements, including the addition of landforming and digital modeling requirements, as part of Alternative 4.

responsible for administration and enforcement of the Endangered Species Act with respect to anadromous and marine species.

Comments that we received in response to the ANPRM differed as to whether the proposed rule should be national in scope or whether it should be limited to central Appalachia or to steep-slope mining operations. After evaluating those comments, we have decided to propose rules that are national in scope because streams are ecologically important regardless of topography or where they are located in the country. Measures to protect the quality and quantity of streamflow, both from surface sources and groundwater discharges, are likewise important regardless of topography or location. In addition, section 101(g) of SMCRA states that ''[national] surface mining and reclamation standards are essential in order to insure that competition in interstate commerce among sellers of coal produced in different States will not be used to undermine the ability of the several States to improve and maintain adequate standards on coal mining operations within their borders.'' In other words, national standards are necessary because they define a set of environmental protection requirements that a state cannot relax as an incentive to coal producers to either continue to mine coal in the state or to relocate to the state.

Protecting our water resources and preventing water pollution is important everywhere, especially in the arid and semiarid West and portions of the country that are experiencing droughts. There is a need for consistent, scientifically-valid documentation of the premining physical, chemical, and biological condition of streams and the impacts of mining and reclamation on those streams. All permits should include plans for stream protection or restoration that require use of best practices to either maintain the ecological condition of streams or restore both the physical form and the ecological function of affected streams. The proposed rule is sufficiently flexible to accommodate the different regions where coal is mined and the differences in streams found in those regions.

In addition, the proposed rule would address some concerns that commenters on the ANPRM expressed with respect to other provisions of our regulations that are not necessarily directly related to stream protection, but that are important in terms of protecting the hydrologic balance or better achieving other requirements and purposes of SMCRA. We also propose to reorganize, revise, and streamline our rules to improve their readability and internal consistency, to update or remove obsolete provisions, to remove redundant and unneeded provisions, to be consistent with court decisions, and to incorporate plain language principles.

VII. Why does the proposed rule include protective measures for ephemeral streams?

Unlike the regulations implementing the Clean Water Act, the existing regulations implementing SMCRA contain no specific protections for ephemeral streams. As summarized in Part II of this preamble, scientific studies completed since the enactment of SMCRA and the adoption of our existing rules have documented the importance of headwater streams, including ephemeral streams, in maintaining the ecological health and function of streams downgradient of headwater streams. EPA recently completed a literature review of the importance of headwater streams and published a report summarizing the findings of more than 1,200 peer-reviewed studies.[112] With some exceptions, the report generally does not differentiate between the various types of headwaters streams, which consist of a mix of perennial, intermittent, and ephemeral streams, but it does emphasize that ephemeral streams are an important component of headwaters streams and that they have an effect on the form and function of downstream channels and aquatic life. Consistent with the findings of this report and other studies, our proposed rule includes some protections for ephemeral streams, tailored to their hydrologic and ecological functions.

We also are considering adopting an alternative that would provide equal protection to all streams, without regard to whether the stream is perennial, intermittent, or ephemeral. We invite comment on whether we should adopt this alternative in the final rule and, if so, whether we should extend all the protections that this proposed rule would afford to perennial and intermittent streams to ephemeral streams or whether we should instead scale back those protections to avoid undue adverse impacts on the mining industry, while still providing improved environmental protection to all streams compared with the existing regulations.

A. What are the findings of the EPA report?

The report states that the evidence unequivocally demonstrates that the stream channels, riparian wetlands, floodplain wetlands, and open waters that together form river networks are clearly connected to downstream waters in ways that profoundly influence downstream water integrity. According to the authors, the body of literature documenting connectivity and downstream effects is most abundant for perennial and intermittent streams and for riparian and floodplain wetlands. However, the report states that, although less abundant, the evidence for connectivity and downstream effects of ephemeral streams is strong and compelling, particularly in context with the large body of evidence supporting the physical connectivity and cumulative effects of channelized flows that form and maintain stream networks.[113]

The report identifies five principal contributions of ephemeral streams: (1) Providing streamflow to larger streams; (2) conveying water into local storage compartments such as ponds, shallow aquifers, or streambanks that are important sources of water for maintenance of the baseflow in larger streams; (3) transporting sediment, woody debris, and nutrients; (4) providing the biological connectivity that is necessary either to support the life cycle of some invertebrates or to facilitate the transport of terrestrial invertebrates that serve as food resources in downstream communities; and (5) influencing fundamental biogeochemical processes such as the assimilation and transformation of nitrogen that may otherwise have detrimental impacts on downstream communities. The report's explanation of these contributions is summarized below. In addition, headwater streams, including ephemeral and intermittent streams, shape downstream channels by accumulating and gradually or episodically releasing stored materials such as sediment and large woody debris.[114] These materials help structure stream and river channels by slowing the flow of water through channels and providing substrate and habitat for aquatic organisms.[115]

[112] U.S. Environmental Protection Agency, *Connectivity of Streams and Wetlands to Downstream Waters: A Review and Synthesis of the Scientific Evidence (Final Report).* Office of Research and Development, National Center for Environmental Assessment, Washington, DC EPA/600/R–14/47F (2015). Available at *http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=296414* (last accessed June 16, 2015).

[113] *Id.* at ES–7.

[114] *Id.* at ES–8.

[115] *Id.*

Providing Streamflow to Larger Streams

Ephemeral streams are hydrologically connected to downstream waters via channels that convey surface and subsurface water in direct response to precipitation. Moreover, these streams are the defining characteristic of many watersheds in arid and semi-arid regions of the United States; thus serving a critical role in the maintenance of water resources.[116]

Conveyance of Water Into Local Storage Compartments

Ephemeral streams may convey water to local storage compartments, such as ponds, shallow aquifers, and streambanks, and recharge regional alluvial aquifers, depending upon the frequency, duration, magnitude, and timing of precipitation events. These local storage compartments are important sources of water for maintaining baseflow in perennial streams. Streamflow typically depends on the delayed (*i.e.,* lagged) release of shallow groundwater from local storage, especially during dry periods and in areas with shallow groundwater tables and pervious subsurfaces. Relative to their cumulative surface area, an inordinate amount of groundwater recharge occurs in headwater ephemeral and intermittent channels within arid drainage basins. Furthermore, in the southwestern United States, short-term shallow groundwater storage in alluvial floodplain aquifers, with gradual release into stream channels, is a major source of annual flow in rivers.[117]

Transport of Sediment and Nutrients

Ephemeral streams frequently contain boulders and woody debris that entrain and store loose, unconsolidated sediment during smaller precipitation events that is subsequently released during infrequent, high-magnitude precipitation events. Because of the abundance and distribution of headwater streams, sediment storage and transport by those streams can have a substantial cumulative effect on downstream waters; headwater streams are important sediment sources for maintaining channels and floodplains.[118] Similarly, headwater streams are important sources of organic matter (organic carbon) that serves as a downstream food source for aquatic life forms such as benthic macroinvertebrates and that enhances the fertility of agriculture on alluvial fans where some of the organic matter is deposited.[119]

Biological Connectivity

Headwaters streams, including ephemeral streams, play an important role in the dispersal of genetic material and production and transport of food resources. For example, headwaters streams provide habitat that is critical for completion of one or more life-cycle stages of many aquatic and semiaquatic species capable of moving throughout water networks. These streams provide habitat for completion of complex life cycles. They also provide a refuge from predators, competitors, parasites, or adverse physical conditions in downstream waters.[120]

Because biological connections often result from passive transport of organisms or their products with water flow, biological connectivity often depends on hydrologic connectivity. Many living organisms, however, also can actively move with or against water flow; others disperse actively or passively over land by walking, flying, drifting, or ''hitchhiking.'' All of these organism-mediated connections form the basis of biological connectivity between headwater streams and downstream waters. Biological connections between upstream and downstream reaches can affect downstream waters via multiple pathways or functions. For organisms capable of significant upstream movement, headwater streams, including ephemeral and intermittent streams, can increase both the amount and quality of habitat available to those organisms. Many organisms require different habitats for different resources (*e.g.,* food, spawning habitat, overwintering habitat), and thus move throughout the river network—both longitudinally and laterally—over their life cycles, with some requiring dry channels to complete part of their life cycle. Furthermore, dry stream channels can facilitate dispersal of aquatic invertebrates by serving as dispersal corridors for terrestrial adult forms. Headwater streams also provide food resources to downstream waters, especially in the form of terrestrial invertebrates that accumulate in intermittent and ephemeral streams during dry periods and are then transported downstream by storm flows during and after a precipitation event.[121]

Biogeochemical Processes

There is strong evidence that headwater streams function as nitrogen sources (via export) and sinks (via uptake and transformation) for river networks. For example, one study estimated that rapid cycling of nutrients, including nitrogen, in small streams with no agricultural or urban impacts removed 20–40% of the nitrogen that otherwise would be delivered to downstream waters. Nutrients, including nitrogen, are necessary to support aquatic life, but excess nutrients lead to eutrophication and hypoxia, in which over-enrichment causes dissolved oxygen concentrations to fall below the level necessary to sustain most aquatic animal life in the stream and streambed. Thus, the influence of streams on nutrient loads can have significant repercussions for hypoxia in downstream waters.[122]

B. What specific rule changes are we proposing with respect to ephemeral streams?

We propose to require that the permit applicant identify and map all ephemeral streams within the proposed permit and adjacent areas. The applicant must describe the physical and hydrologic characteristics of those streams in detail, as well as any associated vegetation in the riparian zone if one exists. In addition, the applicant must assess the biological condition of a representative sample of those ephemeral streams. See proposed 30 CFR 780.19(c)(6) and 784.19(c)(6).

We also propose to require that the significance of ephemeral streams be evaluated during the permitting process as part of the determination of the probable hydrologic consequences of mining and the cumulative hydrologic impact assessment. See proposed 30 CFR 780.20, 780.21, 784.20, and 784.21.

We further propose to specify that the backfilling and grading plan in the reclamation plan required by proposed 30 CFR 780.12(d) and 784.12(d) must include contour maps, cross-sections, or models that show in detail the anticipated final surface configuration, including drainage patterns, of the proposed permit area. Proposed 30 CFR 780.28(c)(1) and 784.28(c)(1) would require that the postmining drainage pattern, including ephemeral streams, be similar to the premining drainage pattern, with limited exceptions.

[116] U.S. Environmental Protection Agency, *The Ecological and Hydrological Significance of Ephemeral and Intermittent Streams in the Arid and Semi-Arid American Southwest.* Office of Research and Development, Washington, DC Final Report No. EPA/600/R–08/134 (2008).

[117] EPA, *Connectivity of Streams and Wetlands to Downstream Waters, op. cit., at ES–8 and 3–11.*

[118] *Id.* at 3–15.

[119] *Id.* at 3–31 and 3–32.

[120] *Id.* at ES–8.

[121] *Id.* at 3–37, 3–38, and 3–39.

[122] *Id.* at ES–8.

Under proposed 30 CFR 780.28(b)(3) and 784.28(b)(3), the reclamation plan for an operation that proposes to disturb a perennial, intermittent, or ephemeral stream, or the surface of land within 100 feet of that stream, must include the planting of native species, including, when appropriate, species adapted to and suitable for planting in riparian zones, within a corridor at least 100 feet in width on each side of the stream as part of the reclamation process following the completion of mining activities. The riparian corridor requirement would not apply to prime farmland or when a corridor would be inconsistent with an approved postmining land use that is actually implemented before expiration of the revegetation responsibility period. Nor would it apply to stream segments that are buried beneath an excess spoil fill or a coal mine waste disposal facility.

VIII. Overview and Tabular Summaries of Proposed Revisions and Organizational Changes

The following derivation tables summarize the organizational changes in the proposed rule, relative to the existing rules. They also indicate whether we propose to revise the rule text in each redesignated section or paragraph. The organizational changes serve several purposes, including—

- Breaking up overly long sections and paragraphs into multiple shorter sections and paragraphs for ease of reference and improved comprehension.
- Renumbering sections in the underground mining rules to align their numbering with the corresponding sections in the surface mining rules. This change would greatly improve ease of reference and the user-friendliness of our rules.
- Moving permitting requirements from subchapter K (performance standards) to subchapter G to consolidate permitting requirements in subchapter G.
- Restructuring subchapter G to better distinguish between baseline information requirements and reclamation plan requirements.
- Removing redundant, suspended, and obsolete provisions.

The following table is organized in the numerical order of the existing rule citations. It includes only those provisions of the existing regulations that we propose to move or remove.

Existing rule	Proposed redesignation	Existing text revised in proposed rule?
§ 700.11(d)(1)(i)	§ 700.11(d)(1)	Yes, editorial.
§ 700.11(d)(1)(ii)	§ 700.11(d)(2)	Yes.
§ 700.11(d)(2)	§ 700.11(d)(3)	Yes.
§ 701.5 [paragraphs (a) and (b) of definition of "replacement of water supply"].	§§ 816.40 and 817.40	Yes.
§ 773.7(a) [last sentence]	§ 773.7(b)(1)	Yes, editorial.
§ 773.7(b)	§ 773.7(c)	Yes, editorial.
§ 773.15(n)	§ 773.15(m)	No.
§ 777.13(a)	§ 777.13(a)(1)	Yes.
§ 777.13(b)	§ 777.13(a)(2)	Yes, editorial.
§ 779.11	None	Proposed for removal; redundant of remainder of part 779.
§ 779.12(a)	None	Proposed for removal; redundant of proposed § 779.24(a)(3).
§ 779.12(b)	§ 779.17	Yes, editorial.
§ 779.24(a) through (f)	§ 779.24(a)(1) through (a)(6)	Yes.
§ 779.24(g)	§ 779.24(a)(10)	Yes.
§ 779.24(h) through (k)	§ 779.24(a)(14) through (a)(17)	No, except for editorial changes in (a)(17).
§ 779.24(l)	§ 779.24(a)(28)	No.
§ 779.25(a)(1)	§ 779.24(a)(18)	Yes.
§ 779.25(a)(2)	§ 779.24(a)(20)	Yes.
§ 779.25(a)(3)	§ 779.24(a)(21)	Yes.
§ 779.25(a)(4)	§ 779.24(a)(22)	No.
§ 779.25(a)(5)	§ 779.24(a)(23) and (a)(24)	Yes, editorial.
§ 779.25(a)(6)	§ 779.24(a)(19)	Yes.
§ 779.25(a)(7)	§ 779.24(a)(9)	Yes, editorial.
§ 779.25(a)(8)	§ 779.24(a)(25)	No.
§ 779.25(a)(9)	§ 779.24(a)(26)	Yes.
§ 779.25(a)(10)	§ 779.24(a)(8) [water wells], § 779.24(a)(27) [gas and oil wells].	Yes.
§ 780.12	§ 780.14	Yes, editorial.
§ 780.13	§ 780.15	Yes.
§ 780.14	§ 780.13	Yes.
§ 780.15	None	Proposed for removal as obsolete.
§ 780.16(a)	§ 779.20(a) through (c)	Yes.
§ 780.16(b)	§ 780.16(a) through (d)	Yes.
§ 780.16(c)	§ 779.20(d), § 780.16(e)	Yes.
§ 780.18 [in general]	§ 780.12 [in general]	Yes.
§ 780.18(b)(1)	§ 780.12(b)	Yes.
§ 780.18(b)(2)	§ 780.12(c)	Yes.
§ 780.18(b)(3)	§ 780.12(d)	Yes.
§ 780.18(b)(4)	§ 780.12(e) [in general]	Yes.
§ 780.18(b)(5)	§ 780.12(g) [in general]	Yes.
§ 780.18(b)(6)	§ 780.12(i)	Yes, editorial.
§ 780.18(b)(7)	§ 780.12(j)	Yes.
§ 780.18(b)(8)	§ 780.12(k)	Yes, editorial.
§ 780.18(b)(9)	§ 780.12(l)	Yes, editorial.
§ 780.21(a)	§ 777.13(b)	Yes.
§ 780.21(b)(1) [location and ownership information in first sentence].	§ 779.24(a)(7)	Yes, editorial.

Existing rule	Proposed redesignation	Existing text revised in proposed rule?
§ 780.21(b)(1) [except location and ownership information in first sentence].	§ 780.19(b)	Yes.
§ 780.21(b)(2) [first part of first sentence through ''impoundments''].	§ 779.24(a)(9)	Yes, editorial.
§ 780.21(b)(2) [the part of the first sentence that pertains to discharges].	§ 779.24(a)(12)	Yes, editorial.
§ 780.21(b)(2) [except the part of the first sentence that precedes ''and information on . . .''].	§ 780.19(c)	Yes.
§ 780.21(b)(3)	§ 780.20(b)	Yes.
§ 780.21(c)	§ 780.19(g)	Yes.
§ 780.21(d)	§ 777.13(d)	Yes.
§ 780.21(e)	§ 780.22(b)(1)	Yes.
§ 780.21(f)(1) through (f)(3)	§ 780.20(a)	Yes.
§ 780.21(f)(4)	§ 780.20(c)(1)	Yes.
§ 780.21(g)	§ 780.21	Yes.
§ 780.21(h)	§ 780.22(a)	Yes.
§ 780.21(i)	§ 780.23(a)	Yes.
§ 780.21(j)	§ 780.23(b)	Yes.
§ 780.22(a)	§ 780.19(a)(1)	Yes.
§ 780.22(b)	§ 780.19(f)(1) through (3)	Yes.
§ 780.22(c)	§ 780.19(f)(4)	Yes, editorial.
§ 780.22(d)	§ 780.19(f)(5)	Yes, editorial.
§ 780.23(a)	§ 779.22	Yes.
§ 780.23(b) [except (b)(3)]	§ 780.24(a)	Yes.
§ 780.23(b)(3)	§ 780.12(m)	Yes, editorial.
§ 780.29	§ 780.29(c)	Yes.
§ 780.35(a)	§ 780.35(f) and (h)	Yes, editorial.
§ 780.35(b)	§ 780.35(g)	Yes.
§ 780.35(c)	§ 780.35(i)	Yes, editorial.
§ 783.11	None	Proposed for removal; redundant of remainder of part 783.
§ 783.12(a)	None	Proposed for removal; redundant of proposed § 783.24(a)(3).
§ 783.12(b)	§ 783.17	Yes, editorial.
§ 783.24(a) through (f)	§ 783.24(a)(1) through (a)(6)	Yes.
§ 783.24(g)	§ 783.24(a)(10)	Yes.
§ 783.24(h) through (k)	§ 783.24(a)(14) through (a)(17)	No, except for editorial changes in (a)(17).
§ 783.24(l)	§ 783.24(a)(28)	No.
§ 783.25(a)(1)	§ 783.24(a)(18)	Yes.
§ 783.25(a)(2)	§ 783.24(a)(20)	Yes.
§ 783.25(a)(3), [Suspended August 4, 1980]	§ 783.24(a)(21)	Yes. We are re-proposing part of this rule and proposing to remove the remainder.
§ 783.25(a)(4)	§ 783.24(a)(22)	Yes.
§ 783.25(a)(5)	§ 783.24(a)(23) and (a)(24)	Yes.
§ 783.25(a)(6)	§ 783.24(a)(19)	Yes.
§ 783.25(a)(7)	§ 783.24(a)(9)	Yes, editorial.
§ 783.25(a)(8), [Suspended August 4, 1980]	§ 783.24(a)(25)	Yes, editorial. We are re-proposing this rule.
§ 783.25(a)(9), [Suspended August 4, 1980]	§ 783.24(a)(26)	Yes. We are re-proposing part of this rule and proposing to remove the remainder.
§ 783.25(a)(10)	§ 783.24(a)(8) [water wells], § 783.24(a)(27) [gas and oil wells].	Yes.
§ 784.12	§ 784.14	Yes, editorial.
§ 784.13 [in general]	§ 784.12 [in general]	Yes.
§ 784.13(b)(1)	§ 784.12(b)	Yes.
§ 784.13(b)(2)	§ 784.12(c)	Yes.
§ 784.13(b)(3)	§ 784.12(d)	Yes.
§ 784.13(b)(4)	§ 784.12(e) [in general]	Yes.
§ 784.13(b)(5)	§ 784.12(g) [in general]	Yes.
§ 784.13(b)(6)	§ 784.12(i)	Yes, editorial.
§ 784.13(b)(7)	§ 784.12(j)	Yes.
§ 784.13(b)(8)	§ 784.12(k)	Yes, editorial.
§ 784.13(b)(9)	§ 784.12(l)	Yes, editorial.
§ 784.14(a)	§ 777.13(b)	Yes.
§ 784.14(b)(1) [location and ownership information in first sentence].	§ 783.24(a)(7)	Yes, editorial.
§ 784.14(b)(1) [except location and ownership information in first sentence].	§ 784.19(b)	Yes.
§ 784.14(b)(2) [the part of the first sentence that precedes ''impoundments''].	§ 783.24(a)(9)	Yes, editorial.
§ 784.14(b)(2) [the part of the first sentence that pertains to discharges].	§ 783.24(a)(12)	Yes, editorial.

Existing rule	Proposed redesignation	Existing text revised in proposed rule?
§ 784.14(b)(2) [except the part of the first sentence that precedes "and information on . . ."].	§ 784.19(c)	Yes.
§ 784.14(b)(3)	§ 784.20(b)	Yes
§ 784.14(c)	§ 784.19(g)	Yes.
§ 784.14(d)	§ 777.13(d)	Yes.
§ 784.14(e)(1) through (e)(3)	§ 784.20(a)	Yes.
§ 784.14(e)(4)	§ 784.20(c)(1)	Yes.
§ 784.14(f)	§ 784.21	Yes.
§ 784.14(g)	§ 784.22(a)	Yes.
§ 784.14(h)	§ 784.23(a)	Yes.
§ 784.14(i)	§ 784.23(b)	Yes.
§ 784.15(a)	§ 783.22	Yes.
§ 784.15(b) [except (b)(3)]	§ 784.24(a)	Yes.
§ 784.15(b)(3)	§ 784.12(m)	Yes, editorial.
§ 784.17	§ 784.31	No.
§ 784.18	§ 784.33	No.
§ 784.19	§ 784.35	Yes.
§ 784.20	§ 784.30	Yes.
§ 784.21(a)	§ 783.20(a) and (b)	Yes.
§ 784.21(b)	§ 784.16(a) through (d)	Yes.
§ 784.21(c)	§ 783.20(d), § 784.16(e)	Yes.
§ 784.22(a)	§ 784.19(a)(1)	Yes.
§ 784.22(b)	§ 784.19(f)(1) through (4)	Yes.
§ 784.22(c)	§ 784.19(f)(5)	Yes, editorial.
§ 784.22(d)	§ 784.19(f)(6)	Yes, editorial.
§ 784.23	§ 784.13	Yes.
§ 784.24	§ 784.37	Yes.
§ 784.25	§ 784.26	Yes, editorial.
§ 784.26	§ 784.12(f)	Yes.
§ 784.29	§ 784.29(c)	Yes
§ 784.30	§ 784.38	Yes, editorial.
§ 784.200(a)	§ 784.24(c)	Yes.
§ 785.14(b)	§ 701.5 [definition of "mountaintop removal mining"].	Yes, editorial.
§ 785.14(c) [introductory text]	§ 785.14(b) [introductory text]	Yes, editorial.
§ 785.14(c)(1) [introductory text]	§ 785.14(b)(1)	Yes, editorial.
§ 785.14(c)(1)(i)	§ 785.14(b)(2)	Yes, editorial.
§ 785.14(c)(1)(ii)	§ 785.14(b)(3)	Yes, editorial.
§ 785.14(c)(1)(iii) [except paragraph (c)(1)(iii)(G)].	§ 785.14(b)(4)	Yes, editorial.
§ 785.14(c)(1)(iii)(G)	§ 785.14(b)(5)	Yes, editorial.
§ 785.14(c)(1)(iv)	§ 785.14(b)(6)	Yes, editorial.
§ 785.14(c)(1)(v)	§ 785.14(b)(7)	Yes, editorial.
§ 785.14(c)(2)	§ 785.14(b)(8)	Yes, editorial.
§ 785.14(c)(3)	None	Proposed for removal as unnecessary.
§ 785.14(c)(4)	§ 785.14(b)(12)	Yes, editorial.
§ 785.14(c)(5)	§ 785.14(c)	Yes.
§ 785.14(d)(1) and (2)	§ 785.14(d)(1)	Yes.
§ 785.14(d)(3)	§ 785.14(d)(2)	Yes, editorial.
§ 785.16(a) [introductory text]	§ 785.16(a) (introductory text)	Yes, editorial.
§ 785.16(a)(1)	§ 785.16(a)(1)	Yes, editorial.
§ 785.16(a)(2)	§ 785.16(a)(2)	Yes, editorial.
§ 785.16(a)(3)	§ 785.16(a)(9)	Yes.
§ 785.16(a)(4)	§ 785.16(a)(10)	Yes.
§ 785.16(b)(1)	None	Proposed for removal as unnecessary.
§ 785.16(b)(2)	§ 785.16(b)(1)	Yes, editorial.
§ 785.16(c) and (d)	§ 785.16(b)(2)	Yes.
§ 785.16(e)	§ 785.16(b)(3)	Yes, editorial.
§ 785.16(f)	§ 785.16(b)(4)	Yes, editorial.
§ 785.25(b) [first sentence]	§ 785.25(b)(1)	Yes, editorial.
§ 785.25(b) [except first sentence]	§ 785.16(b)(2)	Yes, editorial.
§ 800.11(e)	§ 800.9	Yes.
§ 800.11(a) through (d)	§ 800.11	Yes, editorial.
§ 800.15(c) [first sentence]	§ 800.15(a)(2)(ii)	Yes, editorial.
§ 800.16(e)(2)	§ 800.30(b)	Yes.
§ 800.17	None	Proposed for removal; redundant of remainder of part 800.
§ 800.30(a)	§ 800.30(a)(1)	Yes.
§ 800.30(b)	§ 800.30(a)(3)	Yes.
§ 800.40(a)	§ 800.40	Yes, editorial, except for (b)(2)(vi), which has substantive changes.
§ 800.40(b)(1)	§ 800.41	Yes, editorial, except for (a)(2), which has substantive changes.

Existing rule	Proposed redesignation	Existing text revised in proposed rule?
§ 800.40(b)(2)	§ 800.43(a)	Yes, editorial.
§ 800.40(c)	§ 800.42	Yes.
§ 800.40(d)	§ 800.43(b)	Yes, editorial.
§ 800.40(e)	§ 800.43(c)	Yes, editorial.
§ 800.40(f) through (h)	§ 800.44(a) through (c)	Yes, editorial.
§ 816.13	§ 816.13(a), (c), (d), and (f)	Yes, editorial.
§ 816.14	§ 816.13(b)	Yes, editorial.
§ 816.15	§ 816.13(e)	Yes, editorial.
§ 816.22(a)(1) through (4)	§ 816.22(a)(1) and (2)	Yes.
§ 816.22(b)	§ 780.12(e)(2), § 816.22(c)	Yes.
§ 816.22(c)	§ 816.22(b)	Yes.
§ 816.22(d)(1)	§ 816.22(e)(1)	Yes.
§ 816.22(d)(2)	§ 816.22(d)(2)	Yes, editorial.
§ 816.22(d)(3)	§ 816.22(e)(3)	Yes, editorial.
§ 816.22(d)(4)	None	Proposed for removal; covered by proposed § 780.12(g)(1)(iii).
§ 816.22(e)	§ 780.12(e)(1)(ii)	Yes.
§ 816.41(a), (b), and (d)	§ 816.34(a) through (c)	Yes.
§ 816.41(c)	§ 816.35	Yes.
§ 816.41(e)	§ 816.36	Yes.
§ 816.41(f)	§ 816.38	Yes.
§ 816.41(g)	§ 816.39	Yes.
§ 816.41(h)	§ 816.40	Yes.
§ 816.41(i)	§ 816.41	Yes.
§ 816.42	§ 816.42(a)	Yes.
§ 816.43(a)(3) [last sentence], § 816.43(b)	§ 780.28(c), § 816.57(b)	Yes.
§ 816.43(c)(3)	Merged into § 816.43(a)(5)(ii)	Yes.
§ 816.46(b)(2), [Suspended December 22, 1986].	None	Proposed for removal.
§ 816.46(c)(1)(i)	None	Proposed for removal as unnecessary.
§ 816.46(c)(1)(ii) and (iii)	§ 816.46(c)(1)(i) and (ii)	Yes.
§ 816.57(a) [first sentence]	§ 816.57(a)(1)	Yes.
§ 816.57(a) [except first sentence]	§ 780.28(e)(2)	Yes
§ 816.57(b)	Merged into § 816.11(e)	Yes, editorial.
§ 816.71(b)(1)	§ 780.35(f) and (j)	Yes, editorial.
§ 816.71(b)(2)	§ 816.71(b)(1)	Yes, editorial.
§ 816.71(c)	§ 780.35(e)(2) and (3)	Yes.
§ 816.71(d)(1)	§ 780.35(g)(1) and (4)	Yes.
§ 816.71(d)(2) [first sentence]	§ 816.71(b)(2)	Yes.
§ 816.71(d)(2) [second sentence]	Merged into § 780.35(i)	Yes, editorial.
§ 816.71(e)(1)	§ 816.71(d)	Yes.
§ 816.71(e)(2)	§ 816.71(g)(1)	Yes.
§ 816.71(e)(3)	§ 816.71(h)	Yes.
§ 816.71(e)(4)	§ 816.71(i)	Yes.
§ 816.71(e)(5)	§ 816.71(g)(3)	Yes, editorial.
§ 816.71(g)	§ 816.71(j)	Yes, editorial.
§ 816.71(h)	§ 816.71(k)	Yes.
§ 816.71(i)	§ 816.71(l)	Yes.
§ 816.71(j)	§ 816.71(m)	Yes, editorial.
§ 816.72(a)(1)	§ 816.71(e)(2)	Yes, editorial.
§ 816.72(a)(2)	§ 816.71(e)(1)	Yes.
§ 816.72 [except paragraph (a)]	None	Proposed for removal.
§ 816.73	None	Proposed for removal.
§ 816.74(c) [first sentence]	§ 816.74(c)(1)	Yes, editorial.
§ 816.74(c) [second sentence]	§ 816.74(c)(2)	Yes, editorial.
§ 816.74(c) [third sentence]	§ 816.74(d)(1)	Yes, editorial.
§ 816.74(c) [fourth sentence]	§ 816.74(d)(2)	Yes, editorial.
§ 816.74(d) [except (d)(4)]	§ 816.74(e)	Yes.
§ 816.74(d)(4)	§ 816.74(c)(3)	Yes.
§ 816.74(e)	§ 816.74(f)	Yes, editorial.
§ 816.74(f)	§ 816.74(g)	Yes, editorial.
§ 816.74(g)	§ 816.74(h)	Yes, editorial.
§ 816.74(h)	None	Proposed for removal.
§ 816.81(a) [first sentence]	§ 816.81(a)	Yes, editorial.
§ 816.81(a) [except first sentence]	§ 816.81(b)	Yes.
§ 816.81(b)	§ 816.81(c)	Yes, editorial.
§ 816.81(c)	§ 816.81(d)	Yes.
§ 816.81(d)	§ 816.81(e)	Yes, editorial.
§ 816.81(e)	§ 816.81(g)	Yes, editorial.
§ 816.81(f)	§ 816.81(h)	Yes, editorial.
§ 816.83 [introductory text]	§ 816.83(a)	Yes, editorial.
§ 816.83(a)	§ 816.83(b)	Yes.
§ 816.83(b)	§ 816.83(c)	Yes, editorial.
§ 816.83(c)	§ 816.83(d)	Yes.

Existing rule	Proposed redesignation	Existing text revised in proposed rule?
§ 816.83(d)	§ 816.83(e)	Yes, editorial.
§ 816.84 [introductory text]	§ 816.84(a)	Yes, editorial.
§ 816.84(a)	§ 816.84(b)	Yes, editorial.
§ 816.84(b)	§ 816.84(c)	Yes, editorial.
§ 816.84(c)	§ 816.84(d)	Yes, editorial.
§ 816.84(d)	§ 816.84(e)	Yes.
§ 816.84(e)	§ 780.25(d)(3)(iv)	Yes, editorial.
§ 816.97(d)	§ 816.97(b)(5) and (c)(4)	Yes, editorial.
§ 816.97(e)	§ 816.97(d)	Yes.
§ 816.97(f)	§ 816.97(e)	Yes.
§ 816.97(g)	§ 816.97(f)	Yes.
§ 816.97(h)	§ 816.97(g)	Yes.
§ 816.101 [Suspended August 31, 1992]	None	Proposed for removal.
§ 816.102(a)(2)	§ 816.102(a)(3) [introductory text]	Yes.
§ 816.102(a)(3)	§ 816.102(a)(4)	No.
§ 816.102(a)(4)	§ 816.102(a)(5)	Yes.
§ 816.102(a)(5)	§ 816.102(a)(6)	No.
§ 816.102(b)	§ 816.102(b) [introductory text] and (b)(1)	Yes, editorial.
§ 816.102(d)	§ 816.102(b)(3)	Yes.
§ 816.102(f)	§ 816.102(d)	Yes.
§ 816.102(g)	§ 816.102(a)(2)	Yes.
§ 816.102(h)	§ 816.102(a)(3)(i)	Yes.
§ 816.102(i)	§ 816.102(a)(3)(ii)	Yes.
§ 816.102(j)	§ 816.102(f)	Yes.
§ 816.102(k)(1)	§ 816.102(a)(1)(iii)	Yes, editorial.
§ 816.102(k)(2)	§ 816.102(a)(1)(iv)	Yes, editorial.
§ 816.102(k)(3)(i)	§ 816.102(a)(1)(i)	Yes, editorial.
§ 816.102(k)(3)(ii)	§ 816.102(a)(1)(ii)	Yes, editorial.
§ 816.102(k)(3)(iii)	§ 816.102(a)(1)(v)	Yes, editorial.
§ 816.111(a) [except (a)(2) and (a)(4)]	§ 816.111(a) and (b)	Yes.
§ 816.111(a)(2)	§ 780.12(g)(3)(i)	Yes.
§ 816.111(a)(4)	§ 780.12(g)(3)(ii)	Yes.
§ 816.111(b)(1)	§ 780.12(g)(3)(iii)	No.
§ 816.111(b)(2)	§ 780.12(g)(3)(iv)	Yes.
§ 816.111(b)(3)	§ 780.12(g)(3)(v)	Yes, editorial.
§ 816.111(b)(4)	§ 780.12(g)(3)(vi)	No.
§ 816.111(b)(5)	§ 780.12(g)(3)(vii)	Yes, editorial.
§ 816.111(c)	§ 780.12(g)(4)	Yes.
§ 816.111(d)	§ 780.12(g)(5)	Yes, editorial.
§ 816.113	§ 816.111(e)	Yes.
§ 816.114	§ 816.111(d)	Yes.
§ 816.116(a) [introductory text]	§ 816.116(b)	Yes.
§ 816.116(a)(1)	§ 816.116(a)	Yes, editorial.
§ 816.116(a)(2) [first sentence]	§ 816.116(c)	Yes.
§ 816.116(a)(2) [second sentence]	§ 816.116(d)	Yes, editorial.
§ 816.116(b) [introductory text], (b)(1), (b)(2), and introductory text of (b)(3).	None	Proposed for removal; superseded by remainder of proposed § 816.116.
§ 816.116(b)(3)(i)	§ 816.116(e)	Yes.
§ 816.116(b)(3)(ii)	§ 816.116(f)(1) and (f)(2)	Yes.
§ 816.116(b)(3)(iii)	§ 816.116(f)(3)	Yes.
§ 816.116(b)(4)	§ 816.116(g)	Yes.
§ 816.116(b)(5)	§ 816.116(h)	Yes, editorial.
§ 816.116(c)	§ 816.115	Yes.
§ 816.133(a) [introductory text]	§ 816.133 [introductory text]	Yes, editorial.
§ 816.133(a)(1)	§ 816.133(a)	Yes, editorial.
§ 816.133(a)(2)	§ 816.133(b)	Yes, editorial.
§ 816.133(b) [first sentence]	§ 780.24(b)	Yes.
§ 816.133(b) [last sentence]	§ 780.24(e)	Yes.
§ 816.133(c)	§ 780.24(b)	Yes.
§ 816.133(d)(1)	None	Proposed for removal; redundant of § 785.16(a).
§ 816.133(d)(2)	§ 785.16(a)(2)	Yes, editorial.
§ 816.133(d)(3)	None	Proposed for removal as unnecessary and duplicative.
§ 816.133(d)(4)	§ 785.16(a)(3)	Yes, editorial.
§ 816.133(d)(5)	§ 785.16(a)(5)	Yes, editorial.
§ 816.133(d)(6)	§ 785.16(a)(9)	Yes.
§ 816.133(d)(7)	§ 785.16(a)(6)	Yes, editorial.
§ 816.133(d)(8)	§ 785.16(a)(7)	Yes, editorial.
§ 816.133(d)(9)	§ 785.16(a)(10)	Yes, editorial.
§ 816.133(d)(10)	§ 785.16(a)(4)	Yes, editorial.
§ 816.200	None	Proposed for removal as obsolete.
§ 817.13	§ 817.13(a), (d), (e), and (g)	Yes, editorial.
§ 817.14(a)	§ 817.13(b)	Yes, editorial.

Existing rule	Proposed redesignation	Existing text revised in proposed rule?
§ 817.14(b)	§ 817.13(c)	Yes, editorial.
§ 817.15	§ 817.13(f)	Yes, editorial.
§ 817.22(a)(1) through (4)	§ 817.22(a)(1) and (2)	Yes.
§ 817.22(b)	§ 784.12(e)(2), § 817.22(c)	Yes.
§ 817.22(c)	§ 817.22(b)	Yes.
§ 817.22(d)(1)	§ 817.22(e)(1)	Yes.
§ 817.22(d)(2)	§ 817.22(d)(2)	Yes, editorial.
§ 817.22(d)(3)	§ 817.22(e)(3)	Yes, editorial.
§ 817.22(d)(4)	None	Proposed for removal; covered by proposed § 784.12(g)(1)(iii).
§ 817.22(e)	§ 784.12(e)(1)(ii)	Yes.
§ 817.41(a), (b), and (d)	§ 817.34(a) through (c)	Yes.
§ 817.41(c)	§ 817.35	Yes.
§ 817.41(e)	§ 817.36	Yes.
§ 817.41(f)	§ 817.38	Yes.
§ 817.41(g)	§ 817.39	Yes.
§ 817.41(j)	§ 817.40	Yes.
§ 817.41(h)	§ 817.41	Yes.
§ 817.41(i)	§ 817.44	Yes, editorial.
§ 817.42	§ 817.42(a)	Yes.
§ 817.43(a)(3) [last sentence], § 817.43(b)	§ 784.28(c), § 817.57(b)	Yes.
§ 817.43(c)(3)	Merged into § 817.43(a)(5)(ii)	Yes.
§ 817.46(b)(2) [Suspended December 22, 1986].	None	Proposed for removal.
§ 817.46(c)(1)(i)	None	Proposed for removal as unnecessary.
§ 817.46(c)(1)(ii) and (iii)	§ 817.46(c)(1)(i) and (ii)	Yes.
§ 817.57(a) [first sentence]	§ 817.57(a)(1)	Yes.
§ 817.57(a) [except first sentence]	§ 784.28(e)(2)	Yes.
§ 817.57(b)	Merged into § 817.11(e)	Yes, editorial.
§ 817.71(b)(1)	§ 784.35(f) and (j)	Yes, editorial.
§ 817.71(b)(2)	§ 817.71(b)(1)	Yes, editorial.
§ 817.71(c)	§ 784.35(e)(2) and (3)	Yes.
§ 817.71(d)(1)	§ 784.35(g)(1) and (4)	Yes.
§ 817.71(d)(2) [first sentence]	§ 817.71(b)(2)	Yes.
§ 817.71(d)(2) [second sentence]	Merged into § 784.35(i)	Yes, editorial.
§ 817.71(e)(1)	§ 817.71(d)	Yes.
§ 817.71(e)(2)	§ 817.71(g)(1)	Yes.
§ 817.71(e)(3)	§ 817.71(h)	Yes.
§ 817.71(e)(4)	§ 817.71(i)	Yes.
§ 817.71(e)(5)	§ 817.71(g)(3)	Yes, editorial.
§ 817.71(g)	§ 817.71(j)	Yes.
§ 817.71(h)	§ 817.71(k)	Yes.
§ 817.71(i)	§ 817.71(l)	Yes.
§ 817.71(j)	§ 817.71(m)	Yes, editorial.
§ 817.72(a)(1)	§ 817.71(e)(2)	Yes, editorial.
§ 817.72(a)(2)	§ 817.71(e)(1)	Yes.
§ 817.72 [except paragraph (a)]	None	Proposed for removal.
§ 817.73	None	Proposed for removal.
§ 817.74(c) [first sentence]	§ 817.74(c)(1)	Yes, editorial.
§ 817.74(c) [second sentence]	§ 817.74(c)(2)	Yes, editorial.
§ 817.74(c) [third sentence]	§ 817.74(d)(1)	Yes, editorial.
§ 817.74(c) [fourth sentence]	§ 817.74(d)(2)	Yes, editorial.
§ 817.74(d) [except (d)(4)]	§ 817.74(e)	Yes.
§ 817.74(d)(4)	§ 817.74(c)(3)	Yes.
§ 817.74(e)	§ 817.74(f)	Yes, editorial.
§ 817.74(f)	§ 817.74(g)	Yes, editorial.
§ 817.74(g)	§ 817.74(h)	Yes, editorial.
§ 817.74(h)	None	Proposed for removal.
§ 817.81(a) [first sentence]	§ 817.81(a)	Yes, editorial.
§ 817.81(a) [except first sentence]	§ 817.81(b)	Yes.
§ 817.81(b)	§ 817.81(c)	Yes, editorial.
§ 817.81(c)	§ 817.81(d)	Yes.
§ 817.81(d)	§ 817.81(e)	Yes.
§ 817.81(e)	§ 817.81(g)	Yes, editorial.
§ 817.81(f)	§ 817.81(h)	Yes, editorial.
§ 817.83 [introductory text]	§ 817.83(a)	Yes, editorial.
§ 817.83(a)	§ 817.83(b)	Yes.
§ 817.83(b)	§ 817.83(c)	Yes, editorial.
§ 817.83(c)	§ 817.83(d)	Yes.
§ 817.83(d)	§ 817.83(e)	Yes, editorial.
§ 817.84 [introductory text]	§ 817.84(a)	Yes, editorial.
§ 817.84(a)	§ 817.84(b)	Yes, editorial.
§ 817.84(b)	§ 817.84(c)	Yes, editorial.
§ 817.84(c)	§ 817.84(d)	Yes, editorial.

Existing rule	Proposed redesignation	Existing text revised in proposed rule?
§ 817.84(d)	§ 817.84(e)	Yes.
§ 817.84(e)	§ 784.25(d)(3)(iv)	Yes, editorial.
§ 817.97(d)	§ 817.97(b)(5) and (c)(4)	Yes, editorial.
§ 817.97(e)	§ 817.97(d)	Yes.
§ 817.97(f)	§ 817.97(e)	Yes.
§ 817.97(g)	§ 817.97(f)	Yes.
§ 817.97(h)	§ 817.97(g)	Yes.
§ 817.102(a)(2)	§ 817.102(a)(3) [introductory text]	Yes.
§ 817.102(a)(3)	§ 817.102(a)(4)	No.
§ 817.102(a)(4)	§ 817.102(a)(5)	Yes.
§ 817.102(a)(5)	§ 817.102(a)(6)	No.
§ 817.102(b)	§ 817.102(b) [introductory text] and (b)(1)	Yes, editorial.
§ 817.102(d)	§ 817.102(b)(2)	Yes.
§ 817.102(f)	§ 817.102(d)	Yes.
§ 817.102(g)	§ 817.102(a)(2)	Yes.
§ 817.102(h)	§ 817.102(a)(3)(i)	Yes.
§ 817.102(i)	§ 817.102(a)(3)(ii)	Yes.
§ 817.102(j)	§ 817.102(f)	Yes.
§ 817.102(k)(1)	§ 817.102(a)(1)(i)	Yes, editorial.
§ 817.102(k)(2)	§ 817.102(a)(1)(ii)	Yes, editorial.
§ 817.102(l)	§ 817.102(a)(1)(vii)	Yes.
§ 817.111(a) [except (a)(2) and (a)(4)]	§ 817.111(a) and (b)	Yes.
§ 817.111(a)(2)	§ 784.12(g)(3)(i)	Yes.
§ 817.111(a)(4)	§ 784.12(g)(3)(ii)	Yes.
§ 817.111(b)(1)	§ 784.12(g)(3)(iii)	No.
§ 817.111(b)(2)	§ 784.12(g)(3)(iv)	Yes.
§ 817.111(b)(3)	§ 784.12(g)(3)(v)	Yes, editorial.
§ 817.111(b)(4)	§ 784.12(g)(3)(vi)	No.
§ 817.111(b)(5)	§ 784.12(g)(3)(vii)	Yes, editorial.
§ 817.111(c)	§ 784.12(g)(4)	Yes.
§ 817.111(d)	§ 784.12(g)(5)	Yes, editorial.
§ 817.113	§ 817.111(e)	Yes.
§ 817.114	§ 817.111(d)	Yes.
§ 817.116(a) [introductory text]	§ 817.116(b)	Yes.
§ 817.116(a)(1)	§ 817.116(a)	Yes, editorial.
§ 817.116(a)(2) [first sentence]	§ 817.116(c)	Yes.
§ 817.116(a)(2) [second sentence]	§ 817.116(d)	Yes, editorial.
§ 817.116(b) [introductory text], (b)(1), (b)(2), and introductory text of (b)(3).	None	Proposed for removal; superseded by remainder of proposed § 817.116.
§ 817.116(b)(3)(i)	§ 817.116(e)	Yes.
§ 817.116(b)(3)(ii)	§ 817.116(f)(1) and (f)(2)	Yes.
§ 817.116(b)(3)(iii)	§ 817.116(f)(3)	Yes.
§ 817.116(b)(4)	§ 817.116(g)	Yes.
§ 817.116(b)(5)	§ 817.116(h)	Yes, editorial.
§ 817.116(c)	§ 817.115	Yes.
§ 817.121(c)(1)	§ 817.121(c)	Yes, editorial.
§ 817.121(c)(2)	§ 817.121(d)	Yes, editorial.
§ 817.121(c)(3)	§ 817.121(e)	Yes, editorial.
§ 817.121(c)(4)(i) through (c)(4)(iv) [Suspended December 22, 1999].	None	Proposed for removal.
§ 817.121(c)(4)(v)	§ 817.121(f)	Yes, editorial.
§ 817.121(c)(5)	§ 817.121(g)	Yes.
§ 817.121(d)	§ 817.121(h)	Yes, editorial.
§ 817.121(e)	§ 817.121(i)	Yes, editorial.
§ 817.121(f)	§ 817.121(j)	Yes, editorial
§ 817.121(g)	§ 817.121(k)	Yes, editorial.
§ 817.133(a) [introductory text]	§ 817.133 [introductory text]	Yes, editorial.
§ 817.133(a)(1)	§ 817.133(a)	Yes, editorial.
§ 817.133(a)(2)	§ 817.133(b)	Yes, editorial.
§ 817.133(b) [first sentence]	§ 784.24(b)	Yes.
§ 817.133(b) [last sentence]	§ 784.24(e)	Yes.
§ 817.133(c)	§ 784.24(b)	Yes.
§ 817.133(d)(1)	None	Proposed for removal; redundant of § 785.16(a).
§ 817.133(d)(2)	§ 785.16(a)(2)	Yes, editorial.
§ 817.133(d)(3)	None	Proposed for removal as unnecessary and duplicative.
§ 817.133(d)(4)	§ 785.16(a)(3)	Yes, editorial.
§ 817.133(d)(5)	§ 785.16(a)(5)	Yes, editorial.
§ 817.133(d)(6)	§ 785.16(a)(9)	Yes.
§ 817.133(d)(7)	§ 785.16(a)(6)	Yes, editorial.
§ 817.133(d)(8)	§ 785.16(a)(7)	Yes, editorial.
§ 817.133(d)(9)	§ 785.16(a)(10)	Yes, editorial.
§ 817.133(d)(10)	§ 785.16(a)(4)	Yes, editorial.

Existing rule	Proposed redesignation	Existing text revised in proposed rule?
§ 817.200 [except paragraph (d)(1)]	None	Proposed for removal as obsolete.
§ 817.200(d)(1)	§ 784.24(c)	Yes.
§ 824.11(a) [introductory text] and (a)(1)	§ 824.11(a)	Yes, editorial.
§ 824.11(a)(2) and (a)(3)	§ 701.5 [definition of "mountaintop removal mining"].	Yes, editorial.
§ 824.11(a)(4)	None	Proposed for removal; redundant of proposed § 785.14(b)(3).
§ 824.11(a)(5)	§ 824.11(b)(1)	Yes.
§ 824.11(a)(6)	§ 824.11(b)(2)	Yes.
§ 824.11(a)(7)	§ 824.11(b)(3)	Yes, editorial.
§ 824.11(a)(8)	§ 824.11(b)(4)	Yes.
§ 824.11(a)(9)	§ 785.14(b)(9)	Yes.
§ 824.11(a)(10)	None	Proposed for removal; redundant of proposed paragraph (b)(1).
§ 824.11(a)(11)	§ 824.11(b)(5)	Yes.
§ 827.12(a) through (l)	Merged with introductory text of § 827.12	Yes, editorial.

The following table is organized in numerical order of the proposed rule citations. It does not include those provisions of the proposed rule for which there is no counterpart in the existing regulations. In addition, it includes only those provisions of the proposed rule for which we propose to move the existing rule counterpart to a different paragraph or section; *i.e.,* those provisions that we propose to redesignate.

Proposed rule	Existing rule counterpart	Existing text revised in proposed rule?
§ 700.11(d)(1)	§ 700.11(d)(1)(i)	Yes, editorial.
§ 700.11(d)(2)	§ 700.11(d)(1)(ii)	Yes.
§ 700.11(d)(3)	§ 700.11(d)(2)	Yes.
§ 701.5 [definition of "mountaintop removal mining"].	§ 785.14(b), § 824.11(a)(2) and (a)(3)	Yes, editorial.
§ 773.7(b)(1)	§ 773.7(a) [last sentence]	Yes, editorial.
§ 773.7(c)	§ 773.7(b)	Yes, editorial.
§ 773.15(m)	§ 773.15(n)	No.
§ 777.13(a)(1)	§ 777.13(a)	Yes.
§ 777.13(a)(2)	§ 777.13(b)	Yes, editorial.
§ 777.13(b)	§§ 780.21(a) and 784.14(a)	Yes.
§ 777.13(d)	§§ 780.21(d) and 784.14(d)	Yes.
§ 779.17	§ 779.12(b)	Yes, editorial.
§ 779.20(a) through (c)	§ 780.16(a)	Yes.
§ 779.20(d)	§ 780.16(c)	Yes.
§ 779.22	§ 780.23(a)	Yes.
§ 779.24(a)(1) through (a)(6)	§ 779.24(a) through (f)	Yes.
§ 779.24(a)(7)	§ 780.21(b)(1) [location and ownership information in first sentence].	Yes, editorial.
§ 779.24(a)(9)	§ 780.21(b)(2) [first part of first sentence through "impoundments"] and § 779.25(a)(7).	Yes, editorial.
§ 779.24(a)(10)	§ 779.24(g)	Yes.
§ 779.24(a)(12)	§ 780.21(b)(2) [the part of the first sentence that pertains to discharges].	Yes, editorial.
§ 779.24(a)(14) through (a)(17)	§ 779.24(h) through (k)	No, except for editorial changes in (a)(17).
§ 779.24(a)(18)	§ 779.25(a)(1)	Yes.
§ 779.24(a)(19)	§ 779.25(a)(6)	Yes.
§ 779.24(a)(20)	§ 779.25(a)(2)	Yes.
§ 779.24(a)(21)	§ 779.25(a)(3)	Yes.
§ 779.24(a)(22)	§ 779.25(a)(4)	No.
§ 779.24(a)(23) and (a)(24)	§ 779.25(a)(5)	Yes, editorial.
§ 779.24(a)(25)	§ 779.25(a)(8)	No.
§ 779.24(a)(26)	§ 779.25(a)(9)	Yes.
§ 779.24(a)(8) [water wells], § 779.24(a)(27) [gas and oil wells].	§ 779.25(a)(10)	Yes.
§ 779.24(a)(28)	§ 779.24(l)	No.
§ 780.12 [in general]	§ 780.18 [in general]	Yes.
§ 780.12(b)	§ 780.18(b)(1)	Yes.
§ 780.12(c)	§ 780.18(b)(2)	Yes.
§ 780.12(d)	§ 780.18(b)(3)	Yes.
§ 780.12(e) [in general]	§ 780.18(b)(4)	Yes.
§ 780.12(e)(1)(ii)	§ 816.22(e)	Yes.
§ 780.12(e)(2)	§ 816.22(b)	Yes.
§ 780.12(g) [in general]	§ 780.18(b)(5)	Yes.
§ 780.12(g)(3)(i)	§ 816.111(a)(2)	Yes.
§ 780.12(g)(3)(ii)	§ 816.111(a)(4)	Yes.
§ 780.12(g)(3)(iii)	§ 816.111(b)(1)	No.

Proposed rule	Existing rule counterpart	Existing text revised in proposed rule?
§ 780.12(g)(3)(iv)	§ 816.111(b)(2)	Yes.
§ 780.12(g)(3)(v)	§ 816.111(b)(3)	Yes, editorial.
§ 780.12(g)(3)(vi)	§ 816.111(b)(4)	No.
§ 780.12(g)(3)(vii)	§ 816.111(b)(5)	Yes, editorial.
§ 780.12(g)(4)	§ 816.111(c)	Yes.
§ 780.12(g)(5)	§ 816.111(d)	Yes, editorial.
§ 780.12(i)	§ 780.18(b)(6)	Yes, editorial.
§ 780.12(j)	§ 780.18(b)(7)	Yes.
§ 780.12(k)	§ 780.18(b)(8)	Yes, editorial.
§ 780.12(l)	§ 780.18(b)(9)	Yes, editorial.
§ 780.12(m)	§ 780.23(b)(3)	Yes, editorial.
§ 780.13	§ 780.14	Yes.
§ 780.14	§ 780.12	Yes, editorial.
§ 780.15	§ 780.13	Yes.
§ 780.16(a) through (d)	§ 780.16(b)	Yes.
§ 780.16(e)	§ 780.16(c)	Yes.
§ 780.19(a)(1)	§ 780.22(a)	Yes.
§ 780.19(b)	§ 780.21(b)(1) [except location and ownership information in the first sentence].	Yes.
§ 780.19(c)	§ 780.21(b)(2) [except the part of the first sentence that precedes "and information on . . . "].	Yes.
§ 780.19(f)(1) through (3)	§ 780.22(b)	Yes.
§ 780.19(f)(4)	§ 780.22(c)	Yes, editorial.
§ 780.19(f)(5)	§ 780.22(d)	Yes, editorial.
§ 780.19(g)	§ 780.21(c)	Yes.
§ 780.20(a)	§ 780.21(f)(1) through (f)(3)	Yes.
§ 780.20(b)	§ 780.21(b)(3)	Yes.
§ 780.20(c)(1)	§ 780.21(f)(4)	Yes.
§ 780.21	§ 780.21(g)	Yes.
§ 780.22(a)	§ 780.21(h)	Yes.
§ 780.22(b)(1)	§ 780.21(e)	Yes.
§ 780.23(a)	§ 780.21(i)	Yes.
§ 780.23(b)	§ 780.21(j)	Yes.
§ 780.24(a)	§ 780.23(b) [except (b)(3)]	Yes.
§ 780.24(b)	§ 816.133(b) [first sentence], § 816.133(c)	Yes.
§ 780.24(c)	None	Yes, modeled on existing §§ 784.200(a) and 817.200(d)(1).
§ 780.24(e)	§ 816.133(b) [last sentence]	Yes.
§ 780.25(d)(3)(iv)	§ 816.84(e)	Yes, editorial.
§ 780.28(c)	§ 816.43(a)(3) [last sentence], § 816.43(b)	Yes.
§ 780.28(e)(2)	§ 816.57(a) [except first sentence]	Yes
§ 780.29(c)	§ 780.29	Yes.
§ 780.35(e)(2) and (3)	§ 816.71(c)	Yes.
§ 780.35(f)	§ 780.35(a) [in part], § 816.71(b)(1) [first sentence].	Yes, editorial.
§ 780.35(g)	§ 780.35(b), § 816.71(d)(1)	Yes.
§ 780.35(h)	§ 780.35(a) [in part]	Yes, editorial.
§ 780.35(i)	§ 780.35(c)	Yes, editorial.
§ 780.35(j)	§ 816.71(b)(1) [second sentence]	Yes, editorial.
§ 783.17	§ 783.12(b)	Yes, editorial.
§ 783.20(a) and (b)	§ 784.21(a)	Yes.
§ 783.20(d)	§ 784.21(c)	Yes.
§ 783.22	§ 784.15(a)	Yes.
§ 783.24(a)(1) through (a)(6)	§ 783.24(a) through (f)	Yes.
§ 783.24(a)(7)	§ 784.14(b)(1) [location and ownership information in first sentence].	Yes, editorial.
§ 783.24(a)(9)	§ 784.14(b)(2) [the part of the first sentence that precedes "impoundments"] § 783.25(a)(7).	Yes, editorial.
§ 783.24(a)(10)	§ 783.24(g)	Yes.
§ 783.24(a)(12)	§ 784.14(b)(2) [the part of the first sentence that pertains to discharges].	Yes, editorial.
§ 783.24(a)(14) through (a)(17)	§ 783.24(h) through (k)	No, except for editorial changes in (a)(17).
§ 783.24(a)(18)	§ 783.25(a)(1)	Yes.
§ 783.24(a)(19)	§ 783.25(a)(6)	Yes.
§ 783.24(a)(20)	§ 783.25(a)(2)	Yes.
§ 783.24(a)(21)	§ 783.25(a)(3), [Suspended August 4, 1980]	Yes. We are re-proposing part of this rule and proposing to remove the remainder.
§ 783.24(a)(22)	§ 783.25(a)(4)	Yes.
§ 783.24(a)(23) and (a)(24)	§ 783.25(a)(5)	Yes.
§ 783.24(a)(25)	§ 783.25(a)(8), [Suspended August 4, 1980]	Yes, editorial. We are re-proposing this rule.
§ 783.24(a)(26)	§ 783.25(a)(9), [Suspended August 4, 1980]	Yes. We are re-proposing part of this rule and proposing to remove the remainder.

Proposed rule	Existing rule counterpart	Existing text revised in proposed rule?
§ 783.24(a)(8) [water wells], § 783.24(a)(27) [gas and oil wells].	§ 783.25(a)(10)	Yes.
§ 783.24(a)(28)	§ 783.24(l)	No.
§ 784.12 [in general]	§ 784.13 [in general]	Yes.
§ 784.12(b)	§ 784.13(b)(1)	Yes.
§ 784.12(c)	§ 784.13(b)(2)	Yes.
§ 784.12(d)	§ 784.13(b)(3)	Yes.
§ 784.12(e) [in general]	§ 784.13(b)(4)	Yes.
§ 784.12(e)(1)(ii)	§ 817.22(e)	Yes.
§ 784.12(e)(2)	§ 817.22(b)	Yes.
§ 784.12(f)	§ 784.26	Yes.
§ 784.12(g) [in general]	§ 784.13(b)(5)	Yes.
§ 784.12(g)(3)(i)	§ 817.111(a)(2)	Yes.
§ 784.12(g)(3)(ii)	§ 817.111(a)(4)	Yes.
§ 784.12(g)(3)(iii)	§ 817.111(b)(1)	No.
§ 784.12(g)(3)(iv)	§ 817.111(b)(2)	Yes.
§ 784.12(g)(3)(v)	§ 817.111(b)(3)	Yes, editorial.
§ 784.12(g)(3)(vi)	§ 817.111(b)(4)	No.
§ 784.12(g)(3)(vii)	§ 817.111(b)(5)	Yes, editorial.
§ 784.12(g)(4)	§ 817.111(c)	Yes.
§ 784.12(g)(5)	§ 817.111(d)	Yes, editorial.
§ 784.12(i)	§ 784.13(b)(6)	Yes, editorial.
§ 784.12(j)	§ 784.13(b)(7)	Yes.
§ 784.12(k)	§ 784.13(b)(8)	Yes, editorial.
§ 784.12(l)	§ 784.13(b)(9)	Yes, editorial.
§ 784.12(m)	§ 784.15(b)(3)	Yes, editorial.
§ 784.13	§ 784.23	Yes.
§ 784.14	§ 784.12	Yes, editorial.
§ 784.16(a) through (d)	§ 784.21(b)	Yes.
§ 784.16(e)	§ 784.21(c)	Yes.
§ 784.19(a)(1)	§ 784.22(a)	Yes.
§ 784.19(b)	§ 784.14(b)(1) [except location and ownership information].	Yes.
§ 784.19(c)	§ 784.14(b)(2) [except the part of the first sentence that precedes "and information on . . . "].	Yes.
§ 784.19(f)(1) through (4)	§ 784.22(b)	Yes.
§ 784.19(f)(5)	§ 784.22(c)	Yes, editorial.
§ 784.19(f)(6)	§ 784.22(d)	Yes, editorial.
§ 784.19(g)	§ 784.14(c)	Yes.
§ 784.20(a)	§ 784.14(e)(1) through (e)(3)	Yes.
§ 784.20(b)	§ 784.14(b)(3)	Yes.
§ 784.20(c)(1)	§ 784.14(e)(4)	Yes.
§ 784.21	§ 784.14(f)	Yes.
§ 784.22(a)	§ 784.14(g)	Yes.
§ 784.23(a)	§ 784.14(h)	Yes.
§ 784.23(b)	§ 784.14(i)	Yes.
§ 784.24(a)	§ 784.15(b) [except (b)(3)]	Yes.
§ 784.24(b)	§ 817.133(b) [first sentence], § 817.133(c)	Yes.
§ 784.24(c)	§ 784.200(a), § 817.200(d)(1)	Yes.
§ 784.24(e)	§ 817.133(b) [last sentence]	Yes.
§ 784.25(d)(3)(iv)	§ 817.84(e)	Yes, editorial.
§ 784.26	§ 784.25	Yes, editorial.
§ 784.28(c)	§ 817.43(a)(3) [last sentence], § 817.43(b)	Yes.
§ 784.28(e)(2)	§ 817.57(a) [except first sentence]	Yes
§ 784.29(c)	§ 784.29	Yes.
§ 784.30	§ 784.20	Yes.
§ 784.31	§ 784.17	No.
§ 784.33	§ 784.18	No.
§ 784.35	§ 784.19, § 817.71(b)(1), (c), (d)(1), and (d)(2) [second sentence].	Yes.
§ 784.37	§ 784.24	Yes.
§ 784.38	§ 784.30	Yes, editorial.
§ 785.14(b)	§ 785.14(c)	Yes, editorial.
§ 785.14(b) (introductory text)	§ 785.14(c) [introductory text]	Yes, editorial.
§ 785.14(b)(1)	§ 785.14(c)(1) [introductory text]	Yes, editorial.
§ 785.14(b)(2)	§ 785.14(c)(1)(i)	Yes, editorial.
§ 785.14(b)(3)	§ 785.14(c)(1)(ii)	Yes, editorial.
§ 785.14(b)(4)	§ 785.14(c)(1)(iii) [except paragraph (c)(1)(iii)(G)].	Yes, editorial.
§ 785.14(b)(5)	§ 785.14(c)(1)(iii)(G)	Yes, editorial.
§ 785.14(b)(6)	§ 785.14(c)(1)(iv)	Yes, editorial.
§ 785.14(b)(7)	§ 785.14(c)(1)(v)	Yes, editorial.
§ 785.14(b)(8)	§ 785.14(c)(2)	Yes, editorial.

Proposed rule	Existing rule counterpart	Existing text revised in proposed rule?
§ 785.14(b)(9)	§ 824.11(a)(9)	Yes.
§ 785.14(b)(12)	§ 785.14(c)(4)	Yes, editorial.
§ 785.14(c)	§ 785.14(c)(5)	Yes.
§ 785.14(d)(1)	§ 785.14(d)(1) and (2)	Yes.
§ 785.14(d)(2)	§ 785.14(d)(3)	Yes, editorial.
§ 785.16(a) (introductory text)	§ 785.16(a) [introductory text]	Yes, editorial.
§ 785.16(a)(1)	§ 785.16(a)(1)	Yes, editorial.
§ 785.16(a)(2)	§ 816.133(d)(2)	Yes, editorial.
§ 785.16(a)(3)	§ 816.133(d)(4)	Yes, editorial.
§ 785.16(a)(4)	§ 816.133(d)(10)	Yes, editorial.
§ 785.16(a)(5)	§ 816.133(d)(5)	Yes, editorial.
§ 785.16(a)(6)	§ 816.133(d)(7)	Yes, editorial.
§ 785.16(a)(7)	§ 816.133(d)(8)	Yes, editorial.
§ 785.16(a)(9)	§ 785.16(a)(3), § 816.133(d)(6)	Yes.
§ 785.16(a)(10)	§ 785.16(a)(4), § 816.133(d)(9)	Yes.
§ 785.16(b)(1)	§ 785.16(b)(2)	Yes, editorial.
§ 785.16(b)(2)	§ 785.16(c) and (d)	Yes.
§ 785.16(b)(3)	§ 785.16(e)	Yes, editorial.
§ 785.16(b)(4)	§ 785.16(f)	Yes, editorial.
§ 785.25(b)(1)	§ 785.25(b) [first sentence]	Yes, editorial.
§ 785.25(b)(2)	§ 785.25(b) [except first sentence]	Yes, editorial.
§ 800.9	§ 800.11(e)	Yes.
§ 800.11	§ 800.11(a) through (d)	Yes, editorial.
§ 800.15(a)(2)(ii)	§ 800.15(c) [first sentence]	Yes, editorial.
§ 800.30(a)(1)	§ 800.30(a)	Yes.
§ 800.30(a)(3)	§ 800.30(b)	Yes
§ 800.30(b)	§ 800.16(e)(2)	Yes.
§ 800.40	§ 800.40(a)	Yes, editorial, except for (b)(2)(vi), which has substantive changes.
§ 800.41	§ 800.40(b)(1)	Yes, editorial, except for (a)(2), which has substantive changes.
§ 800.42	§ 800.40(c)	Yes.
§ 800.43(a)	§ 800.40(b)(2)	Yes, editorial.
§ 800.43(b)	§ 800.40(d)	Yes, editorial.
§ 800.43(c)	§ 800.40(e)	Yes, editorial
§ 800.44(a) through (c)	§ 800.40(f) through (h)	Yes, editorial.
§ 816.13(a), (c), (d), and (f)	§ 816.13	Yes, editorial.
§ 816.13(b)	§ 816.14	Yes, editorial.
§ 816.13(e)	§ 816.15	Yes, editorial.
§ 816.22(a)(1) and (2)	§ 816.22(a)(1) through (4)	Yes.
§ 816.22(b)	§ 816.22(c)	Yes.
§ 816.22(c)	§ 816.22(b)	Yes.
§ 816.22(d)(2)	§ 816.22(d)(2)	Yes, editorial.
§ 816.22(e)(1)	§ 816.22(d)(1)	Yes.
§ 816.22(e)(3)	§ 816.22(d)(3)	Yes, editorial.
§ 816.34(a) through (c)	§ 816.41(a), (b), and (d)	Yes.
§ 816.35	§ 816.41(c)	Yes.
§ 816.36	§ 816.41(e)	Yes.
§ 816.38	§ 816.41(f)	Yes.
§ 816.39	§ 816.41(g)	Yes.
§ 816.40	§ 816.41(h) and paragraphs (a) and (b) of definition of ''replacement of water supply'' in § 701.5.	Yes.
§ 816.41	§ 816.41(i)	Yes.
§ 816.42(a)	§ 816.42	Yes.
§ 816.43(a)(5)(ii)	§ 816.43(c)(3)	Yes.
§ 816.46(c)(1)(i) and (ii)	§ 816.46(c)(1)(ii) and (iii)	Yes.
§ 816.57(a)(1)	§ 816.57(a) [first sentence]	Yes.
§ 816.57(b)	§ 816.43(a)(3) (last sentence), § 816.43(b)	Yes.
§ 816.71(b)(1)	§ 816.71(b)(2)	Yes, editorial.
§ 816.71(b)(2)	§ 816.71(d)(2) [first sentence]	Yes.
§ 816.71(d)	§ 816.71(e)(1)	Yes.
§ 816.71(e)(1)	§ 816.72(a)(2)	Yes.
§ 816.71(e)(2)	§ 816.72(a)(1)	Yes, editorial.
§ 816.71(g)(1)	§ 816.71(e)(2)	Yes.
§ 816.71(g)(3)	§ 816.71(e)(5)	Yes, editorial.
§ 816.71(h)	§ 816.71(e)(3)	Yes.
§ 816.71(i)	§ 816.71(e)(4)	Yes.
§ 816.71(j)	§ 816.71(g)	Yes, editorial.
§ 816.71(k)	§ 816.71(h)	Yes.
§ 816.71(l)	§ 816.71(i)	Yes.
§ 816.71(m)	§ 816.71(j)	Yes, editorial.
§ 816.74(c)(1)	§ 816.74(c) [first sentence]	Yes, editorial.
§ 816.74(c)(2)	§ 816.74(c) [second sentence]	Yes, editorial.

Proposed rule	Existing rule counterpart	Existing text revised in proposed rule?
§ 816.74(c)(3)	§ 816.74(d)(4)	Yes.
§ 816.74(d)(1)	§ 816.74(c) [third sentence]	Yes, editorial.
§ 816.74(d)(2)	§ 816.74(c) [fourth sentence]	Yes, editorial.
§ 816.74(e)	§ 816.74(d) [except (d)(4)]	Yes.
§ 816.74(f)	§ 816.74(e)	Yes, editorial.
§ 816.74(g)	§ 816.74(f)	Yes, editorial.
§ 816.74(h)	§ 816.74(g)	Yes, editorial.
§ 816.81(a)	§ 816.81(a) [first sentence]	Yes, editorial.
§ 816.81(b)	§ 816.81(a) [except first sentence]	Yes.
§ 816.81(c)	§ 816.81(b)	Yes, editorial.
§ 816.81(d)	§ 816.81(c)	Yes.
§ 816.81(e)	§ 816.81(d)	Yes, editorial.
§ 816.81(g)	§ 816.81(e)	Yes, editorial.
§ 816.81(h)	§ 816.81(f)	Yes, editorial.
§ 816.83(a)	§ 816.83 [introductory text]	Yes, editorial.
§ 816.83(b)	§ 816.83(a)	Yes.
§ 816.83(c)	§ 816.83(b)	Yes, editorial.
§ 816.83(d)	§ 816.83(c)	Yes.
§ 816.83(e)	§ 816.83(d)	Yes, editorial.
§ 816.84(a)	§ 816.84 [introductory text]	Yes, editorial.
§ 816.84(b)	§ 816.84(a)	Yes, editorial.
§ 816.84(c)	§ 816.84(b)	Yes, editorial.
§ 816.84(d)	§ 816.84(c)	Yes, editorial.
§ 816.84(e)	§ 816.84(d)	Yes.
§ 816.97(b)(5) and (c)(4)	§ 816.97(d)	Yes, editorial.
§ 816.97(d)	§ 816.97(e)	Yes.
§ 816.97(e)	§ 816.97(f)	Yes.
§ 816.97(f)	§ 816.97(g)	Yes.
§ 816.97(g)	§ 816.97(h)	Yes.
§ 816.102(a)(1)(i)	§ 816.102(k)(3)(i)	Yes, editorial.
§ 816.102(a)(1)(ii)	§ 816.102(k)(3)(ii)	Yes, editorial.
§ 816.102(a)(1)(iii)	§ 816.102(k)(1)	Yes, editorial.
§ 816.102(a)(1)(iv)	§ 816.102(k)(2)	Yes, editorial.
§ 816.102(a)(1)(v)	§ 816.102(k)(3)(iii)	Yes, editorial.
§ 816.102(a)(2)	§ 816.102(g)	Yes.
§ 816.102(a)(3) [introductory text]	§ 816.102(a)(2)	Yes.
§ 816.102(a)(3)(i)	§ 816.102(h)	Yes.
§ 816.102(a)(3)(ii)	§ 816.102(i)	Yes.
§ 816.102(a)(4)	§ 816.102(a)(3)	No.
§ 816.102(a)(5)	§ 816.102(a)(4)	Yes.
§ 816.102(a)(6)	§ 816.102(a)(5)	No.
§ 816.102(b) [introductory text] and (b)(1)	§ 816.102(b)	Yes, editorial.
§ 816.102(b)(3)	§ 816.102(d)	Yes.
§ 816.102(d)	§ 816.102(f)	Yes.
§ 816.102(f)	§ 816.102(j)	Yes.
§ 816.111(a) and (b)	§ 816.111(a) [except (a)(2) and (a)(4)]	Yes.
§ 816.111(d)	§ 816.114	Yes.
§ 816.111(e)	§ 816.113	Yes.
§ 816.116(a)	§ 816.116(a)(1)	Yes, editorial.
§ 816.116(b)	§ 816.116(a) [introductory text]	Yes.
§ 816.116(c)	§ 816.116(a)(2) [first sentence]	Yes
§ 816.116(d)	§ 816.116(a)(2) [second sentence]	Yes, editorial.
§ 816.116(e)	§ 816.116(b)(3)(i)	Yes.
§ 816.116(f)(1) and (f)(2)	§ 816.116(b)(3)(ii)	Yes.
§ 816.116(f)(3)	§ 816.116(b)(3)(iii)	Yes.
§ 816.116(g)	§ 816.116(b)(4)	Yes.
§ 816.116(h)	§ 816.116(b)(5)	Yes, editorial.
§ 816.115	§ 816.116(c)	Yes.
§ 816.133 [introductory text]	§ 816.133(a) [introductory text]	Yes, editorial.
§ 816.133(a)	§ 816.133(a)(1)	Yes, editorial.
§ 816.133(b)	§ 816.133(a)(2)	Yes, editorial.
§ 817.13(a), (d), (e), and (g)	§ 817.13	Yes, editorial.
§ 817.13(b)	§ 817.14(a)	Yes, editorial.
§ 817.13(c)	§ 817.14(b)	Yes, editorial.
§ 817.13(f)	§ 817.15	Yes, editorial.
§ 817.22(a)(1) and (2)	§ 817.22(a)(1) through (4)	Yes.
§ 817.22(b)	§ 817.22(c)	Yes.
§ 817.22(c)	§ 817.22(b)	Yes.
§ 817.22(d)(2)	§ 817.22(d)(2)	Yes, editorial.
§ 817.22(e)(1)	§ 817.22(d)(1)	Yes.
§ 817.22(e)(3)	§ 817.22(d)(3)	Yes, editorial.
§ 817.34(a) through (c)	§ 817.41(a), (b), and (d)	Yes.
§ 817.35	§ 817.41(c)	Yes.
§ 817.36	§ 817.41(e)	Yes.

Proposed rule	Existing rule counterpart	Existing text revised in proposed rule?
§ 817.38	§ 817.41(f)	Yes.
§ 817.39	§ 817.41(g)	Yes.
§ 817.40	§ 817.41(j) and paragraphs (a) and (b) of definition of "replacement of water supply" in § 701.5.	Yes.
§ 817.41	§ 817.41(h)	Yes.
§ 817.42(a)	§ 817.42	Yes.
§ 817.43(a)(5)(ii)	§ 817.43(c)(3)	Yes.
§ 817.44	§ 817.41(i)	Yes, editorial.
§ 817.46(c)(1)(i) and (ii)	§ 817.46(c)(1)(ii) and (iii)	Yes.
§ 817.57(a)(1)	§ 817.57(a) [first sentence]	Yes.
§ 817.57(b)	§ 817.43(a)(3) [last sentence], § 817.43(b)	Yes.
§ 817.71(b)(1)	§ 817.71(b)(2)	Yes, editorial.
§ 817.71(b)(2)	§ 817.71(d)(2) [first sentence]	Yes.
§ 817.71(d)	§ 817.71(e)(1)	Yes.
§ 817.71(e)(1)	§ 817.72(a)(2)	Yes.
§ 816.71(e)(2)	§ 817.72(a)(1)	Yes, editorial.
§ 817.71(g)(1)	§ 817.71(e)(2)	Yes.
§ 817.71(g)(3)	§ 817.71(e)(5)	Yes, editorial.
§ 817.71(h)	§ 817.71(e)(3)	Yes.
§ 817.71(i)	§ 817.71(e)(4)	Yes.
§ 817.71(j)	§ 817.71(g)	Yes.
§ 817.71(k)	§ 817.71(h)	Yes.
§ 817.71(l)	§ 817.71(i)	Yes.
§ 817.71(m)	§ 817.71(j)	Yes, editorial.
§ 817.74(c)(1)	§ 817.74(c) [first sentence]	Yes, editorial.
§ 817.74(c)(2)	§ 817.74(c) [second sentence]	Yes, editorial.
§ 817.74(c)(3)	§ 817.74(d)(4)	Yes.
§ 817.74(d)(1)	§ 817.74(c) [third sentence]	Yes, editorial.
§ 817.74(d)(2)	§ 817.74(c) [fourth sentence]	Yes, editorial.
§ 817.74(e)	§ 817.74(d) [except (d)(4)]	Ye.s
§ 817.74(f)	§ 817.74(e)	Yes, editorial.
§ 817.74(g)	§ 817.74(f)	Yes, editorial.
§ 817.74(h)	§ 817.74(g)	Yes, editorial.
§ 817.81(a)	§ 817.81(a) [first sentence]	Yes, editorial.
§ 817.81(b)	§ 817.81(a) [except first sentence]	Yes.
§ 817.81(c)	§ 817.81(b)	Yes, editorial.
§ 817.81(d)	§ 817.81(c)	Yes.
§ 817.81(e)	§ 817.81(d)	Yes.
§ 817.81(g)	§ 817.81(e)	Yes, editorial.
§ 817.81(h)	§ 817.81(f)	Yes, editorial.
§ 817.83(a)	§ 817.83 [introductory text]	Yes, editorial.
§ 817.83(b)	§ 817.83(a)	Yes.
§ 817.83(c)	§ 817.83(b)	Yes, editorial.
§ 817.83(d)	§ 817.83(c)	Yes.
§ 817.83(e)	§ 817.83(d)	Yes, editorial.
§ 817.84(a)	§ 817.84 [introductory text]	Yes, editorial.
§ 817.84(b)	§ 817.84(a)	Yes, editorial.
§ 817.84(c)	§ 817.84(b)	Yes, editorial.
§ 817.84(d)	§ 817.84(c)	Yes, editorial.
§ 817.84(e)	§ 817.84(d)	Yes.
§ 817.97(b)(5) and (c)(4)	§ 817.97(d)	Yes, editorial.
§ 817.97(d)	§ 817.97(e)	Yes.
§ 817.97(e)	§ 817.97(f)	Yes.
§ 817.97(f)	§ 817.97(g)	Yes.
§ 817.97(g)	§ 817.97(h)	Yes.
§ 817.102(a)(1)(i)	§ 817.102(k)(1)	Yes, editorial.
§ 817.102(a)(1)(ii)	§ 817.102(k)(2)	Yes, editorial.
§ 817.102(a)(1)(vii)	§ 817.102(l)	Yes.
§ 817.102(a)(2)	§ 817.102(g)	Yes.
§ 817.102(a)(3) [introductory text]	§ 817.102(a)(2)	Yes.
§ 817.102(a)(3)(i)	§ 817.102(h)	Yes.
§ 817.102(a)(3)(ii)	§ 817.102(i)	Yes.
§ 817.102(a)(4)	§ 817.102(a)(3)	No.
§ 817.102(a)(5)	§ 817.102(a)(4)	Yes.
§ 817.102(a)(6)	§ 817.102(a)(5)	No.
§ 817.102(b) [introductory text] and (b)(1)	§ 817.102(b)	Yes, editorial.
§ 817.102(b)(2)	§ 817.102(d)	Yes.
§ 817.102(d)	§ 817.102(f)	Yes.
§ 817.102(f)	§ 817.102(j)	Yes.
§ 817.111(a) and (b)	§ 817.111(a) [except (a)(2) and (a)(4)]	Yes.
§ 817.111(d)	§ 817.114	Yes.
§ 817.111(e)	§ 817.113	Yes.
§ 817.116(a)	§ 817.116(a)(1)	Yes, editorial.

Proposed rule	Existing rule counterpart	Existing text revised in proposed rule?
§ 817.116(b)	§ 817.116(a) [introductory text]	Yes.
§ 817.116(c)	§ 817.116(a)(2) [first sentence]	Yes.
§ 817.116(d)	§ 817.116(a)(2) [second sentence]	Yes, editorial.
§ 817.116(e)	§ 817.116(b)(3)(i)	Yes.
§ 817.116(f)(1) and (f)(2)	§ 817.116(b)(3)(ii)	Yes.
§ 817.116(f)(3)	§ 817.116(b)(3)(iii)	Yes.
§ 817.116(g)	§ 817.116(b)(4)	Yes.
§ 817.116(h)	§ 817.116(b)(5)	Yes, editorial.
§ 817.115	§ 817.116(c)	Yes.
§ 817.133 [introductory text]	§ 817.133(a) [introductory text]	Yes, editorial.
§ 817.133(a)	§ 817.133(a)(1)	Yes, editorial.
§ 817.133(b)	§ 817.133(a)(2)	Yes, editorial.
§ 817.121(c)	§ 817.121(c)(1)	Yes, editorial.
§ 817.121(d)	§ 817.121(c)(2)	Yes, editorial.
§ 817.121(e)	§ 817.121(c)(3)	Yes, editorial.
§ 817.121(f)	§ 817.121(c)(4)(v)	Yes, editorial.
§ 817.121(g)	§ 817.121(c)(5)	Yes.
§ 817.121(h)	§ 817.121(d)	Yes, editorial.
§ 817.121(i)	§ 817.121(e)	Yes, editorial.
§ 817.121(j)	§ 817.121(f)	Yes, editorial.
§ 817.121(k)	§ 817.121(g)	Yes, editorial.
§ 824.11(a)	§ 824.11(a) [introductory text] and (a)(1)	Yes, editorial.
§ 824.11(b)(1)	§ 824.11(a)(5)	Yes.
§ 824.11(b)(2)	§ 824.11(a)(6)	Yes.
§ 824.11(b)(3)	§ 824.11(a)(7)	Yes, editorial.
§ 824.11(b)(4)	§ 824.11(a)(8)	Yes.
§ 824.11(b)(5)	§ 824.11(a)(11)	Yes.

In general, we drafted the proposed rule using plain language principles, consistent with section 501(b) of SMCRA, 30 U.S.C. 1251(a), which provides that regulations must be ''concise and written in plain, understandable language,'' and Executive Order 13563, which provides that our regulatory system ''must ensure that regulations are accessible, consistent, written in plain language, and easy to understand.'' [123] In addition, a June 1, 1998, Executive Memorandum on Plain Language in Government Writing [124] requires the use of plain language in all proposed and final rulemaking documents published after January 1, 1999. The Office of the Federal Register also encourages the use of plain language in writing regulations, as set forth in detail at *www.plainlanguage.gov* and associated links.

Plain language requirements vary from one document to another, depending on the intended audience. Plain language documents have logical organization and easy-to-read design features like short sections, short sentences, tables, and lots of white space. They use common everyday words (except for necessary technical terms), pronouns, the active voice, and a question-and-answer format when feasible.

The proposed rule and preamble use the pronouns ''we,'' ''us,'' and ''our'' to refer to OSMRE, and the pronouns ''I,'' ''you,'' and ''your'' to refer to a permit applicant or permittee. We avoid use of the word ''shall'' in the proposed rule and preamble, except in quoted material. Instead, we use ''must'' to indicate an obligation, ''will'' to identify a future event, and ''may not'' to convey a prohibition.

We invite comment on how we could more fully incorporate plain language principles.

IX. How do we propose to revise specific provisions of our existing regulations?

In this portion of the preamble, we discuss selected provisions of our proposed rule in the order in which the regulations that we propose to revise would appear in Title 30, Chapter VII of the Code of Federal Regulations. In general, we do not discuss proposed organizational changes (see Part VIII of this preamble for a listing of organizational changes), nonsubstantive editorial revisions (*e.g.,* plain language changes, correction of grammatical errors, and syntax improvements), cross-reference changes, or revisions of a minor nature. No substantive change in meaning is intended for proposed revisions made in accordance with plain language principles.

A. Section 700.11(d): Termination and Reassertion of Jurisdiction

The basis and purpose for our termination-of-jurisdiction rules is set forth in the preamble to the 1988 version of these rules. See 53 FR 44356–44363 (Nov. 2, 1988). We propose to revise paragraph (d)(1) of the existing rules by removing the phrase ''the reclaimed site of'' from the existing introductory language because the regulatory authority's jurisdiction extends to the entire surface coal mining and reclamation operation, not just to the lands disturbed and reclaimed by the operation. Hence, any decision to terminate jurisdiction likewise should extend to the entire operation.

We propose to improve the structure of the existing rule by placing the termination of jurisdiction requirements for initial program operations in paragraph (d)(1) and the requirements for permanent program operations in paragraph (d)(2). We also propose to add a provision to paragraph (d)(2)(ii) to reflect the proposed addition to 30 CFR part 800 of provisions concerning financial assurances for treatment of long-term discharges. In particular, we propose to allow the regulatory authority to terminate jurisdiction over all portions of a minesite and all aspects of the operation, except treatment-related facilities and obligations, once the permittee posts an acceptable financial assurance under proposed 30 CFR 800.18 to guarantee treatment of all long-term discharges. Termination of jurisdiction may not occur until all performance bonds for the remainder of the permit area are fully released. Our proposed rule would improve the efficiency of regulatory authorities by eliminating unnecessary inspections of

[123] 76 FR 3821 (Jan. 21, 2011).

[124] 63 FR 31883–31886 (Jun. 10, 1998).

the portion of the permit area that has been fully reclaimed. It also would eliminate the need for federal oversight of those sites and allow the property owner to acquire full control over the land. Continuing to conduct inspections of a fully-reclaimed minesite or of fully-completed operations would divert scarce resources from unreclaimed sites and other regulatory program responsibilities.

Because of the restructuring described above, we propose to redesignate existing paragraph (d)(2) as paragraph (d)(3). This paragraph provides that the regulatory authority must reassert jurisdiction if the termination was based upon fraud, collusion, or misrepresentation of a material fact. We also propose to revise this provision to clarify that it applies to both intentional and unintentional misrepresentations of a material fact, including the subsequent discovery of a discharge that requires treatment. Our proposed revision is consistent with the decision of the U.S. Court of Appeals for the District of Columbia Circuit that upheld our termination of jurisdiction rules.[125]

In addition, proposed paragraph (d)(4) would specify that the termination of jurisdiction provisions of proposed paragraphs (d)(1) and (2) do not apply to proposed 30 CFR 817.40, which contains the domestic water supply replacement requirements for underground mines, or to the structural damage repair or compensation requirements of 30 CFR 817.121(c)(2). Proposed paragraph (d)(4) is consistent with the decision of the U.S. District Court for the District of Columbia concerning termination of jurisdiction for the water replacement and subsidence damage correction obligations imposed on underground mines by section 720(a) of SMCRA.[126] In that decision, the court held that those obligations are not subject to the termination of jurisdiction provisions of 30 CFR 700.11(d).[127]

Finally, we propose to revise existing 30 CFR 700.11(d)(1)(ii), which we propose to redesignate as 30 CFR 700.11(d)(2), to specify that the requirements of that paragraph also apply to coal exploration activities, as was intended when we first published our termination-of-jurisdiction rules in 1988.[128] The phrase ''or of a coal exploration site'' was inadvertently omitted from the published text of existing 30 CFR 700.11(d)(1). We plan to correct this inadvertent error when publishing a final rule. However, we invite comment on whether we should instead limit the scope of that requirement to termination of jurisdiction for coal exploration permits issued under 30 CFR 772.12. The rationale for a limitation of this nature is that, unlike coal exploration permits, coal exploration notices do not require regulatory authority approval and do not involve activities that substantially disturb the land surface.

B. Section 701.5: Definitions

This portion of the preamble discusses, in alphabetical order, each definition that we propose to add, remove, or revise.

Acid Drainage

We propose to revise the definition of this term to clarify that the same definition applies to the term ''acid mine drainage.'' We also propose to correct the terminology in the definition to comport with the terminology used in SMCRA. Specifically, we propose to replace the undefined term ''surface coal mine and reclamation operation'' with ''surface coal mining and reclamation operations,'' which is defined at section 701(27) of SMCRA,[129] as well as in 30 CFR 700.5.

Adjacent Area

Proposed paragraph (a) would revise and broaden the existing definition of ''adjacent area'' to ensure that it includes all areas outside the proposed or actual permit area within which there is a reasonable possibility of adverse impacts from surface coal mining operations or underground mining activities, as applicable. The existing definition limits the adjacent area to areas where adverse impacts could reasonably be expected to occur and, for underground mining, to areas where subsidence is probable. Those limits are too restrictive because they effectively limit baseline data collection and monitoring to the area in which adverse impacts are almost certain to occur. If impacts occur outside that area, there will be no baseline data against which to evaluate those impacts. Therefore, we propose to revise the definition to include areas where impacts are reasonably possible, as determined by the regulatory authority on a site-specific basis.

The revised definition would emphasize that the term ''adjacent area'' is both site-specific and context-specific. As in the existing definition, the nature of the resource and the context in which the regulations use the term ''adjacent area'' would determine the size and dimensions of the adjacent area for that resource. Our regulations require that each permit application contain information concerning historic resources, fish and wildlife resources, surface water, groundwater, and geology for the proposed permit and adjacent areas. The size and boundaries of the adjacent area in the context of historic resources, which are stationary, may differ substantially from the size and boundaries of the adjacent area for surface water, for which flow patterns are determined by topography, and the size and boundaries of the adjacent area for groundwater, which has a migration pattern determined by geology.

Proposed paragraph (b) would specify that the adjacent area for an underground mine includes both the area overlying the proposed underground workings and the area within a reasonable angle of draw [130] from the perimeter of the underground workings. This provision would ensure that the adjacent area includes all areas in which subsidence may reasonably occur.

Proposed paragraph (c) would specify that, for all operations, the adjacent area also includes the area that might be affected physically or hydrologically by dewatering existing underground mine pools as part of surface or underground mining operations, plus the area that might be affected physically or hydrologically by mine pools that develop after cessation of mining activities.

We considered adding another paragraph to specify that, in the context of surface-water resources, the adjacent area would include, at a minimum, the HUC–12 (U.S. Geological Survey 12-digit Watershed Boundary Dataset) [131] watershed or watersheds in which the proposed or actual permit area is located. However, we decided against including that provision because HUC boundaries are fixed and do not vary with the location of the mining operation. Surface-water data collected from those portions of the HUC–12 watershed that are upgradient of the

[125] *Nat'l Wildlife Fed'n* v. *Lujan,* 950 F.2d 765, 770 (D.C. Cir. 1991); see also Brief for the Secretary at 27 n. 11.

[126] 30 U.S.C. 1309a(a).

[127] *Nat'l Mining Ass'n* v. *Babbitt,* No. 95–0938, slip op. at 15 (D.D.C. May 29, 1998).

[128] 53 FR 44360 (Nov. 2, 1988).

[129] 30 U.S.C. 1291(27).

[130] The angle of draw is the angle between the outside edge of an underground mine void and the point on the surface to which subsidence may extend when the strata overlying the mine void collapse. Draw usually proceeds at an angle of 65–75° to the horizontal. This definition is adapted from: Ailsa Allaby and Michael Allaby. ''angle of draw.'' *A Dictionary of Earth Sciences.* 1999. Retrieved February 02, 2015, from Encyclopedia.com: *http://www.encyclopedia.com/doc/1O13-angleofdraw.html.*

[131] See *http://water.usgs.gov/GIS/huc.html* (last accessed September 8, 2014).

proposed operation would be of little or no value in making permitting decisions or evaluating the impacts of mining. In addition, HUC–12 watersheds typically contain between 10,000 and 40,000 acres, which is much larger than the area necessary or appropriate to establish baseline conditions for most coal mines, which are only tens or hundreds of acres in size.

We invite comment on whether the definition should prescribe a more appropriate minimum size for the adjacent area for surface-water resources and, if so, how that minimum size should be determined. For example, a 2002 OSMRE reference document on baseline data recommends that the adjacent area for surface water include both the surface-water runoff drainage area for the proposed operation and at least the next higher-order drainage area.

Approximate Original Contour

We propose to revise the definition of this term to explain its scope and to incorporate plain language principles. In concert with these changes, we propose to clarify that the term refers to the general surface configuration of the land within the permit area as it existed before any mining, not the configuration that existed immediately prior to the proposed or current operation. We intend this change to operate as a requirement that operations backfill and regrade previously mined areas to closely resemble the general surface configuration that existed before any mining, except as provided in 30 CFR 816.106 or 817.106. This approach is consistent with section 515(b)(2) of SMCRA,[132] which requires that surface coal mining and reclamation operations be conducted so as to ''restore the land affected to a condition capable of supporting the uses which it was capable of supporting prior to any mining . . . .'' In ruling on the regulations implementing that provision of the Act, the U.S. District Court for the District of Columbia subsequently held that ''[t]he use of the word 'any' indicates that Congress intended the operator to restore the land to the condition that existed before it was ever mined.'' [133]

Our proposed addition of the phrase ''within the permit area'' when referring to the general surface configuration is intended to clarify that determinations of approximate original contour must be made based on the general surface configuration of the permit area, not the general surface configuration of the surrounding area. The proposed addition is consistent with section 701(2) of SMCRA,[134] which defines ''approximate original contour'' as meaning ''that surface configuration achieved by backfilling and grading of the mined area so that the reclaimed area . . . closely resembles the general surface configuration of the land prior to mining and blends into and complements the drainage pattern of the surrounding terrain . . . .'' The statutory definition clearly applies the term ''general surface configuration'' only to the area that is mined and reclaimed; it does not extend to the surrounding area. Instead, with respect to the surrounding area, the statutory definition requires that the general surface configuration of the reclaimed area blend into and complement the drainage pattern of the surrounding terrain. Limiting the scope of the term ''general surface configuration'' to the mined and reclaimed area also is consistent with the discussion and diagrams in the legislative history of SMCRA. See H.R. Rep. No. 94–45, at 94 (1975).

In addition, we propose to revise the definition to include an exception for excess spoil fills, consistent with a June 18, 1999, legal opinion from the Department of the Interior's Office of the Solicitor. That opinion confirmed that the AOC restoration requirements of SMCRA do not apply to the construction of excess spoil fills, in part because the statutory definition of approximate original contour in section 701(2) of SMCRA [135] applies only to ''that surface configuration achieved by backfilling and grading of the mined area.'' Excess spoil fills are not part of the backfilling process and they are at least initially located outside the mined area. We also propose to add an exception for coal mine waste refuse piles because the same rationale applies to the construction of those piles. Furthermore, sections 515(b)(11) and 516(b)(4) of SMCRA [136] clearly envision the construction of permanent coal mine waste refuse piles on the land's surface, but there is no requirement to restore the surface of that land to approximate original contour, nor would it be possible to do so. Instead, section 515(b)(11) of the Act [137] requires that the operation ''assure the final contour of the waste pile will be compatible with natural surroundings and that the site can and will be stabilized and revegetated according to the provisions of the Act.'' Section 516(b)(4) [138] includes similar language for refuse piles associated with underground mines.

We also propose to revise the definition to clarify that, consistent with the legislative history, the potentially confusing placement of the phrase ''including any terracing or access roads'' in the statutory definition does not mean that terraces and access roads must be regraded to the approximate original contour. As explained in the legislative history of the definition of approximate original contour, Congress added this phrase to clarify that the AOC restoration requirement does not prohibit the construction of terraces or the retention of access roads on backfilled areas.[139] Therefore, we propose to add language stating that the requirements of the definition do not prohibit the approval of terracing under 30 CFR 816.102 or 817.102 or the retention of access roads under 30 CFR 816.150 or 817.150.

Finally, we propose to replace the cross-references to 30 CFR 816.133 and 817.133 with cross-references to 30 CFR 780.24(b) and 784.24(b), respectively. This change reflects our proposal to move the relevant portions of 30 CFR 816.133 and 817.133 to 30 CFR 780.24(b) and 784.24(b), respectively.

Backfill

We propose to add a definition of ''backfill'' to clarify the difference between backfill, excess spoil fills, and thick overburden returned to the mined-out area under 30 CFR 816.105, all of which have different permitting requirements and performance standards. We derived our proposed definition from the definition of ''backfill'' in *A Dictionary of Mining, Mineral, and Related Terms* (U.S. Bureau of Mines, 1968). However, we modified that definition by tailoring it to coal mining and the purpose stated in the first sentence of this discussion. Specifically, we propose to define ''backfill,'' when used as a noun, as the spoil and waste materials used to fill the void resulting from an excavation created for the purpose of extracting coal from the earth. When used as a verb, the term would refer to the process of filling that void. The definition also would include all materials used to restore the approximate original contour of the mined-out area. We propose to

[132] 30 U.S.C. 1265(b)(2).

[133] *In re Permanent Surface Mining Regulation Litig. I, Round I (PSMRL I, Round I),* 1980 U.S. Dist. LEXIS 17722 at * 95 (D.D.C. 1980), 14 Env't Rep. Cas. (BNA) 1083, 1107, 10 Envtl. L. Rep. (Envtl. Law Inst.) 20208.

[134] 30 U.S.C. 1291(2).

[135] *Id.*

[136] 30 U.S.C. 1265(b)(11) and 1266(b)(4).

[137] 30 U.S.C. 1265(b)(11).

[138] 30 U.S.C. 1266(b)(4).

[139] See H.R. Rep. No. 95–218, at 178 (1977) and H.R. Rep. No. 95–493, at 112 (1977) (Conf. Rep.).

make conforming changes to the definition of excess spoil, which is discussed below under a separate heading.

Bankfull

We propose to add a definition of this technical and scientific term because we use this term in our proposed regulations to more precisely fix the boundaries of stream buffer zones and riparian corridors and in our proposed stream restoration requirements. Under our proposed definition, bankfull would mean the water level or stage at which a stream, river, or lake is at the top of its banks and any further rise would result in water moving into the flood plain. The proposed definition parallels the one that appears in the National Weather Service glossary.[140]

Biological Condition

We propose to add a definition of biological condition in conjunction with the new permitting requirements and performance standards concerning documentation, protection, and restoration of biological communities in streams. Specifically, we propose to define biological condition as a measure of the ecological health of a stream or segment of a stream as determined by the type, diversity, distribution, abundance, and physiological state of aquatic organisms and communities found in the stream or stream segment. The biological condition of a water body is the ultimate indicator of watershed health because aquatic organisms and communities reflect the cumulative conditions of all other watershed components and processes.[141]

Our proposed rule would require application of a multimetric biological assessment and taxonomic assessment protocol to determine biological condition. See, *e.g.,* proposed 30 CFR 780.19(e) and 784.19(e). Multimetric indices include metrics such as species richness, complexity, and tolerance as well as trophic measures. They provide a quantitative comparison (often referred to as an index of biological or biotic integrity) of the ecological complexity of biological assemblages relative to a regionally-defined reference condition. For example, River Invertebrate Prediction and Classification System models quantify biological condition by comparing the observed taxa at a site to the taxa that would be expected to be present in the absence of human-caused stress.[142]

Our existing regulations do not specifically require collection of the baseline data necessary to determine the biological condition of streams. Consequently, the permit application often lacks specific descriptions of the aquatic community residing in streams within the permit and adjacent areas. The lack of baseline information on the biological condition of streams creates an impediment to determining whether the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area, as required by sections 507(b) and 510(b)(3) of SMCRA.[143] It also creates an impediment to evaluating whether the operation has been and is being conducted to minimize adverse impacts on fish, wildlife, and related environmental values, as required by sections 515(b)(24) and 516(b)(11) of SMCRA.[144] Furthermore, preparation of a comprehensive cumulative hydrologic impact assessment is not always possible if the permit application does not include information on the biological condition of streams. While the information sometimes may be available from the agencies responsible for implementing the Clean Water Act, those agencies generally do not assess the cumulative loading of substances legally discharged into the receiving stream until the stream becomes impaired.

Cumulative Impact Area

Sections 507(b)(11) and 510(b)(3) of SMCRA [145] require that the regulatory authority prepare an assessment of the probable cumulative impact of all anticipated mining in the area upon the hydrology of the general area. In 1983, we adopted a definition of cumulative impact area to identify both the extent of the area that must be included in this evaluation and the scope of the term ''anticipated mining.'' [146] The first sentence of the 1983 definition mentions only anticipated mining, while the second sentence includes existing operations in the list of the types of operations encompassed by the term ''anticipated mining.'' We propose to resolve this inconsistency by replacing the term ''anticipated mining'' with ''existing and anticipated mining'' or its equivalent.

In addition, we propose to add language clearly specifying that the term ''mining'' includes both surface and underground mining operations. Discharges of water from underground mines can cause material damage to the hydrologic balance outside the permit area, as demonstrated by a 2010 incident in which water discharged from an underground mine resulted in a golden algae bloom in Dunkard Creek in West Virginia and Pennsylvania that caused a major fish kill.[147] Our revised definition would clarify that the cumulative impact area includes the area within which the proposed or actual operation may interact with the impacts of all existing and anticipated surface and underground coal mining operations.

We propose to restructure the definition for clarity. Proposed paragraphs (a) through (c) would specify the areas that must be included in the cumulative impact area.

Proposed paragraph (a) would require that the cumulative impact area include the actual or proposed permit area. The addition of the ''actual or proposed'' language reflects the fact that the cumulative impact area is a concept that applies both before and after permit issuance.

Proposed paragraph (b) would require that the cumulative impact area include the HUC–12 (U.S. Geological Survey 12-digit Watershed Boundary Dataset) [148] watershed or watersheds in which the actual or proposed permit area is located. We propose to add this provision to establish a bright-line standard for the minimum size of the cumulative impact area. For operations that straddle a ridgeline or other watershed boundary, the cumulative impact area must include, at a minimum, the HUC–12 watershed on each side of the ridgeline or other boundary.

Proposed paragraph (c) would provide that, in addition to the areas specified in proposed paragraphs (a) and (b), the cumulative impact area must include any other area within which impacts resulting from an actual or proposed surface or underground coal mining operation may interact with the impacts of all existing and anticipated surface and underground coal mining on surface-water and groundwater systems, including the impacts that existing and

[140] See *http://forecast.weather.gov/glossary.php?word=BANKFULL* (last accessed January 16, 2015).

[141] *http://water.epa.gov/polwaste/nps/watershed/biotic.cfm* (last accessed June 8, 2015).

[142] *Id.*

[143] 30 U.S.C. 1257(b) and 1260(b)(3).

[144] 30 U.S.C. 1265(b)(24) and 1266(b)(11).

[145] 30 U.S.C. 1257(b)(1)) and 1260(b)(3).

[146] 48 FR 43956, 43957 (Sept. 26, 1983).

[147] Reynolds, Louis. Update on Dunkard Creek (November 23, 2009). U.S. Environmental Protection Agency, Region 3, Environmental Analysis and Innovation Division, Office of Monitoring and Assessment, Freshwater Biology Team.

[148] See *http://water.usgs.gov/GIS/huc.html* (last accessed September 8, 2014).

anticipated mining will have during mining and reclamation and after final bond release. Proposed paragraphs (c)(1) through (6) would specify the minimum components of the term ''existing and anticipated mining.'' Proposed paragraphs (c)(1) through (3) are substantively identical to paragraphs (a) through (c) of the existing definition.

Proposed paragraph (c)(4) would specify that ''anticipated mining'' includes any proposed surface or underground mining operation for which a person has submitted a request for an authorization, certification, or permit under the Clean Water Act. Inclusion of proposed operations for which the Clean Water Act authorization process has begun would assist in preparation of a more comprehensive analysis on the part of both the permit applicant or permittee and the regulatory authority.

Proposed paragraph (c)(5) would modify paragraph (d) of the existing definition to clarify that anticipated mining includes all lands for which a resource recovery and protection plan has been either approved or submitted to and reviewed by the authorized officer of the Bureau of Land Management under 43 CFR 3482.1(b). The added language would clarify the point at which lands containing leased Federal coal must be included within the cumulative impact area.

Proposed paragraph (c)(6) would specify that anticipated mining includes, for underground mines, all areas of contiguous coal reserves adjacent to an existing or proposed underground mine that are owned or controlled by the applicant. This addition is appropriate because, barring significant changes in economic or regulatory conditions, the mine very likely will be extended into those reserves in the future.

Ecological Function

We propose to add a definition of this term in concert with our proposal to require that permittees restore the ecological function of the segments of perennial and intermittent streams through which they mine. Ecological function includes physical parameters, biological parameters, and a consideration of physical and biological interactions as nutrients and energy are collected and transferred down the stream continuum.[149] Specifically, we propose to define this term as including the role that the stream plays in dissipating energy and transporting water, sediment, organic matter, and nutrients downstream. It also includes the ability of the stream ecosystem to retain and transform inorganic materials needed for biological processes into organic forms (forms containing carbon) and to oxidize those organic molecules back into elemental forms through respiration and decomposition. Finally, the term includes the role that the stream plays in the life cycles of plants, insects, amphibians (especially salamanders), reptiles, fish, birds, and mammals that either reside in the stream or depend upon it for habitat, reproduction, food, water, or protection from predators. The proposed definition is based upon a functional assessment guidebook that the U.S. Army Corps of Engineers developed for ephemeral and intermittent streams in central Appalachia.[150] The biological condition of a stream is one measure of its ecological function.

Ephemeral Stream

We propose to redefine ''ephemeral stream'' in a manner that is substantively identical to the manner in which the U.S. Army Corps of Engineers defines that term in Part F of the 2012 reissuance of the nationwide permits under section 404 of the Clean Water Act. See 77 FR 10184, 10288 (Feb. 21, 2012). Adoption of a substantively identical definition would promote consistency in application and interpretation of that term under both SMCRA and Clean Water Act programs.

We invite comment on whether the definition in the final rule should include language specifying that the U.S. Army Corps of Engineers has the ultimate authority to determine the point at which an ephemeral stream becomes an intermittent stream or a perennial stream and vice versa. Further, if the final rule includes language to that effect, we invite comment on whether the definition also should provide that any determination that the Corps makes concerning these transition points will be controlling for purposes of SMCRA regulatory programs. Commenters should discuss the applicability of two SMCRA provisions in this context. First, section 702(a) of SMCRA [151] provides that ''[n]othing in this Act shall be construed as superseding, amending, modifying, or repealing'' the Clean Water Act, any rule or regulation adopted under the Clean Water Act, or any state laws enacted pursuant to the Clean Water Act. Second, section 505(b) of SMCRA [152] provides that any provision of any state law or regulation may not be construed to be inconsistent with SMCRA if it ''provides for more stringent land use and environmental controls and regulations of surface coal mining and reclamation operation[s] than do the provisions of this Act or any regulation issued pursuant thereto.'' In other words, should our regulations allow states to adopt and apply stream definitions in a manner that would protect a greater length of stream than would the Corps determinations?

The primary difference between our existing definition and the Corps definition that we propose to adopt concerns the treatment of snowmelt. Our existing definition classifies streamflow in response to the melting of snow and ice as an ephemeral stream, whereas the Corps definition is silent on this point. The preamble to the Corps definition notes that the Corps declined to accept a recommendation from a commenter that streamflow resulting from snowmelt be classified as an ephemeral stream. The preamble explains that, while snowmelt may contribute to the flow of ephemeral streams, snowmelt also contributes to the flow of intermittent and perennial streams, especially in areas with deep snow packs. The preamble further states that the definition appropriately focuses on the duration of flow and that melting snow should not be considered a precipitation event because the development of a snowpack occurs over the course of a winter season. See 77 FR 10184, 10262 (Feb. 21, 2012).

Excess Spoil

Our existing rules define excess spoil as spoil material disposed of in a location other than the mined-out area. The definition excludes spoil used to achieve the approximate original contour or to blend the mined-out area with the surrounding terrain in non-steep slope areas. However, the existing definition is silent with respect to the characterization of spoil placed on the mined-out area in excess of the amount of spoil needed to restore the approximate original contour. We propose to revise the definition of excess spoil and add a definition of backfill to more clearly differentiate among backfill, material placed in excess spoil fills, and thick overburden returned to the mined-out area under 30 CFR 816.105.

[149] Vannote, R. L., G. W. Minshall, K. W. Cummins, J. R. Sedell, and C. E. Cushing. The river continuum concept. (1980) *Can. J. Fish. Aquat. Sci.* 37:130–137.

[150] ''Operational Draft Regional Guidebook for the Functional Assessment of High-Gradient Ephemeral and Intermittent Headwater Streams in Western West Virginia and Eastern Kentucky.'' ERDC/EL TR–10–11, July 2010, U.S. Army Engineer Research and Development Center, Vicksburg, MS.

[151] 30 U.S.C. 1292(a).

[152] 30 U.S.C. 1255(b).

Specifically, we propose to define excess spoil as including all spoil material disposed of in a location other than the mined-out area within the permit area. The definition also would include all spoil material placed above the approximate original contour within the mined-out area as part of the continued construction of an excess spoil fill with a toe located outside the mined-out area. The added language concerning continuation of an excess spoil fill onto the mined-out area is intended to ensure that the fill is constructed using consistent standards for the entire structure so that the fill is uniformly stable.

The revised definition would retain the clarification that spoil used to restore the approximate original contour of the mined-out area is not excess spoil. It also would retain the exception for spoil used to blend the mined-out area with the surrounding terrain in non-steep slope areas. We propose to add a new provision clarifying that the definition does not include spoil material placed within the mined-out area in accordance with the thick overburden provisions of 30 CFR 816.105(b)(1), even if it exceeds the amount needed to restore the approximate original contour, unless that material is a continuation of an excess spoil fill. This provision would eliminate any ambiguity regarding thick overburden treatment in the existing rules and is consistent with the thick overburden provisions of section 515(b)(3) of SMCRA,[153] which makes no reference to the excess spoil provisions of section 515(b)(22) of SMCRA [154] in establishing requirements for the placement and grading of spoil within the mined-out area.

In summary, under our proposed rule, the general backfilling and grading requirements of 30 CFR 816.102 or 817.102 would apply to all spoil placed in the mined-out area for the purpose of restoring the approximate original contour within the parameters of those rules. The thick overburden performance standards of 30 CFR 816.105(b) would apply to all spoil placed in or on the mined-out area in excess of the approximate original contour parameters established in 30 CFR 816.102(a)(1) or 817.102(a)(1), with the exception of spoil that is a continuation of an excess spoil fill with a toe located outside the mined-out area. For all operations, the excess spoil disposal requirements of 30 CFR 816.71 and 816.74 or 817.71 and 817.74 would govern the construction of excess spoil fills, including any spoil placed above the approximate original contour within the mined-out area as part of the continuation of an excess spoil fill with a toe located outside the mined-out area.

[153] 30 U.S.C. 1265(b)(3).

[154] 30 U.S.C. 1265(b)(22).

Fill

We propose to define the term ''fill'' to clarify the meaning of this term as it is used in the context of surface coal mining operations under SMCRA and to differentiate this term from the term ''fill material'' as used and defined in the regulations implementing section 404 of the Clean Water Act.[155] See 33 CFR 323.2(e) and 40 CFR 232.2. Our proposed definition would include only permanent, non-impounding structures constructed for the purpose of disposing of excess spoil and solid coal mine waste, consistent with the common usage of this term in the context of coal mining operations. It would not include any impoundments or temporary structures. It has no relationship to whether construction of the excess spoil or coal mine waste disposal facility involves the discharge of dredged or fill material into waters of the United States under the Clean Water Act.

Fugitive Dust

We propose to remove this definition because it defines a term that we no longer use in our regulations. See the preamble discussions of proposed 30 CFR 780.12(f) and our proposed removal of existing 30 CFR 780.15 and 784.26 for further explanation.

Groundwater

This definition would replace the existing definition of the term ''Ground water.'' We propose to replace the words ''ground water'' with the single word ''groundwater'' throughout our regulations for internal consistency. We also propose to revise the definition to add clarity and to more closely resemble generally-accepted definitions in scientific and trade publications. Specifically, our proposed definition is adapted from Freeze and Cherry (1979) [156] and a publication entitled ''The ABCs of Aquifers.'' [157] Under the proposed rule, ''groundwater'' would mean subsurface water located in those portions of soils and geologic formations that are completely saturated with water; *i.e.,* those zones where all the pore spaces and rock fractures are completely filled with water. We propose to add a sentence clarifying that this term includes subsurface water in both regional and perched aquifers, but that it does not include water in soil horizons that are temporarily saturated by precipitation events.

Perched aquifers occur where subsurface water collects above unsaturated rock formations as a result of a discontinuous impermeable layer.[158] Perched aquifers are fairly common in glacial sediments.[159] They also occur in other sedimentary formations where weathered layers, ancient soils or caliche (found in arid or semiarid areas) have created impermeable zones.[160] Perched aquifers are often removed by surface coal mining operations; they need not be restored unless restoration is needed to prevent material damage to the hydrologic balance outside the permit area.

Highwall Remnant

We propose to remove this definition because the term ''highwall remnant'' is self-explanatory and because the existing definition inappropriately limits the term to remining operations. There is no basis under SMCRA for this limitation.

Hydrologic Balance

The existing definition of hydrologic balance mentions water quality, but focuses on water quantity, water flow and movement, water storage, and changes in the physical state of water. We propose to revise this definition to include provisions relating to water quality and the impact of water quality on the biological condition of streams. Specifically, we propose to add language stating that the term includes interactions that result in changes in the chemical composition or physical characteristics of groundwater and surface water, which may affect the biological condition of streams and other water bodies. The proposed revisions are intended to clarify that water quality is as important as water quantity. They are consistent with the manner and context in which the term ''hydrologic balance'' appears in SMCRA. Sections 507, 508, 510, 515, and 516 of SMCRA[161] contain repeated references to water quality considerations. As summarized in Part II of this preamble, in many cases, adverse impacts on water quality and the resulting change in the biological condition of streams are the principal

[155] 33 U.S.C. 1344.

[156] Freeze, R. A., and Cherry, J. A. *Groundwater.* (1979), Prentice-Hall, Englewood Cliffs, NJ, p. 2.

[157] Stone, Andrew. ''The ABCs of Aquifers,'' (May 30, 2010); available at *http://www.nationaldriller.com/articles/85773-the-abcs-of-aquifers* (last accessed September 8, 2014).

[158] *Id.*

[159] *Id.*

[160] *Id.*

[161] 30 U.S.C. 1257, 1258, 1260, 1265, and 1266.

cause of material damage to the hydrologic balance outside the permit area as we proposed to define that term in 30 CFR 701.5.

Intermittent Stream

We propose to redefine ''intermittent stream'' in a manner that is substantively identical to the manner in which the U.S. Army Corps of Engineers defines that term in Part F of the 2012 reissuance of the nationwide permits under section 404 of the Clean Water Act. See 77 FR 10184, 10288 (Feb. 21, 2012). Adoption of a substantively-identical definition would promote consistency in application and interpretation of that term under both SMCRA and Clean Water Act programs.

We invite comment on whether the definition in the final rule should include language specifying that the U.S. Army Corps of Engineers has the ultimate authority to determine the point at which an ephemeral stream becomes an intermittent stream or a perennial stream and vice versa. Further, if the final rule includes language to that effect, we invite comment on whether the definition also should provide that any determination that the Corps makes concerning these transition points will be controlling for purposes of SMCRA regulatory programs. Commenters should discuss the applicability of two SMCRA provisions in this context. First, section 702(a) of SMCRA [162] provides that ''[n]othing in this Act shall be construed as superseding, amending, modifying, or repealing'' the Clean Water Act, any rule or regulation adopted under the Clean Water Act, or any state laws enacted pursuant to the Clean Water Act. Second, section 505(b) of SMCRA [163] provides that any provision of any state law or regulation may not be construed to be inconsistent with SMCRA if it ''provides for more stringent land use and environmental controls and regulations of surface coal mining and reclamation operation[s] than do the provisions of this Act or any regulation issued pursuant thereto.'' In other words, should our regulations allow states to adopt and apply stream definitions in a manner that would protect a greater length of stream than would the Corps determinations?

Our existing definition has two principal differences with the Corps' definition that we propose to adopt. First, paragraph (b) of our existing definition of an intermittent stream would not consider a stream with a base flow resulting from the melting of a snowpack to be an intermittent stream because the snowpack does not lie below the local water table and because snowmelt is not considered groundwater. However, the preamble to the definition of ''ephemeral stream'' that the Corps adopted as part of the 2012 reissuance of the nationwide permits under section 404 of the Clean Water Act states that snowmelt contributes to the flow of intermittent and perennial streams, especially in areas with deep snow packs, and that melting snow should not be considered a precipitation event because the development of a snowpack occurs over the course of a winter season. See 77 FR 10184, 10262 (Feb. 21, 2012). In essence, the preamble discussion would allow a stream originating from a melting snowpack to be considered an intermittent stream even though the definition of ''intermittent stream'' requires groundwater as the source of base flow. We invite comment on whether we should revise our proposed definition of ''intermittent stream'' to include language consistent with the discussion of snowmelt in the preamble to the Corps' definition of ''ephemeral stream.''

Second, we propose to remove paragraph (a) of our existing definition of ''intermittent stream.'' That paragraph automatically designates any stream or reach of a stream that drains a watershed of at least one square mile as an intermittent stream. This provision is inconsistent with generally-accepted stream classification systems because it is based on watershed size rather than streambed characteristics and duration and source of streamflow. For example, one study in West Virginia found perennial streams with a median drainage area of less than 0.1 square mile and intermittent flows with a median drainage area of 14.5 acres, both of which are much smaller than one square mile (640 acres).[164] On the other hand, ephemeral streams in arid regions can have drainage areas of dozens of square miles. Furthermore, the existing definition could be construed as meaning that all streams with a watershed greater than one square mile are intermittent, even when they would otherwise be classified as perennial streams.

We originally adopted the watershed-size criterion because Alabama and Illinois found it easy to administer and apply and because we believed that a stream with a watershed of that size has a potential for flood volumes that would necessitate application of the stream-channel diversion requirements.[165] As explained below, we no longer find either reason compelling.

First, the easy-to-administer argument is valid only if the watershed-size criterion was the only criterion for determining whether a stream is intermittent. However, that is not the case. The existing definition also provides that any stream that is below the local water table for at least part of the year and obtains its flow from both surface runoff and groundwater discharge is an intermittent stream. As discussed above, both perennial and intermittent streams often have watersheds much smaller than one square mile, so the permit applicant and the regulatory authority still must conduct a hydrological evaluation of streams in watersheds smaller than one square mile to determine whether they are nonetheless intermittent or perennial based on the source of streamflow.

With respect to the second reason, the possibility of flood damage from diversion of an otherwise-ephemeral stream with a watershed greater than one square mile does not justify retention of a definition of intermittent stream that is not consistent with definitions used by the U.S. Army Corps of Engineers and the scientific community. The preamble to 30 CFR 816.43 and 817.43 requests comment on whether we should revise our regulations governing diversions to adopt design requirements based on whether the diversion is permanent or temporary rather than on whether the flow being diverted is perennial, intermittent, or ephemeral.

Land Use

We propose to revise the introductory text of this definition for clarity and to add a sentence specifying that the individual land use categories in the definition are the categories to be used in the regulatory program. In addition, we propose to remove the third sentence of the first paragraph of the existing definition. That sentence reads: ''Changes of land use from one of the following categories to another shall be considered as a change to an alternative land use which is subject to approval by the regulatory authority.'' This sentence is inconsistent with the revisions that we are proposing to 30 CFR 780.24 and 784.24, as discussed later in this preamble. Under our proposed revisions to those rules, a proposed postmining

[162] 30 U.S.C. 1292(a).

[163] 30 U.S.C. 1255(b).

[164] Paybins, Katherine M., ''Flow Origin, Drainage Area, and Hydrologic Characteristics for Headwater Streams in the Mountaintop Coal-Mining Region of Southern West Virginia, 2000–2001.'' Water-Resources Investigations Report 02–4300, U.S. Department of the Interior Geological Survey.

[165] 44 FR 14932 (Mar. 13, 1979).

land use that differs from the actual premining land use would not require approval as a higher or better use if the land as it existed before mining was already capable of supporting that use in its existing condition. Moreover, this change would better implement section 515(b)(2) of SMCRA,[166] which provides that the permittee must ''restore the land affected to a condition capable of supporting the uses [not just the use that existed immediately prior to mining] which it was capable of supporting prior to any mining, or higher or better uses of which there is reasonable likelihood.'' This statutory language indicates that the alternative postmining land use requirements in our rules should apply only when the applicant or permittee proposes a higher or better use, not a use that the land was capable of supporting before mining.

We also propose to revise the definition of cropland in paragraph (a) of the definition of land use to more accurately and inclusively describe the types of plantings and planting settings associated with that land use category. Specifically, we propose to include commercial nursery plantings, vegetables, fruits, nuts, and other plants typically grown in fields, orchards, vineyards, and similar settings involving intensive agricultural uses.

Material Damage

We propose to revise a cross-reference to 30 CFR 784.20 in this definition to be consistent with our proposed redesignation of existing § 784.20 as § 784.30. We propose no other changes to this definition, which applies only in the context of damage that occurs as a result of subsidence caused by underground mining operations. It is not related to, nor does it replace or supersede, the definition of ''material damage to the hydrologic balance outside the permit area'' or requirements related to that definition.

Material Damage to the Hydrologic Balance Outside the Permit Area

Our existing regulations do not define this term, which, as discussed below, is central to one of the principal findings required for approval of a permit application. Section 510(b)(3) of SMCRA [167] specifies that the regulatory authority may not approve a permit application unless the regulatory authority has ''made an assessment of the probable cumulative impact of all anticipated mining in the area on the hydrologic balance specified in section 507(b).'' This assessment is generally referred to as the cumulative hydrologic impact assessment (CHIA). Section 507(b)(11) of SMCRA,[168] the pertinent part of the SMCRA section referenced in the quote above, requires that each permit application include—

> a determination of the probable hydrologic consequences of the mining and reclamation operations, both on and off the mine site, with respect to the hydrologic regime, quantity and quality of water in surface and ground water systems including the dissolved and suspended solids under seasonal flow conditions and the collection of sufficient data for the mine site and surrounding areas so that an assessment can be made by the regulatory authority of the probable cumulative impact of all anticipated mining in the area upon the hydrology of the area and particularly upon water availability.

Section 510(b)(3) also specifies that the regulatory authority may not approve a permit unless the application affirmatively demonstrates and the regulatory authority finds in writing that the proposed operation ''has been designed to prevent material damage to the hydrologic balance outside the permit area.'' However, SMCRA does not define or explain the meaning of the term ''material damage to the hydrologic balance outside the permit area.''

Our existing regulations do not fully integrate the implementation of sections 507(b)(11) and 510(b)(3) of SMCRA [169] because they do not require collection of sufficient data for the proposed permit area and surrounding areas to prepare an adequate CHIA and because they do not define or establish criteria for determining material damage to the hydrologic balance outside the permit area. In particular, they do not specifically require data related to the biological community in streams or data comprised of a complete suite of the chemical and physical constituents and properties of groundwater and surface water. Without sound baseline information on surface-water and groundwater quality and quantity and the biological communities in streams, the regulatory authority cannot prepare an adequate cumulative hydrologic impact assessment or determine whether the proposed mining operation has been designed to prevent material damage to the hydrologic balance outside the permit area. This proposed rule is intended to correct this problem by adding a definition of the term ''material damage to the hydrologic balance outside the permit area'' and by refining and expanding baseline data requirements for permit applications, which we discuss later in this preamble in connection with proposed 30 CFR 780.19. These two changes would promote more effective implementation of sections 507(b)(11) and 510(b)(3) of SMCRA [170] and, in combination with the improved monitoring requirements in proposed 30 CFR 780.23 and 816.35 through 816.37, would better protect streams.

In developing a definition of ''material damage to the hydrologic balance outside the permit area,'' we looked to our previous statements on this matter in preambles to our regulations concerning hydrology and geology. We also examined other provisions of SMCRA and the legislative history of section 510(b)(3) of SMCRA.[171] Several commenters on a proposed rule on hydrology and geology that we published on June 25, 1982 (47 FR 27712), requested that we add a definition of material damage to the hydrologic balance outside the permit area to our regulations. However, the preamble to the final rule that we adopted in response to that proposed rule explains that we declined the requests for a definition ''because the gauges for measuring material damage may vary from area to area and from operation to operation. OSM[RE] has not established fixed criteria, except for those established under §§ 816.42 and 817.42 related to compliance with water-quality standards and effluent limitations.'' [172] The preamble provides no further explanation of that statement, but it does state that we agreed with commenters that ''regulatory authorities should establish criteria to measure material damage.'' [173]

In the 30 years since we published that preamble, very few states have adopted a definition or established programmatic criteria for material damage to the hydrologic balance outside the permit area. Therefore, adoption of a federal definition of material damage to the hydrologic balance outside the permit area is both necessary and appropriate to ensure effective and consistent application of that term.

In addition, the absence of either a federal definition of or criteria for material damage to the hydrologic balance outside the permit area has made it difficult for us to determine whether states are effectively implementing their counterparts to 30 CFR 773.15(c) and section 510(b)(3) of

[166] 30 U.S.C. 1265(b)(2).

[167] 30 U.S.C. 1260(b)(3).

[168] 30 U.S.C. 1257(b)(11).

[169] 30 U.S.C. 1257(b)(11) and 1260(b)(3).

[170] 30 U.S.C. 1257(b)(11) and 1260(b)(3).

[171] 30 U.S.C. 1260(b)(3).

[172] 48 FR 43973 (Sept. 26, 1983).

[173] *Id.*

SMCRA.[174] As we have long recognized, definitions can help us more effectively implement SMCRA: ''Many of the terms used by Congress are not defined or explained and thus are too vague to be enforced effectively until given more precise meanings.'' [175]

The legislative history of section 510(b)(3) of SMCRA [176] provides little illumination as to the meaning of material damage to the hydrologic balance outside the permit area and thus is of little assistance in developing a definition. The term first appears in H.R. 2, the House version of the legislation that ultimately became SMCRA. Earlier unsuccessful precursors to SMCRA used the phrase ''significant irreparable offsite damage,'' which also was undefined. In explaining the change in terminology, the Committee report states only that the previous phrase was ''deleted in favor of language that specifies that the mine is to be designed to prevent damage to the hydrologic balance outside the permit area.'' [177] There is no discussion of whether, in making this substitution, Congress intended to eliminate the elements of ''significant'' and ''irreparable'' from the standard, or whether the new language is merely a nonsubstantive change in wording.

When we declined to define ''material damage to the hydrologic balance outside the permit area'' in 1983, we noted that the only fixed criteria that we established at the time for such damage were those included in ''§§ 816.42 and 817.42 related to compliance with water-quality standards and effluent limitations.'' However, we do not think it appropriate to interpret this preamble statement as meaning that any exceedance of water quality standards or effluent limitations, no matter how minor and no matter what the cause, would constitute material damage to the hydrologic balance outside the permit area.

Our proposed definition reflects our conclusion that the mere possibility of an acid or toxic discharge or other type of degradation of surface water or groundwater does not provide an adequate basis for permit denial on the grounds that it would not prevent material damage to the hydrologic balance outside the permit area. Instead, for a permit to be denied on this basis, there must be some probability of the formation of acid or toxic mine drainage that may continue after the completion of mining and land reclamation, and there must be a reasonable likelihood that the reclamation plan proposed by the applicant will not be capable of preventing the formation of that drainage. We base our conclusion, in part, on our prior statements relating to the preparation of cumulative hydrologic impact assessments. We find these statements to be particularly instructive because section 510(b)(3) of SMCRA,[178] which refers to those assessments, also contains the term ''material damage to the hydrologic balance outside the permit area.'' In particular, in the preamble to the 1983 version of 30 CFR 780.21(g), we stated that the cumulative hydrologic impact assessment must be ''accomplished in an environmentally and scientifically sound fashion,'' and that it ''cannot reasonably be extended to include remote and speculative impacts.'' [179] Instead, we determined that the assessment ''should be based upon those impacts that have a reasonable likelihood for occurring and which are sufficiently defined to enable the regulatory authority to reach a decision.'' [180]

That preamble, however, does not define or otherwise clarify the meaning of ''reasonable likelihood'' and ''sufficiently defined.'' Thus, we looked to other sources, including related provisions of SMCRA, to provide some guidance as to what material damage to the hydrologic balance outside the permit area means in the context of water quality parameters for which there are no effluent limitations. Section 508(a)(13) of SMCRA [181] requires that each reclamation plan include—

> [A] detailed description of the measures to be taken during the mining and reclamation process to assure the protection of:
>
> (A) the quality of surface and ground water systems, both on- and off-site, from adverse effects of the mining and reclamation process;
>
> (B) the rights of present users to such water; and
>
> (C) the quantity of surface and ground water systems, both on- and off-site, from adverse effects of the mining and reclamation process or to provide alternative sources of water where such protection of quantity cannot be assured[.]

In 1979, we noted that this provision of SMCRA, along with sections 102, 510(b)(3), and 522(a) through (d) of the Act,[182] ''requires that mining not be permitted at all, if reclamation cannot be feasibly performed to protect water uses. Thus, to the extent that mining would result in unacceptable discharges of sulfates and total dissolved solids, the regulatory authority should not issue permits for the areas involved.'' [183] As that passage from the 1979 preamble indicates, we have never interpreted section 508(a)(13) of SMCRA [184] to operate as an absolute prohibition on mining operations that would have adverse effects on the hydrologic balance. In our judgment, this provision also does not supersede the performance standards in sections 515 and 516 of SMCRA,[185] which recognize that mining may cause some adverse effects on surface water and groundwater, particularly within the permit area. See, *e.g.,* section 515(b)(10) of SMCRA,[186] which provides that surface coal mining and reclamation operations must be conducted ''to minimize the disturbances to the prevailing hydrologic balance at the mine-site and in associated offsite areas and to the quality and quantity of water in surface and ground water systems both during and after surface coal mining operations and during reclamation.'' Significantly, this provision of SMCRA uses the term ''minimize'' rather than ''prevent'' when describing the standard that surface coal mining and reclamation operations must meet in this context.

With these considerations in mind, we have designed our proposed definition of material damage to the hydrologic balance outside the permit area to protect all designated uses of surface water and all existing and reasonably foreseeable uses of surface water and groundwater outside the permit area. Specifically, in relevant part, under our proposed definition, ''material damage to the hydrologic balance outside the permit area'' would mean any adverse impact from surface or underground mining operations on the quantity or quality of surface water or groundwater, or on the biological condition of a perennial or intermittent stream, that would preclude any designated surface-water use under sections 101(a) and 303(c) of the Clean Water Act [187] or any existing or reasonably foreseeable use of surface water or groundwater outside the permit area. Our proposed definition is consistent with our statement in the 1979 preamble that mining should not be permitted at all if reclamation cannot feasibly protect water uses.[188]

[174] 30 U.S.C. 1260(b)(3).

[175] 44 FR 15148 (Mar. 13, 1979).

[176] 30 U.S.C. 1260(b)(3).

[177] H.R. Rep. No. 218, at 65 (1977).

[178] 30 U.S.C. 1260(b)(3).

[179] 48 FR at 43972 (Sept. 26, 1983).

[180] *Id.*

[181] 30 U.S.C. 1258(a)(13).

[182] 30 U.S.C. 1202, 1260(b)(3), and 1272(a) through (d).

[183] 44 FR 15156 (Mar. 13 1979).

[184] 30 U.S.C. 1258(a)(13).

[185] 30 U.S.C. 1265 and 1266.

[186] 30 U.S.C. 1265(b)(10).

[187] 33 U.S.C. 1251(a) and 1313(c).

[188] 44 FR 15156 (Mar. 13, 1979).

States have developed multimetric bioassessment protocols for use in determining the biological condition of streams and other surface waters for purposes of preparing the water quality inventory required under section 305(b) of the Clean Water Act. Multimetric indices include metrics such as species richness, complexity, and tolerance as well as trophic measures. They provide a quantitative comparison (often referred to as an index of biological or biotic integrity) of the ecological complexity of biological assemblages relative to a regionally-defined reference condition. Under proposed 30 CFR 780.19(e)(2) and 784.19(e)(2), states would be required to establish a correlation between these index values and each designated use under sections 101(a) and 303(c) of the Clean Water Act, as well as any other existing or reasonably foreseeable uses. In other words, we anticipate that the SMCRA regulatory authority, with assistance from the appropriate Clean Water Act agencies, will define the range of index values required to support each existing, reasonably foreseeable, and designated use of the stream segment in question. Any change in the biological condition of the stream or other surface-water body, as documented by index scores resulting from use of the bioassessment protocol for monitoring purposes, that would preclude attainment or maintenance of an existing, reasonably foreseeable, or designated use of surface water would constitute material damage to the hydrologic balance outside the permit area if the change in scores is a result of the SMCRA operation. We seek comment on the effectiveness of using index scores from bioassessment protocols to ascertain impacts on existing, reasonably foreseeable, or designated uses. If you disagree with the use of index scores from bioassessment protocols, please identify a viable and scientifically-valid alternative.

The regulations implementing the Clean Water Act define ''existing uses'' as ''those uses actually attained in a waterbody on or after November 28, 1975, whether or not they are included in the water quality standards.'' See 40 CFR 131.3. In the context of this proposed definition, we intend to interpret the term ''existing uses'' in a similar fashion; *i.e.,* existing uses would be those uses in existence at the time of preparation of the permit application, regardless of whether those uses are designated uses. Alternatively, we may replace the term ''existing uses'' with ''premining uses'' for purposes of clarity. We invite comment on this topic.

The second part of the proposed definition of ''material damage to the hydrologic balance outside the permit area'' provides that this term means any adverse impact from surface coal mining and reclamation operations or from underground mining activities, including any adverse impacts from subsidence that may occur as a result of underground mining activities, on the quality or quantity of surface water or groundwater, or on the biological condition of a perennial or intermittent stream, that would impact threatened or endangered species, or have an adverse effect on designated critical habitat, outside the permit area in violation of the Endangered Species Act of 1973, 16 U.S.C. 1531 *et seq.* This provision is intended to ensure compliance with both the Endangered Species Act and the fish and wildlife protection provisions of sections 515(b)(24) and 516(b)(11) of SMCRA. We also are considering alternative language for the second part of the definition. That alternative would replace the phrase ''that would impact threatened or endangered species, or have an adverse effect on designated critical habitat, outside the permit area in violation of the Endangered Species Act of 1973, 16 U.S.C. 1531 *et seq.*'' with ''that would jeopardize the continued existence of threatened or endangered species, or result in the destruction or adverse modification of designated critical habitat, outside the permit area in violation of the Endangered Species Act of 1973, 16 U.S.C. 1531 *et seq.*'' The second alternative would parallel the language of existing and proposed 30 CFR 816.97(b) and 817.97(b).

State water quality standards and associated water quality criteria provide a starting point for establishment of material damage criteria under SMCRA for surface waters, but they are not the endpoint. SMCRA material damage criteria must be no less stringent than Clean Water Act water quality standards and criteria in all cases, but, in some situations, they may need to be more stringent to protect unique uses or to comply with the Endangered Species Act. In addition, the SMCRA regulatory authority may need to establish numerical material damage criteria for parameters of concern for which there are no numerical water quality standards or water quality criteria under the Clean Water Act.

The Clean Water Act does not apply to groundwater, so the SMCRA regulatory authority would need to use best professional judgment to establish material damage criteria to protect existing and reasonably foreseeable uses of groundwater. Material damage criteria for groundwater also would need to take into consideration the needs of any threatened or endangered species.

The proposed definition does not differentiate between permanent or long-term impacts and temporary or short-term impacts. Any impact that would preclude a designated, existing, or reasonably foreseeable use of surface water outside the permit area, or an existing or reasonably foreseeable use of groundwater outside the permit area, would constitute material damage to the hydrologic balance, regardless of the duration of the impairment. Isolated noncompliant discharges would not be considered material damage unless those discharges are of a magnitude sufficient to preclude a protected use. We invite comment on whether the definition should exclude temporary adverse impacts if the permit applicant can demonstrate that there will be no long-term adverse impacts after mining is completed.

Nothing in the proposed definition is intended to supersede the water supply replacement provisions of sections 717 and 720 of SMCRA.[189] In other words, material damage to the hydrologic balance outside the permit area would not exist solely because the operation destroys or damages protected water supplies, provided that the permittee replaces those supplies in accordance with applicable regulatory program requirements (*i.e.,* proposed 30 CFR 816.40 or 817.40) and the definition of ''replacement of water supply'' in 30 CFR 701.5.

The definition would apply to adverse impacts from subsidence resulting from underground mining operations and to other adverse impacts resulting from underground mining operations; *e.g.,* dewatering a stream by mining through a fracture zone or dewatering an aquifer or saturated zone that serves as a water supply for legitimate uses. It would not be limited to the impacts of surface mining activities or the impacts of activities conducted on the surface of land in connection with an underground coal mine. Section 510(b)(3) of SMCRA[190] applies to all applications for permits or permit revisions. This provision has never contained an exception for impacts from underground mining operations or for any other type of surface coal mining operations for which a permit is required.

[189] 30 U.S.C. 1307 and 1309a.

[190] 30 U.S.C. 1260(b)(3).

Paragraphs (a) and (d) of section 516 of SMCRA[191] require that the Secretary take into consideration the distinct difference between surface and underground coal mining when promulgating regulations for underground mining operations. However, this provision does not justify allowing underground mining operations or subsidence resulting from underground mining operations to dewater or degrade a stream to the extent of precluding an existing, reasonably foreseeable, or designated use of that stream. Doing so would hold underground mines to a lesser standard of environmental protection than surface mines. Nothing in the environmental protection purposes of SMCRA, as set forth in paragraphs (a), (c), (d), and (f) of section 102 of the Act,[192] suggests or supports the adoption of a lesser standard for underground mines.

We are aware of concerns that including impacts from subsidence in the definition could effectively prohibit use of the longwall mining method or other high-extraction methods of underground mining to recover a substantial proportion of coal reserves. However, application of this definition to the area overlying proposed underground workings and the area within a reasonable angle of draw from the perimeter of those workings would not prohibit all mining operations that would result in subsidence of streams. It would only prohibit mining operations that would result in dewatering of a stream to the extent that the stream would no longer be able to support existing or reasonably foreseeable uses or designated uses of the stream under the Clean Water Act and for which there are no viable measures to prevent this impact. Our draft regulatory impact analysis found that the proposed rule, including this definition, would not strand or sterilize any reserves; *i.e.,* the proposed rule would not make any coal reserves that are technically and economically feasible to mine under baseline conditions unavailable for extraction.

Underground mine operators cannot avoid application of section 510(b)(3) of SMCRA[193] by drawing the permit boundaries for the mine to include undisturbed areas that may be affected by subsidence. In revising the definition of ''permit area'' in 1983, we specifically rejected a suggestion that the definition should include all areas overlying underground workings. Instead, we stated that the permit area consists of all ''areas for which reclamation operations are planned and for which the performance bond can be accurately set,'' which, we further explain, would not include areas with subsidence potential but no planned disturbance.[194] We recognize that some state regulatory programs may include the area overlying the proposed underground workings and other undisturbed areas with subsidence potential within their definitions of ''permit area.'' Should our proposed definition of material damage to the hydrologic balance outside the permit area become final, those states would need to specify that the prohibition on the approval of permit applications for operations that would result in material damage to the hydrologic balance outside the permit area applies to all lands to which that prohibition would apply under the federal regulations. In other words, state regulatory authorities would have to ensure that the prohibition would apply to all lands overlying the underground mine workings and to all lands within a reasonable angle of draw [195] from the perimeter of those workings, if those lands are not otherwise disturbed by surface operations or facilities associated with the underground mine.

Mountaintop Removal Mining

We propose to consolidate the descriptions of mountaintop removal mining operations in existing 30 CFR 785.14(b) and 824.11(a)(2) and (3) into a new definition in § 701.5 for clarity and ease of use. This new definition is consistent with section 515(c)(2) of SMCRA,[196] which pertains to operations that ''remove an entire coal seam or seams running through the upper fraction of a mountain, ridge, or hill . . . by removing all of the overburden and creating a level plateau or a gently rolling contour with no highwalls remaining, and capable of supporting postmining uses in accord with the requirements of this section.'' We anticipate that this definition also may be useful in correcting misconceptions about the meaning of this term and what types of operations it includes.

Occupied Residential Dwelling and Structures Related Thereto

We propose to revise a cross-reference to 30 CFR 784.20 in this definition to be consistent with our proposed redesignation of existing § 784.20 as § 784.30. We propose no other substantive revisions to this definition—only a plain language revision to the last sentence.

Parameters of Concern

We propose to add a definition of this term because we use this term extensively in our proposed rule. Under the proposed definition, parameters of concern would consist of those chemical or physical characteristics or properties of surface water or groundwater that could be altered by mining activities in a manner that would adversely impact the quality of surface water or groundwater or the biological condition of a stream.

Perennial Stream

We propose to redefine ''perennial stream'' in a manner that is substantively identical to the manner in which the U.S. Army Corps of Engineers defines that term in Part F of the 2012 reissuance of the nationwide permits under section 404 of the Clean Water Act. See 77 FR 10184, 10288 (Feb. 21, 2012). Adoption of a substantively identical definition would promote consistency in application and interpretation of that term under both SMCRA and Clean Water Act programs.

We invite comment on whether the definition in the final rule should include language specifying that the U.S. Army Corps of Engineers has the ultimate authority to determine the point at which an ephemeral stream becomes an intermittent stream or a perennial stream and vice versa. Further, if the final rule includes language to that effect, we invite comment on whether the definition also should provide that any determination that the Corps makes concerning these transition points will be controlling for purposes of SMCRA regulatory programs. Commenters should discuss the applicability of two SMCRA provisions in this context. First, section 702(a) of SMCRA [197] provides that ''[n]othing in this Act shall be construed as superseding, amending, modifying, or repealing'' the Clean Water Act, any rule or regulation adopted under the Clean Water Act, or any state laws enacted pursuant to the Clean Water Act. Second, section 505(b) of SMCRA [198] provides that any provision of any state law or regulation may not be construed to be inconsistent with SMCRA if it ''provides for more stringent land use and environmental controls and regulations of surface coal mining and

[191] 30 U.S.C. 1266(a) and (d).

[192] 30 U.S.C. 1202(a),(c),(d), and (f).

[193] 30 U.S.C. 1260(b)(3).

[194] 48 FR 14820 (Apr. 5, 1983).

[195] The angle of draw would be determined on a site-specific basis after evaluating the thickness of the strata overlying the coal seam, the lithology of the strata overlying the coal seam, and the thickness of the coal seam mined.

[196] 30 U.S.C. 1265(c)(2).

[197] 30 U.S.C. 1292(a).

[198] 30 U.S.C. 1255(b).

reclamation operation[s] than do the provisions of this Act or any regulation issued pursuant thereto.'' In other words, should our regulations allow states to adopt and apply stream definitions in a manner that would protect a greater length of stream than would the Corps determinations?

Our existing definition has two principal differences with the Corps' definition that we propose to adopt. First, our existing definition of a perennial stream would not consider a stream with a base flow resulting from the melting of a snowpack to be a perennial stream because the snowpack does not lie below the local water table and because snowmelt is not considered groundwater. However, the preamble to the definition of ''ephemeral stream'' that the Corps adopted as part of the 2012 reissuance of the nationwide permits under section 404 of the Clean Water Act states that snowmelt contributes to the flow of intermittent and perennial streams, especially in areas with deep snow packs, and that melting snow should not be considered a precipitation event because the development of a snowpack occurs over the course of a winter season. See 77 FR 10184, 10262 (Feb. 21, 2012). In essence, the preamble discussion would allow a stream originating from a melting snowpack to be considered a perennial stream even though the definition of ''perennial stream'' requires groundwater as the source of base flow. We invite comment on whether we should revise our proposed definition of ''perennial stream'' to include language consistent with the discussion of snowmelt in the preamble to the Corps' definition of ''ephemeral stream.''

Second, the Corps' definition of ''perennial stream'' refers to continuous flow year-round ''during a typical year.'' Our existing definition refers to continuous flow during all of the calendar year. The Corps' definition—and hence our proposed definition—reflect the fact that perennial streams or segments of those streams may cease flowing during periods of sustained below-normal precipitation. Our proposed adoption of the Corps' definition would have the effect of clarifying that those stoppages do not result in reclassification of the stream as intermittent.

Reclamation

The existing definition of reclamation in 30 CFR 701.5 provides that this term ''means those actions taken to restore mined land as required by this chapter to a postmining land use approved by the regulatory authority.'' This definition is too narrow and does not fully implement SMCRA.

First, the existing definition applies only to the mined area, not to the entire disturbed area. Section 102(e) of SMCRA [199] states that one of the purposes of SMCRA is to ''assure that adequate procedures are undertaken to reclaim surface areas as contemporaneously as possible with the surface coal mining operations.'' Among other things, the definition of ''surface coal mining operations'' in section 701(28) of SMCRA [200] includes all activities conducted on the surface of lands in connection with a surface coal mine. Those activities are not limited to mined areas. In addition, paragraph (B) of the definition includes ''the areas upon which such activities occur or where such activities disturb the natural land surface.'' Therefore, we propose to apply the definition to the entire disturbed area, rather than limiting it to the mined area.

Second, the existing definition includes only actions taken to restore land to an approved postmining land use, not to all actions taken to restore land and water to the conditions required by the Act and regulatory program. Third, the existing definition implies that the land must be restored to an actual postmining land use when, in fact, section 515(b)(2) of SMCRA [201] requires only that the land be restored to a condition in which it is capable of supporting the uses it was capable of supporting prior to any mining or, subject to certain restrictions, higher or better uses.

The proposed definition corrects these deficiencies. Our proposed rule would define reclamation as meaning those actions taken to restore the mined land and associated disturbed areas to a condition in which the site is (1) capable of supporting the uses it was capable of supporting prior to any mining or any higher or better uses approved by the regulatory authority, and (2) meets all other requirements of the permit and regulatory program that pertain to restoration of the site. In addition, our proposed definition specifically details what reclamation means for sites with discharges that require treatment. For those sites, we propose to revise the definition to specify that the term also includes those actions taken or that must be taken to eliminate, remediate or treat those discharges, including both discharges from the mined area and all other discharges that are hydrologically connected to either the mined area or the mining operation, regardless of whether those discharges are located within the disturbed area.

However, nothing in this proposed definition should be construed as meaning that the regulatory authority may approve a permit application for an operation that will cause, or that is likely to cause, a postmining discharge that requires treatment to prevent pollution. Doing so would violate SMCRA as explained in the acid mine drainage policy statement that we issued on March 31, 1997.[202]

Reclamation Plan

We propose to add this definition to clarify which provisions of our permit application requirements are considered part of the reclamation plan. Section 701(21) of SMCRA [203] defines ''reclamation plan'' as ''a plan submitted by an applicant for a permit under a State program or Federal program which sets forth a plan for reclamation of the proposed surface coal mining operations pursuant to section 508 [of SMCRA.]'' In this proposed rule, we propose to adopt a streamlined version of the statutory definition that complies with plain language principles, eliminates the unnecessary reference to state or federal programs, and contains adaptations needed to reflect the structure and organization of the regulations that correspond to the reclamation plan requirements of SMCRA. Specifically, the proposed rule would replace the reference to section 508 of SMCRA [204] with references to 30 CFR parts 780, 784, and 785. Part 780 contains the rules that implement section 508 of SMCRA.[205] Part 784 is the underground mining counterpart of part 780. Part 785 contains permit application requirements, including reclamation plan requirements, that apply to special categories of mining.

Renewable Resource Lands

We propose to revise this definition to clarify that it includes recharge areas for surface waters, not just recharge areas for underground waters. We find no legal or technical reason to exclude recharge areas for lakes, ponds, and wetlands from classification as renewable resource lands. Section

[199] 30 U.S.C. 1202(e).

[200] 30 U.S.C. 1291(28).

[201] 30 U.S.C. 1265(b)(2).

[202] ''Policy Goals and Objectives on Correcting, Preventing and Controlling Acid/Toxic Mine Drainage,'' OSMRE, March 31, 1997. Available at *www.osmre.gov/lrg/docs/amdpolicy033197.pdf* (last accessed August 27, 2014).

[203] 30 U.S.C. 1291(21).

[204] 30 U.S.C. 1258.

[205] 30 U.S.C. 1258.

522(a)(3)(C) of SMCRA [206] uses this term in the context of establishing criteria for designating lands as unsuitable for certain types of surface coal mining operations. Specifically, it provides that lands are eligible for designation if surface coal mining operations would ''affect renewable resource lands in which such operations could result in a substantial loss or reduction of long-range productivity of water supply . . .'' This statutory provision further provides that those lands ''include aquifers and aquifer recharge areas,'' but it does not limit the scope of that provision to those areas. Many towns and cities depend upon surface-water reservoirs for their water supply, which means that paragraph (a)(3)(C) would include the watersheds of those reservoirs. Surface disturbances like mining that involve removal of vegetation can significantly impact both the quantity and quality of water available from those watersheds.

Replacement of Water Supply

We propose to revise this definition by moving existing paragraphs (a) and (b), which describe how the water supply replacement obligation may be satisfied, to the performance standards at 30 CFR 816.40 and 817.40. Existing paragraphs (a) and (b) of the definition are more appropriately categorized as performance standards, which means that they should be codified as part of the performance standards in subchapter K, not as part of the definition of this term.

Temporary Diversion

We propose to revise this definition in a manner that avoids using part of the term itself (''diversion'') as part of the definition. In addition, the existing definition, which includes only diversions of streams and overland flow, could be construed as excluding diversion channels used to convey surface runoff or pit water to a siltation structure or treatment facility. We propose to revise the definition to specifically include those channels.

Waters of the United States

To promote consistency with the Clean Water Act, we propose to define this term as having the same meaning as the corresponding definition in 40 CFR 230.3(s), which is part of the Section 404(b)(1) Guidelines under the Clean Water Act

C. Part 773: Requirements for Permits and Permit Processing

1. Section 773.5: How must the regulatory authority coordinate the permitting process with requirements under other laws?

Section 773.5 specifies that each regulatory program must provide for the coordination of review and issuance of SMCRA permits with applicable provisions of various federal laws. It implements, in part, section 503(a)(6) of SMCRA,[207] which requires that each state regulatory program establish ''a process for coordinating the review and issuance of permits for surface coal mining and reclamation operations with any other Federal or State permit process applicable to the proposed operations.''

We propose to add the Clean Water Act, 33 U.S.C. 1251 *et seq.,* to the list of laws for which coordination is required under both state and federal regulatory programs. Almost all surface coal mining operations require Clean Water Act permits and both SMCRA and the Clean Water Act are concerned with protection of water quality, so it makes sense to coordinate the SMCRA and Clean Water Act permitting processes. Coordination of the SMCRA and Clean Water Act permitting processes also would assist in reducing or eliminating potential conflicts between SMCRA and Clean Water Act permits. That outcome would be consistent with section 702(a) of SMCRA,[208] which provides that ''[n]othing in this Act shall be construed as superseding, amending, modifying, or repealing'' the Clean Water Act, any rule or regulation adopted under the Clean Water Act, or any state laws enacted pursuant to the Clean Water Act.

In addition, we propose to add the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. 4371 *et seq.,* to the list of laws for which a coordination process is required under federal regulatory programs. There is no need or basis to apply this coordination requirement to state regulatory programs approved under SMCRA because the Departmental Manual excludes permit applications under state SMCRA regulatory programs from NEPA compliance. See 516 DM 13.3.

Finally, we propose to clarify that only federal regulatory programs must establish a process for coordination with the National Historic Preservation Act of 1966 (NHPA), 54 U.S.C. 300101 *et seq.* This change is consistent with *National Mining Association* v. *John M. Fowler,* 324 F.3d 752 (D.C. Cir. 2003), in which the court held that projects licensed or permitted by state and local agencies pursuant to a delegation or approval by a federal agency are not federally funded or federally licensed undertakings for purposes of section 106 of the NHPA.

2. Section 773.7: How and when will the regulatory authority review and make a decision on a permit application?

We propose to restructure 30 CFR 773.7(a) to improve clarity and eliminate a grammatical error in the existing language. There are no substantive revisions to this paragraph.

We also propose to add 30 CFR 773.7(b)(2), which would list the factors that the regulatory authority must consider in determining what constitutes a reasonable time for notifying a permit applicant whether the application has been approved or disapproved, in whole or in part. The factors in proposed paragraphs (b))(2)(i) through (iv) reflect the factors listed in section 514(b) of SMCRA.[209] Proposed paragraph (b)(2)(v) would require consideration of the time required to complete the interagency permitting coordination process under 30 CFR 773.5.

Finally, we propose to redesignate existing 30 CFR 773.7(b) as 30 CFR 773.7(c) and revise that paragraph to specifically state that an applicant for the transfer, assignment, or sale of permit rights has the burden of proof for establishing that the application is in compliance with all regulatory program requirements. We propose to make this change because the transfer, assignment, or sale of permit rights is a type of permit revision, which means that an application of that nature is subject to section 510(a) of SMCRA.[210] In relevant part, that paragraph of the Act states that the applicant for a permit or permit revision has the burden of establishing that the application is in compliance with all requirements of the applicable regulatory program.

3. Section 773.15: What findings must the regulatory authority make before approving a permit application?

Most of the changes that we propose to make to this section result from either the application of plain language principles or an effort to clarify the meaning and scope of the findings that the regulatory authority must make before approving a permit application.

Proposed paragraph (c)(2) would clarify that the finding that the proposed

[206] 30 U.S.C. 1272(a)(3)(C).

[207] 30 U.S.C. 1253(a)(6).

[208] 30 U.S.C. 1292(a).

[209] 30 U.S.C. 1264(b).

[210] 30 U.S.C. 1260(a).

permit area is not within an area designated as unsuitable for surface coal mining operations under 30 CFR parts 762 and 764 or 769 applies only to lands that are designated as unsuitable for the type of surface coal mining operations that the permit applicant proposed to conduct. For example, lands may be designated as unsuitable only for surface mining, in which case the regulatory authority may approve a permit for an underground mine. Similarly, proposed paragraph (c)(3) would clarify that the finding that the proposed permit area is not within an area subject to the prohibitions of 30 CFR 761.11 does not apply in situations in which one or more of the exceptions (valid existing rights, the existing operation exemption, landowner consent, joint approval, etc.) to those prohibitions applies.

We propose to revise the finding in paragraph (e) concerning the assessment of the cumulative hydrologic impacts of mining by adding paragraph (e)(3), which would require that the regulatory authority find that it has inserted into the permit criteria defining material damage to the hydrologic balance outside the permit area on a site-specific basis, expressed in numerical terms for each parameter of concern, as required by § 780.21(b) or § 784.21(b). Our proposed revision is intended to ensure that permit-specific criteria are both established and readily available to the permittee, inspectors, and permit reviewers.

Existing paragraph (j) provides that, before approving a permit application, the regulatory authority must find that the proposed operation is not likely to either jeopardize the continued existence of threatened or endangered species or result in destruction or adverse modification of critical habitat, as determined under the Endangered Species Act of 1973, 16 U.S.C. 1531 *et seq.* In response to discussions with the U.S. Fish and Wildlife Service concerning compliance with the Endangered Species Act, we propose to modify paragraph (j) to extend the finding to include species that the Secretary has proposed for listing as threatened or endangered.[211] The proposed change is consistent with section 7(a)(4) of the Endangered Species Act, which provides that ''[e]ach Federal agency shall confer with the Secretary on any agency action which is likely to jeopardize the continued existence of any species proposed to be listed under section 4 or result in the destruction or adverse modification of critical habitat proposed to be designated for such species.'' It also would assist in implementing the fish and wildlife protection provisions of sections 515(b)(24) and 516(b)(11) of SMCRA. The conferencing requirement of section 7(a)(4) of the Endangered Species Act is not the same as the consultation requirement for threatened and endangered species under section 7(a)(2) of the Endangered Species Act. Also, the U.S. Fish and Wildlife Service is responsible for determining allowable take of species listed as threatened or endangered.

We propose to remove existing paragraph (m), which applies to permits to be issued under 30 CFR 785.25 (permits containing lands eligible for remining). This finding is not needed because it merely repeats requirements already stated in 30 CFR 785.25. In addition, paragraph (m) is duplicative of paragraph (h), which requires a finding that the applicant has satisfied all applicable requirements of 30 CFR part 785. Removal of existing paragraph (m) would result in the redesignation of existing paragraph (n) as paragraph (m).

In addition, we propose to add a new paragraph (n), which would require that the regulatory authority find that the applicant has demonstrated that the operation has been designed to prevent the formation of discharges that would require long-term treatment after mining has been completed. The regulatory authority also would be required to find that the applicant has demonstrated that there is no credible evidence that the design of the operation will not work as intended to prevent the formation of discharges of that nature.

Avoiding creation of discharges that require long-term treatment benefits both the permittee (because the permittee would bear the cost of treating the discharge) and the public (because there is no risk of environmental damage or use of tax receipts to pay for treatment if the permittee defaults). Adoption of proposed paragraph (n) would incorporate into regulation one of the provisions of the policy entitled ''Hydrologic Balance Protection: Policy Goals and Objectives on Correcting, Preventing, and Controlling Acid/Toxic Mine Drainage'' [212] that we issued on March 31, 1997. In that policy, we explain that approval of a permit that would result in the creation of a discharge requiring long-term treatment would be inconsistent with SMCRA: ''In no case should a permit be approved if the determination of probable hydrologic consequences or other reliable hydrologic analysis predicts the formation of a postmining pollutional discharge that would require continuing long-term treatment without a defined endpoint.'' [213] The regulatory authority may rely upon data from similar completed mining operations under conditions that are representative of those found at the site of the proposed operation as credible evidence for this demonstration and finding.

We explained our authority for this provision when we issued our policy document:

> Several commenters expressed concern that OSM exceeded its statutory authority by focusing on section 510(b)(3) of SMCRA, which provides that no permit application may be approved unless the regulatory authority finds that the operation has been designed to prevent material damage to the hydrologic balance outside the permit area, and interpreting that section as requiring the prevention of AMD [acid mine drainage] formation. The commenters noted that sections 515(b)(10) and 516(b)(9) of SMCRA refer to minimization (rather than prevention) of hydrologic disturbances and avoidance (rather than the prevention) of AMD, with the prevention of AMD formation being only one of the three avoidance mechanisms listed in these sections.
>
> *Response:* The minimization and avoidance provisions of sections 515(b)(10) and 516(b)(9) of SMCRA do not negate the material damage prevention requirement of section 510(b)(3). Furthermore, the Act specifies that the provisions cited by the commenters apply only during mining and reclamation. OSM interprets this limitation as meaning that conducting operations in a manner likely to result in AMD production is acceptable only when AMD formation is expected to be a temporary phenomenon. In other words, discharge treatment is an appropriate means of avoiding AMD and minimizing damage to the hydrologic balance only when the need for treatment has a defined endpoint.
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> * * * * *
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> The approach adopted in the policy statement is fully consistent with the *Rith Energy* decision in which the IBLA [Interior Board of Land Appeals] upheld OSM's refusal to approve a mining plan that sought to minimize, rather than avoid, AMD. In that case, the IBLA agreed with OSM that ''the statute, as properly read, requires the agency to minimize disturbance to the prevailing hydrologic balance by avoiding acid or toxic mine drainage. Minimizing the contact of water and toxic-producing deposits, as argued by petitioner [*Rith Energy*], is not the standard.'' 111 IBLA 249. The policy

[211] We will revise this provision and other proposed rules concerning protection of threatened and endangered species to include the National Marine Fisheries Service (NMFS), which is responsible for administration and enforcement of the Endangered Species Act with respect to anadromous and marine species, if we determine that this rulemaking may affect species under NMFS jurisdiction.

[212] See *www.osmre.gov/lrg/docs/amdpolicy033197.pdf* (last accessed August 5, 2014).

[213] *Id.,* p. 5.

statement accords with *Rith Energy* because it provides that ''[p]ermits may only be approved where the operation is designed to ensure that off-site material damage to the hydrologic balance will be *prevented.*'' (Emphasis added.) Permittees may not plan in advance to allow AMD to occur and then simply mitigate the effects of the AMD.[214]

Finally, we propose to add a new required finding in paragraph (o) in response to discussions with the U.S. Fish and Wildlife Service concerning compliance with the Endangered Species Act. This finding would specify that, to the extent possible using the best technology currently available, the proposed operation has been designed to minimize disturbances and adverse impacts on fish, wildlife, and related environmental values, as identified in § 779.20 or § 783.20, and to enhance those resources where practicable, as required under § 780.16 and § 784.16. The proposed language is similar to sections 515(b)(24) and 516(b)(11) of SMCRA [215] and is intended to reinforce those statutory provisions.

4. Section 773.17: What conditions must the regulatory authority place on each permit issued?

We propose to revise paragraph (c) of this section to require that the permittee comply with all applicable requirements of the Act rather than all applicable performance standards of the Act. We propose to make this change because the condition also requires compliance with the requirements of the regulatory program, which means that the applicable performance standards would be in the program, not the Act.

We propose to revise paragraph (e) of this section to require that the permittee notify the regulatory authority and other appropriate state and federal regulatory agencies of any adverse impact to the environment or public health or safety as a result of a noncompliance with any term or condition of the permit. Notification would allow those agencies to take any necessary action to minimize the impacts of the noncompliance on the environment or public health or safety, consistent with the purpose stated in section 102(a) of SMCRA.[216]

We propose to add a new permit condition in paragraph (h) of this section to require that the permittee obtain all necessary authorizations, certifications, and permits in accordance with Clean Water Act requirements before conducting any activities that require approval or authorization under the Clean Water Act. The new condition would be consistent with section 702(a) of SMCRA,[217] which provides that ''[n]othing in this Act shall be construed as superseding, amending, modifying, or repealing'' the Clean Water Act,[218] or any rule or regulation adopted under the Clean Water Act, or any state laws enacted pursuant to the Clean Water Act. It also would be consistent with our efforts to enhance coordination between the SMCRA and Clean Water Act regulatory authorities. Permit conditions are directly enforceable under SMCRA. Therefore, the addition of this permit condition would mean that the SMCRA regulatory authority must take enforcement action if the permittee does not obtain all necessary Clean Water Act authorizations, certifications, and permits before beginning any activity under the SMCRA permit that also requires approval, authorization, or certification under the Clean Water Act.

D. Part 774: Revision; Renewal; Transfer, Assignment, or Sale of Permit Rights; Post-Permit Issuance Requirements.

1. Section 774.10: When must the regulatory authority review a permit?

We propose to revise paragraphs (a)(2) and (a)(3) of this section to establish identical review requirements for permits for mountaintop removal mining operations under 30 CFR 785.14 and for permits that include a variance from approximate original contour restoration requirements under 30 CFR 785.16. This change is appropriate because the statutory review requirements for those types of operations in paragraphs (c)(6) and (e)(6) of section 515 of SMCRA [219] are substantively identical. Furthermore, these reviews are one-time events, not recurring requirements like midterm permit reviews.

In concert with this change, we propose to move the midterm review requirements for permits with a variance for a delay in contemporaneous reclamation requirements because of combined surface and underground mining from paragraph (a)(2) to a new paragraph (a)(4). Creation of the new single-topic paragraph also is in keeping with plain language principles.

2. Section 774.15: How may I renew a permit?

We propose to revise paragraph (b)(2) of this section by adding paragraph (b)(2)(vii), which would require that each application for permit renewal include an analysis of the monitoring results for surface water, groundwater, and the biological condition of streams and an evaluation of the accuracy and adequacy of the determination of the probable hydrologic consequences of mining (PHC determination). We also propose to add paragraph (b)(2)(viii), which would require that the renewal application include either an update of the PHC determination or documentation that the findings in the existing PHC determination are still valid. Similarly, we propose to revise paragraph (c)(1) of this section by adding paragraph (c)(1)(viii), which would authorize the regulatory authority to withhold approval of a permit renewal application if monitoring results or the updated PHC determination indicate that the finding that the regulatory authority made under 30 CFR 773.15(e) that the operation is designed to prevent material damage to the hydrologic balance outside the permit area is no longer accurate.

These revisions would assist the regulatory authority in ensuring that the operation continues to be designed and conducted to prevent material damage to the hydrologic balance outside the permit area. A narrow reading of section 510(b)(3) of SMCRA [220] and 30 CFR 773.15(e) might hold that the finding concerning material damage to the hydrologic balance outside the permit area is required only for the approval of an application for a permit or permit revision. However, we interpret section 510(b)(3) of SMCRA more broadly. Addition of a requirement for an equivalent finding as a prerequisite for the approval of permit renewal applications is consistent with the intent and purpose of section 510(b)(3) of the Act.[221]

Proposed paragraph (b)(2)(v) is substantively identical to existing paragraph (b)(2)(iii), with the exception that we propose to remove the provision requiring that the application for a permit renewal include any additional bond requested by the regulatory authority. This provision is both unnecessary and out of sequence because, at the time that the permittee submits the application for renewal, the amount of additional bond needed, if any, would not yet be known. The regulatory authority determines the amount of additional bond required after completing a technical review of the renewal application. Proposed paragraph (c)(1)(vi), like existing paragraph (c)(1)(v), provides that the

[214] *Id.* at 12 and 14.

[215] 30 U.S.C. 1265(b)(24) and 1266(b)(11).

[216] 30 U.S.C. 1202.

[217] 30 U.S.C. 1292(a).

[218] 33 U.S.C. 1251 *et seq.*

[219] 30 U.S.C. 1265(c)(6) and (e)(6).

[220] 30 U.S.C. 1260(b)(3).

[221] 30 U.S.C. 1260(b)(3).

regulatory authority may deny a permit renewal application if the applicant has not submitted the additional bond required by the regulatory authority. This paragraph provides sufficient protection against renewal of a permit that lacks the necessary bond coverage.

We propose to revise paragraph (c)(1)(ii) to specify that the regulatory authority will apply the permit eligibility standards in 30 CFR 773.12 through 773.14 in making this determination. In other words, applicants for permit renewal may avail themselves of the provisionally-issued permit procedures of 30 CFR 773.14 and the exception in 30 CFR 773.13 for unanticipated events or conditions at remining sites. Extending the exception for unanticipated events or conditions at remining sites to permit renewals is consistent with the intent of Congress in enacting section 510(e) of SMCRA.[222]

In addition, as a matter of equitable treatment, a permittee with a violation who is seeking renewal of a permit should have the same opportunity to obtain a provisionally-renewed permit as a person with a violation who is seeking to obtain a new permit has to obtain a provisionally-issued permit. Under 30 CFR 773.14, the regulatory authority may provisionally issue a permit if (1) the applicant certifies that each outstanding violation is being abated to the satisfaction of the agency with jurisdiction over the violation and the regulatory authority has no evidence to the contrary, (2) the applicant and operations owned or controlled by the applicant are in compliance with any abatement plan approved by the agency with jurisdiction over the violation, (3) the applicant is pursuing a good faith challenge to the pertinent ownership or control listing and there is no initial judicial decision in force affirming the listing, or (4) the violation is the subject of a good faith administrative or judicial appeal contesting the validity of the violation and there is no initial judicial decision in force affirming the violation. Our proposed revisions to 30 CFR 774.15(c)(1)(ii) would apply the same principles and criteria to the permit renewal process. In addition, the provisions of 30 CFR 773.14(c), which specify the actions that the regulatory authority must take to suspend or revoke the permit if the permittee ceases to be eligible for a provisionally-issued permit, would apply.

We also propose assorted other nonsubstantive changes to 30 CFR 774.15 to improve compliance with plain language principles.

[222] 30 U.S.C. 1260(e).

E. Part 777: General Content Requirements for Permit Applications

1. Section 777.11: What are the format and content requirements for permit applications?

We propose to revise paragraph (a)(3) of this section to require that permit applications be filed in an electronic format prescribed by the regulatory authority, unless the regulatory authority grants an exception to this requirement for good cause. We propose this change to facilitate public participation and interagency coordination in the permitting process because it is much more efficient and convenient to review and exchange information online or by email than it is to review hard copies, which are time-consuming to produce and which may involve considerable travel to other offices to review documents that cannot be copied. Electronic filing also would assist in the coordination of regulatory and inspection activities required by section 713 of SMCRA.[223] Furthermore, use of an electronic format for the permitting process can improve efficiency by enabling correction letters and applicant responses to occur in real time with less expense to the regulatory authority and the applicant. Finally, electronic filing promotes attainment of the goals of the Paperwork Reduction Act.

2. Section 777.13: What requirements apply to the collection, analysis, and reporting of technical data and to the use of models?

We propose to consolidate existing paragraphs (a) and (b) into proposed paragraph (a) because both paragraphs pertain to technical data and analyses. Existing paragraph (a) would be recodified as paragraph (a)(1) and existing paragraph (b) would be recodified as paragraph (a)(2).

Proposed paragraph (a)(1) would add a requirement for submission of metadata, which consists of data describing the contents and context of data files. The availability of metadata greatly increases the usefulness of the original data by providing information about how, where, when, and by whom the data were collected and analyzed. It enables reviewers to evaluate the validity of both the data itself and comparisons with data collected at other times and other places by other persons. Existing paragraph (a) already required submission of much of this information, *i.e.,* the names of persons or organizations that collected and analyzed the data, the dates that the data were collected and analyzed, and descriptions of the methodology used to collect and analyze the data. We also propose to revise the rule to add requirements for submission of the field sampling sheets prepared for water samples collected from wells (the sheets would identify the presence of any well screens as well as the depth at which the sample was taken). For all samples that require laboratory analysis, the proposed rule would require information pertaining to the quality assurance and quality control procedures used by the laboratory that analyzed the sample. For electronic data, the proposed rule would require identification of any transformations that the data underwent. The proposed rule would not limit metadata to the specific items listed in proposed paragraph (a)(1). Although not specified in the proposed rule, metadata should be generated in a format commonly used by the scientific community.

Proposed paragraph (b) would require that all sampling and analyses of groundwater and surface water performed to meet the permitting requirements of subchapter G of our regulations be conducted according to the methodology in 40 CFR parts 136 and 434. Proposed paragraph corresponds to the provisions concerning water-quality sampling and analysis methodologies in existing 30 CFR 780.21(a) and 784.14(a). Moving this provision to 30 CFR 777.13 would consolidate the requirements concerning sampling and analysis methodologies for groundwater and surface water in one location and expand their applicability to all pertinent data and analyses required for permit applications under subchapter G, which should promote better data collection and analysis procedures and, hence, improved permitting decisions.

We propose to eliminate the incorporation by reference of the 15th edition of the ''Standard Methods for the Examination of Water and Wastewater'' in existing 30 CFR 780.21(a) and 784.14(a). That document is now obsolete because the current edition is the 22nd edition, which was published in 2012. However, rather than incorporating the current edition of the ''Standard Methods for the Examination of Water and Wastewater,'' we propose to remove the existing incorporation by reference of the 15th edition of that document while retaining the provision in the existing rule that allows use of the sampling and analysis methodologies in 40 CFR parts 136 and 434. This proposed change would ensure that sampling and analysis methodologies under SMCRA are

[223] 30 U.S.C. 1303.

consistent with those approved by EPA for use for Clean Water Act purposes. We invite comment on whether there are any unique SMCRA-related requirements that would necessitate incorporating the current edition of the ''Standard Methods for the Examination of Water and Wastewater'' into our rule. In other words, would the collection and analysis of the baseline and monitoring data that we propose to require under this rule involve the use of sampling and analysis methodologies that 40 CFR parts 136 and 434 do not include?

Proposed paragraph (c) would require that all geological sampling and analyses performed to meet the permitting requirements of subchapter G of our regulations be conducted using a scientifically-valid methodology. This new provision should promote better geologic data collection and analysis procedures and, hence, improved permitting decisions. Scientifically-valid methodologies include, but are not limited to, those set forth in the Engineering Geology Field Manual, Second Edition (1998), developed by the Bureau of Reclamation within the U.S. Department of the Interior.

We propose to move the provisions concerning the use of models found in existing 30 CFR 780.21(d) and 784.14(d) to 30 CFR 777.13(d) to consolidate requirements concerning the use of models in the latter paragraph. If adopted as final, proposed paragraph (d) would apply to all permit application requirements. The existing provisions in 30 CFR 780.21(d) and 784.14(d) apply only to hydrologic data, but we find no scientific reason for limiting the use of modeling in this manner. We also propose to modify the existing provisions by adding paragraph (d)(2), which would require that all models be calibrated using actual site-specific data and that they be validated for the region and ecosystem in which they will be used. The additional requirements are intended to improve the accuracy and validity of any models used. Finally, we propose to add a new paragraph (d)(3) clarifying that the regulatory authority has the discretionary authority to prohibit the use of models and to require the submission of additional actual, site-specific data.

3. Section 777.15: What information must my application include to be administratively complete?

We propose to revise this section to use terminology consistent with the revisions to the permitting regulations published on September 28, 1983 (48 FR 44344), which removed the term ''complete application'' and replaced it with the terms ''administratively complete application'' and ''complete and accurate application.''

F. Part 779: Surface Mining Permit Applications—Minimum Requirements for Information on Environmental Resources and Conditions

1. Section 779.1: What does this part do?

Existing 30 CFR 779.1 states that part 779 establishes the minimum requirements for the Secretary's approval of regulatory program provisions for the environmental resources contents of permit applications for surface mining activities. However, the content requirements and standards for approval of state regulatory programs are located in 30 CFR parts 730 through 732. Therefore, we propose to revise 30 CFR 779.1 to specify that part 779 sets forth permit application requirements relating to environmental resources and conditions.

2. Section 779.2: What is the objective of this part?

We propose to revise this section to reflect plain language principles and to clarify that the objective of part 779 is to ensure that the permit applicant provides the regulatory authority with a complete and accurate description of both the environmental resources that may be impacted or affected by proposed surface mining activities and the environmental conditions that exist within the proposed permit and adjacent areas. The existing language does not mention environmental conditions, such as the information on climate required by 30 CFR 779.18.

3. Why are we proposing to remove existing 30 CFR 779.11 and 779.12?

We propose to remove 30 CFR 779.11, which requires a description of the existing premining environmental resources within the proposed permit and adjacent areas, because the requirements for this description are set out in detail in other sections of part 779. Therefore, existing 30 CFR 779.11 is redundant and unnecessary.

We propose to remove existing 30 CFR 779.12(a) because the anticipated mining schedule that it requires is duplicative of proposed 30 CFR 779.24(a)(3). We propose to move the cultural resource requirements of existing 30 CFR 779.12(b) to a new 30 CFR 779.17 devoted to that topic.

4. Section 779.19: What information on vegetation must I include in my permit application?

We propose to revise existing 30 CFR 779.19 by adding more specificity and making submission of vegetation information mandatory rather than discretionary as under the existing rules. The changes that we propose are needed to ensure that native plant communities are restored on reclaimed areas as required by section 515(b)(19) of SMCRA.[224] Further, these changes are intended to implement, in part, section 515(b)(24) of SMCRA,[225] which requires that, ''to the extent possible using the best technology currently available,'' surface coal mining and reclamation operations be conducted in a manner that will ''minimize disturbances and adverse impacts on fish, wildlife, and related environmental values, and achieve enhancement of such resources where practicable.''

Restoration or establishment of native plant communities is the most effective way of restoring or enhancing wildlife habitat. The Virginia Department of Conservation and Natural Resources describes the benefits of native plants as follows:

> The benefit of growing plants within the region they evolved is they are more likely to thrive under the local conditions while being less likely to invade new habitats. Native plants are well adapted to local environmental conditions, maintain or improve soil fertility, reduce erosion, and often require less fertilizer and pesticides than many alien plants. These characteristics save time and money and reduce the amount of harmful run-off threatening the aquatic resources of our streams, rivers, and estuaries. In addition, functionally healthy and established natural communities are better able to resist invasions by alien plant species. So the use of native plants can help prevent the spread of alien species already present in a region and help avert future introductions. ***
>
> Native plants provide familiar sources of food and shelter for wildlife. As natural habitats are replaced by urban and suburban development, the use of native plants in landscaping can provide essential shelter for displaced wildlife. Land managers can use native plants to maintain and restore wildlife habitat. Native wildlife species comprise a majority of the game and non-game animals we manage habitat for, and they evolved with native plant species. Although alien species are often promoted for their value as wildlife food plants, there is no evidence that alien plant materials are superior to native plants. For instance, on land managed for upland game animals, native warm season grasses (big and little bluestem, switch grass, Indian grass, coastal panic grass, gama grass), and other native forbs (butterfly weed, ironweed,

[224] 30 U.S.C. 1265(b)(19).

[225] 30 U.S.C. 1265(b)(24).

Joe Pye weed) offer good sources of nutrition without the ecological threats associated with nonnative forage plants. Dramatic increases in nesting success of both game birds and songbirds have been observed in fields planted with native grasses, which also offer superior winter cover. In addition, warm season grasses provide productive and palatable livestock forage. ***

On a broader ecological scale, planting native species contributes to the overall health of natural communities. Disturbances of intact ecosystems that open and fragment habitat, such as land clearing activities, increase the potential of invasion by alien species. Native plants provide important alternatives to alien species for conservation and restoration projects in these disturbed areas. They can fill many land management needs currently occupied by nonnative species, and often with lower costs and maintenance requirements. Once established in an appropriate area, most native plant species are hardy and do not require watering, fertilizers, or pesticides.[226]

A U.S. Fish and Wildlife Service publication describes the benefits of native plants as follows:

Native plants naturally occur in the region in which they evolved. While non-native plants might provide some of the above benefits, native plants have many additional advantages. Because native plants are adapted to local soils and climate conditions, they generally require less watering and fertilizing than non-natives. Natives are often more resistant to insects and disease as well, and so are less likely to need pesticides. Wildlife evolved with plants; therefore, they use native plant communities for food, cover and rearing young. Using native plants helps preserve the balance and beauty of natural ecosystems.[227]

Notwithstanding the advantages of native plant communities, many regraded and revegetated areas do not contain a diverse, effective, permanent vegetative cover of the same seasonal variety native to the area as required by section 515(b)(19) of SMCRA.[228] Instead, areas that were previously forested were backfilled, regraded, and revegetated in a manner that makes the land incapable of achieving its premining forested status. Those lands are now heavily compacted grasslands with scrub trees. Neither grassland nor the trees are representative of the native premining vegetation. A 2007 study estimates that Appalachia alone contains between 750,000 and 1.5 million acres of such reclaimed mine land.[229] Our proposed refinements to the regulations would lead to better implementation of the revegetation requirements of section 515(b)(19) of SMCRA.[230] In addition, the proposed rule would assist in the implementation of section 508(a)(2) of SMCRA,[231] which requires that the reclamation plan in each permit application identify both the premining land uses and the capability of the land prior to any mining to support a variety of uses.

Moreover, the proposed rule is consistent with Section 2.(a)(2)(iv) of Executive Order 13112, ''Invasive Species,'' which requires that ''[e]ach Federal agency whose actions may affect the status of invasive species shall, to the extent practicable and permitted by law, . . . provide for the restoration of native species and habitat conditions in ecosystems that have been invaded.'' [232]

Proposed paragraph (a) would require that the permit application identify, describe, and map existing vegetation and plant communities, as well as those plant communities that would exist under conditions of natural succession. The description and map must be adequate to evaluate whether the vegetation provides important habitat for fish and wildlife and whether the site contains any native plant communities of local or regional significance.

Proposed paragraph (b) would require that the applicant adhere to the classifications in the National Vegetation Classification Standard (NVCS) [233] in preparing the description required under proposed paragraph (a). The NVCS is the standard endorsed by the Federal Geographic Data Committee.[234] Use of this standard would promote consistent identification of plant communities and development of appropriate revegetation plans to restore those communities following mining.

Proposed paragraph (c) would allow the regulatory authority to approve the use of other generally-accepted vegetation classification systems in lieu of the NVCS. We invite comment on what other systems may exist.

Proposed paragraph (d) would require that the application include a discussion of the potential for reestablishing the plant communities described in paragraph (a) after the completion of mining. This discussion would assist the regulatory authority in evaluating the proposed revegetation plan and in determining which plant communities the permittee must reestablish.

5. Section 779.20: What information on fish and wildlife resources must I include in my permit application?

The fish and wildlife resource information requirements in existing 30 CFR 780.16(a) identify the baseline fish and wildlife resource information that each permit application must include. Therefore, we propose to move it to part 779, which contains environmental resource information requirements for permit applications. Part 779 is a better fit for a fish and wildlife resource information requirement than part 780, which contains operation and reclamation plan requirements. The fish and wildlife information requirements in existing 30 CFR 780.16(a) and proposed 30 CFR 779.20 are necessary to fully implement the fish and wildlife protection and enhancement requirements of section 515(b)(24) of SMCRA.[235]

Proposed paragraph (c)(1) is similar to the portion of existing 30 CFR 780.16(a)(2)(i) that pertains to species listed or proposed for listing as threatened or endangered under the Endangered Species Act of 1973, 16 U.S.C. 1531 *et seq.,* and to critical habitat designated under that law. We propose to add a requirement that the site-specific resource information include a description of the effects of future state or private activities that are reasonably certain to occur within the proposed permit and adjacent areas. The requested information will assist the U.S. Fish and Wildlife Service in fulfilling its responsibilities under the coordination process pertaining to threatened or endangered species.

Proposed paragraph (c)(2) is substantively identical to the portion of existing 30 CFR 780.16(a)(2)(i) that pertains to species or habitat protected by state statutes similar to the Endangered Species Act.

In proposed paragraph (c)(3), which corresponds to existing 30 CFR 780.16(a)(2)(ii), we propose to expand the list of examples of habitat of unusually high value to fish and

[226] *http://www.dcr.virginia.gov/natural_heritage/nativeplants.shtml (last accessed August 27, 2014).*

[227] Slattery, Britt E., Kathryn Reshetiloff, and Susan M. Zwicker. 2003. ''Native Plants for Wildlife Habitat and Conservation Landscaping: Chesapeake Bay Watershed.'' U.S. Fish and Wildlife Service, Chesapeake Bay Field Office, Annapolis, MD. 82 pp.

[228] 30 U.S.C. 1265(b)(19).

[229] Zipper, C.E., J.A. Burger, J.M. McGrath, and B. Amichev, ''Carbon Accumulation Potentials of Post-SMCRA Coal-Mined Lands.'' Paper prepared for presentation at the 30 Years of SMCRA and Beyond Symposium, June 2–7, 2007. Published by the American Society of Mining and Reclamation, R. I. Barnhisel, ed. (unpaginated document).

[230] 30 U.S.C. 1265(b)(19).

[231] 30 U.S.C. 1258(a)(2).

[232] 64 FR 6184 (Feb. 8, 1999).

[233] See *http://www.fgdc.gov/standards/projects/FGDC-standards-projects/vegetation/index_html* (last accessed August 5, 2014).

[234] See *https://www.fgdc.gov/standards/projects/FGDC-standards-projects/vegetation* (last accessed January 21, 2015).

[235] 30 U.S.C. 1265(b)(24).

wildlife to include areas that support populations of endemic species that are vulnerable because of restricted ranges, limited mobility, limited reproductive capacity, or specialized habitat requirements. We propose to delete the reference to important streams in the existing regulation because proposed paragraph (c)(5) would require site-specific information for all perennial and intermittent streams, not just important streams.

Proposed paragraph (c)(4) is substantively identical to existing 30 CFR 780.16(a)(2)(iii), except for the addition of language clarifying that this provision includes species identified as sensitive by a state or federal agency. Proposed paragraph (c)(6) would require submission of site-specific information when native plant communities of local or regional ecological significance are present.

Proposed paragraph (d) includes the U.S. Fish and Wildlife Service permit application review provisions found at 30 CFR 780.16(c) in our existing rules. We propose to revise those provisions in response to discussions with the U.S. Fish and Wildlife Service concerning compliance with the Endangered Species Act. We will further revise this provision and other proposed rules concerning protection of threatened and endangered species to include the National Marine Fisheries Service (NMFS), which is responsible for administration and enforcement of the Endangered Species Act with respect to anadromous and marine species, if we determine that this rulemaking may affect species under NMFS jurisdiction.

Proposed paragraph (d)(1)(i) would require that the regulatory authority provide the fish and wildlife resource information included in the permit application under proposed paragraph (c) to the applicable regional or field office of the U.S. Fish and Wildlife Service whenever that information includes species listed as threatened or endangered under the Endangered Species Act, critical habitat designated under that law, or species proposed for listing as threatened or endangered under that law. The proposed rule would require that the regulatory authority provide this information to the Service no later than the time that it provides written notice of receipt of an administratively complete permit application to the Service under § 773.6(a)(3)(ii). Under the existing rule, the Service must request this information from the regulatory authority rather than receiving it automatically.

Proposed paragraph (d)(1)(ii) is similar to the existing rule in that it allows the Service to request fish and wildlife resource information submitted as part of permit applications even when the information in those applications does not include species listed as threatened or endangered under the Endangered Species Act, critical habitat designated under that law, or species proposed for listing as threatened or endangered under that law. Under both the existing and proposed rules, the regulatory authority must provide that information to the Service within 10 days of receipt of the request.

Proposed paragraph (d)(2) specifies how the regulatory authority must handle comments received from the Service and how any disagreements are to be resolved. This proposed paragraph generally parallels the provisions that we and the Service agreed to as a result of a formal section 7(a)(2) Endangered Species Act consultation pertaining to the approval and conduct of surface coal mining and reclamation operations under a SMCRA regulatory program. Specifically, proposed paragraphs (d)(2)(i) through (iii) provide that if the regulatory authority does not agree with a Service recommendation that pertains to fish and wildlife or plants listed as threatened or endangered under the Endangered Species Act or to critical habitat designated under that law, the regulatory authority must explain the rationale for that decision in a comment disposition document and must provide a copy of that document to the pertinent Service field office. The proposed rule also would require that the regulatory authority provide a copy of that document to the appropriate OSMRE field office for informational purposes and to allow the OSMRE field office to monitor resolution of the disagreement. If the Service field office does not concur with the regulatory authority's decision and the regulatory authority and the Service field office are subsequently unable to conclude an agreement at that level, the proposed rule allows either the regulatory authority or the Service to elevate the issue through the chain of command of the regulatory authority, the Service, and OSMRE for resolution.

Proposed paragraph (d)(2)(iv) provides that the regulatory authority may not approve the permit application until all issues are resolved in accordance with this process and the regulatory authority receives written documentation from the Service that all issues have been resolved. Like all provisions in proposed paragraph (d)(2), this provision is intended to ensure the protection of threatened and endangered species in accordance with the Endangered Species Act.

Proposed paragraph (e) provides that the regulatory authority may require the prevention of adverse impacts to streams and watersheds in the permit and adjacent areas in order to protect exceptional environmental values. The proposed rule would require that all decisions be based upon scientific principles and analyses. In addition, it would require coordination with state and federal fish and wildlife agencies and agencies responsible for implementing the Clean Water Act before taking action under this paragraph. The protection that this proposed rule would provide through the permitting process would be in addition to any protection that might be available through the process for designating lands as unsuitable for surface coal mining operations under section 522 of SMCRA.[236] The proposed rule is consistent with section 102(c) of SMCRA,[237] which provides that one of the purposes of the Act is to ''assure that surface mining operations are not conducted where reclamation as required by this Act is not feasible.'' Section 515(b)(23) of SMCRA,[238] requires that surface coal mining and reclamation operations ''meet such other criteria as are necessary to achieve reclamation in accordance with the purposes of this Act, taking into consideration the physical, climatological, and other characteristics of the site.'' The site-specific nature of our proposed rule is consistent with this provision of the Act.

6. Section 779.21: What information on soils must I include in my permit application?

Existing 30 CFR 779.21 requires that each permit applicant submit adequate soil survey information for the proposed permit area. On August 4, 1980, we suspended the existing rules insofar as they apply to lands other than prime farmland.[239] The suspension reflects the February 26, 1980, decision of the U.S. District Court for the District of Columbia in litigation concerning the permanent regulatory program rules that we adopted in 1979. In that decision, the court held that section 507(b)(16) of SMCRA [240] is a clear expression of congressional intent to require soil surveys only for prime farmlands identified by a reconnaissance inspection. The court also ruled that the

[236] 30 U.S.C. 1272.

[237] 30 U.S.C. 1202(c).

[238] 30 U.S.C. 1265(b)(23).

[239] 45 FR 51548 (Aug. 4, 1980).

[240] 30 U.S.C. 1257(b)(16).

Secretary's reliance on section 508(a)(3) of SMCRA [241] as justification for the rule was misplaced.[242]

We propose to lift the suspension of existing 30 CFR 779.21 and replace the provisions of the existing rule with revised rule text that is consistent with the court decision. Proposed paragraph (a) would require that the application include the results of a reconnaissance inspection of the proposed permit area to determine whether or not prime farmland is present, as required by 30 CFR 785.17(b)(1). If that inspection indicates that prime farmland may be present, proposed paragraph (e) would require that the application include the soil survey information required by 30 CFR 785.17(b)(3). Proposed paragraphs (a) and (e) do not contain any new requirements; they merely include and cross-reference existing prime farmland regulations.

Proposed paragraph (b) would require a map showing all soil mapping units located within the proposed permit area, if the National Cooperative Soil Survey (NCSS) has completed and published a soil survey for the area. The application also would be required to include either a link to the appropriate soil survey information on the Natural Resources Conservation Service (NRCS) Web site, which is located at *http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm* (as of August 27, 2014), or the equivalent information in paper form.

Proposed paragraph (c) would require a description of soil depths within the proposed permit area. Proposed paragraph (d) would require detailed information on soil quality to satisfy the requirements of proposed 30 CFR 780.12(e)(2)(ii) if the permit applicant seeks approval for the use of soil substitutes or supplements under 30 CFR 780.12(e). Proposed paragraph (e) is discussed above together with proposed paragraph (a). Proposed paragraph (f) would require that the permit applicant provide any other information that the regulatory authority finds necessary to determine land use capability and to prepare the reclamation plan.

The revised version of 30 CFR 779.21 that we are proposing today would be consistent with the decision in *PSMRL I, Round I.* First, the proposed rule would not require that the applicant conduct an actual soil survey for lands other than prime farmland. Instead, it would require submission of only existing soil survey information, which, apart from transferring pertinent information to the permit application maps, can be provided by reference to the appropriate link to the NRCS Web site. The proposed rule would not require that the applicant conduct an actual soil survey if the information is not available from the NRCS. (The NRCS has completed soil surveys for more than 99 percent of the land area within the conterminous states.)

Second, the statutory basis for proposed 30 CFR 779.21 is section 508(a)(2) of SMCRA,[243] not section 508(a)(3).[244] The court held that section 508(a)(3) did not constitute authority for the prior rule. However, section 508(a)(2) provides that—

> Each reclamation plan submitted as part of a permit application pursuant to any approved State program or a Federal program under the provisions of this Act shall include, in the degree of detail necessary to demonstrate that reclamation required by the State or Federal program can be accomplished, a statement of:
> * * * * *
> (B) the capability of the land prior to any mining to support a variety of uses giving consideration to soil and foundation characteristics, topography, and vegetative cover, and, if applicable, a soil survey prepared pursuant to section 507(b)(16).

All the information that we propose to require in 30 CFR 779.21 consists of soil and foundation characteristics. Section 508(a)(2) of SMCRA [245] requires the applicant to include that information in each permit application, not just in those applications that contain prime farmland. Identification of soil mapping units and submission of available soil survey information about those units, as proposed paragraph (b) would require, is critical to determining the premining capability of the land, as required by section 508(a)(2)(B) of SMCRA,[246] and to establishing the soil salvage and replacement requirements needed to ensure that the revegetation requirements of the Act and regulations can be met.

Likewise, the premining soil depth, soil quality, and other information that would be required under proposed paragraphs (c), (d), and (f) also is needed for the applicant and the regulatory authority to effectively determine the premining capability of the land and to establish the soil salvage, soil substitute, and soil replacement requirements needed to ensure that the revegetation requirements of the Act and regulations can be met. Furthermore, soil depth and quality are critical to determining the productivity of the site and hence to establishing pertinent revegetation success standards for the site for certain postmining land uses.

7. Section 779.22: What information on land use and productivity must I include in my permit application?

The counterpart in our existing rules to this section is 30 CFR 780.23(a). We propose to delete the second sentence of existing paragraph (a)(1), which provides that the application must include a description of the historical use of the land if the premining use changed within the 5 years preceding the anticipated starting date of the proposed operation. SMCRA does not include a similar provision and this timeframe has sometimes proven difficult to determine with precision. Furthermore, this information has little or no value in the existing permitting process because it is not a criterion or determinant of any permitting decisions under the existing rules.

The proposed rule would continue to require that the application include a narrative analysis of the capability of the land before any mining to support a variety of uses, as required by section 508(a)(2)(B) of SMCRA.[247] We propose to require a description of all historical uses of the land without a time limitation and without limitation to the single use preceding the permit application, as a component of this narrative because historical uses provide documentation, in part, of premining land use capability. Our proposed revisions are consistent with the legislative history of this provision of SMCRA, which states that:

> The description is to serve as a benchmark against which the adequacy of reclamation and the degradation resulting from the proposed mining may be measured. It is important that the potential utility which the land had for a variety of uses be the benchmark rather than any single, possibly low value, use which by circumstances may have existed at the time mining began.[248]

Thus, it is clear that a single-use criterion is not in accordance with sections 508(a) and 515(b)(2) of SMCRA [249] or the legislative history of section 508(a). The postmining land use must be compared with the variety of uses that the land was capable of supporting before any mining, not just a single premining use.

We also propose to add paragraph (b)(3), which would require that the permit application include a narrative

[241] 30 U.S.C. 1258(a)(3).

[242] *In re Permanent Surface Mining Regulation Litig. I, Round I (PSMRL I, Round I),* 1980 U.S. Dist. LEXIS 17722 at *62 (D.D.C., February 26, 1980), 14 Env't Rep. Cas. (BNA) 1083, 10 Envtl. L. Rep. (Envtl. Law Inst.) 20208.

[243] 30 U.S.C. 1258(a)(2).

[244] 30 U.S.C. 1258(a)(3).

[245] 30 U.S.C. 1258(a)(2).

[246] 30 U.S.C. 1258(a)(2)(B).

[247] 30 U.S.C. 1258(a)(2)(B).

[248] S. Rep. No. 95–128, at 76–77 (1977).

[249] 30 U.S.C. 1258(a) and 1265(b)(2), respectively.

analysis of the premining productivity of the proposed permit area for fish and wildlife. Section 508(a)(2)(C) of SMCRA [250] lists productivity in terms of the average yield of food, fiber, forage, or wood products, but it is not an exclusive list of productivity measures that can be used to assess premining productivity. The fish and wildlife information required by proposed paragraph (b)(3) would assist the regulatory authority in evaluating the environmental impacts of the proposed operation and in determining what fish and wildlife protection and enhancement measures may be appropriate. Limiting productivity measures to quantifiable commodity indicators such as food, fiber, and wood products would incorrectly ignore the underlying purposes of SMCRA, one of which is to establish a nationwide program to protect society and the environment from the adverse effects of surface coal mining operations.[251]

Following the same logic, we propose to add paragraph (c), which would allow the regulatory authority to require submission of any additional information that the regulatory authority deems necessary to determine the condition, capability, and productivity of the land within the proposed permit area. This additional information may include data concerning the site's carbon absorption and storage capability.

8. Section 779.24: What maps, plans, and cross-sections must I submit with my permit application?

We propose to consolidate existing 30 CFR 779.24 and 779.25 into 30 CFR 779.24 and add a new paragraph (c) to clarify that the regulatory authority may require that the applicant submit all materials in a digital format that includes all necessary metadata. We invite comment on whether the digital format option should instead be mandatory to facilitate review by both the public and the regulatory authority.

Other substantive proposed changes are discussed below.

Proposed paragraph (a)(3) would require a description of the size, sequence, and timing of the mining of subareas for which the applicant anticipates seeking additional permits or expansion of an existing permit in the future. The corresponding existing rule at 30 CFR 779.24(c) applies this requirement to areas for which the applicant anticipates seeking additional permits. However, in practice, regulatory authorities do not always require a new permit application for additional acreage to be mined. Some state regulatory programs allow expansion by means of permit amendments or revisions. We have approved state program amendments of this nature, provided that the program amendment specifies that the permit amendment or revision application is subject to the same information requirements as a new permit and that the application must be processed and approved in the same manner as a new permit. We have found that amendments containing those provisions are no less stringent than section 510(a)(3) of SMCRA,[252] which provides that, except for incidental boundary revisions, any extension of the area covered by a permit must be made by application for a new permit. The proposed language would reflect this reality and ensure that the description would include all subareas for which the applicant anticipates seeking approval to mine in the future, not just those subareas for which the applicant anticipates seeking new permits.

Proposed paragraphs (a)(7), (a)(8), (a)(9), (a)(18), (a)(20), and (a)(27) would allow certain information that is not particularly amenable to display on a map to instead be submitted in a table cross-referenced to a map if approved by the regulatory authority. This information would include depth of water, gas and oil wells; ownership of wells and groundwater resources; ownership and descriptions of surface-water features; and elevations and geographic coordinates of test borings, core samplings, and monitoring stations.

In proposed paragraph (a)(11), we propose to add a provision requiring mapping of all public water supplies and wellhead protection zones [253] located within one-half mile of the proposed permit area. This information would be important in preparing the cumulative hydrologic impact assessment required by section 510(b)(3) of SMCRA [254] and may be of value in preparing the PHC determination and hydrologic reclamation plan for the proposed permit.

Proposed paragraph (a)(13) would add a requirement for a map showing the location of any discharge, including, but not limited to, a mine-water treatment or pumping facility, into or from an active, inactive, or abandoned underground mine that is hydrologically connected to the proposed permit area or that is located within one-half mile, measured horizontally, of the proposed permit area. The applicant will need this information to prepare the determination of the probable hydrologic consequences of mining required by section 507(b)(11) of SMCRA.[255] In addition, the regulatory authority will need this information to prepare the cumulative hydrologic impact assessment required by the same provision of the Act and by section 510(b)(3) of SMCRA.[256]

We propose to add a requirement in paragraphs (a)(18) and (20) that the application include the geographic coordinates of test borings, core samplings, and monitoring stations. Our inspectors have found that this information often is time-consuming or difficult to locate in the permit file or to determine from maps included in that file, so a list of features with their geographic coordinates should improve the efficiency with which regulatory authority and OSMRE personnel perform their duties by greatly improving the ability of regulatory authority and OSMRE personnel to field-check those locations using GPS devices. The requirement for geographic coordinates also is intended to ensure that the locations of these features are determined by an actual survey rather than approximated on a topographic map.

Proposed paragraph (a)(19) would expand upon the requirement in existing 30 CFR 779.25(a)(6) for the location and extent of subsurface water, if encountered, by adding provisions concerning aquifers that currently are found only in the corresponding requirements for underground mines at existing 30 CFR 783.25(a)(6). Specifically, we propose to require that the application include the areal and vertical distribution of aquifers and a portrayal of seasonal variations in hydraulic head in different aquifers. This information is equally important for proposed surface mining operations because it would be used to establish baseline groundwater conditions and predict the impacts of the proposed mining operation on those aquifers, regardless of whether the proposed operation is a surface mine or an underground mine. Furthermore, section 507(b)(14) of SMCRA,[257] which is the primary statutory counterpart to proposed 30 CFR 779.24, expressly requires that the application include the location of aquifers. In addition,

[250] 30 U.S.C. 1258(a)(2)(C).

[251] See 30 U.S.C. 1202(a).

[252] 30 U.S.C. 1260(b)(3).

[253] A wellhead protection zone or area is a surface and subsurface land area regulated under the Safe Drinking Water Act (42 U.S.C. 330f-300j) to prevent contamination of a well or well-field supplying a public water system.

[254] 30 U.S.C. 1260(b)(3).

[255] 30 U.S.C. 1257(b)(11).

[256] 30 U.S.C. 1260(b)(3).

[257] 30 U.S.C. 1257(b)(14).

proposed 30 CFR 779.24(a)(19) would include a requirement for the estimated elevation of the water table, which section 507(b)(14) of SMCRA also requires.

In proposed paragraph (a)(21), we propose to add a requirement that the maps, cross-sections, and plans include the commonly used names of the coal seams to be mined, overburden strata, and the stratum immediately below the lowest coal seam to be mined. This information would assist reviewers in predicting the impacts of the proposed operation by facilitating consultation with published reference materials on the coal seams and geological strata in question.

In proposed paragraph (a)(27), we propose to add a requirement that the application identify all directional or horizontal drilling for hydrocarbon extraction operations, including those using hydraulic fracturing methods, within or underlying the proposed permit and adjacent areas. Both the applicant and the regulatory authority need this information to determine the probable hydrologic consequences of the proposed operation and to ensure that the operation's design takes these operations and wells into consideration.

G. Part 780: Surface Mining Permit Applications—Minimum Requirements for Reclamation and Operation Plans

1. Section 780.1: What does this part do?

Existing 30 CFR 780.1 states that part 780 provides the minimum requirements for the Secretary's approval of regulatory program provisions for the mining operations and reclamation plan portions of permit applications for surface mining activities, except to the extent that part 785 establishes different requirements. However, the content requirements and standards for approval of state regulatory programs are located in 30 CFR parts 730 through 732. Therefore, we propose to revise 30 CFR 780.1 to specify that part 780 sets forth permit application requirements for reclamation and operation plans for proposed operations.

2. Section 780.2: What is the objective of this part?

We propose to revise this section to specifically mention reclamation of the disturbed area to reflect the fact that part 780 includes numerous reclamation requirements. The existing rule only mentions surface mining activities. We recognize that this change is not essential because the definition of ''surface mining activities'' in 30 CFR 700.5 includes reclamation, but adding a mention of reclamation in 30 CFR 780.2 would make this rule clearer to the reader.

3. Section 780.12: What information must the reclamation plan include?

Paragraph (a): General Requirements

Proposed paragraph (a) is substantively identical to existing 30 CFR 780.18(a) with one exception. The existing rule requires that each permit application contain a reclamation plan showing how the applicant will comply with section 515 of SMCRA,[258] the federal performance standards in subchapter K of 30 CFR Chapter VII, and the environmental protection performance standards of the regulatory program. We propose to revise this provision to be more consistent with section 508(a) of SMCRA,[259] which requires that each reclamation plan include the information ''necessary to demonstrate that reclamation required by the State or Federal program can be accomplished.'' The existing rule is too limiting in that it refers only to performance standards, not to all reclamation requirements. In addition, the references to section 515 of SMCRA and subchapter K of 30 CFR Chapter VII in the existing rule are inconsistent with the principle of state primacy under section 503(a) of SMCRA,[260] which specifies that a state with an approved regulatory program assumes exclusive jurisdiction over surface coal mining and reclamation operations on non-Federal, non-Indian lands within its borders, except as provided in sections 521 and 523 [261] and title IV [262] of the Act. Therefore, we propose to revise paragraph (a) by deleting the references to performance standards and to section 515 of SMCRA and subchapter K of 30 CFR Chapter VII. Instead, we propose to require that each permit application include a reclamation plan showing how the applicant will comply with the reclamation requirements of the applicable regulatory program.

Paragraph (b): Reclamation Timetable

Section 508(a)(7) of SMCRA [263] requires the reclamation plan for each permit application include ''a detailed estimated timetable for the accomplishment of each major step in the reclamation plan.'' Existing 30 CFR 780.18(b)(1) implements this provision in part. We propose to revise the existing rule by listing the activities which, at a minimum, must be considered major steps in the reclamation process. In typical chronological order, those steps include, but are not limited to, backfilling, grading, restoration of the form of all reconstructed perennial and intermittent stream segments, soil redistribution, planting, demonstration of revegetation success, restoration of the ecological function of all reconstructed perennial and intermittent stream segments, and application for each phase of bond release. Establishment of a timetable that includes those steps should promote consistency in the application of this provision and result in a more comprehensive timetable, which would implement section 508(a)(7) of SMCRA more completely.

The regulatory authority must evaluate the proposed timetable to determine whether it meets the contemporaneous reclamation requirements of section 515(b)(16) of SMCRA.[264] Once approved as part of the permit, this timetable serves as a standard for evaluating compliance with the contemporaneous reclamation requirements of section 515(b)(16) of SMCRA.[265]

Paragraph (c): Reclamation Cost Estimate

We propose to revise this paragraph, which appears at 30 CFR 780.18(b)(2) in our existing rules, by clarifying that the cost estimates must include both direct and indirect costs and by requiring that the permit applicant use current, standardized construction cost estimation methods and equipment cost guides in developing estimates of the cost of reclamation. These changes should improve the accuracy of cost estimates and increase the usefulness of these estimates to the regulatory authority in determining the amount of performance bond required under section 509 of SMCRA [266] and 30 CFR part 800.

Paragraph (d): Backfilling and Grading Plan

Proposed paragraph (d) corresponds to existing 30 CFR 780.18(b)(3). We propose to add more specificity to the existing rule, which requires ''[a] plan for backfilling, soil stabilization, compacting, and grading, with contour maps or cross-sections that show the anticipated final surface configuration of the proposed permit area, in

[258] 30 U.S.C. 1265.
[259] 30 U.S.C. 1258(a).
[260] 30 U.S.C. 1253(a).
[261] 30 U.S.C. 1271 and 1273.
[262] 30 U.S.C. 1231 through 1243.
[263] 30 U.S.C. 1258(a)(7).
[264] 30 U.S.C. 1265(b)(16).
[265] *Id.*
[266] 30 U.S.C. 1259.

accordance with 30 CFR 816.102 through 816.107.''

Proposed paragraph (d)(1) would require that the reclamation plan contain a plan for backfilling the mined-out area, compacting the backfill, and grading the disturbed area in accordance with 30 CFR 817.102 through 817.107 of this chapter, using the best technology currently available. It also would specify that the plan must limit compaction to the minimum necessary to achieve stability requirements unless additional compaction is necessary to reduce infiltration to minimize leaching and discharges of parameters of concern. The added language is intended to achieve a balance between minimizing compaction, which research has shown stunts the growth of most crops and woody plants,[267] and the need to minimize the formation of discharges that contain sulfate and other ions that could have adverse impacts on receiving streams and their aquatic life.

Proposed paragraph (d)(1) also would require that the plan be accompanied by models, contour maps, or cross-sections that show in detail the anticipated final surface elevations and configuration of the proposed permit area, including drainage patterns. The regulatory authority would use this information to determine whether the proposed plan satisfies the backfilling, grading, and surface configuration requirements of 30 CFR 816.102 through 816.107.

Proposed paragraph (d)(2) would require that the plan describe in detail how the permittee will conduct backfilling and reclamation activities and handle acid-forming and toxic-forming materials, if present, to prevent the formation of acid or toxic mine drainage from acid-forming and toxic-forming materials within the overburden. It also would require an explanation of how the method selected will protect groundwater and surface water in accordance with 30 CFR 816.38, which contains the performance standards for handling acid-forming and toxic-forming materials. Proposed paragraph (d)(2) would implement in part the requirements in section 515(b)(3) of SMCRA [268] that surface coal mining and reclamation operations compact spoil where advisable to prevent leaching of toxic materials, cover all acid-forming and other toxic materials, and shape and grade overburden and spoil to prevent water pollution. It also would implement, in part, section 515(b)(14) of SMCRA,[269] which requires that all acid-forming materials and toxic materials be ''treated or buried and compacted or otherwise disposed of in a manner designed to prevent contamination of ground or surface waters.''

Paragraph (e): Soil Handling Plan

We propose to extensively revise our existing rules concerning soils to promote salvage, preservation, and redistribution of the best available soil materials for the purpose of creating a growing medium (soil) suitable for the intended vegetation, including creation of a root zone of sufficient depth for that vegetation. Proposed paragraph (e) would include those provisions of our existing rules at 30 CFR 816.22(b) and (e) that are permitting requirements rather than performance standards in an effort to consolidate permit application information and review requirements in subchapter G rather than having them split between subchapters G (permit requirements) and K (performance standards).

We propose to extensively revise our existing rules to better implement section 515(b)(5) of SMCRA,[270] which states that surface coal mining operations must—

> remove the topsoil from the land in a separate layer, replace it on the backfill area, or if not utilized immediately, segregate it in a separate pile from other spoil and when the topsoil is not replaced on a backfill area within a time short enough to avoid deterioration of the topsoil, maintain a successful cover by quick growing plant or other means thereafter so that the topsoil is preserved from wind and water erosion, remains free of any contamination by other acid or toxic material, and is in a usable condition for sustaining vegetation when restored during reclamation, except if topsoil is of insufficient quantity or of poor quality for sustaining vegetation, or if other strata can be shown to be more suitable for vegetation requirements, then the operator shall remove, segregate, and preserve in a like manner such other strata which is best able to support vegetation.

Proposed paragraph (e)(1)(i) is similar to the first sentence of existing 30 CFR 780.18(b)(4). It would require that the reclamation plan include a plan and schedule for removal, storage, and redistribution of topsoil, subsoil, and other material to be used as a final growing medium in accordance with 30 CFR 816.22.

Consistent with proposed 30 CFR 816.22(f), we also propose to add a requirement that the application include a plan for salvaging, protecting, and redistributing or otherwise using all organic matter (duff, other organic litter, and vegetative materials such as tree tops, small logs, and root balls) found on the site. Acceptable uses for organic matter are as a soil supplement, to promote revegetation, to assist in stream restoration, or to provide wildlife habitat. Preservation and distribution of organic matter on the regraded site would assist in meeting the requirement of section 515(b)(19) of SMCRA [271] to establish on the regraded area a diverse, effective, and permanent vegetative cover of the same seasonal variety native to the area. Our proposed rule also is consistent with the findings of an extensive literature review of reforestation on minesites in Appalachia. That review recommended that ''all surface organic debris (including stumps, stems, roots, and litter), all soil layers, and the soft saprolite and weathered rock materials under the soil be removed, mixed in the process of excavating, hauling and dumping, and placed on the surface of reclaimed mine sites to a depth of 1 to 2 meters.'' [272]

Proposed paragraph (e)(1)(ii) provides that the plan must require the removal, segregation, stockpiling, and redistribution of the B and C horizons and other underlying strata or portions thereof to the extent that those horizons and strata are needed to provide the root zone required to restore premining land use capability or to comply with the revegetation requirements of 30 CFR 816.111 and 816.116. The proposed rule differs from the existing rule at 30 CFR 816.22(e) in that the existing rule provides that salvage and redistribution of these soil materials is discretionary on the part of the regulatory authority.

However, the subsoil (the B and C horizons) also is important for plant growth. Plant roots extend through the topsoil into the subsoil (root zone), which provides a substantial proportion of the plant's nutrient requirements. For example, field studies have shown that between 45 percent and 65 percent of nitrogen available to plants from the soil lies below a depth of 6 inches. During dry summer weather, many plants, especially deep-rooted plants like alfalfa and most trees, depend for their survival on moisture available in the subsoil. Alfalfa extracts 55 percent of its moisture requirements from soil

[267] See, *e.g.,* Hamza, M. A., and W. K. Anderson. ''Soil compaction in cropping systems: a review of the nature, causes and possible solutions.'' *Soil and tillage research* 82.2 (2005): 121–145; Crossley, D. I. ''The effect of a compact subsoil horizon on root penetration.'' *Journal of Forestry* 38.10 (1940): 794–796.

[268] 30 U.S.C. 1265(b)(3).

[269] 30 U.S.C. 1265(b)(14).

[270] 30 U.S.C. 1265(b)(5).

[271] 30 U.S.C. 1265(b)(19).

[272] Zipper, C. E., J. A. Burger, C D. Barton, and J. G. Skousen. ''Rebuilding Soils on Mined Land for Native Forest in Appalachia'' (2012). Soil Sci. Soc. Am. J. (77:337–349), p. 347.

materials deeper than one foot and is capable of extracting water from subsoil up to 6 feet in depth. Even medium-rooted crops like wheat and corn extract up to 40 percent of their moisture requirements from soil materials deeper than one foot. Finally, many plants depend on root penetration well into the subsoil for physical support, especially where topsoil is thin. If plant roots are unable to penetrate deeply into a reclaimed subsoil, soil capability for plant growth will be degraded.[273]

Therefore, a failure to require salvage and redistribution of the B and C horizons under these conditions would result in a failure to restore the site to a condition in which it is capable of supporting those land uses that it was capable of supporting before any mining, as required by section 515(b)(2) of SMCRA.[274]

Furthermore, proposed paragraph (e)(1)(ii) is consistent with, and would improve implementation of, section 515(b)(5) of SMCRA,[275] which provides that if strata other than the topsoil ''can be shown to be more suitable for vegetation requirements, then the operator shall remove, segregate, and preserve in a like manner such other strata which is best able to support vegetation.'' The U.S. District Court for the District of Columbia upheld this interpretation of section 515(b)(5) of SMCRA in 1980 in *PSMRL I, Round I* concerning the 1979 version of our regulations at 30 CFR 816.22(d),[276] which required segregation of the B horizon and portions of the C horizon if the regulatory authority determined that those materials were necessary or desirable to ensure soil productivity:

> Section 515(b)(5) authorizes segregation [of materials other than topsoil] if the topsoil cannot sustain vegetation or if other strata enhance post-mining vegetation. This is essentially what the regulations command. They focus on ''soil productivity,'' and grant the regulatory authority power to require segregation if necessary to improve such productivity.[277]

Proposed paragraph (e)(1)(iii) would require that the plan explain how soil materials would be handled and stored to avoid contamination by acid-forming or toxic-forming materials and to minimize the loss of desirable soil characteristics during handling and storage. These provisions mirror similar requirements in section 515(b)(5) of SMCRA.[278]

Proposed paragraph (e)(2) contains expanded criteria and requirements for the approval and use of soil substitutes or supplements. It differs from existing 30 CFR 816.22(b) most significantly in that the existing rule allows use of topsoil substitutes or supplements if the resulting soil medium is equal to or more suitable than the existing topsoil in terms of its capability to sustain vegetation. We propose to eliminate the provision allowing use of topsoil substitutes or supplements when the resulting growing medium (soil) is only equal to the existing topsoil in terms of its capability to sustain vegetation. Our proposed revision would improve the implementation of section 515(b)(5) of SMCRA,[279] which allows use of other overburden strata in place of the topsoil only if those strata ''can be shown to be more suitable for vegetation requirements.'' Nothing in this provision of SMCRA authorizes the use of other strata in place of topsoil if the resulting medium is only equal in its ability to meet vegetation requirements.

While section 515(b)(5) of SMCRA [280] is silent on the use of subsoil substitutes, we propose to apply the same standards to the use of subsoil substitutes and supplements as we do to topsoil substitutes and supplements. The subsoil is an important part of the growing medium in that, among other things, it provides the root zone required by many plants for physical support, moisture, and nutrient uptake.[281] Therefore, application of the same standards for subsoil substitutes as for topsoil substitutes is appropriate to ensure that the reclaimed site is restored to a condition in which it is capable of supporting the uses that it was capable of supporting before any mining, as required by section 515(b)(2) of SMCRA.[282]

Proposed paragraph (e)(2)(i) explains that proposed paragraph (e)(2) would apply to all permit applicants proposing to use appropriate overburden materials as a supplement to or substitute for the existing topsoil or subsoil on the proposed permit area.

Proposed paragraph (e)(2)(ii)(A) would require that the permit applicant demonstrate, and the regulatory authority find in writing, that either the quality of the existing topsoil and subsoil is inferior to that of the alternative overburden materials proposed for use or that the quantity of existing topsoil and subsoil is not adequate to provide the optimal rooting depth or to meet other growth requirements of the native species to be planted under the revegetation plan. In the latter case, the proposed rule also would require that the soil handling plan provide for the salvage and redistribution of all existing soil materials as a component of the approved growing medium to obtain the benefits of the native existing soil materials as a source of seeds, other plant propagules, mycorrhizae, other soil flora and fauna, and other biological components that promote revegetation. Studies in Appalachia have found that native soils contain nitrogen and phosphorus in organic forms that are readily available to plants; they also contain organic carbon that is essential to soil microorganisms and nutrient cycling.[283] The author of an extensive literature review of reforestation on minesites in Appalachia concluded that native soils ''will be the most favorable material available on most mine sites for use in constructing mine soils for reforestation'' and that, when use of rock spoil is necessary, the native soils, as well as stumps and woody debris, should be mixed with those spoils to enhance their chemical, biological, and physical properties.[284]

Proposed paragraph (e)(2)(ii)(B) would require that the permit applicant demonstrate, and the regulatory authority find in writing, that use of the alternative overburden materials, either in combination with or in place of the topsoil or subsoil, would result in a growing medium (soil) that will provide superior rooting depth in comparison to the existing topsoil and subsoil and that will be more suitable to sustain the vegetation required by the approved postmining land use and the revegetation plan than the existing topsoil and subsoil.

Proposed paragraph (e)(2)(ii)(C) would require that overburden materials selected for use as a soil substitute or supplement be the best materials available in the proposed permit area to support the native vegetation to be established on the reclaimed area or the crops to be planted on that area.

The demonstrations and findings required by proposed paragraphs (e)(2)(ii)(A) through (C) would, in part, improve implementation of section

[273] Alberta Transportation, ''Alberta Transportation Guide to Reclaiming Borrow Excavations'' (December 2013); pp. 5–6.

[274] 30 U.S.C. 1265(b)(2).

[275] 30 U.S.C. 1265(b)(5).

[276] 30 CFR 816.22(d) was subsequently redesignated as 30 CFR 816.22(e) on May 16, 1983. See 48 FR 22100.

[277] *PSMRL I, Round I,* supra, slip op. at 54, 1980 U.S. Dist. LEXIS 17722 at *83.

[278] 30 U.S.C. 1265(b)(5).

[279] *Id.*

[280] *Id.*

[281] Alberta Transportation, ''Alberta Transportation Guide to Reclaiming Borrow Excavations'' (December 2013); pp. 5–6.

[282] 30 U.S.C. 1265(b)(2).

[283] Zipper, et al. (2012), *op. cit.* at 346.

[284] *Id.*

515(b)(5) of SMCRA,[285] which provides that ''if topsoil is of insufficient quantity or of poor quality for sustaining vegetation, or if other strata can be shown to be more suitable for vegetation requirements, then the operator shall remove, segregate, and preserve in a like manner such other strata which is best able to support vegetation.'' In addition, these demonstrations and findings are intended to ensure the establishment of a growing medium on the reclaimed area that is capable of supporting the uses that the land was capable of supporting before any mining, as required by section 515(b)(2) of SMCRA.[286] Finally, the emphasis on the use of native species to determine optimal rooting depths and other growth requirements when evaluating the suitability of potential soil substitutes is consistent with section 515(b)(19) of SMCRA,[287] which requires establishment of a diverse, effective, and permanent vegetative cover of the same seasonal variety native to the area of land to be affected and capable of self-regeneration and plant succession. . . .''

Proposed paragraphs (e)(2)(iii) and (iv) would expand upon the second and third sentences of existing 30 CFR 780.18(b)(4), which establish minimum content requirements for the demonstration of the suitability of potential soil substitutes or supplements and which allow the regulatory authority to require other analyses, field trials, or greenhouse tests if necessary. Proposed paragraph (e)(2)(iii) would require that the regulatory authority specify suitability criteria for potential soil substitutes and supplements; chemical and physical analyses, field trials, or greenhouse tests that the applicant must conduct on potential soil substitutes and supplements; and sampling objectives, sampling techniques, and the techniques to be used to analyze the samples collected. Proposed paragraph (e)(2)(iv)(A) would require that demonstrations of the suitability of potential soil substitutes and supplements include the physical and chemical soil characteristics and root zones needed to support the type of vegetation to be established on the reclaimed area. Proposed paragraph (e)(2)(iv)(B) would require that those demonstrations include a comparison and analysis of the thickness, total depth, texture, percent coarse fragments, pH, thermal toxicity, and areal extent of the different kinds of soil horizons and overburden materials available within the proposed permit area, based upon a statistically valid sampling procedure.

Proposed paragraphs (e)(2)(iii) and (iv) are intended to ensure that the determination of the suitability of potential soil substitutes and supplements is conducted in a scientifically-sound manner. Use of scientifically-invalid sampling and analytical techniques or a lack of comprehensive criteria for the evaluation and approval of potential soil substitutes and supplements could result in the establishment of an inferior growing medium on the reclaimed area that is incapable of supporting the uses that it was capable of supporting before any mining. Such a result would be inconsistent with section 515(b)(2) of SMCRA.[288] It also would be inconsistent with the requirement in section 515(b)(5) of SMCRA [289] that any topsoil substitutes be shown to be more suitable for vegetation requirements than the existing soil and that any substitute materials be the best able to support vegetation.

Proposed paragraph (e)(2)(v) would require that the soil handling plan include a plan for testing and evaluating overburden materials during both removal and redistribution to ensure that the permittee removes and redistributes only those overburden materials approved for use as soil substitutes or supplements. This requirement would provide a safeguard against the salvage and redistribution of overburden materials that have not been approved for use as soil substitutes or supplements. Use of unapproved materials could result in the establishment of an inferior growing medium on the reclaimed area that is incapable of supporting the uses that it was capable of supporting before any mining. Such a result would be inconsistent with section 515(b)(2) of SMCRA.[290] It also would be inconsistent with the requirement in section 515(b)(5) of SMCRA [291] that any topsoil substitutes be shown to be more suitable for vegetation requirements than the existing soil and that any substitute materials be the best able to support vegetation.

Paragraph (f): Surface Stabilization Plan

We propose to add this paragraph to replace existing 30 CFR 780.15, which requires that the reclamation plan include an air pollution control plan for fugitive dust. Under existing 30 CFR 780.15, at a minimum, the permit application must include a ''plan for fugitive dust control practices, as required under 30 CFR 816.95.'' We propose to remove 30 CFR 780.15 because the references to fugitive dust and cross-references to 30 CFR 816.95 in the existing rule refer to provisions that we removed in 1983 in response to a court decision striking down our authority to regulate air pollution under SMCRA, except for air pollution attendant to erosion. The court held that ''the legislative history indicates that Congress only intended to regulate air pollution related to erosion.'' [292] The 1983 rulemaking removed all requirements in 30 CFR 816.95 for fugitive dust control practices, including requirements for monitoring of fugitive dust to determine compliance with federal and state air quality standards. That rulemaking also changed the section heading of 30 CFR 816.95 from ''Air resources protection'' to ''Stabilization of surface areas'' and replaced the air quality performance standards formerly located in that section with soil stabilization requirements that contain no mention of fugitive dust or air quality monitoring. See 48 FR 1160–1163 (Jan. 10, 1983).

However, the 1983 rulemaking did not remove the parallel permitting requirements in 30 CFR 780.15 and 784.26. Instead, we stated in the preamble to that rulemaking that we agreed with a commenter that we also needed to amend the permit application rules at 30 CFR 780.15 and 784.26 for consistency with the revisions to 30 CFR 816.95 and 817.95, and that we would do so in a subsequent independent rulemaking.[293] Adoption of this proposed rule would fulfill that commitment in part by adding permit application information requirements consistent with the 1983 revisions to 30 CFR 816.95. In other words, we propose to replace the obsolete air pollution control plan requirements in existing 30 CFR 780.15 with the surface stabilization plan requirements in proposed 30 CFR 780.12(f) to correspond with the requirements in existing 30 CFR 816.95, as revised in 1983.

Proposed paragraph (f) would add a permitting counterpart to the current performance standard at 30 CFR 816.95(a), which provides that all exposed surface areas must be protected and stabilized to effectively control erosion and air pollution attendant to

[285] 30 U.S.C. 1265(b)(5).

[286] 30 U.S.C. 1265(b)(2).

[287] 30 U.S.C. 1265(b)(19).

[288] 30 U.S.C. 1265(b)(2).

[289] 30 U.S.C. 1265(b)(5).

[290] 30 U.S.C. 1265(b)(2).

[291] 30 U.S.C. 1265(b)(5).

[292] *In re Permanent Surface Min. Regulation Litig. I, Round II (PSMRL I, Round II),* 1980 U.S. Dist. LEXIS 17660 at *43–44 (D.D.C., May 16, 1980), 19 Env't Rep. Cas. (BNA) 1477.

[293] 48 FR 1161 (Jan. 10, 1983).

erosion. We also propose to add cross-references to the current dust control performance standards for roads in 30 CFR 816.150 and 816.151.

Paragraph (g): Revegetation Plan

We propose to extensively revise this paragraph, which appears at 30 CFR 780.18(b)(5) in our existing rules, by adding specificity for elements of the revegetation plan, by incorporating those provisions of 30 CFR 816.111 that are more appropriately considered permitting requirements rather than performance standards, and by ensuring that there is a detailed counterpart in the revegetation plan to the revegetation performance standards in 30 CFR 816.111 through 816.116, when appropriate. The various components of proposed paragraph (g) are intended to ensure compliance with or improve implementation of section 515(b)(19) of SMCRA,[294] which requires that surface coal mining and reclamation operations establish ''a diverse, effective, and permanent vegetative cover of the same seasonal variety native to the area of land to be affected and capable of self-regeneration and plant succession at least equal in extent of cover to the natural vegetation of the area; except, that introduced species may be used in the revegetation process where desirable and necessary to achieve the approved postmining land use plan.''

Proposed paragraph (g)(1)(ii) would add a site preparation element to the revegetation plan to reflect extensive research documenting the adverse impacts of excessive compaction on vegetation, especially woody plants. The new element would require a description of the measures that the permittee will take to avoid compaction or, when avoidance is not possible, to minimize and alleviate compaction of the root zone during backfilling, grading, soil redistribution, and planting.

In addition, we propose to require in paragraph (g)(1)(viii) that the revegetation plan identify any normal husbandry practices that the permittee intends to use and explain whether the permittee intends to conduct irrigation or apply fertilizer after the first year and, if so, for how long and to what extent. This information will assist the regulatory authority in determining whether the proposed practices are normal husbandry practices or whether they are augmentative in nature, which would necessitate restarting the revegetation responsibility period under proposed 30 CFR 816.115, which corresponds to existing 30 CFR 816.116(c). These provisions would serve as the permit application information counterpart to the performance standards in proposed 30 CFR 816.115(a)(1) and (b), which correspond to existing 30 CFR 816.116(c)(1) and (c)(4).

Proposed paragraph (g)(1)(xi) would add a requirement that the revegetation plan include the measures that the permittee will take to avoid the establishment of invasive species on reclaimed areas or to control those species if they do become established. Invasive species are highly detrimental to native ecosystems, agriculture, and forestry. They have posed a problem on some minesites either because the permit improperly allowed the use of invasive non-native species or because of the reclamation practices used. We propose to add this provision to improve the implementation of section 515(b)(19) of SMCRA,[295] which requires the establishment of a diverse, effective, and permanent vegetative cover of the same seasonal variety native to the area, and section 515(b)(2) of SMCRA,[296] which requires restoration of mined land to a condition capable of supporting the uses it was capable of supporting before any mining. Allowing the establishment of invasive species also would be inconsistent with the fish and wildlife protection provisions of section 515(b)(24) of SMCRA.[297] Moreover, proposed paragraph (g)(1)(xi) is consistent with Section 2.(a)(2)(i) and (iv) of Executive Order 13112, ''Invasive Species,'' which requires that ''[e]ach Federal agency whose actions may affect the status of invasive species shall, to the extent practicable and permitted by law, . . . (i) prevent the introduction of invasive species; . . . [and] (iv) provide for the restoration of native species and habitat conditions in ecosystems that have been invaded.'' [298]

Proposed paragraph (g)(2) would require that the plan be designed to create a diverse, effective, permanent vegetative cover that is consistent with the vegetative communities described in the permit application in accordance with 30 CFR 779.19. It also would require that the plan meet the other requirements of 30 CFR 816.116(a) and (b).

Proposed paragraph (g)(3) is substantively identical to the species-selection criteria of existing 30 CFR 816.111(a)(2), (a)(4), and (b), with two exceptions. Proposed paragraph (g)(3)(i) would prohibit the use of introduced species unless they are non-invasive. This proposed requirement is consistent with section 515(b)(19) of SMCRA,[299] which allows the use of introduced species only if they are desirable. Invasive introduced species are not desirable because they out-compete native vegetation and can have adverse impacts on fish and wildlife, which would be inconsistent with the fish and wildlife protection requirements of section 515(b)(24) of SMCRA.[300] Moreover, proposed paragraph (g)(3)(i) is consistent with Section 2.(a)(2)(i) of Executive Order 13112, ''Invasive Species,'' which requires that ''[e]ach Federal agency whose actions may affect the status of invasive species shall, to the extent practicable and permitted by law, . . . prevent the introduction of invasive species''.[301]

Proposed paragraph (g)(3)(ii) would provide that the species selected need to be capable of stabilizing the soil surface from erosion only to the extent that control of erosion with herbaceous species is consistent with establishment of a permanent vegetative cover that resembles native plant communities in the area. We propose to add this qualifier because some level of erosion is natural and because excessive herbaceous cover can inhibit establishment of woody plants, as discussed at length elsewhere in this preamble.

Proposed paragraphs (g)(4) and (g)(5) are substantively identical to existing 30 CFR 816.116(c) and (d). Both paragraphs would provide limited exceptions to the species-selection requirements of proposed paragraphs (g)(3)(i), (iv), and (v), which correspond to the species-selection provisions of section 515(b)(19) of SMCRA.[302] Proposed paragraph (g)(3) would provide an exception for temporary cover, while proposed paragraph (g)(4) would provide an exception for long-term, intensive agricultural postmining land uses. These exceptions would be consistent with section 515(b)(19) of SMCRA,[303] which allows the use of introduced species ''in the revegetation process where desirable and necessary to achieve the approved postmining land use plan.'' Proposed paragraph (g)(4) also would implement section 515(b)(20) of SMCRA [304] to the extent that it provides exceptions to the requirements of section 515(b)(19) for

[294] 30 U.S.C. 1265(b)(19).

[295] 30 U.S.C. 1265(b)(19).

[296] 30 U.S.C. 1265(b)(2).

[297] 30 U.S.C. 1265(b)(24).

[298] 64 FR 6184 (Feb. 8, 1999).

[299] 30 U.S.C. 1265(b)(19).

[300] 30 U.S.C. 1265(b)(24).

[301] 64 FR 6184 (Feb. 8, 1999).

[302] 30 U.S.C. 1265(b)(19).

[303] *Id.*

[304] 30 U.S.C. 1265(b)(20).

long-term, intensive agricultural postmining land uses.

Proposed paragraph (g)(6) would require that a professional forester or ecologist develop and certify all revegetation plans that include the establishment of trees and shrubs. It also would require that those plans include site-specific planting prescriptions for canopy trees, understory trees and shrubs, and herbaceous ground cover compatible with establishment of those trees and shrubs. In addition, this proposed paragraph would require that the plan rely exclusively upon the use of native species unless those species are inconsistent with the approved postmining land use and that land use is implemented before the entire bond amount for the area in question has been fully released.

Paragraph (h): Stream Restoration Plan

We propose to add this paragraph to require that the reclamation plan expressly address in detail how the permittee will restore the form and ecological function of each segment of a perennial or intermittent stream that is proposed to be mined through under 30 CFR 780.28. The plan must conform to the requirements of 30 CFR 780.28 and 816.57. The U.S. Army Corps of Engineers may require additional onsite or offsite mitigation under section 404 of the Clean Water Act.[305]

Paragraph (i): Coal Resource Conservation Plan

Proposed paragraph (i) corresponds to existing 30 CFR 780.18(b)(6). We propose to add language consistent with the existing coal recovery performance standard at 30 CFR 816.59. Proposed paragraph (i) would implement section 508(a)(6) of SMCRA,[306] which provides that the reclamation plan must include a statement of ''the consideration which has been given to maximize the utilization and conservation of the solid fuel resource being recovered so that reaffecting the land in the future can be minimized.''

Paragraph (j): Plan for Disposal of Noncoal Waste Materials

Proposed paragraph (j) corresponds to existing 30 CFR 780.18(b)(7). We propose to clarify that this requirement applies to all noncoal waste materials resulting from mining and reclamation activities, but not to coal combustion residuals such as fly ash and bottom ash. The existing rule applies to ''debris, acid-forming and toxic-forming materials, and materials constituting a fire hazard.'' We propose to delete the reference to acid-forming and toxic-forming materials because proposed 30 CFR 780.22 contains the permit application information requirements for those materials. As revised, proposed paragraph (j) would apply to all noncoal waste materials covered by 30 CFR 816.89. It would serve as the permit application information counterpart to the performance standards for disposal of noncoal waste materials in 30 CFR 816.89.

We also propose to require that the reclamation plan describe the type and quantity of noncoal waste materials that the permittee intends to dispose of within the proposed permit area, how the permittee intends to dispose of those materials in accordance with 30 CFR 816.89, and the locations of any noncoal waste material disposal sites within the proposed permit area, as well as the contingency plans developed to preclude sustained combustion of combustible noncoal materials. These permit application information requirements would enable the regulatory authority to evaluate the potential environmental impacts of the disposal of noncoal waste materials and ensure that the permit includes appropriate measures to protect society and the environment from the adverse effects of this aspect of surface coal mining operations, as provided in section 102(a) of SMCRA.[307]

Paragraph (m): Consistency With Land Use Plans and Landowner Plans

In the existing rules, this paragraph appears in 30 CFR 780.23(b)(3). However, section 780.23(b) applies only in the context of the postmining land use, which is not consistent with the underlying statutory requirement at section 508(a)(8) of SMCRA.[308] That provision of the Act requires that the reclamation plan describe the consideration that has been given to making the surface coal mining and reclamation operations themselves consistent with surface owner plans and applicable state and local land use plans and programs. This provision is separate and distinct from the requirement in section 508(a)(3) of the Act [309] that the reclamation plan discuss the relationship of the postmining land use to existing land use policies and plans and the comments of the surface owner. Therefore, we propose to move the provision in existing 30 CFR 780.23(b)(3) to new § 780.12(m) to ensure that, in discussing consistency with surface owner plans and applicable state and local land use plans, the reclamation plan addresses the consistency of the proposed operations (not just the proposed postmining land use) with those plans.

4. Section 780.13: What additional maps and plans must I include in the reclamation plan?

We propose to redesignate existing 30 CFR 780.14 as 30 CFR 780.13. We also propose to combine existing paragraphs (a) and (b) into paragraph (a) and redesignate existing paragraph (c) as paragraph (b).

We propose to remove the requirement in existing 30 CFR 780.14(b)(7) for maps showing each air pollution collection and control facility because that requirement is associated with regulations in 30 CFR 816.95 that the court struck down in 1980 and that we removed in 1983. Specifically, the court struck down our authority to regulate air pollution under SMCRA, except for air pollution attendant to erosion.[310] See the portion of this preamble concerning our proposed removal of 30 CFR 780.15 for additional discussion.

In proposed paragraph (a)(7), which corresponds to existing paragraph (b)(6), we propose to add a requirement for a map showing the location of each point at which water will be discharged from the proposed permit area to a surface-water body and the name of that water body, consistent with equivalent requirements in sections 507(b)(10) and (14) of SMCRA.[311]

In proposed paragraph (a)(11), which corresponds to existing paragraph (b)(11), we propose to replace the terms ''coal processing waste bank'' and ''coal processing waste dam and embankment'' with ''refuse pile'' and ''coal mine waste impounding structure'' to employ terminology consistent with the definitions and performance standards that we adopted on September 26, 1983 (48 FR 44006). We also propose to add a reference to siltation structures, consistent with our addition of that terminology and requirements for those structures on September 26, 1983 (48 FR 44032).

We propose to add paragraphs (a)(12) through (a)(14), which would require a map showing each segment of a perennial or intermittent stream that would be mined through, buried, or diverted; any perennial or intermittent stream segment to be restored, any temporary or permanent stream-channel

[305] 33 U.S.C. 1344.

[306] 30 U.S.C. 1258(a)(6).

[307] 30 U.S.C. 1202(a).

[308] 30 U.S.C. 1258(a)(8).

[309] 30 U.S.C. 1258(a)(3).

[310] *PSMRL I, Round II,* 1980 U.S. Dist. LEXIS 17660 at *43–44, 19 Env't Rep. Cas. (BNA) 1477.

[311] 30 U.S.C. 1257(b)(10) and (14).

diversion, and each segment of a perennial or intermittent stream that would be improved as part of the fish and wildlife enhancement plan. The regulatory authority would need this information to assist in evaluating whether the proposed application is in compliance with requirements pertaining to activities in perennial and intermittent streams in proposed 30 CFR 780.28 and 816.57.

We also propose to add paragraph (a)(15), which would require a map showing the location and geographic coordinates of each point at which the applicant proposes to monitor groundwater, surface water, or the biological condition of perennial and intermittent streams. The regulatory authority would need this information to determine whether the application includes a sufficient number of monitoring sites and whether those sites are adequately distributed and located to ensure that monitoring results are representative of the entire permit area, as required by proposed 30 CFR 780.23.

In addition, we propose to revise existing 30 CFR 780.14(c), which we propose to redesignate as 30 CFR 780.13(b), by replacing the cross-references to 30 CFR 780.35(c) and 816.71(b) with a cross-reference to 30 CFR 780.35 to be consistent with other changes that we are proposing to those rules. Those changes include moving the design certification requirement formerly located in section 816.71(b) to 30 CFR 780.35(b) to consolidate permitting requirements in subchapter G. The existing rules also include a cross-reference to the certification requirements in 30 CFR 816.73(c) for durable rock fills. We do not propose to include a similar cross-reference in 30 CFR 780.13(b) because we are proposing to remove 30 CFR 816.73 in its entirety, which means that durable rock fills would no longer be allowed.

We propose to add paragraph (c), which would authorize the regulatory authority to require submission of the information required by paragraph (a) in a digital format, when appropriate. We invite comment on whether submission of this information in a digital format should be mandatory rather than discretionary to facilitate review and analysis by the public and the regulatory authority.

5. Why are we proposing to remove existing 30 CFR 780.15?

We propose to remove existing 30 CFR 780.15 and redesignate existing 30 CFR 780.13 as 30 CFR 780.15 because the references to fugitive dust and cross-references to 30 CFR 816.95 in existing 30 CFR 780.15 refer to provisions that we removed in 1983 in response to a court decision striking down our authority to regulate air pollution under SMCRA, except for air pollution attendant to erosion. The court held that ''the legislative history indicates that Congress only intended to regulate air pollution related to erosion'' [312] and that ''the Secretary's authority to regulate [air] pollution is limited to activities related to erosion.'' [313] The court remanded former 30 CFR 816.95 and 817.95 (1979), which contained performance standards for fugitive dust control, for revision. However, the court did not address the parallel permitting requirements at 30 CFR 780.15 and 784.26.

The 1983 rulemaking removed all requirements in 30 CFR 816.95 for fugitive dust control practices, including requirements for monitoring of fugitive dust to determine compliance with federal and state air quality standards. That rulemaking also changed the section heading of 30 CFR 816.95 from ''Air resources protection'' to ''Stabilization of surface areas'' and replaced the air quality performance standards formerly located in 30 CFR 816.95 with soil stabilization requirements that contain no mention of fugitive dust or air quality monitoring. See 48 FR 1160–1163 (Jan. 10, 1983).

However, the 1983 rulemaking did not remove the parallel permitting requirements in 30 CFR 780.15. Instead, we stated in the preamble to that rulemaking that we agreed with a commenter that we also needed to amend the permit application rules at 30 CFR 780.15 and 784.26 for consistency with the revisions to 30 CFR 816.95 and 817.95, and that we would do so in a subsequent independent rulemaking.[314] Adoption of this proposed rule would fulfill that long-delayed commitment.

In concert with the removal of 30 CFR 780.15, we propose to redesignate existing 30 CFR 780.13, which concerns blasting, as 30 CFR 780.15.

6. Section 780.16: What must I include in the fish and wildlife protection and enhancement plan?

Proposed 30 CFR 780.16 is the counterpart to paragraphs (b) and (c) of existing 30 CFR 780.16. Our proposed revisions to the existing rule would provide greater specificity on the measures that the fish and wildlife protection and enhancement plan in the permit application must include. The proposed revisions would improve implementation of section 515(b)(24) of SMCRA,[315] which provides that ''to the extent possible using the best technology currently available,'' surface coal mining and reclamation operations must ''minimize disturbances and adverse impacts of the operation on fish, wildlife, and related environmental values, and achieve enhancement of those resources where practicable.'' The proposed revisions also are consistent with paragraphs (a) and (d) of section 102 of SMCRA,[316] which provide that two of the purposes of SMCRA are establishing ''a nationwide program to protect society and the environment from the adverse effects of surface coal mining operations'' and assuring ''that surface coal mining operations are so conducted as to protect the environment.''

Likewise, the proposed revisions to 30 CFR 780.16 are consistent with section 515(b)(23) of SMCRA,[317] which requires that surface coal mining and reclamation operations ''meet such other criteria as are necessary to achieve reclamation in accordance with the purposes of this Act, taking into consideration the physical, climatological, and other characteristics of the site.'' Long-standing case law supports the Secretary's authority to adopt these regulations [318] and provides the Secretary ''great deference'' in determining how to ensure that the Act's provisions are enforced.[319]

Proposed paragraph (a) contains general requirements analogous to existing 30 CFR 780.16(b)(1) and (2). Like the existing rules, it provides that the fish and wildlife protection and enhancement plan must be consistent with the performance standards for fish and wildlife protection and enhancement at 30 CFR 816.97 and must be specific to the fish and wildlife resources of the proposed permit and adjacent areas as identified in the permit application in accordance with 30 CFR 779.20. We propose to add a requirement that the plan also comply with the specific protection and enhancement requirements of 30 CFR 780.16(b) through (e).

Proposed paragraph (b) concerns protection of threatened and endangered species. Like the existing rule, it would require a description of how the proposed operation will comply with the Endangered Species Act. We

[312] *PSMRL I, Round II,* 1980 U.S. Dist. LEXIS 17660 at *43–44, 19 Env't Rep. Cas. (BNA) 1477.

[313] *Id.* at *42.

[314] 48 FR 1161 (Jan. 10, 1983).

[315] 30 U.S.C. 1265(b)(24).

[316] 30 U.S.C. 1202(a) and (d).

[317] 30 U.S.C. 1265(b)(23).

[318] *Nat'l Wildlife Fed'n* v. *Hodel,* 839 F.2d 694, 735 (D.C. Cir. 1988).

[319] *Nat'l Wildlife Fed'n* v. *Lujan,* 1990 U.S. Dist. LEXIS 8869 at *84 (D.D.C. 1990).

propose to add a provision that would expressly require that the fish and wildlife protection and enhancement plan contain a description of any species-specific protection and enhancement plans developed under the Endangered Species Act, which would include any plans developed in accordance with the existing formal section 7(a)(2) Endangered Species Act consultation pertaining to the approval and conduct of surface coal mining and reclamation operations under a SMCRA regulatory program. We propose to add these provisions in response to discussions with the U.S. Fish and Wildlife Service concerning compliance with the Endangered Species Act.

Proposed paragraph (c) would contain requirements for the protection of fish and wildlife other than threatened and endangered species. It would require that the fish and wildlife protection and enhancement plan describe how, to the extent possible using the best technology currently available, the proposed operation will minimize disturbances and adverse impacts on fish, wildlife, and related environmental values, as required by section 515(b)(24) of SMCRA.[320] It lists a number of measures that the fish and wildlife protection and enhancement plan must include to minimize disturbance and adverse impacts, including timing of operations to avoid or minimize disruption to wildlife and retention of forest cover and native vegetation for as long as possible.

As discussed below, riparian (streamside) vegetation plays a critical role in maintaining or restoring the ecological function of a stream. Therefore, proposed paragraph (c)(3) would specify that the fish and wildlife enhancement plan must require maintenance of an intact forested buffer at least 100 feet wide between surface disturbance and a perennial or intermittent stream to the extent possible. This requirement would apply only when the stream is located in a forested area.

Researchers have found that, in small, well-shaded upland streams, as much as 75 percent of the organic food base may be supplied by dissolved organic compounds or detritus such as fruit, limbs, leaves and insects that fall from the forest canopy in the riparian zone.[321] Benthic detritivores (bacteria, fungi and invertebrates) that live on the stream bottom feed on the detritus and form the basis of the aquatic food chain. They pass on this energy when they are, in turn, consumed by larger benthic fauna and eventually by fish. Thus, the streamside forest functions as an important energy source for the entire aquatic food chain from headwaters to estuary.[322]

Furthermore, forested riparian buffers are essential to prevent excessively high water temperatures in coldwater streams and to moderate temperature variations in other streams. One study found a four-fold decline in fish density in coldwater streams after removal of the forested riparian buffer.[323] Another study found that invertebrate populations in streams with forested buffers of 100 feet exhibited no change following clearcutting of the area outside the buffer zone. However, streams in watersheds in which clearcutting operations left narrower forested buffers experienced significant changes in the species diversity of invertebrate populations, with the extent of the changes correlating to buffer width.[324]

Studies of effective buffer widths for wildlife generally recommend wider buffers than those required for sediment control and protection of water quality. For example, recommended buffer widths for conservation of forest-dwelling birds often exceed 300 feet.[325] A comprehensive guide to riparian forest buffers in the Chesapeake Bay watershed provides a range of recommended minimum buffer widths for different objectives: 50 to 275 feet for wildlife habitat, 60 to 225 feet for flood mitigation, 50 to 175 feet for sediment removal, 35 to 140 feet for nitrogen removal, 20 to 60 feet for water temperature moderation, and 20 to 45 feet for bank stabilization and aquatic food web maintenance.[326] The minimum 100-foot buffer width that we propose to adopt lies within the lower end of the range of recommended minimum widths for wildlife habitat and flood mitigation, in the middle of the range for sediment removal and nitrogen removal, and exceeds the range recommended for water temperature moderation and bank stabilization and aquatic food web maintenance. Therefore, the 100-foot minimum width that we have proposed for the riparian buffer is an appropriate midrange compromise that strikes a balance among property rights and the various recommended buffer widths for relevant objectives, consistent with section 102(f) of SMCRA,[327] which provides that one of the purposes of SMCRA is to strike a balance between environmental protection and the need for coal production.

We propose to specify that the buffer width must be measured horizontally on a line perpendicular to the stream beginning at the bankfull elevation or, if there are no discernible streambanks, the centerline of the active channel. We derived this provision primarily from Natural Resources Conservation Service Conservation Practice Standard Code 391 (''Riparian Forest Buffer'') (July 2010), which states: ''Measurement shall begin at and perpendicular to the normal water line, bank-full elevation, or the top of the bank as determined locally.'' For streams that lack defined banks, our proposed rule would adopt the standard used in a riparian buffer conservation zone model ordinance, which calls for measurement from the centerline of the stream in those circumstances.[328]

Another measure listed in proposed paragraph (c) is a requirement for periodic evaluation of the impacts of the operation on fish, wildlife, and related environmental values in the permit and adjacent areas. This paragraph would require that the permittee use that information to modify operations or take other action if necessary to avoid or minimize unforeseen adverse impacts on fish, wildlife, and related environmental values.

Proposed paragraph (d)(1) would require that the fish and wildlife protection and enhancement plan include a description of the measures that the permit applicant proposes to implement as the best technology currently available to enhance fish, wildlife, and related environmental values both within and outside the area

[320] 30 U.S.C. 12658(b)(24).

[321] Welsch, David J., ''Riparian Forest Buffers: Function and Design for Protection and Enhancement of Water Resources,'' NA–PR–07–91, U.S. Dept. of Agriculture, Forest Service, Northeastern Area State and Private Forestry (1991). Unpaginated document available at *http://www.na.fs.fed.us/spfo/pubs/n_resource/buffer/cover.htm* (last accessed January 16, 2015).

[322] *Id.*

[323] P. Lee et al., ''Quantitative review of riparian buffer width guidelines from Canada and the United States,'' *Journal of Environmental Management* 70 (2004) 165–180, p. 172. The review noted that fish populations recovered after stream temperatures decreased following reforestation.

[324] *Id.*

[325] Fischer, R. A. and J.C. Fischenich, Design recommendations for riparian corridors and vegetated buffer strips (2000) in ''EMRRP Technical Notes Collection'' (ERDC TN–EMRRP–SR–24), U.S. Army Engineer Research and Development Center, Vicksburg, MS.

[326] Palone, Roxane S. and Albert H. Todd, ed. ''Chesapeake Bay Riparian Handbook: A Guide for Establishing and Maintaining Riparian Forest Buffers,'' U.S. Dept. of Agriculture, Forest Service, Northeastern Area State and Private Forestry, May 1997, rev. June 1998. Figure 6–3, p. 132.

[327] 30 U.S.C. 1202(f).

[328] Passaic River Coalition and New Jersey Dept. of Environmental Protection, Division of Watershed Management, ''Riparian Buffer Conservation Zone Model Ordinance,'' Part IV (March 2005).

to be disturbed by mining activities, where practicable. If the applicant determines that it is not practicable to implement any enhancement measures, the application would have to explain the rationale for this determination. Proposed paragraphs (d)(1)(i) through (xi) list examples of potential enhancement measures. However, the applicant may select other measures. There is no expectation that each application will include all the measures listed here.

Under proposed paragraph (d)(2), implementation of fish and wildlife enhancement measures would be mandatory whenever the proposed operation would result in the long-term loss of native forest, other native plant communities, or a segment of a perennial or intermittent stream. In this context, ''long-term'' means that the permittee would not be able to correct the resource loss before expiration of the period of extended revegetation responsibility as prescribed in proposed 30 CFR 816.115. Thus, the removal of significant native forest cover and the loss of the ecological benefits associated with that cover would be considered a long-term loss, as would the burial of a perennial or intermittent stream segment by an excess spoil fill or coal mine waste disposal facility.

We invite comment on whether there are other interpretations of ''long-term'' that we should consider. We also invite comment on whether the regulatory authority may consider mitigation measures approved under the authority of the Clean Water Act as satisfying the separate SMCRA requirement for mandatory enhancement measures. Acceptance may enhance coordination of permitting reviews under SMCRA and the Clean Water Act. We request that anyone with data on the effectiveness and long-term viability of Clean Water Act mitigation measures that have already been implemented submit that data to us for consideration in our decision as to whether to accept Clean Water Act mitigation measures as fish and wildlife enhancement measures under SMCRA. We also request that anyone with data on downstream impacts from coal mining and the effectiveness of Clean Water Act mitigation measures on those impacts submit that data to us for consideration. Finally, we request that anyone with data on the cumulative downstream impacts of coal mining that are not addressed by Clean Water Act mitigation measures or National Pollutant Discharge Elimination System (NPDES) permits submit that data to us for consideration.

Proposed paragraph (d)(2)(ii) would require that the scope of the enhancement measures be commensurate with the potential long-term adverse impact to those resources and that the measures be permanent in nature. For example, riparian corridors must be protected by conservation easements (dedicated to an appropriate agency or organization) or deed restrictions or so that the newly planted vegetation is not destroyed after bond release and termination of jurisdiction under SMCRA. We invite comment on whether our regulations should define ''commensurate'' in this context and, if so, how we should define that term.

Proposed paragraph (d)(2)(iii)(A) would require that enhancement measures be implemented within the watershed in which the proposed operation is located, unless opportunities for enhancement are not available within that watershed. In the latter situation, the proposed rule would allow the permit applicant to propose enhancement measures for implementation in the nearest adjacent watershed in which enhancement opportunities exist. Proposed paragraph (d)(2)(iii)(B) would require that each regulatory program prescribe the size of the watershed for purposes of paragraph (d)(2)(iii)(A) of this section, using a generally-accepted watershed classification system. We invite comment on whether we should instead establish a standard size nationwide as part of the final rule. The HUC–12 (U.S. Geological Survey 12-digit Watershed Boundary Dataset) watershed is one possibility.

Proposed paragraph (d)(2)(iv) would require that completion of mandatory enhancement measures be made a condition of permit issuance to ensure that this requirement is both enforceable and covered by the performance bond posted for the operation.

Proposed paragraph (d)(3) would require that the area to be disturbed by implementation of enhancement measures be included within the proposed permit area whenever implementation of those measures would result in more than a de minimis disturbance of the surface of land outside the area to be mined. This provision would ensure that the regulatory authority can enforce implementation of those measures under the SMCRA permit and that their implementation would be covered by the performance bond for the operation.

Proposed paragraph (e) would contain the U.S. Fish and Wildlife Service permit application review provisions located at existing 30 CFR 780.16(c). We propose to revise these provisions in response to discussions with the U.S. Fish and Wildlife Service concerning compliance with the Endangered Species Act.

Proposed paragraph (e)(1)(i) would require that the regulatory authority provide the fish and wildlife protection and enhancement plan developed under this section as part of the permit application to the applicable regional or field office of the U.S. Fish and Wildlife Service whenever the resource information submitted under proposed 30 CFR 779.20 includes species listed as threatened or endangered under the Endangered Species Act, critical habitat designated under that law, or species proposed for listing as threatened or endangered under that law. The proposed rule would require that the regulatory authority provide this information to the Service no later than the time that the regulatory authority provides written notice of receipt of an administratively complete permit application to the Service under proposed 30 CFR 773.6(a)(3)(ii). Under existing 30 CFR 780.16(c), the Service must request this information from the regulatory authority rather than receiving it automatically.

Proposed paragraph (e)(1)(ii) is similar to existing 30 CFR 780.16(c) in that it would allow the Service to request an opportunity to review the fish and wildlife protection and enhancement plans submitted as part of other permit applications even when the resource information in those applications does not include species listed as threatened or endangered under the Endangered Species Act, critical habitat designated under that law, or species proposed for listing as threatened or endangered under that law. Under both the existing and proposed rules, the regulatory authority must provide that information to the Service within 10 days of receipt of the request.

Proposed paragraph (e)(2) would specify how the regulatory authority must handle comments received from the Service and how any disagreements are to be resolved. Proposed paragraph (e)(2) generally parallels the provisions that we and the Service agreed to as a result of a formal section 7(a)(2) Endangered Species Act consultation pertaining to the approval and conduct of surface coal mining and reclamation operations under a SMCRA regulatory program. Specifically, proposed paragraphs (e)(2)(i) through (iii) would provide that if the regulatory authority does not agree with a Service recommendation that pertains to fish and wildlife or plants listed as threatened or endangered under the

Endangered Species Act or to critical habitat designated under that law, the regulatory authority must explain the rationale for that decision in a comment disposition document and must provide a copy of that document to the pertinent Service field office. The proposed rule also would require that the regulatory authority provide a copy of that document to the appropriate OSMRE field office for informational purposes and to allow the OSMRE field office to monitor resolution of the disagreement. If the Service field office does not concur with the regulatory authority's decision and the regulatory authority and the Service field office are subsequently unable to conclude an agreement at that level, the proposed rule allows either the regulatory authority or the Service to elevate the issue through the chain of command of the regulatory authority, the Service, and OSMRE for resolution.

Proposed paragraph (e)(2)(iv) would provide that the regulatory authority may not approve the permit application until all issues are resolved in accordance with this process and the regulatory authority receives written documentation from the Service that all issues have been resolved. Like all provisions of proposed paragraph (e)(2), this provision is intended to ensure the protection of threatened and endangered species in accordance with the Endangered Species Act.

7. Section 780.19: What baseline information on hydrology, geology, and aquatic biology must I provide?

Proposed paragraph (a): General Requirements

Proposed paragraph (a) would require that each permit application contain information on the hydrology, geology, and aquatic biology of the proposed permit and adjacent areas in sufficient detail to assist in preparing the determination of the probable hydrologic consequences of mining under 30 CFR 780.20, preparing the hydrologic reclamation plan under 30 CFR 780.22, preparing the surface-water and groundwater monitoring plans under 30 CFR 780.23, preparing the plans for monitoring the biological condition of streams under 30 CFR 780.23, demonstrating that all reclamation required by the regulatory program can be accomplished as required by 30 CFR 773.15(b), preparing the cumulative hydrologic impact assessment under 30 CFR 780.21, and determining whether the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area as required by 30 CFR 773.15(e).

Section 510(b)(3) of SMCRA [329] specifies that the regulatory authority may not approve a permit application unless the regulatory authority has ''made an assessment of the probable cumulative impact of all anticipated mining in the area on the hydrologic balance specified in section 507(b).'' This assessment is commonly referred to as the CHIA. Section 507(b)(11) of SMCRA,[330] the pertinent part of the SMCRA section referenced in the quote above, requires that each permit application include—

> a determination of the probable hydrologic consequences of the mining and reclamation operations, both on and off the mine site, with respect to the hydrologic regime, quantity and quality of water in surface and ground water systems including the dissolved and suspended solids under seasonal flow conditions and the collection of sufficient data for the mine site and surrounding areas so that an assessment can be made by the regulatory authority of the probable cumulative impact of all anticipated mining in the area upon the hydrology of the area and particularly upon water availability.

Section 510(b)(3) also specifies that the regulatory authority may not approve a permit unless the application affirmatively demonstrates and the regulatory authority finds in writing that the proposed operation ''has been designed to prevent material damage to the hydrologic balance outside the permit area.'' In addition, section 510(b)(2) of SMCRA [331] specifies that the regulatory authority may not approve a permit unless the application affirmatively demonstrates and the regulatory authority finds in writing that the ''applicant has demonstrated that reclamation as required by this Act and the State or Federal program can be accomplished under the reclamation plan contained in the permit application.''

Without sound baseline information on surface-water and groundwater quality and quantity and the biological communities in streams, the regulatory authority cannot prepare an adequate CHIA or determine whether the proposed mining operation has been designed to prevent material damage to the hydrologic balance outside the permit area. A lack of adequate baseline data and accurate mining impact analyses based on that data likewise would impair the ability of the regulatory authority to make the finding required by 30 CFR 773.15(b) and section 510(b)(2) of SMCRA [332] concerning the feasibility of reclamation. Proposed 30 CFR 780.19 would refine and expand baseline data requirements for permit applications to promote more effective implementation of sections 507(b)(11) and 510(b)(3) of SMCRA [333] and better protect streams, groundwater, and related environmental values.

Proposed Paragraph (b): Information on Groundwater

Proposed paragraph (b)(1) would require that each permit application include information sufficient to document seasonal variations in the quality, quantity, and usage of groundwater, including all surface discharges, within the proposed permit and adjacent areas. Currently, this provision is part of existing 30 CFR 780.21(b)(1).

Proposed paragraph (b)(2) would require that the permit application include an assessment of the seasonal characteristics of any underground mine pool that is present within the proposed permit or adjacent areas unless the applicant demonstrates, and the regulatory authority finds, that the mine pool is not hydrologically connected to the proposed permit area. Proposed paragraph (b)(2) also would require that the determination of the probable hydrologic consequences of the proposed operation include a discussion of the effect of the proposed mining operation on any underground mine pools within the proposed permit and adjacent areas. In our experience, the mine pools associated with underground mines adjacent to, underlying, or overlying the proposed operation are not always properly or completely described, including the current or potential degree of hydrologic connection between the mine pool and the proposed operation. The level of detail and data collection needs to be sufficient for the reviewer to understand the complex interaction between the mine pools and the hydrology of the proposed permit and adjacent areas.

Proposed paragraph (b)(3) would allow the regulatory authority to require the installation of properly-screened monitoring wells when necessary to obtain groundwater quality and quantity information sufficient to characterize seasonal variations. Properly-designed and constructed monitoring wells are essential to collection of reliable and scientifically-valid data, which section 517(b)(2) of SMCRA requires.

[329] 30 U.S.C. 1260(b)(3).

[330] 30 U.S.C. 1257(b)(11).

[331] 30 U.S.C. 1260(b)(2).

[332] *Id.*

[333] 30 U.S.C. 1257(b)(11) and 1260(b)(3).

Proposed paragraph (b)(4) would expand the list of parameters in existing 30 CFR 780.21(b)(1) that must be included in the description of groundwater quality. Proposed new parameters include major anions, major cations, the cation-anion balance, hot acidity,[334] total alkalinity, pH, ammonia, arsenic, cadmium, copper, nitrogen, selenium, and zinc. Our rationale for adding these parameters is that a complete characterization of the prevailing premining hydrologic balance, including water chemistry, is necessary to fully assess the impacts of the proposed operations. The additional data also would facilitate quality assurance and quality control procedures. Finally, the additional baseline data may document existing water quality or other problems and thus provide the permittee with a defense against later assertions that it has caused adverse impacts to a stream with respect to those parameters.

The proposed addition of selenium and a requirement for both total dissolved solids and specific conductance (rather than either total dissolved solids or specific conductance, as in the existing regulations) reflect concerns identified in scientific studies documenting the adverse impacts that elevated concentrations of those parameters have had on aquatic life in streams in the central Appalachian coalfields. Part II of this preamble summarizes some of those studies.

Proposed paragraph (b)(5) is substantively identical to the groundwater quantity information requirements in the last sentence of existing 30 CFR 780.21(b)(1).

Proposed paragraph (b)(6)(i) would require that the permit applicant establish monitoring wells (or equivalent monitoring points like springs and other direct surface discharges of groundwater) at a sufficient number of locations within the proposed permit and adjacent areas to determine groundwater quality, quantity, and movement in each aquifer above or immediately below the lowest coal seam to be mined. At a minimum, for each aquifer, we propose to require monitoring points upgradient and downgradient of the proposed permit area and within the proposed permit area to ensure collection of data sufficient to fully describe baseline groundwater conditions.

Proposed paragraph (b)(6)(ii) would require that the permit applicant collect water samples from the locations identified in proposed paragraph (b)(6)(i) at equally-spaced monthly intervals for a minimum of 12 consecutive months to document seasonal variations in the quality of groundwater through a complete hydrologic cycle. Proposed paragraph (b)(6)(ii) also would require that the permit applicant analyze those samples for all parameters listed in proposed paragraph (b)(4) at the same frequency. Analysis of all listed parameters would establish a comprehensive baseline for groundwater quality.

Proposed paragraph (b)(6)(iii) would require that the permit applicant take the measurements listed in proposed paragraph (b)(5) at each location identified in proposed paragraph (b)(6)(i) at equally spaced monthly intervals for a minimum of 12 consecutive months to document seasonal variations in groundwater levels and to establish a comprehensive baseline for groundwater availability.

Currently, regulatory authorities require anywhere from as few as three samples (high, mean, and low base flow) to multiple years of sampling. Requiring a minimum of 12 consecutive, equally-spaced monthly samples would ensure that the baseline data collected would cover the entire water year.[335] Under both our existing rules and the 1979 rules, the regulatory authority could accept fewer than 12 months of data, provided that, as explained in the preamble to the 1979 rules, the maximum seasonal variation could be established by extrapolation from existing data collected within the same watershed or in a similar watershed through the use of modeling or other reasonable predictive tools.[336] However, our past experience indicates that extrapolation is not a reliably accurate method to document and describe seasonal variation. Therefore, we now propose to require collection of actual data for the complete water year.

Proposed paragraph (b)(6)(iv) would require that the regulatory authority extend the minimum baseline data collection period whenever data available from the National Oceanic and Atmospheric Administration or similar databases indicate that the region in which the proposed operation is located experienced severe drought (−3.0 or lower on the Palmer Drought Severity Index[337]) or abnormally high precipitation (3.0 or higher on the Palmer Drought Severity Index) during the initial baseline data collection period. The Palmer Drought Severity Index is a national index used to characterize climatic conditions across the country on a weekly frequency. During excessively wet periods, the seasonal concentrations of chemical constituents might be lower than normal because flows and water levels are higher. During severe drought periods, the concentrations of chemical constituents might be higher than normal because flows and water levels are lower. We propose to require that baseline data collection continue until the dataset includes 12 consecutive months without severe drought or abnormally high precipitation. Without this provision, the baseline data in the permit application would not be an accurate description of normal premining conditions.

Proposed Paragraph (c): Information on Surface Water

Proposed paragraph (c)(1) would require that each permit application include information sufficient to document seasonal variation in surface-water quality, quantity, and usage within the proposed permit and adjacent areas. Currently, this provision is part of existing 30 CFR 780.21(b)(2).

Proposed paragraph (c)(2) would expand the list of parameters in existing 30 CFR 780.21(b)(2) that must be included in the descriptions of surface water quality. Proposed new parameters include major anions, major cations, the cation-anion balance, hot acidity,[338] total alkalinity, pH, ammonia, arsenic, cadmium, copper, nitrogen, selenium, and zinc. We also propose to require that the applicant include any additional parameters required by the agency implementing the NPDES program under section 402 of the Clean Water Act.[339] Our rationale for adding these parameters is that a complete characterization of the prevailing premining hydrologic balance, including water chemistry, is necessary to fully assess the impacts of the proposed operations. The additional data also would facilitate quality assurance and quality control procedures. Finally, the additional baseline data may document existing water quality or other problems and thus provide the permittee with a defense against later assertions that it

[334] Hot acidity refers to the hot peroxide treatment titration method for determination of acidity.

[335] The water year runs from October 1 through September 30.

[336] 44 FR 15034 (Mar. 13, 1979).

[337] See *http://www.drought.gov/drought/content/products-current-drought-and-monitoring-drought-indicators/palmer-drought-severity-index* (last accessed August 25, 2014).

[338] Hot acidity refers to the hot peroxide treatment titration method for determination of acidity.

[339] 33 U.S.C. 1342.

has caused adverse impacts to a stream with respect to those parameters.

The proposed addition of selenium and a requirement for both total dissolved solids and specific conductance (rather than just one or the other, as in the existing regulations) reflect concerns identified in scientific studies documenting the adverse impacts that elevated concentrations of those parameters have had on aquatic life in streams in the central Appalachian coalfields. Part II of this preamble summarizes some of those studies.

Proposed paragraph (c)(3)(i) would require that the applicant provide baseline information on seasonal flow variations and peak-flow magnitude and frequency for all perennial, intermittent, and ephemeral streams and other surface-water discharges within the proposed permit and adjacent areas. This information is needed to prepare the determination of the probable hydrologic consequences of mining under proposed 30 CFR 780.20 and to prepare the surface-water runoff control plan that we propose to require under 30 CFR 780.29. Proposed paragraph (c)(3)(i) also would require that the applicant provide information on the extent of existing usage for existing uses and anticipated usage for all reasonably foreseeable uses. This information is needed to prepare the determination of the probable hydrologic consequences of mining and the CHIA and to establish permit-specific criteria for material damage to the hydrologic balance outside the permit area, consistent with our proposed definition of that term in 30 CFR 701.5.

Proposed paragraph (c)(3)(ii) would require the use of generally-accepted professional flow measurement techniques to ensure the accuracy of baseline flow data. The proposed rule would prohibit the use of subjective visual flow observations because of the inherent lack of precision in those observations and variations among observers.

Proposed paragraph (c)(4)(i) would require that the permit applicant establish monitoring points at a sufficient number of locations within the proposed permit and adjacent areas to determine the quality and quantity of water in each stream within those areas. At a minimum, we propose to require monitoring points upgradient and downgradient of the proposed permit area in each perennial and intermittent stream within the proposed permit and adjacent areas, as well as in a representative number of ephemeral streams within the proposed permit area, to ensure collection of data sufficient to fully describe baseline surface water conditions. Ephemeral streams in the adjacent area are unlikely to be affected by mining, so we do not propose to require monitoring of those streams.

Proposed paragraph (c)(4)(ii) would require that the permit applicant collect water samples from the locations identified in proposed paragraph (c)(4)(i) at equally-spaced monthly intervals for a minimum of 12 consecutive months to document seasonal variations in surface water quality through a complete hydrologic cycle. Proposed paragraph (c)(4)(ii) also would require that the permit applicant analyze those samples for all parameters listed in proposed paragraph (c)(2) at the same frequency. Analysis of all listed parameters would establish a comprehensive baseline for surface water quality.

Proposed paragraph (c)(4)(iii) would require that the permit applicant take the measurements listed in proposed paragraph (c)(3) at each location identified in proposed paragraph (c)(4)(i) at equally spaced monthly intervals for a minimum of 12 consecutive months to document seasonal variations in streamflow and to establish a comprehensive baseline for streamflow and surface water availability.

Currently, regulatory authorities require anywhere from as few as three samples (high, mean, and low base flow) to multiple years of sampling. Requiring a minimum of 12 consecutive, equally-spaced monthly samples would ensure that the baseline data collected would cover the entire water year.[340] Under both our existing rules and the 1979 rules, the regulatory authority could accept fewer than 12 months of data, provided that, as explained in the preamble to the 1979 rules, the maximum seasonal variation could be established by extrapolation from existing data collected within the same watershed or in a similar watershed through the use of modeling or other reasonable predictive tools.[341] However, our past experience indicates that extrapolation is not a reliably accurate method to document and describe seasonal variation. Therefore, we now propose to require collection of actual data for the complete water year. In addition, our proposal is consistent with the approach now being taken by agencies responsible for implementing the Clean Water Act.

Proposed paragraph (c)(4)(iv) would require that the regulatory authority extend the minimum baseline data collection period whenever data available from the National Oceanic and Atmospheric Administration or similar databases indicate that the region in which the proposed operation is located experienced severe drought (-3.0 or lower on the Palmer Drought Severity Index[342]) or abnormally high precipitation (3.0 or higher on the Palmer Drought Severity Index) during the initial baseline data collection period. The Palmer Drought Severity Index is a national index used to characterize climatic conditions across the country on a weekly frequency. During excessively wet periods, the seasonal concentrations of chemical constituents might be lower than normal because flows and water levels are higher. During severe drought periods, the concentrations of chemical constituents might be higher than normal because flows and water levels are lower. We propose to require that baseline data collection continue until the dataset includes 12 consecutive months without severe drought or abnormally high precipitation. Without this provision, the baseline data in the permit application would not be an accurate description of normal premining conditions.

Proposed paragraph (c)(5) would require that the applicant provide records of precipitation amounts for the proposed permit area, using on-site self-recording devices. Precipitation records must be adequate to generate and calibrate a hydrologic model of the site, should the regulatory authority require such a model. This information is needed to prepare the PHC determination under proposed 30 CFR 780.20 and the surface-water runoff control plan required under proposed 30 CFR 780.29.

Proposed paragraph (c)(6) would require that the applicant identify and assess all perennial, intermittent, and ephemeral streams within the permit and adjacent areas. The assessment would include a description of the physical and hydraulic characteristics of the stream channel, as well as the biological condition of each stream, and the nature of vegetation within the riparian zone. For streams that appear on the list of impaired surface waters prepared under section 303(d) of the Clean Water Act,[343] it also would

[340] The water year runs from October 1 through September 30.

[341] 44 FR 15034 (Mar. 13, 1979).

[342] See *http://www.drought.gov/drought/content/products-current-drought-and-monitoring-drought-indicators/palmer-drought-severity-index* (last accessed August 25, 2014).

[343] 33 U.S.C. 1313(d).

require identification of the stressors and associated total maximum daily loads, if applicable. Proposed paragraph (c)(6) would result in documentation of the premining physical and biological conditions of streams for purposes of evaluating the impacts of mining, establishing stream restoration standards, and establishing revegetation requirements for riparian corridors.

Proposed Paragraph (d): Additional Information for Discharges From Previous Coal Mining Operations

Proposed paragraph (d) would require that the applicant collect and analyze a one-time sample of all existing discharges from previous mining operations within the proposed permit and adjacent areas during the low baseflow season. Both the applicant and the regulatory authority would use the results of these analyses to identify any additional parameters of concern. Data from previous mining operations also can be helpful in preparing the determination of the probable hydrologic consequences of mining and the CHIA. Hydrologic data from both reclaimed and unreclaimed minesites can be extremely valuable in predicting the impacts of future mining.

Proposed Paragraph (e): Biological Condition Information for Streams

Proposed paragraph (e)(1) would require that each permit application include an assessment of the biological condition of each perennial and intermittent stream within the proposed permit and adjacent areas as well as an assessment of the biological condition of a representative sample of ephemeral streams within those areas. This requirement would not apply to a permit application for which the regulatory authority grants an exemption under proposed paragraph (h).

Proposed paragraph (e)(2) would require that persons conducting the assessment use a multimetric bioassessment protocol approved by the state or tribal agency responsible for preparing the water quality inventory report required under section 305(b) of the Clean Water Act [344] or other scientifically-valid multimetric bioassessment protocols used by agencies responsible for implementing the Clean Water Act. Multimetric indices include metrics such as species richness, complexity, and tolerance as well as trophic measures. They provide a quantitative comparison (often referred to as an index of biological or biotic integrity) of the ecological complexity of biological assemblages relative to a regionally-defined reference condition. However, we also propose to establish minimum standards that those protocols must meet. First, the bioassessment protocol must be based upon the measurement of an appropriate array of aquatic organisms, including benthic macroinvertebrates. Benthic macroinvertebrates are particularly useful for assessing the biological condition of the stream because certain species are highly sensitive to the presence of pollutants. Furthermore, we propose to require identification of benthic macroinvertebrates to the genus level because a bioassessment protocol that identifies macroinvertebrates only to the family level may not be capable of differentiating between pollution-tolerant and pollution-intolerant genera within the same family. On the other hand, a bioassessment protocol that identifies organisms to the species level may not be consistent with available indices of biological integrity.

Finally, proposed paragraph (e)(2) would require that the bioassessment protocol result in the calculation of index values for both habitat and macroinvertebrates and provide a correlation of index values to the capability of the stream to support designated uses under section 101(a) or 303(c) of the Clean Water Act, as well as any other existing or reasonably foreseeable uses. We seek comment on the effectiveness of using index scores from bioassessment protocols to ascertain impacts on existing, reasonably foreseeable, or designated uses. We also invite commenters to suggest other approaches that may be equally or more effective.

Proposed Paragraph (f): Geologic Information

Proposed paragraph (f) is substantively identical to the existing rules at 30 CFR 780.22(b) through (d), except as discussed below. We propose to eliminate the provision in existing 30 CFR 780.22(b)(2)(ii) that allows the regulatory authority to waive the requirement that the permit application include analyses of each stratum in the geological column for alkalinity-producing materials. We also propose to eliminate the provision in existing 30 CFR 780.22(b)(2)(iii) that allows the regulatory authority to waive the requirement that the permit application include an analysis of the coal seam for pyritic sulfur. Both analyses are necessary for a complete acid-base accounting, assessment of the potential for acid mine drainage, and prediction of the total dissolved solids content of postmining discharges. In addition, this information is necessary to prepare an accurate determination of the probable hydrologic consequences of mining under proposed 30 CFR 780.20 and the cumulative hydrologic impact assessment under proposed 30 CFR 780.21. Finally, the information is necessary to assist the regulatory authority in determining whether reclamation is possible and whether the proposed operation will create a long-term postmining discharge requiring treatment.

We invite comment on whether we should adopt provisions similar to proposed 30 CFR 777.13(b) to prescribe acceptable methodologies for the geochemical analyses required by proposed 30 CFR 780.19(f)(3)(ii) and (iii).

Proposed Paragraph (g): Cumulative Impact Area Information

Proposed paragraph (g) is substantively identical to existing 30 CFR 780.21(c), with the exception that we propose to clarify that the permit applicant may submit data and analyses from nearby mining operations if the site of those operations is representative of the proposed operations in terms of topography, hydrology, geology, geochemistry, and method of mining.

Proposed Paragraph (h): Exception for Operations That Avoid Streams

Proposed paragraph (h) would allow a permit applicant to request that the regulatory authority waive the biological condition information requirements of proposed 30 CFR 780.19(e). The regulatory authority may approve the request only if it determines that the applicant has demonstrated that the proposed operation will not mine through or bury a perennial or intermittent stream; create a point-source discharge to any perennial, intermittent, or ephemeral stream; or modify the baseflow of any perennial or intermittent stream.

Proposed Paragraph (i): Coordination With Clean Water Act Agencies

Proposed paragraph (i) would require that SMCRA regulatory authorities consult with the agencies responsible for issuing permits, authorizations, and certifications under the Clean Water Act and make best efforts to minimize differences in baseline data collection points and parameters to the extent practicable and consistent with each agency's mission, statutory requirements, and implementing regulations. Coordination could reduce the overall regulatory impact to the industry, reduce the workload of

[344] 33 U.S.C. 1315(b).

regulatory authorities, and expedite the permitting process. Applicants and permittees may use data already provided to or collected by a Clean Water Act agency to satisfy SMCRA requirements, provided that the data is reasonably current and of the type, scope, and quantity required for SMCRA purposes. Proposed paragraph (i) is consistent with the intent of section 713 of SMCRA,[345] which, among other things, promotes coordination of regulatory activities under SMCRA and the Clean Water Act.

Proposed Paragraph (j): Corroboration of Baseline Data

Proposed paragraph (j) would require that the regulatory authority either corroborate a sample of the baseline information in each permit application or arrange for a third party to conduct the corroboration at the applicant's expense. Corroboration may include, but is not limited to, simultaneous sample collection and analysis, use of field verification measurements, or comparison of application data with application or monitoring data from adjacent operations. The existing regulations at 30 CFR 777.13 already require that the permit applicant document and describe the methods and persons collecting and analyzing technical data. We interpret the existing regulations as meaning that the regulatory authority has an obligation to monitor the accuracy and completeness of data collection and analyses for permit applications. Proposed paragraph (j) would make this responsibility explicit.

Proposed Paragraph (k): Permit Nullification for Inaccurate Information

Proposed paragraph (k) specifies that a permit will be void from the date of issuance and have no legal effect if the permit issuance was based on substantially inaccurate baseline information. Under those circumstances, the proposed rule provides that the permittee must cease mining-related activities and immediately begin to reclaim the site. This measure would avoid or minimize the environmental harm that could result from initiation or continuation of an operation approved on the basis of substantially inaccurate data. We do not intend for this provision to apply in situations in which the application contains only minor omissions or errors. By ''substantially inaccurate,'' we mean situations such as missing or false chemical analyses of geologic strata or misrepresentation of data from another permit application as being collected from the proposed permit and adjacent areas. Adoption of proposed paragraph (k) would be in furtherance of section 102(a) of SMCRA,[346] which provides that one of the purposes of the Act is to establish a nationwide program to protect society and the environment from the adverse effects of surface coal mining operations.

8. Section 780.20: How must I prepare the determination of the probable hydrologic consequences of my proposed operation (PHC determination)?

Proposed paragraph (a) would revise the requirements concerning preparation of the determination of the probable hydrologic consequences of mining in existing 30 CFR 780.21(f)(1) through (f)(3) by adding a requirement to consider the impacts of the proposed operation on the biological condition of perennial, intermittent, and ephemeral streams located within the proposed permit and adjacent areas, not just on the quantity and quality of surface water and groundwater as in the existing rule. Proposed paragraph (a)(1) would replace the requirement in existing 30 CFR 780.21(f)(3)(i) for a finding on whether the proposed operation may cause adverse impacts to the hydrologic balance with a requirement for a finding on whether the proposed operation may cause material damage to the hydrologic balance outside the permit area. These proposed changes would more closely tailor the PHC determination to both the definition of ''material damage to the hydrologic balance outside the permit area'' that we propose to add to 30 CFR 701.5 and the existing finding that the regulatory authority must make before approving a permit application under 30 CFR 773.15(e), which, in relevant part, requires a determination that the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area.

Proposed paragraph (a)(4) would require a finding on whether the proposed operation would either intercept or create aquifers in surface mine spoil or underground mine voids. Surface mining frequently results in the formation of a new aquifer in spoil that is placed in either the backfill or an excess spoil fill. This aquifer may have substantially different quality and quantity characteristics than water found in undisturbed overburden strata. Underground mine voids can store large volumes of water in what are commonly known as mine pools. The storage volume and discharge rates of these pools may be orders of magnitude larger than those associated with aquifers in surface mine spoil because mine pools typically collect water from a much larger area than do surface mine spoil aquifers. Discharges from underground mine pools are frequently of relatively high volume because their recharge rate averages 0.47 gallons per minute per acre of mine voids.[347]

The quantity and quality of the groundwater that recharges the mine pool from overlying and underlying rock strata can significantly influence postmining water quality.[348] These mine pool aquifers may discharge directly to the land surface or to groundwater systems downgradient of the aquifer. The PHC determination must consider the timing, quality, quantity, and location of these discharges to adequately assess the probable impacts of the proposed operation on the hydrologic balance. The new finding also would require evaluation of the impacts of any temporary or permanent dewatering of aquifers, including underground mine pools, on the hydrologic balance.

Proposed paragraph (a)(5) would expand the finding in existing 30 CFR 780.21(f)(3)(iv) concerning what impact the proposed operation would have on specific water quality parameters to include the parameters for which baseline information would be required under proposed 30 CFR 780.19(b) and (c). Furthermore, we propose to add requirements in paragraph (a)(5) for findings on what impact the proposed operation would have on precipitation runoff patterns and characteristics; seasonal variations in streamflow; the magnitude and frequency of peak flows in perennial, intermittent, and ephemeral streams within the proposed permit and adjacent areas; and the biological condition of those streams. Finally, we propose to add a requirement in paragraph (a)(5)(iv) for a finding about the impact that any diversion of surface or subsurface flows to underground mine workings or any changes in watershed size as a result of the postmining surface configuration would have on the availability of surface water and groundwater. The changes in proposed paragraph (a)(5)

[345] 30 U.S.C. 1303.

[346] 30 U.S.C. 1202(a).

[347] Parizek, R.R., 1971. Prevention of Coal Mine Drainage Formation by Well Dewatering. Special Report of Research, The Pennsylvania State University, 73 p.

[348] See, *e.g.,* McDonald, L. M., J. Skousen, and J. Demchak, 2003, Longevity of Mine Discharges from Above-Drainage Underground Mines, in the Proceedings of the Twenty-Fourth West Virginia Surface Mine Drainage Task Force Symposium, Morgantown, WV, 54 pp.

would improve the comprehensiveness and predictive accuracy of the PHC determination. They also would provide a more scientifically sound basis for development of the CHIA required by proposed 30 CFR 780.21 and the hydrologic reclamation plan required by proposed 30 CFR 780.22.

Proposed paragraph (b) is substantively identical to existing 30 CFR 780.21(b)(3), with the exception that we propose to expand the conditions under which the regulatory authority may request that the applicant submit supplemental information to include those situations in which the PHC determination indicates that the proposed operation may result in adverse impacts to the biological condition of perennial or intermittent streams within the proposed permit area or the adjacent area. We also propose to clarify that the regulatory authority may request additional geochemical analyses of overburden materials and information concerning underground mine pools and their impacts. The new provisions are necessary to ensure that the PHC determination is sufficiently comprehensive to support development of the hydrologic reclamation plan required by 30 CFR 780.22 and the CHIA required by 30 CFR 780.21.

Proposed paragraph (c)(1) is substantively identical to existing 30 CFR 780.21(f)(4), which requires that the regulatory authority determine whether a new or updated PHC determination is needed as part of the process of evaluating permit revision applications. We propose to add paragraph (c)(2) to clarify that the applicant must prepare a new or updated PHC determination whenever a regulatory authority review finds that one is needed.

9. Section 780.21: What requirements apply to preparation and review of the cumulative hydrologic impact assessment (CHIA)?

Our existing regulations contain very few standards or criteria for preparation of the CHIA. Those regulations, which are located at 30 CFR 780.21(g)(1), provide that the regulatory authority must prepare an assessment of the probable cumulative hydrologic impacts of the proposed operation and all anticipated mining upon surface-water and groundwater systems in the cumulative impact area. The regulations further state that the assessment must be sufficient to determine, for purposes of permit approval, whether the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area. The lack of standards or content requirements for the CHIA, coupled with the lack of a definition of material damage to the hydrologic balance, is an impediment to stream protection under SMCRA because there are no objective criteria to apply.

We propose to remedy that problem, in part, by establishing more detailed content requirements for the CHIA, based on our experience as the regulatory authority in Tennessee and on Indian lands and on our experience in evaluating the implementation of state regulatory programs. Our proposed requirements would improve implementation of sections 507(b)(11) and 510(b)(3) of SMCRA,[349] which require that the regulatory authority prepare a CHIA and provide that the regulatory authority may not approve a permit application unless the application affirmatively demonstrates, and the regulatory authority finds in writing, that the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area. Section 201(c)(2) of SMCRA [350] directs the Secretary, acting through OSMRE, to ''publish such rules and regulations as may be necessary to carry out the purposes and provisions of the Act.'' This provision establishes statutory authority for the enhanced CHIA regulations in this proposed rule. The more detailed CHIA content requirements that we propose to adopt are prudent measures to ensure that the CHIA is adequate to prevent the approval or renewal of permits that would result in material damage to the hydrologic balance outside the permit area.

Proposed paragraph (a)(1) is substantively identical to existing 30 CFR 780.21(g)(1), with the exception that we propose to clarify that the CHIA must be in writing. We also propose to remove the sentence stating that the regulatory authority may allow the permit applicant to submit data and analyses relevant to the CHIA with the application. This sentence that we propose to delete is unnecessary because it is inherently true, whether stated or not. In addition, proposed paragraph (a)(3) effectively replaces this sentence.

Proposed paragraph (a)(2) would provide that, in preparing the CHIA, the regulatory authority must consider relevant information on file for other mining operations located within the cumulative impact area or in similar watersheds. This provision is intended to ensure that the regulatory authority considers all available information when preparing the CHIA.

Proposed paragraph (a)(3) would provide that the regulatory authority may not approve a permit application until it receives the hydrologic, geologic, and biological information needed to prepare the CHIA, either from other federal and state agencies or from the applicant. This provision is consistent with similar language in the provisos at the end of section 507(b)(11) of SMCRA.[351]

Proposed paragraph (b) would establish detailed content requirements for the CHIA to ensure that the assessment is sufficiently comprehensive to support the finding that the regulatory authority must make under section 510(b)(3) of SMCRA [352] and 30 CFR 773.15(e) regarding whether the operation has been designed to prevent material damage to the hydrologic balance outside the permit area. The new requirements correspond to elements of the proposed definition of ''material damage to the hydrologic balance outside the permit area'' in 30 CFR 701.5. By requiring the development of permit-specific, numerical material damage criteria, they also would facilitate implementation of the prohibition in section 510(b)(3) of SMCRA and 30 CFR 773.15(e) on approval of a permit application unless the CHIA demonstrates that the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area.

Proposed paragraph (b)(1) would require that the CHIA contain a map of the cumulative impact area. The boundaries of this area may differ for surface water and groundwater, in which case proposed paragraph (b)(1)(i) would require that the map identify and display those differences. Proposed paragraphs (b)(1)(ii) through (iv) would require that the map identify the locations of all previous, current, and anticipated surface and underground mining, the locations of all baseline data collection sites under proposed 30 CFR 780.19, and designated uses of surface water under section 101(a) or 303(c) of the Clean Water Act.

Proposed paragraph (b)(2) would require that the CHIA contain a description of all previous, existing, and anticipated mining within the cumulative impact area, including, at a minimum, the coal seam or seams mined, the extent of mining, and the reclamation status of each operation.

[349] 30 U.S.C. 1257(b)(11) and 1260(b)(3).

[350] 30 U.S.C. 1211(c)(2).

[351] 30 U.S.C. 1257(b)(11).

[352] 30 U.S.C. 1260(b)(3).

Proposed paragraph (b)(3) would require that the CHIA contain a description of the baseline hydrologic information collected from the proposed permit and adjacent areas under proposed 30 CFR 780.19. This description would include the quality and quantity of surface water and groundwater and seasonal variations therein; quantitative information about existing usage of surface water and groundwater, as well as information defining the quality of water required for each existing and reasonably foreseeable use of groundwater and surface water and each designated use of surface water under section 101(a) or 303(c) of the Clean Water Act; a description and map of the local and regional groundwater systems; and the biological condition of perennial, intermittent, and ephemeral streams within the proposed permit and adjacent areas. The requirements of proposed paragraph (b)(3) would not apply to the entire cumulative impact area.

Proposed paragraph (b)(4) would require that the CHIA contain a discussion of any potential concerns identified in the PHC determination prepared under proposed 30 CFR 780.20 and how those concerns have been or will be resolved.

Proposed paragraph (b)(5) would require that the CHIA contain a qualitative and quantitative assessment of how all anticipated surface and underground mining may impact water quality in surface water and groundwater in the cumulative impact area, expressed in terms of each baseline parameter identified under 30 CFR 780.19.

Proposed paragraph (b)(6) would require that the CHIA contain criteria defining material damage to the hydrologic balance outside the permit area on a site-specific basis and that these numerical criteria be incorporated into the permit to ensure that they are enforceable. Proposed paragraphs (b)(6)(i) through (iii) would require that the criteria be expressed in numerical terms for each parameter of concern, that they take into consideration the biological requirements of any species listed as threatened or endangered under the Endangered Species Act when those species or designated critical habitat are present within the cumulative impact area, and that they identify the portion of the cumulative impact area to which the criteria apply and the locations at which impacts will be monitored. The regulatory authority may establish different criteria for subareas within the cumulative impact area when appropriate. Water quality standards established under the Clean Water Act or in the NPDES permit for the operation might suffice for some parameters of concern, but NPDES permits do not address cumulative impacts and are not necessarily structured to prevent material damage to the hydrologic balance outside the permit area.

We invite comment on whether the rule also should require that the regulatory authority establish lower corrective action thresholds to identify the point at which the permittee must take action to minimize the potential that adverse trends will continue and ultimately cause material damage to the hydrologic balance outside the permit area. In particular, we are interested in whether corrective action thresholds would be both more effective and more efficient in preventing material damage to the hydrologic balance outside the permit area, as required by SMCRA, and in avoiding designation of streams as impaired under section 303(d) of the Clean Water Act.[353]

Proposed paragraph (b)(7) would require an assessment of how all anticipated surface and underground mining may affect groundwater movement and availability within the cumulative impact area. This information is important in the determination of whether adverse impacts on groundwater would be severe enough to result in material damage to the hydrologic balance outside the permit area.

Proposed paragraph (b)(8) would require an evaluation of whether the CHIA will support a finding that the operation has been designed to prevent material damage to the hydrologic balance outside the permit area, as required by 30 CFR 773.15(e) and section 510(b)(3) of SMCRA.[354] This evaluation would have to contain supporting data and analyses. Proposed paragraph (b)(8) also would require that the CHIA include certain documented determinations as a prerequisite for a finding that the operation has been designed to prevent material damage to the hydrologic balance outside the permit area.

Proposed paragraph (b)(8)(i) would require a determination that, during all phases of mining and reclamation and at all times of the year, variations in streamflow and groundwater availability resulting from the operation, as well as variations in the amount and concentration of parameters of concern in discharges from the operation to groundwater and surface water, would not—

- Result in conversion of a perennial or intermittent stream to an ephemeral stream or conversion of a perennial stream to an intermittent stream. Conversion of an intermittent stream to a perennial stream or conversion of an ephemeral stream to an intermittent or perennial stream may be acceptable, provided the conversion would not disrupt or preclude any existing, reasonably foreseeable, or designated use of the stream under section 101(a) or 303(c) of the Clean Water Act and would not adversely impact threatened or endangered species or designated critical habitat in violation of the Endangered Species Act. We also are considering replacement of ''would not adversely impact threatened or endangered species or designated critical habitat in violation of the Endangered Species Act'' with ''would not jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of designated critical habitat in violation of the Endangered Species Act.'' The second alternative would parallel the language of existing and proposed 30 CFR 816.97(b) and 817.97(b).
- Result in an exceedance of applicable water quality standards in any stream located outside the permit area.
- Disrupt or preclude any existing or reasonably foreseeable use of surface water outside the permit area or any designated use of surface water under section 101(a) or 303(c) of the Clean Water Act[355] outside the permit area, except as provided in water supply replacement provisions of proposed 30 CFR 780.22(b) and 816.40.

Proposed paragraph (b)(8)(ii) would require a determination that the operation has been designed to ensure that neither the mining operation nor the final configuration of the reclaimed area will result in changes in the size or frequency of peak flows from precipitation events or thaws that would cause an increase in damage from flooding, when compared with premining conditions.

Proposed paragraph (b)(8)(iii) would require a determination that perennial and intermittent streams located outside the permit area but within the cumulative impact area would continue to have sufficient baseflow and recharge capacity to maintain their premining flow regime both during and after mining and reclamation. In other words, the regulatory authority must find that

[353] 33 U.S.C. 1313(d).

[354] 30 U.S.C. 1260(b)(3).

[355] 33 U.S.C. 1251(a) and 1313(c).

perennial stream segments will retain perennial flows and intermittent stream segments will retain intermittent flows during and after mining and reclamation. Conversion of an intermittent stream to a perennial stream or conversion of an ephemeral stream to an intermittent or perennial stream may be acceptable, provided the conversion would not disrupt or preclude any existing, reasonably foreseeable, or designated use of the stream under section 101(a) or 303(c) of the Clean Water Act and would not adversely impact threatened or endangered species or designated critical habitat in violation of the Endangered Species Act. We also are considering replacement of ''would not adversely impact threatened or endangered species or designated critical habitat in violation of the Endangered Species Act'' with ''would not jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of designated critical habitat in violation of the Endangered Species Act.'' The second alternative would parallel the language of existing and proposed 30 CFR 816.97(b) and 817.97(b).

Proposed paragraph (b)(8)(iv) would require a determination that the operation has been designed to protect the quantity and quality of water in any aquifer that significantly ensures the prevailing hydrologic balance.

Proposed paragraph (c)(1) would require that the regulatory authority review each application for a significant permit revision to determine whether a new or updated CHIA is needed. This paragraph is similar to existing 30 CFR 780.21(g)(2), except that we propose to add a requirement that the regulatory authority document the review, including the analysis and conclusions, together with the rationale for the conclusions, in writing. In addition, we propose to require this review only for applications for significant permit revisions, not for all applications for any type of permit revisions as under the existing rule. We are not aware of any situation in which a non-significant permit revision application has required an update of the CHIA under the existing rules. Therefore, conducting this review of non-significant permit revision applications is not a meaningful or productive use of regulatory authority resources.

Proposed paragraph (c)(2) would add a requirement that the regulatory authority reevaluate the CHIA during the permit renewal process or every 5 years, whichever is more frequent, to determine whether the CHIA remains accurate and whether the material damage criteria in the CHIA and the permit are adequate to ensure that material damage to the hydrologic balance outside the permit area will not occur. This evaluation must include a review of all water monitoring data from both the operation in question and all coal mining operations within the cumulative impact area. We invite comment on whether this 5-year review frequency for water monitoring data is adequate to detect adverse trends in a timely manner or whether more frequent reviews, such as during midterm permit review, should be required. In addition, we invite comment on whether the permittee also should be required to conduct this review.

Proposed paragraph (c)(3) would require preparation of a new or updated CHIA whenever the regulatory authority finds that one is needed based on the evaluation required by proposed paragraph (c)(2). Proposed paragraphs (c)(2) and (c)(3) are logical extensions of the finding that the regulatory authority must make under section 510(b)(3) of SMCRA [356] and 30 CFR 773.15(e) regarding whether the operation has been designed to prevent material damage to the hydrologic balance outside the permit area.

10. Section 780.22: What information must I include in the hydrologic reclamation plan and what information must I provide on alternative water resources?

Proposed paragraph (a) would be substantively identical to the hydrologic reclamation plan requirements in existing 30 CFR 780.21(h), except as discussed below. Proposed paragraph (a)(2)(v) would replace the existing requirement for measures to avoid acid or toxic drainage with a requirement for preventive and remedial measures to avoid acid or toxic discharges to surface water and to avoid (or, if avoidance is not possible, minimize) degradation of groundwater. The new language reflects the nature of the surface mining process, which typically converts solid rock to highly-fragmented spoil, thus altering groundwater composition and quality.

Proposed paragraph (a)(3) would require that the hydrologic reclamation plan address the impacts of any transfers of water among active and abandoned mines within the proposed permit and adjacent areas. The transfer of water between mines, whether intentional through direct connections or unintentional through leakage, can have substantial impacts on the availability, quality, and distribution of groundwater and surface water in the permit and adjacent areas, which in turn may have a substantial impact on users of groundwater and surface water. For example, a reduction in baseflow of a stream would reduce the assimilative capacity of the stream. In addition, increases in the hydrostatic head elevations of underground mine pools might cause blowouts or landslides or have other adverse impacts on land and water resources.

Proposed paragraph (a)(4) would add a requirement for a description of the steps that the permittee will take during mining and reclamation through final bond release to protect and enhance aquatic life and related environmental values to the extent possible using the best technology currently available. This requirement would more completely implement section 515(b)(24) of SMCRA,[357] which provides that surface coal mining and reclamation operations must use the best technology currently available to minimize disturbances and adverse impacts to fish, wildlife, and related environmental values to the extent possible and enhance those resources where practicable.

Proposed paragraph (b) would replace and expand the alternative water source information required by existing 30 CFR 780.21(e) if the proposed operation may result in contamination, diminution, or interruption of a protected water supply. Proposed paragraph (b)(1) would require that the applicant identify alternative water sources that are available, feasible to develop, and suitable in quality and sufficient in quantity to support premining uses and approved postmining land uses. Proposed paragraph (b)(2) would prohibit any mining that would contaminate, diminish, or interrupt a protected water supply if the applicant is unable to identify any suitable alternative water sources. These provisions are intended to prevent situations in which high-quality water from a spring is replaced with well water that requires substantial treatment.

When a suitable alternative water source is available, proposed paragraph (b)(3) would require that the permittee develop and install the alternative water supply on a permanent basis before adversely affecting an existing water supply protected under proposed 30 CFR 816.40. This provision would not apply if the permittee demonstrates, and the regulatory authority finds, that the proposed operation also would adversely affect the replacement supply.

[356] 30 U.S.C. 1260(b)(3).

[357] 30 U.S.C. 1265(b)(24).

In that case, the proposed rule would require that the permittee provide a temporary replacement water supply until it is safe to install the permanent replacement water supply.

Finally, proposed paragraph (b)(4) would require a description of how the applicant would provide both temporary and permanent replacements for any unexpected losses of protected water supplies in accordance with the timeframes and other requirements of proposed 30 CFR 816.40.

Proposed paragraph (b) is intended to more completely implement the water supply replacement requirements of sections 717(b) and 720(a)(2) of SMCRA.[358]

11. Section 780.23: What information must I include in plans for the monitoring of groundwater, surface water, and the biological condition of streams during and after mining?

Paragraphs (b)(1) and (2) of section 517 of SMCRA [359] provide authority for the adoption of regulations establishing monitoring requirements for surface coal mining and reclamation operations. Among other things, paragraph (b)(1) provides that ''the regulatory authority shall require any permittee to . . . install, use, and maintain any necessary monitoring equipment or methods [and] evaluate results in accordance with such methods, at such locations, intervals, and in such manner as a regulatory authority shall prescribe.'' Paragraph (b)(2) includes the following additional provisions:

> [F]or those surface coal mining and reclamation operations which remove or disturb strata that serve as aquifers which significantly insure the hydrologic balance of water use either on or off the mining site, the regulatory authority shall specify those—
>
> (A) monitoring sites to record the quantity and quality of surface drainage above and below the minesite as well as in the potential zone of influence;
>
> (B) monitoring sites to record level, amount, and samples of ground water and aquifers potentially affected by the mining and also directly below the lowermost (deepest) coal seam to be mined;
>
> (C) records of well logs and borehole data to be maintained; and
>
> (D) monitoring sites to record precipitation.
>
> The monitoring data collection and analysis required by this section shall be conducted according to standards and procedures set forth by the regulatory authority in order to assure their reliability and validity.

Proposed 30 CFR 780.23 would establish more detailed requirements for groundwater and surface-water monitoring plans than those that appear in existing 30 CFR 780.21(i) and (j). Thus, they would more completely implement the statutory provisions described and quoted above. Furthermore, our proposed enhanced monitoring requirements are intended to ensure that, as required by section 515(b)(24) of SMCRA,[360] surface coal mining and reclamation operations are conducted so as to minimize disturbances to and adverse impacts on fish, wildlife, and related environmental values to the extent possible using the best technology currently available.

Finally, our proposed enhanced monitoring requirements would be consistent with both the more comprehensive baseline information that we propose to require in 30 CFR 780.19 and the definition of ''material damage to the hydrologic balance outside the permit area'' that we propose to adopt in 30 CFR 701.5. Comprehensive baseline information and monitoring are critical to evaluating the impact of the mining operation on the hydrologic balance, which in turn is essential to preventing the occurrence of material damage to the hydrologic balance outside the permit area, consistent with section 510(b)(3) of SMCRA.[361]

Proposed Paragraphs (a): Groundwater Monitoring Plan

Proposed paragraph (a) would include the groundwater monitoring plan requirements in existing 30 CFR 780.21(i). We propose to revise those requirements by adding more specific minimum requirements for the groundwater monitoring plan to ensure that the plan is adequate to evaluate the impacts of the mining operation on groundwater in the proposed permit and adjacent areas and to identify adverse trends in sufficient time to initiate corrective action to prevent the operation from causing material damage to the hydrologic balance outside the permit area. The following discussion highlights the more significant elements of proposed paragraph (a).

Proposed paragraph (a)(1)(iii)(A) would require that each groundwater monitoring plan include monitoring wells (or equivalent monitoring points with direct groundwater discharges, such as springs) located upgradient and downgradient of the proposed operation to facilitate identification of potential mining-related changes in groundwater quantity or quality and to assist in an evaluation of whether any downgradient changes are the result of the mining and reclamation activities. The proposed rule would require separate wells for each aquifer above or immediately below the lowest coal seam to be mined. This provision would ensure identification of impacts on each aquifer, consistent with section 517(b)(2)(B) of SMCRA, which requires monitoring of ''aquifers potentially affected by the mining and also directly below the lowermost (deepest) coal seam to be mined.''

Proposed paragraph (a)(1)(iii)(B) would require placement of monitoring wells in backfilled portions of the permit area after backfilling and grading of all or a portion of the permit area is completed. The purpose of these wells is to identify how infiltration through the spoil may alter groundwater levels and quality. The proposed rule would allow the regulatory authority to waive placement of monitoring wells in the backfilled area if it finds that wells in the backfilled area are not necessary to determine or predict the future impact of the mining operation on groundwater quality.

Finally, to monitor impacts on underground mine pools, proposed paragraph (a)(1)(iii)(C) would require placement of monitoring wells in any existing underground mine workings that would have a direct hydrological connection to the proposed operation. These mine pools may serve as municipal, industrial, or residential water supplies. In addition, sudden, unplanned releases of the water in those mine pools can result in flooding damage or adverse impacts on receiving streams.

Proposed paragraph (a)(1)(iv) would require that the plan describe how the monitoring data will be used to determine the impacts of the operation upon the hydrologic balance and the biological condition of perennial and intermittent streams within the permit and adjacent areas, as well as to prevent material damage to the hydrologic balance outside the permit area.

Proposed paragraph (a)(1)(v) would require that the plan describe how monitoring practices will comply with the sampling, analysis, and reporting requirements of proposed 30 CFR 777.13(a) and (b) to ensure that samples are collected and analyzed in a legally and scientifically valid manner. Proposed paragraph (a)(1)(v) is consistent with the requirement in the text after section 517(b)(2)(D) of SMCRA [362] that the regulatory authority set forth standards and procedures for monitoring data collection and analysis

[358] 30 U.S.C. 1307(b) and 1309a(a)(2).

[359] 30 U.S.C. 1267(b)(1) and (2).

[360] 30 U.S.C. 1265(b)(24).

[361] 30 U.S.C. 1260(b)(3).

[362] 30 U.S.C. 1267(b)(2)(D).

to assure the reliability and validity of the data.

Proposed paragraph (a)(2)(i) would require that the groundwater monitoring plan provide for the monitoring of parameters that could be affected by the proposed operation if those parameters relate to the findings and predictions in the PHC determination prepared under 30 CFR 780.20, the biological condition of perennial and intermittent streams and other surface-water bodies that receive discharges from groundwater within the proposed permit and adjacent areas, the suitability of the groundwater for existing and reasonably foreseeable uses, and the suitability of the groundwater to support the premining and postmining land uses. Monitoring of these parameters would assist the permittee and regulatory authority in preventing material damage to the hydrologic balance outside the permit area and in determining compliance with the water supply protection and postmining land use requirements of SMCRA and its implementing regulations.

Proposed paragraph (a)(2)(ii) would require quarterly monitoring of 14 specific parameters, including, among others, selenium and the minimum water-quality parameters required by existing 30 CFR 780.21(i)(1) (pH, total iron, total manganese, and total dissolved solids or specific conductance). As summarized in Part II of this preamble, selenium can have deleterious effects upon fish and human health. In addition, this proposed paragraph would require quarterly monitoring of major anions (including, at a minimum, bicarbonate, chloride, and sulfate), major cations (including, at a minimum, calcium, magnesium, potassium, and sodium), and the cation-anion balance. As summarized in Part II of this preamble, these anions and cations form salts that can alter water chemistry in a manner that sometimes has a substantial adverse impact on aquatic life. With respect to water quantity, proposed paragraph (a)(2)(ii) would require quarterly measurement of water levels, discharge rates, or yield rates. Existing 30 CFR 780.21(i) only requires monitoring of water levels, which may not be sufficient to fully evaluate groundwater quantity and availability in all cases. Finally, proposed paragraph (a)(2)(ii) would require quarterly monitoring of certain metals (if present in discharges from prior underground mines) and any other parameters of local significance, as determined by the regulatory authority based upon the information collected and the analyses conducted under proposed 30 CFR 780.19 through 780.21.

Proposed paragraph (a)(3) would require that the regulatory authority reconsider the adequacy of the groundwater monitoring plan at two points during the permit application review process. The first reconsideration would occur after the regulatory authority completes the technical review of the application. At that point, the regulatory authority may require that the permit applicant revise the plan to increase the frequency of monitoring, to require monitoring of additional parameters, or to require monitoring at additional locations, if the additional requirements would contribute to protection of the hydrologic balance. The second reconsideration would occur after preparation of the CHIA under proposed 30 CFR 780.21. At that point, the regulatory authority would be responsible for ensuring that the groundwater monitoring plan requires monitoring of all parameters for which the CHIA establishes material damage criteria; *i.e.*, all parameters of concern. These reconsiderations are intended to ensure that the monitoring plans are designed to provide sufficiently comprehensive monitoring data to enable both the permittee and the regulatory authority to identify any adverse impacts on groundwater in time to take corrective action to prevent material damage to the hydrologic balance outside the permit area.

Finally, proposed paragraph (a)(4) would modify the provision in existing 30 CFR 780.21(i)(2) that authorizes a groundwater-monitoring exception for any water-bearing stratum that does not serve as an aquifer that significantly ensures the hydrologic balance within the cumulative impact area. Specifically, proposed paragraph (a)(4) would allow a groundwater-monitoring exception for a water-bearing stratum that does not serve as an aquifer that significantly ensures the hydrologic balance within the cumulative impact area only if that stratum has no existing or foreseeable use for agricultural or other human purposes or for fish and wildlife purposes. The addition of this requirement would more fully implement the environmental protection purposes set forth in sections 102(a) and (d) of SMCRA.[363] We recognize that the proposed new criterion does not appear in section 517(b)(2) of SMCRA.[364] However, addition of the new criterion is appropriate because use of water for agricultural or fish and wildlife purposes impacts land use capability and productivity and would assist in the implementation of the postmining land use requirements of section 515(b)(2) of SMCRA [365] and the fish and wildlife protection and enhancement requirements of section 515(b)(24) of SMCRA.[366]

Proposed Paragraph (b): Surface-Water Monitoring Plan

Proposed paragraph (b) would include the surface-water monitoring plan requirements in existing 30 CFR 780.21(j). We propose to revise those requirements by adding more specific minimum requirements for the surface-water monitoring plan to ensure that the plan is adequate to evaluate the impacts of the mining operation on streams and other surface-water bodies in the proposed permit and adjacent areas and to identify adverse trends in sufficient time to initiate corrective action to prevent the operation from causing material damage to the hydrologic balance outside the permit area. The following discussion highlights the more significant elements of proposed paragraph (b).

Proposed paragraph (b)(1)(ii) would require on-site measurement of precipitation amounts at specified locations within the permit area, using self-recording devices. Measurement of precipitation amounts at the minesite is an important component of the surface water runoff control plan required under proposed 30 CFR 780.29. We propose to require that precipitation measurements continue through Phase II bond release under proposed 30 CFR 800.42(c) or for any longer period specified by the regulatory authority. Phase II bond release is the point at which revegetation has been established.

Proposed paragraph (b)(1)(iv) would require that, at a minimum, each surface-water monitoring plan include monitoring of point-source discharges from the proposed operation as well as monitoring points located upgradient and downgradient of the proposed permit area in each perennial and intermittent stream within the proposed permit and adjacent areas to facilitate identification of potential mining-related changes in surface-water quantity or quality and to assist in an evaluation of whether any downgradient changes are the result of the mining and reclamation activities. This provision would be consistent with section 517(b)(2)(A) of SMCRA, which requires

[363] 30 U.S.C. 1202(a) and (d).

[364] 30 U.S.C. 1267(b)(2).

[365] 30 U.S.C. 1265(b)(2).

[366] 30 U.S.C. 1265(b)(24).

that the regulatory authority specify ''monitoring sites to record the quantity and quality of surface drainage above and below the minesite as well as in the potential zone of influence.'' Point-source discharges would be located within the potential zone of influence.

Proposed paragraph (b)(1)(v) would require that the plan describe how the monitoring data will be used to determine the impacts of the operation upon the hydrologic balance and the biological condition of perennial and intermittent streams within the permit and adjacent areas, as well as to prevent material damage to the hydrologic balance outside the permit area.

Proposed paragraph (b)(1)(vi) would require that the plan describe how surface-water monitoring practices will comply with the sampling, analysis, and reporting requirements of proposed 30 CFR 777.13(a) and (b) to ensure that samples are collected and analyzed in a legally and scientifically valid manner. Proposed paragraph (b)(1)(vi) is consistent with the requirement in the text after section 517(b)(2)(D) of SMCRA that the regulatory authority set forth standards and procedures for monitoring data collection and analysis to assure the reliability and validity of the data.

Proposed paragraph (b)(2)(i) would require that the surface-water monitoring plan provide for the monitoring of parameters that could be affected by the proposed operation if those parameters relate to applicable effluent limitation guidelines under 40 CFR part 434, the findings and predictions in the PHC determination prepared under 30 CFR 780.20, the surface-water runoff control plan prepared under proposed 30 CFR 780.29, the biological condition of perennial and intermittent streams and other surface-water bodies within the proposed permit and adjacent areas, the suitability of the surface water for existing and reasonably foreseeable uses as well as designated uses under section 101(a) or 303(c) of the Clean Water Act, and the suitability of the surface water to support the premining and postmining land uses. Monitoring of these parameters would assist the permittee and regulatory authority in preventing material damage to the hydrologic balance outside the permit area and in determining compliance with the water supply protection and postmining land use requirements of SMCRA and its implementing regulations.

Proposed paragraph (b)(2)(ii) would require quarterly monitoring of 15 specific parameters, including, among others, selenium and the minimum water-quality parameters required by existing 30 CFR 780.21(j)(2)(i) (pH, total iron, total manganese, total suspended solids, and total dissolved solids or specific conductance). As summarized in Part II of this preamble, selenium can have deleterious effects upon fish and human health. In addition, this proposed paragraph would require quarterly monitoring of major anions (including, at a minimum, bicarbonate, chloride, and sulfate), major cations (including, at a minimum, calcium, magnesium, potassium, and sodium), and the cation-anion balance. As summarized in Part II of this preamble, these anions and cations form salts that can alter water chemistry in a manner that sometimes has a significant adverse impact on aquatic life. With respect to water quantity, proposed paragraphs (b)(2)(ii)(A) and (iii)(B), like existing 30 CFR 780.21(j)(2)(i), would require quarterly measurement of flow rates. We propose to require use of generally-accepted professional flow measurement techniques, rather than subjective visual observations that involve no actual measurements and that will vary from observer to observer. Finally, proposed paragraph (b)(2)(ii) would require quarterly monitoring of certain metals (if present in discharges from prior underground mines) and any other parameters of local significance, as determined by the regulatory authority based upon the information collected and the analyses conducted under proposed 30 CFR 780.19 through 780.21.

Proposed paragraph (b)(2)(iii) would not require that point-source discharges be monitored for the parameters listed in proposed paragraph (b)(2)(ii). Instead, as in existing 30 CFR 780.21(j)(2)(ii), the proposed rule would defer to the National Pollutant Discharge Elimination System permitting authority's determinations of which parameters must be monitored. We invite comment on whether, in the final rule, we should require monitoring of some or all of the parameters listed in proposed paragraph (b)(2)(ii) in point-source discharges to establish a more definitive connection between discharges from the minesite and trends observed at downgradient monitoring locations.

To promote coordination of permitting and monitoring requirements under SMCRA and the Clean Water Act, proposed paragraph (b)(2)(iv) would require that the surface-water monitoring plan be revised to include any site-specific monitoring requirements imposed by the National Pollutant Discharge Elimination System permitting authority or the agency responsible for administration of section 404 of the Clean Water Act.[367] This provision recognizes that this information may not be available at the time of application for the SMCRA permit and, thus, may need to be added later via a permit revision.

Proposed paragraph (b)(3) would require that the regulatory authority reconsider the adequacy of the surface-water monitoring plan at two points during the permit application review process. The first reconsideration would occur after the regulatory authority completes the technical review of the application. At that point, the regulatory authority may require that the permit applicant revise the plan to increase the frequency of monitoring, to require monitoring of additional parameters, or to require monitoring at additional locations, if the additional requirements would contribute to protection of the hydrologic balance. The second reconsideration would occur after preparation of the CHIA under proposed 30 CFR 780.21. At that point, the regulatory authority would be responsible for ensuring that the surface-water monitoring plan requires monitoring of all parameters for which the CHIA establishes material damage criteria; *i.e.,* all parameters of concern. These reconsiderations are intended to ensure that the monitoring plans are designed to provide sufficiently comprehensive monitoring data to enable both the permittee and the regulatory authority to identify any adverse impacts on surface water in time to take corrective action to prevent material damage to the hydrologic balance outside the permit area.

Proposed Paragraph (c): Biological Condition Monitoring Plan

Proposed paragraph (c)(1) would require that each permit application include a plan for monitoring the biological condition of perennial and intermittent streams within the proposed permit area and the adjacent area. The proposed rule would require that the plan be adequate to evaluate the impacts of the mining operation on the biological condition of those streams and to determine in a timely manner whether corrective action is needed to prevent the operation from causing material damage to the hydrologic balance outside the permit area.

Proposed paragraph (c)(2)(i) would specify that the plan must require use of a multimetric bioassessment protocol that meets the requirements of proposed 30 CFR 780.19(e)(2). In essence, this provision requires use of a multimetric

[367] 33 U.S.C. 1344.

bioassessment protocol approved by the state or tribal agency responsible for preparing the water quality inventory report required under section 305(b) of the Clean Water Act [368] or other scientifically-valid, multimetric bioassessment protocols used by agencies responsible for implementing the Clean Water Act. The bioassessment protocol must be based upon the presence or absence, population levels, and biomass of an appropriate array of aquatic organisms, including benthic macroinvertebrates. It must require identification of macroinvertebrates to the genus level because a bioassessment protocol that requires identification of aquatic organisms only to the family level may not be capable of differentiating between pollution-tolerant and pollution-intolerant genera within the same family, while a bioassessment protocol that identifies organisms to the species level may not be consistent with available indices of biological integrity. Finally, the protocol must result in the calculation of index values for both habitat and macroinvertebrates and provide a correlation of index values to the capability of the stream to support designated uses under section 101(a) or 303(c) of the Clean Water Act.

Proposed paragraph (c)(2)(ii) would require that the plan identify biological condition monitoring locations in each perennial and intermittent stream within the proposed permit and adjacent areas. Proposed paragraph (c)(2)(iii) would require that the plan establish a sampling frequency that must be no less than annual, but not so frequent as to unnecessarily deplete the populations of the species being monitored. Proposed paragraph (c)(2)(iv) would provide that the plan must require submission of biological condition monitoring data to the regulatory authority on an annual basis.

Proposed paragraph (c)(3) would require that the regulatory authority reconsider the adequacy of the biological condition monitoring plan after completing preparation of the CHIA under proposed 30 CFR 780.21. The proposed rule would require that, if necessary, the regulatory authority issue an order to the applicant to revise the plan to correct any deficiencies.

The monitoring requirements in proposed paragraph (c) would assist in more completely implementing section 515(b)(24) of SMCRA,[369] which requires that surface coal mining and reclamation operations be conducted so as to minimize disturbances to and adverse impacts on fish, wildlife, and related environmental values to the extent possible using the best technology currently available. Proposed paragraph (c) also would provide a means of implementing the definition of ''material damage to the hydrologic balance outside the permit area'' that we propose to adopt in 30 CFR 701.5, which relies in part upon designated uses of surface water under section 101(a) or section 303(c) of the Clean Water Act. The biological condition of perennial and intermittent streams and other surface waters determines whether those waters are capable of attaining their designated uses.

Proposed Paragraph (d): Exceptions

Proposed paragraph (d)(1) would allow potential permit applicants to request that the regulatory authority modify the groundwater and surface-water monitoring plan requirements of proposed paragraphs (b) and (c) and modify or waive the biological condition monitoring plan requirements of proposed paragraph (c) if the proposed permit area includes only lands eligible for remining. The proposed rule would allow the regulatory authority to approve the request if it determines that an alternative monitoring plan will be adequate to monitor the impacts of the proposed operation on groundwater and surface water, based upon an evaluation of the quality of groundwater and surface water and the biological condition of the receiving stream at the time of application. The exception for remining operations would provide an incentive to mine and reclaim previously mined areas without the use of public funds. Streams in the vicinity of previously mined areas also are likely to be of lower quality than streams in unmined watersheds because of the adverse impacts of previous mining.

Proposed paragraph (d)(2) would allow permit applicants to request that the regulatory authority waive the biological condition monitoring plan requirements of proposed paragraph (c) if the applicant demonstrates, and the regulatory authority finds in writing, that the proposed operation will not mine through or bury a perennial or intermittent stream; create a point-source discharge to any perennial, intermittent, or ephemeral stream; or modify the baseflow of any perennial or intermittent stream. If the applicant meets all requirements except the one concerning a point-source discharge, the proposed rule would allow the regulatory authority to approve limiting the biological condition monitoring plan requirements to only the stream that will receive the point-source discharge.

Proposed Paragraph (e): Coordination With Clean Water Act Agencies

Proposed paragraph (e) would require that SMCRA regulatory authorities consult with the agencies responsible for issuing permits, authorizations, and certifications under the Clean Water Act and make best efforts to minimize differences in monitoring locations and reporting requirements and to share data to the extent practicable and consistent with each agency's mission, statutory requirements, and implementing regulations. Coordination could reduce both costs and the overall regulatory impact to the industry, as well as improving regulatory efficiency. In addition, the proposed requirement would be consistent with the intent of the regulatory coordination provisions of section 713 of SMCRA.[370]

12. Section 780.24: What requirements apply to the postmining land use?

Proposed 30 CFR 780.24 would consolidate the requirements for approval of postmining land uses that appear in existing 30 CFR 780.23(b), 816.133(b), and 816.133(c). We also propose to add a surface mining counterpart to the interpretive rules concerning postmining land use changes in existing 30 CFR 784.200(a) and 817.200(d)(1). In addition, we propose to revise existing 30 CFR 780.24 to improve consistency with SMCRA and its legislative history and to more completely implement the environmental protection purposes of SMCRA, including the fish and wildlife protection and enhancement requirements of section 515(b)(24) of SMCRA,[371] while remaining mindful of the requirement in section 508(a)(3) of SMCRA [372] to consider the comments of the surface owner and state and local governments and agencies. Our proposed revisions to the existing requirements also are consistent with section 515(b)(23) of SMCRA,[373] which provides that surface coal mining and reclamation operations must ''meet such other criteria as are necessary to achieve reclamation in accordance with the purposes of this Act, taking into consideration the physical, climatological, and other characteristics of the site.''

[368] 33 U.S.C. 1315(b).

[369] 30 U.S.C. 1265(b)(24).

[370] 30 U.S.C. 1303.

[371] 30 U.S.C. 1265(b)(24).

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[372] 30 U.S.C. 1258(a)(3).

[373] 30 U.S.C. 1265(b)(23).

Proposed Paragraph (a): What postmining land use information must my application contain?

Section 515(b)(2) of SMCRA [374] requires that surface coal mining and reclamation operations ''restore the land affected to a condition capable of supporting the uses which it was capable of supporting prior to any mining, or higher or better uses of which there is a reasonable likelihood.'' Section 508(a)(3) of SMCRA [375] requires that each reclamation plan include a statement of ''the use which is proposed to be made of the land following reclamation, including a discussion of the utility and capacity of the reclaimed land to support a variety of alternative uses.'' Combining these two statutory provisions, proposed paragraph (a)(1) would require that each permit application include both a description and a map of the proposed postmining land use or uses and a discussion of the utility and capability of the reclaimed land to support a variety of other uses, including the uses that the land was capable of supporting before any mining, as identified in the narrative analysis required under 30 CFR 779.22.

Proposed paragraph (a)(2) would require that the land use or uses be described in terms of the categories listed in our definition of ''land use'' in 30 CFR 701.5, which would assist the regulatory authority in determining compliance with provisions of our regulations that are tied to land use; *e.g.,* alternative postmining land uses, revegetation standards, and exceptions from approximate original contour restoration requirements, and provide a baseline for application of these provisions on a national basis.

Proposed paragraph (a)(3) would require that the application explain how the proposed postmining land use is consistent with existing state and local land use policies and plans. Addition of this requirement would be consistent with section 508(a)(3) of SMCRA,[376] which requires that the reclamation plan include an explanation of the relationship of the proposed postmining land use to existing land use policies and plans. That section of SMCRA also requires that the application include comments from state and local governments or agencies that would have to approve or authorize the proposed land use. Furthermore, section 515(b)(2) of SMCRA [377] prohibits the approval of alternative postmining land uses that are ''inconsistent with applicable land use policies and plans.'' Therefore, it would be reasonable to conclude that Congress intended for all postmining land uses to be consistent with state and local land use policies and plans, especially since regulation of land use has traditionally been the province of state and local governments.

Proposed paragraph (a)(4) is substantively identical to the corresponding existing rule at 30 CFR 780.23(c). Proposed paragraph (a)(5) is substantively identical to the corresponding existing rule at 30 CFR 780.23(b)(1) with the exception that the proposed rule clarifies that the permit applicant must identify any support facilities (not just activities as in the existing rule) needed to achieve the postmining land use. (Support facilities are equipment repair areas, mine offices, parking lots, and other surface areas upon which are sited structures, facilities, or other property or material resulting from or incident to the activities listed in paragraph (a) of the definition of ''surface coal mining operations'' in 30 CFR 700.5.) The regulatory authority needs this information when evaluating whether the proposed postmining land use can be achieved and in deciding whether to allow mining-related structures to be retained as part of the postmining land use.

Proposed paragraph (a)(6)(i) would specify that the application must provide the demonstration required under proposed paragraph (b)(1) if the applicant proposes to restore the proposed permit area or a portion thereof to a condition capable of supporting a higher or better use or uses rather than to a condition capable of supporting the use or uses that the land supported before any mining. This provision is substantively identical to existing 30 CFR 780.23(b)(2) except as discussed in the preamble to proposed paragraph (b) below.

Proposed paragraph (a)(6)(ii) would require that an applicant requesting approval of a higher or better alternative postmining land use disclose any monetary compensation, item of value, or other consideration offered to the landowner by the applicant or the applicant's agent in exchange for the landowner's agreement to a postmining land use that differs from the premining use. Adoption of this provision is supported by section 515(b)(2) of SMCRA, which requires that surface coal mining and reclamation operations—

> restore the land affected to a condition capable of supporting the uses which it was capable of supporting prior to any mining, or higher or better uses of which there is reasonable likelihood, so long as such use or uses do not present any actual or probably hazard to public health or safety or pose any actual or probable threat of water diminution or pollution, and the permit applicants' declared proposed land use following reclamation is not deemed to be impractical or unreasonable, inconsistent with applicable land use policies and plans, involves unreasonable delay in implementation, or is violative of Federal, State, or local law.

Disclosure of whether a landowner has been provided with or is reasonably expected to be provided with compensation or other consideration for any postmining land use changes would allow the regulatory authority to better understand whether the proposed postmining land use change is one that the landowner genuinely desires on its own merits and is reasonably likely to be achieved, or whether the landowner agreed to the land use change for short-term financial gain or other reasons. This type of short-term land use decision-making is contrary to the broader purposes identified in SMCRA, such as ''protect[ing] society and the environment from the adverse effects of surface mining coal operations'' in section 102(a) and assuring that ''operations are conducted as to protect the environment'' in section 102(d).

Proposed Paragraph (b): What requirements apply to the approval of alternative postmining land uses?

Existing 30 CFR 780.23(b)(2) provides that the application must include all materials needed for approval of an alternative postmining land use under 30 CFR 816.133 if the proposed postmining land use differs from the premining use. Existing 30 CFR 816.133(b) further provides that the ''premining uses of land to which the postmining land use is compared shall be those uses which the land previously supported, if the land has not been previously mined and has been properly managed.'' In new section 780.24, we propose to require compliance with the alternative postmining land use approval requirements only when the applicant or permittee proposes to restore the land to a condition capable of supporting higher or better uses (a term that we define in 30 CFR 701.5) rather than to a condition capable of supporting the uses that it could support before any mining. The proposed language better tracks the underlying statutory provision in section 515(b)(2) of SMCRA,[378] as quoted above. In addition, it is consistent with the legislative history of section 508(a) of SMCRA: [379]

[374] 30 U.S.C. 1265(b)(2).

[375] 30 U.S.C. 1258(a)(3).

[376] 30 U.S.C. 1258(a)(3).

[377] 30 U.S.C. 1265(b)(2).

[378] 30 U.S.C. 1265(b)(2).

[379] 30 U.S.C. 1258(a).

The description [of premining land use capability] is to serve as a benchmark against which the adequacy of reclamation and the degradation resulting from the proposed mining may be measured. It is important that the potential utility which the land had for a variety of uses be the benchmark rather than any single, possibly low value, use which by circumstances may have existed at the time mining began.[380]

By requiring approval only when the change is to a higher or better use, our proposed rule also would avoid unnecessary paperwork on the part of permit applicants and conserve often-scarce regulatory authority resources.

We propose to delete the provision in existing 30 CFR 816.133(b) requiring that the land be properly managed before the premining land use may be compared with the proposed alternative postmining land use. There is no statutory counterpart to this provision of the existing rule, nor is it supported by the legislative history of SMCRA. Furthermore, the criteria for approval of proposed alternative postmining land uses in existing 30 CFR 816.133(c) bear no relationship to whether the land was properly managed before mining. In addition, proper management is a subjective determination. To the extent that this provision could be construed as requiring that the regulatory authority reject a proposed higher or better postmining land use that involves less intensive management than the premining use, the existing rule is inconsistent with the preamble to our definition of ''land use'' in 30 CFR 701.5, which states that the land use categories in the definition are not hierarchical.[381] Consistent with that statement, the same rulemaking defined ''higher or better uses'' as meaning ''postmining land uses that have a higher economic value or nonmonetary benefit to the landowner or the community than the premining land uses.'' We are not proposing any changes to that definition. Therefore, the provision in existing 30 CFR 816.133(b) requiring that the land be properly managed before the premining land use may be compared with the proposed alternative postmining land use has no statutory basis and, in any case, is not feasible.

Proposed paragraph (b) combines existing 30 CFR 780.23(b)(2), which requires that the permit application include all materials needed for approval of an alternative postmining land use under 30 CFR 816.133, with the alternative postmining land use approval criteria of 30 CFR 816.133(c). Proposed paragraph (b)(1) sets forth permit application requirements, while proposed paragraph (b)(2) contains requirements applicable to the regulatory authority's decision-making process. In essence, proposed paragraph (b)(1), like existing 30 CFR 780.23(b)(2), requires that the permit applicant submit a demonstration that the request for an alternative postmining land use meets the criteria for approval, while proposed paragraph (b)(2), like existing 30 CFR 816.133(c), specifies when the regulatory authority may approve a request for an alternative postmining land use.

Proposed paragraph (b)(1) would retain the criteria in the corresponding existing rules at 30 CFR 816.133(c) for approving alternative postmining land uses, while requiring that the permit applicant demonstrate compliance with both those criteria and several new criteria intended to promote environmental protection and restoration of fish and wildlife habitat consistent with section 515(b)(24) of SMCRA [382] and the purposes in paragraphs (a), (d), and (f) of section 102 of SMCRA.[383] Addition of the new criteria also would be consistent with section 515(b)(23) of SMCRA,[384] which requires that surface coal mining and reclamation operations ''meet such other criteria as are necessary to achieve reclamation in accordance with the purposes of this Act, taking into consideration the physical, climatological, and other characteristics of the site.''

As previously stated, proposed paragraph (b)(1)(i) would retain the provision in the corresponding existing rules at 30 CFR 816.133(c)(1) that there must be a reasonable likelihood of achievement of the proposed higher or better alternative postmining land use. However, we propose to expand upon this requirement by adding language that would require the applicant to document that a reasonable likelihood of achieving the higher or better use exists through submission of, for example, real estate and construction contracts, plans for installation of any necessary infrastructure, procurement of any necessary zoning approvals, landowner commitments, economic forecasts, and studies by land use planning agencies, as applicable. The additional language would flesh out the requirement in section 515(b)(2) of SMCRA [385] that there be a reasonable likelihood of achievement of the proposed land use. In the past, approved alternative postmining land uses have not been implemented on some reclaimed minesites, including some sites for which the regulatory authority approved a variance from approximate original contour restoration requirements for the purpose of achieving a particular alternative postmining land use. Our proposed rule changes concerning the reasonable likelihood of achievement of the alternative postmining land use are intended to prevent recurrences of situations in which the regulatory authority approves an alternative postmining land use that has little chance of being implemented in the reasonably foreseeable future. The proposed rule changes thus would improve compliance with the conditions for approval of higher or better uses under section 515(b)(2) of SMCRA [386] and the approximate original contour restoration requirements of section 515(b)(3) of SMCRA.[387]

We propose to add paragraphs (b)(1)(iii)(E) through (G) to better implement the environmental protection purposes in paragraphs (a), (d), and (f) of section 102 of SMCRA [388] and the prohibition in section 510(b)(3) of SMCRA [389] on the approval of any permit application unless the regulatory authority finds that the operation has been designed to prevent material damage to the hydrologic balance outside the permit area. Specifically, these proposed paragraphs would require that the applicant for an alternative postmining land use demonstrate that the proposed use would not—

- Result in changes in the size or frequency of peak flows from the reclaimed area to the extent that the changes would cause an increase in damage from flooding compared to the conditions that would exist if the land were restored to a condition capable of supporting the uses that it was capable of supporting before any mining.
- Cause the total volume of flow from the reclaimed area, during every season of the year, to vary in a way that would preclude any existing or reasonably foreseeable use of surface water or groundwater or any designated use of surface water under section 101(a) or 303(c) of the Clean Water Act.[390]
- Cause a change in the temperature or chemical composition of the water

[380] S. Rept. 95–128, 95th Cong., 1st Sess. 76–77 (1977).

[381] 48 FR 39893 (Sept. 1, 1983).

[382] 30 U.S.C. 1265(b)(24).

[383] 30 U.S.C. 1202(a), (d), and (f).

[384] 30 U.S.C. 1265(b)(23).

[385] 30 U.S.C. 1265(b)(2).

[386] *Id.*

[387] 30 U.S.C. 1265(b)(3).

[388] 30 U.S.C. 1202(a), (d), and (f).

[389] 30 U.S.C. 1260(b)(3).

[390] 33 U.S.C. 1251(a) and 1313(c).

that would preclude any existing or reasonably foreseeable use of surface water or any designated use of surface water under section 101(a) or 303(c) of the Clean Water Act.[391]

Proposed paragraph (b)(2) would allow the regulatory authority to approve a request for an alternative postmining land use if it first consults with the landowner or the land management agency having jurisdiction over the lands to which the use would apply and finds in writing that the applicant has made the demonstration required under proposed paragraph (b)(1). These proposed provisions are substantively identical to the corresponding existing rules at 30 CFR 816.133(c), with the exception of the proposed requirement that the finding be in writing and the addition of the new and modified criteria in paragraph (b)(1) as discussed above.

Proposed Paragraph (c): What requirements apply to permit revision applications that propose to change the postmining land use?

Proposed paragraph (c) would provide that, consistent with the decision in *PSMRL I, Round II,*[392] permittees may use the permit revision process to change the postmining land use after permit issuance. The proposed rule would specify that the application for a permit revision must be processed as a significant revision if the permittee proposes to restore the land to a condition capable of supporting higher or better uses rather than to a condition capable of supporting the uses that it was capable of supporting before any mining.

Proposed paragraph (c) would provide a surface mining counterpart to the interpretive rules for underground mines at 30 CFR 784.200 and 817.200(d)(1), which specify that the requirements for approval of an alternative postmining land use may be met via the permit revision process rather than as part of the original permit application. We do not now interpret our existing surface mining rules as prohibiting permittees from submitting permit revision applications to change the postmining land use after permit issuance, nor have we interpreted those rules as doing so in the past. Therefore, the only effect of proposed paragraph (c) would be to require that a proposed change to a higher or better postmining land use be processed as a significant revision. As provided in 30 CFR 774.13(a)(2), an application for a significant permit revision must comply with the public notice and public participation requirements that apply to an application for a new permit.

Unlike existing 30 CFR 784.200 and 817.200(d)(1), which classify any change in postmining land use as a significant permit revision, we propose to apply this requirement only to a proposed change to a higher or better use. A change from one postmining land use that the land was capable of supporting prior to mining to another postmining land use that the land was capable of supporting prior to mining would no longer require approval as an alternative postmining land use, nor would a request for such a change need to be processed as a significant permit revision.

Our proposed rule would improve consistency with section 515(b)(2) of SMCRA,[393] which requires that surface coal mining and reclamation operations ''restore the land affected to a condition capable of supporting the uses which it was capable of supporting prior to any mining, or higher or better uses of which there is a reasonable likelihood.'' The statutory provision distinguishes only between uses that the land was capable of supporting before mining and higher or better uses; *i.e.,* it establishes criteria for approval of higher or better uses, but no criteria for approval of any of the uses that the land was capable of supporting before mining.

Proposed Paragraph (d): What restrictions apply to the retention of mining-related structures?

Proposed paragraph (d) would establish new requirements pertinent to the retention of mining-related structures in support of the postmining land use. First, the applicant or permittee would have to demonstrate, and the regulatory authority would have to find in writing, that the size and characteristics of mining-related structures (other than roads and impoundments) proposed for retention for potential use as part of the postmining land use are consistent with and proportional to the needs of the postmining land use. For example, retention of an entire coal preparation plant building as a storage facility for an agriculture or silvicultural postmining land use would be disproportionate to the needs for the postmining land use. Second, the amount of bond required for the permit must include the cost of removing the structure and reclaiming the land to a condition capable of supporting the premining uses. Third, the reclamation plan must specify that the permittee will remove any structure not in use as part of the approved postmining land use by the end of the revegetation responsibility period and reclaim the land upon which it was located.

These measures are intended to ensure that only mining-related structures with a bona fide role in supporting the postmining land use are retained. These provisions should minimize the number of mining-related structures that are retained, ostensibly to support the postmining land use, but that are abandoned after final bond release and become safety hazards, attractive nuisances, or a visual blight on the landscape. Thus, proposed paragraph (d) would more fully implement section 102(a) of SMCRA,[394] which provides that one of the purposes of SMCRA is to protect society and the environment from the adverse effects of surface coal mining operations. In addition, section 515(b)(2) of SMCRA [395] allows the approval of higher or better postmining land uses only if they do not present any actual of probable hazard to public health or safety. Logically, the same requirement should apply to retention of mining-related structures that did not exist prior to mining.

Proposed Paragraph (e): What special provisions apply to previously mined areas?

Proposed paragraph (e) would contain the postmining land use requirements for previously mined areas, as that term is defined in 30 CFR 701.5. They do not differ substantively from the corresponding requirements in the last sentence of the existing rules at 30 CFR 816.133(b) except for the proposed addition of a requirement that the revegetation plan require the use of native tree and shrub species for revegetation of all portions of the proposed permit area that were forested at the time of application or that would revert to forest under conditions of natural succession, provided that the planting of trees and shrubs on those lands would not be inconsistent with achievement of the proposed postmining land use. The added requirement would more fully implement section 515(b)(19) of SMCRA,[396] which requires establishment of a diverse, effective, permanent vegetative cover of the same seasonal variety native to the area, and the fish and wildlife protection and

[391] *Id.*

[392] *PSMRL I, Round II,* 1980 U.S. Dist. LEXIS 17660 at *20 (D.D.C. 1980), 19 Env't Rep. Cas. (BNA) 1477.

[393] 30 U.S.C. 1265(b)(2).

[394] 30 U.S.C. 1202(a).

[395] 30 U.S.C. 1265(b)(2).

[396] 30 U.S.C. 1265(b)(19).

enhancement requirements of section 515(b)(24) of SMCRA.[397]

13. Section 780.25: What information must I provide for siltation structures, impoundments, and refuse piles?

Changes To Conform With the 1983 Revisions to Definitions and Performance Standards

On September 26, 1983 (48 FR 44006), we revised the definitions and performance standards in our regulations relating to coal mine waste to be more consistent with the terminology used by the Mine Safety and Health Administration (MSHA). As we stated at 48 FR 44009, ''[i]t is undesirable to have two regulatory programs for the same subject that contain conflicting standards or which use fundamentally different terminology.''

Among other things, we adopted definitions of three new terms in 30 CFR 701.5. *Coal mine waste* is defined as ''coal processing waste and underground development waste.'' *Impounding structure* is defined as ''a dam, embankment, or other structure used to impound water, slurry, or other liquid or semi-liquid material.'' *Refuse pile* is defined as ''a surface deposit of coal mine waste that does not impound water, slurry, or other liquid or semi-liquid material.'' The latter two terms are consistent with the terminology of MSHA's regulations. ''Refuse pile'' replaces the term ''coal processing waste bank'' that we used in our previous regulations, while the term ''impounding structure'' includes, but is not limited to, all structures that our rules previously referred to as coal processing waste dams or embankments.

In concert with the new definition of coal mine waste, we revised our performance standards at 30 CFR 817.71 through 817.74 to eliminate the language that combined underground development waste with excess spoil for purposes of performances standards for underground mines. Because the definition of coal mine waste includes underground development waste, we revised our regulations to specify that the disposal of underground development waste is subject to the performance standards for refuse piles at 30 CFR 817.83 rather than the performance standards for the disposal of excess spoil that applied under the old rules.

However, we did not revise our permitting requirements in a similar fashion at that time. Therefore, we now propose to modify 30 CFR parts 780 and 784 to harmonize the terminology in those rules with our 1983 changes to the definitions and performance standards concerning coal mine waste. In essence, we propose to (1) replace the term ''coal processing waste banks'' with ''refuse piles'' and (2) replace the term ''coal processing waste dams and embankments'' with references to coal mine waste impounding structures.

Proposed Paragraph (a): General Requirements

In addition to the changes in terminology, we propose to revise existing paragraph (a)(1)(iii) to require that the general plan for each proposed siltation structure, impoundment, or refuse pile include the hydrologic and geologic information needed to assess the hydrologic impact of the structure. The existing rule requires submission of only ''preliminary'' hydrologic and geologic information. We propose to remove the word ''preliminary'' because preliminary information typically would not be sufficient to assess the hydrologic impact of a proposed structure.

We propose to revise existing paragraph (a)(1)(iv) to require that the general plan for each proposed siltation structure, impoundment, or refuse pile contain a report describing the results of a geotechnical investigation of the potential effect on the structure if subsurface strata should subside as a result of past, current, or future underground mining operations beneath or within the proposed permit and adjacent areas. Geotechnical investigations may include site reconnaissance, drilling, or some combination of these with geophysical investigations (ground-penetrating radar, seismic investigations, etc.). The existing rule requires only a survey describing the potential effect of subsidence resulting from past underground mining operations. A survey alone would provide insufficient information to evaluate the potential effects of subsidence.

Therefore, to promote long-term structural stability, we propose to require a geotechnical investigation instead of a survey and we propose to require consideration of the potential effects of subsidence from past, existing, and future underground mining operations, beneath or within the proposed permit and adjacent areas, not just the potential effects of past underground mining operations within an unspecified area. The design needs to ensure that the structure will be capable of withstanding all potential impacts of any subsidence that may occur during the life of the proposed structure. We propose to add the reference to the proposed permit and adjacent areas to ensure that the investigation includes all underground mining operations that have the potential to cause subsidence that may affect the proposed structure, not just operations within the proposed permit area.

Finally, we propose to specify that the investigation report must identify design and construction measures that would prevent adverse subsidence-related impacts on the structure whenever impacts of that nature are a possibility. In short, proposed paragraph (a)(1)(iv) is intended to protect against failure of the impoundment embankment or other impoundment failures as a result of subsidence. Impoundment stability, especially for large impoundments, is important to protect the public, private and public property, and the environment from the adverse effects of flooding and other consequences of impoundment failure, consistent with the purposes of SMCRA in paragraphs (a) and (d) of section 102 of the Act.[398]

We propose to redesignate existing paragraph (a)(1)(v) as paragraph (a)(1)(vi) and add a new paragraph (a)(1)(v) to require that the general plan for each impoundment include an analysis of the potential for the impoundment to drain into subjacent underground mine workings, together with an analysis of the impacts of such drainage. The Martin County Slurry Spill incident in Martin County, Kentucky on October 11, 2000, illustrates the magnitude of environmental damage that can result when impounded coal refuse slurry breaks through into adjacent underground mine workings that open to the surface. In this case, the mine openings discharged 306 million gallons of slurry into two tributaries of the Tug Fork River (Coldwater Fork and Wolf Creek). The slurry covered nearby residents' yards to a depth of as much as 5 feet, visibly polluted more than 100 miles of waterways, including the Big Sandy and Ohio Rivers, and devastated aquatic life in 70 miles of stream. Six public water intakes were adversely affected and alternative water supplies had to be arranged for 27,000 residents. Cleanup costs were approximately $59 million.[399]

Proposed paragraph (a)(1)(v) is intended to ensure that all types of

[397] 30 U.S.C. 1265(b)(24).

[398] 30 U.S.C. 1202(a) and (d).

[399] See *http://www.sourcewatch.org/index.php?title=Martin_County_sludge_spill* (last accessed February 4, 2015) and *http://www.jackspadaro.com/news_articles/2003/10_12_03/herald-leader10_12_03.html* (last accessed February 4, 2015).

impoundments constructed for coal mining purposes are designed to prevent similar breakthroughs. This design requirement would reduce the probability of breakthroughs into underground mine workings, thus benefiting the public, the environment, and mine operators by avoiding the environmental and property damage and cleanup expenses that may result from those breakthroughs, consistent with the purposes of SMCRA in paragraphs (a) and (d) of section 102 of the Act.[400]

Paragraph (a)(2) sets forth design requirements for all impoundments other than low-hazard impoundments. We propose to revise the introductory text of existing paragraph (a)(2) for clarity and redesignate that text as paragraph (a)(2)(i). Proposed paragraph (a)(2)(i) would specify that the detailed design plan requirements of proposed paragraph (a)2)(ii) would apply to all structures meeting the MSHA criteria of 30 CFR 77.216(a), as well as to all structures that meet the Significant Hazard Class or High Hazard Class criteria for dams in NRCS publication Technical Release No. 60, ''Earth Dams and Reservoirs,'' regardless of whether those structures meet the MSHA criteria of 30 CFR 77.216(a).

We propose to revise redesignated paragraph (a)(2)(i) to update the incorporation by reference of the NRCS publication ''Earth Dams and Reservoirs,'' Technical Release No. 60 (210–VI–TR60, October 1985), by replacing the reference to the October 1985 edition with a reference to the superseding July 2005 edition. Consistent with the terminology in the newer edition, we propose to replace references to Class B or C dam criteria with references to Significant Hazard Class or High Hazard Class dam criteria, respectively. Only the terminology has changed—the actual criteria remain the same as before. The newer publication is not available from the National Technical Information Service, but is available online from the NRCS (the successor to the Soil Conservation Service). Consequently, we propose to delete the ordering information pertinent to the National Technical Information Service and replace it with the Internet address at which the publication may be reviewed and from which it may be downloaded without charge. We also propose to update the address and location of our administrative record room and the Internet address information for the National Archives and Records Administration.

In addition, we propose to redesignate existing paragraphs (a)(2)(i) through (iv) as paragraphs (a)(2)(ii)(A) through (D) and add introductory text to proposed paragraph (a)(2)(ii). The introductory text is a revised version of the last sentence of the introductory text of existing paragraph (a)(2), modified to be consistent with proposed paragraph (a)(2)(i). As it currently exists, redesignated paragraph (a)(2)(ii)(B) requires that the detailed design plan include any geotechnical investigation, design, and construction requirements. This language is ambiguous because it does not identify the geotechnical investigation, design, and construction requirements to which it refers. Therefore, we propose to revise redesignated paragraph (a)(2)(ii)(B) to require that the detailed design plan for any structure that meets the applicability provisions of proposed paragraph (a)(2)(i) incorporate any design and construction measures identified in the geotechnical investigation report prepared under 30 CFR 780.25(a)(1)(iv) as necessary to protect against potential adverse impacts from subsidence resulting from underground mine workings underlying or adjacent to the structure. These measures might include grouting or backstowing of mine voids or surface mining of seams within the impoundment safety zone. In short, proposed paragraph (a)(2)(ii)(B) would operate in conjunction with proposed paragraph (a)(1)(iv) to protect against failure of the impoundment embankment or other impoundment failures as a result of subsidence. Impoundment stability, especially for large impoundments, is important to protect the public, private and public property, and the environment from the adverse effects of flooding and other consequences of impoundment failure, consistent with the purposes of SMCRA in paragraphs (a) and (d) of section 102 of the Act.[401]

We propose to reinstate former paragraph (a)(3), which was erroneously removed as part of the codification process for a rule published December 12, 2008 (73 FR 75814). This paragraph contains detailed design plan requirements for structures not covered under paragraph (a)(2).

Proposed Paragraph (c): Permanent and Temporary Impoundments

Both the existing and proposed versions of paragraph (c) contain design requirements that apply to all impoundments. To improve clarity and consistency with other regulations, we propose to revise existing paragraph (c)(2) by replacing the term ''Mine Safety and Health Administration'' with a citation to 30 CFR 77.216(a), which contains the MSHA impoundment criteria to which paragraph (c)(2) refers. As revised, proposed paragraph (c)(2) would require that plans for impoundments meeting MSHA criteria comply with MSHA's impoundment design requirements at 30 CFR 77.216–2. We propose to delete the requirement that those plans also comply with 30 CFR 77.216–1. The requirement that we propose to delete is not germane to permit applications and plans because it contains signage requirements that apply only to impoundments that already exist or are under construction. In the second sentence, we propose to delete an obsolete cross-reference to paragraph (a).

We also propose to revise paragraph (c)(2) to clarify that the requirement that the permit application include the plan submitted to MSHA applies only to those portions of the plan that are complete at the time of submission of the SMCRA permit application. Impoundment plans normally are submitted to MSHA in stages; they may not be complete or even started at the time that the applicant submits an application for the SMCRA permit. SMCRA-related permit application information requirements are sufficiently comprehensive that the regulatory authority does not need the MSHA plan to process the SMCRA permit application or to ensure the stability of proposed structures.

We propose to redesignate existing paragraph (f) as paragraph (c)(4). That paragraph applies only to impoundments that meet certain criteria in Technical Release No. 60 or the MSHA criteria of 30 CFR 77.216(a). It has no relevance to the other structures to which 30 CFR 780.25 applies (low-hazard impoundments and refuse piles). Therefore, it is more appropriate to include the stability analysis requirements of existing paragraph (f) as part of proposed paragraph (c), which applies only to impoundments, including coal mine waste impoundments. We also propose to revise this paragraph to be consistent with the terminology in the July 2005 edition of Technical Release No. 60 by replacing references to Class B or C dam criteria with references to Significant Hazard Class or High Hazard Class dam criteria, respectively. Only the terminology would change; the actual criteria would remain the same as before. Finally, we propose to revise this paragraph to clarify that the stability analyses that it requires must address

[400] 30 U.S.C. 1202(a) and (d).

[401] 30 U.S.C. 1202(a) and (d).

static, seismic, and post-earthquake (liquefaction) conditions because those conditions are all part of a comprehensive stability analysis.

Proposed Paragraph (d): Coal Mine Waste Impoundments and Refuse Piles

As discussed in the introductory portion of the preamble to this section, we propose to modify 30 CFR parts 780 and 784 to harmonize the terminology in those rules with our 1983 changes to the definitions and performance standards concerning coal mine waste. In essence, ''refuse pile'' would replace the term ''coal processing waste bank'' as used in existing parts 780 and 784, while the term ''impounding structure'' would include all structures that existing parts 780 and 784 refer to as coal processing waste dams or embankments. We also use the term ''coal mine waste impoundment'' to refer to the impounding structure in combination with the basin behind the impounding structure. We propose to combine existing paragraph (d), which contains design requirements for coal processing waste banks, and existing paragraph (e), which contains design requirements for coal processing waste dams and embankments, into a revised paragraph (d) that uses the newer terminology. Proposed paragraph (d) would apply to any application that proposes to place coal mine waste in a refuse pile or impoundment or use coal mine waste to construct an impounding structure. We are adding the language concerning use of coal mine waste to construct an impounding structure because proposed paragraph (d) is the permitting counterpart of the performance standards for coal mine waste disposal in 30 CFR 816.81 through 816.84. Section 816.84 applies to both impounding structures constructed of coal mine waste and impounding structures intended to impound coal mine waste. Our proposed revision would expand the scope of proposed paragraph (d) to coincide with the scope of the corresponding performance standards.

Proposed paragraph (d)(1) corresponds to existing paragraph (d), which requires that coal processing waste banks be designed to comply with the requirements of 30 CFR 816.81 through 816.84. Proposed paragraph (d)(1) would require that refuse piles (the successor term to ''coal processing waste banks'') be designed to comply with the requirements of 30 CFR 780.28, 816.81, and 816.83. We propose to delete the cross-reference to 30 CFR 816.84 found in existing paragraph (d) because proposed paragraph (d)(1) would pertain only to refuse piles, not to the impounding structures to which 30 CFR 816.84 applies. The proposed deletion is not a substantive change because the corresponding provision of the existing rules does not pertain to impounding structures either, despite the cross-reference. We propose to add the cross-reference to 30 CFR 780.28 to emphasize the need for compliance with that section whenever a refuse pile would be located in or within 100 feet of a perennial or intermittent stream.

Proposed paragraph (d)(2) corresponds to existing paragraph (e), which requires that coal processing waste dams and embankments be designed to comply with the requirements of 30 CFR 816.81 through 816.84, among other things. Proposed paragraph (d)(2)(i) would require that impounding structures constructed of or intended to impound coal mine waste (the successor terminology to ''coal processing waste dams and embankments'') be designed to comply with the requirements of 30 CFR 780.28, 816.81, and 816.84. We propose to delete the cross-reference to 30 CFR 816.83 found in existing paragraph (e) because proposed paragraph (d)(2) would pertain only to impounding structures, not to the refuse piles to which 30 CFR 816.83 applies. The proposed deletion is not a substantive change because the corresponding provision of the existing rules does not pertain to refuse piles either, despite the cross-reference. We also propose to add a cross-reference to the impoundment requirements of 30 CFR 816.49(a) and (c). This proposed addition likewise is not a substantive change because 30 CFR 816.84(b)(1) already includes an identical cross-reference to 30 CFR 816.49(a) and (c), which would apply by operation of the cross-reference to 30 CFR 816.84 in proposed paragraph (d)(2)(i). We propose to add this cross-reference only as a matter of clarity and ease of use.

Finally, we propose to add the cross-reference to 30 CFR 780.28 to emphasize the need for compliance with that section whenever an impounding structure constructed of or intended to impound coal mine waste would be located in or within 100 feet of a perennial or intermittent stream. While coal mine waste impoundments may not be retained as permanent impoundments, they typically are converted to refuse piles and retained as permanent features, which means that the stream segment that they cover is not restored. Hence, proposed paragraph (d)(2)(i) and proposed 30 CFR 780.28 would apply the same requirements to coal mine waste impoundments as would apply to refuse piles with respect to the approval of such structures in perennial or intermittent streams.

Proposed paragraph (d)(2)(ii) would require that the design plan for any impounding structure constructed of or intended to impound coal mine waste comply with the MSHA requirements of 30 CFR 77.216–2 if the structure meets the criteria of 30 CFR 77.216(a). The corresponding provision of existing paragraph (e) also required compliance with 30 CFR 77.216–1. We propose to delete this cross-reference because 30 CFR 77.216–1 does not include any design requirements. Instead, that rule consists solely of MSHA requirements for signage for existing impoundments and impoundments under construction. Those requirements are not relevant to preparation of plans or permit applications for proposed impoundments or impounding structures. Proposed paragraph (d)(2)(ii) would retain the requirement that each plan for an impounding structure comply with 30 CFR 77.216–2, which contains MSHA design requirements for impoundments and impounding structures.

Proposed paragraph (d)(2)(iii) is substantively identical to the corresponding portion of existing paragraph (e), which requires that the application include a geotechnical investigation of the foundation area and that the investigation be planned and supervised by an engineer or engineering geologist. We propose to redesignate existing paragraphs (e)(1) through (4), which establish minimum requirements for that investigation, as paragraphs (d)(2)(iii)(A) through (D).

Proposed paragraph (d)(2)(iv) would require that the design ensure that at least 90 percent of the water stored in the impoundment during the design precipitation event will be removed within a 10-day period. This requirement is substantively identical to existing 30 CFR 816.84(e). We propose to move it to 30 CFR 780.25(d)(2)(iv) as part of our ongoing efforts to move permitting requirements currently located in subchapter K to subchapter G.

14. Section 780.28: What additional requirements apply to proposed activities in, through, or adjacent to streams?

Proposed 780.28 would establish standards for the review and approval of permit applications that propose to conduct surface mining activities in or through a perennial, intermittent, or ephemeral stream or that would disturb the surface of lands within 100 feet of a perennial, intermittent, or ephemeral stream. Consequently, we propose to move the permitting aspects of the

stream buffer zone rule, which is currently codified at 30 CFR 816.57(a) as part of the performance standards in subchapter K, to 30 CFR 780.28, which would be part of the permitting requirements of subchapter G. Existing 30 CFR 816.57(a) provides that the regulatory authority may authorize activities on the surface of lands within 100 feet of a perennial or intermittent stream only upon finding that (1) the activities will not cause or contribute to the violation of applicable State or Federal water quality standards and will not adversely affect the water quantity and quality or other environmental resources of the stream, and (2) if there will be a temporary or permanent stream-channel diversion, it will comply with 30 CFR 816.43.

Part II of this preamble summarizes the impacts of surface coal mining operations on streams, as documented by scientific studies. Our proposed rule is intended to prevent or minimize the adverse impacts documented in those studies.

The permitting requirements and performance standards in SMCRA contain limited direct references to streams, but SMCRA is replete with requirements to minimize or prevent adverse impacts on fish, wildlife, related environmental values, the quantity and quality of surface water and groundwater, and the hydrologic balance. See sections 507(b)(10), (11) and (14); 508(a)(9) and (13); 510(b); 515(b)(2), (4), (9), (10), (14), (17), and (24); 515(c)(4); 515(e)(3); 516(b)(4); and 516(b)(9) through (12).[402] To the extent that proposed 30 CFR 780.28 pertains to the impact of surface coal mining and reclamation operations on streams outside the permit area, section 510(b)(3) of SMCRA,[403] which prohibits issuance of a permit unless the applicant demonstrates, and the regulatory authority finds, that the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area, provides authority for this proposed rule.

In addition, section 102 of SMCRA [404] repeatedly identifies environmental protection as one of the purposes of SMCRA. In particular, section 102(a) [405] states that one of the purposes of SMCRA is to ''establish a nationwide program to protect society and the environment from the adverse effects of surface coal mining operations.'' Paragraph (c) [406] provides that another purpose is to ''assure that surface mining operations are not conducted where reclamation as required by this Act is not feasible.'' Paragraph (d) [407] provides that still another purpose is to ''assure that surface coal mining operations are so conducted as to protect the environment.'' Paragraph (f) [408] states that one of the Act's purposes is to ''strike a balance between protection of the environment and agricultural productivity and the Nation's need for coal as an essential source of energy.'' Together with section 201(c)(2) of SMCRA [409] and the provisions of title V of SMCRA discussed below, these statutory provisions provide adequate authority for the stream protection measures that we propose to adopt in 30 CFR 780.28 to remedy the environmental problems identified in Part II of this preamble. Section 201(c)(2) of SMCRA [410] provides that the Secretary of the Interior, acting through OSMRE, shall ''publish and promulgate such rules and regulations as may be necessary to carry out the purposes and provisions of the Act.''

In an en banc ruling, the U.S. Court of Appeals for the District of Columbia Circuit upheld the Secretary's authority to promulgate rules under the authority of section 201(c) of SMCRA [411] that impose permitting requirements in addition to those set forth in sections 507 and 508 of SMCRA: [412] ''We hold that the Act's explicit listings of information required of permit applicants are not exhaustive, and do not preclude the Secretary from requiring the states to secure additional information needed to ensure compliance with the Act.'' [413] The court found that the Secretary's conclusion that additional information beyond that explicitly required in the Act was needed to effectively implement the Act was entitled to some deference.[414] Furthermore, the U.S. District Court for the District of Columbia has held that ''[a] court should sustain regulations when they reasonably relate to the purpose of the legislation.'' [415] The regulations that we propose in 30 CFR 780.28 clearly relate to and promote attainment of the environmental protection purposes of the Act, as well as the other provisions of SMCRA cited above that pertain to protection of fish, wildlife, related environmental values, the quantity and quality of surface water and groundwater, and the hydrologic balance. The proposed regulations also would implement section 515(b)(23) of SMCRA,[416] which provides that surface coal mining and reclamation operations must ''meet such other criteria as are necessary to achieve reclamation in accordance with the purposes of this Act, taking into consideration the physical, climatological, and other characteristics of the site.''

In addition, the measures that we propose to adopt in 30 CFR 780.28 receive support from section 515(b)(2) of SMCRA,[417] which requires that surface coal mining and reclamation operations ''restore the land affected to a condition capable of supporting the uses which it was capable of supporting prior to any mining, or higher or better uses of which there is a reasonable likelihood.'' Perennial and intermittent streams provide important fish and wildlife habitat, which almost always is one of the uses that the land was capable of supporting before mining. Section 515(b)(10) of SMCRA [418] also provides statutory authority for proposed 30 CFR 780.28. In relevant part, section 515(b)(10) of SMCRA requires that surface coal mining and reclamation operations ''minimize the disturbances to the prevailing hydrologic balance at the mine-site and in associated offsite areas and to the quality and quantity of water in surface and ground water systems both during and after surface coal mining operations and during reclamation by . . . (G) such other actions as the regulatory authority may prescribe.''

Paragraphs (b)(10)(B)(i) and (b)(24) of section 515 of SMCRA [419] provide support for the buffer zone protections that proposed 30 CFR 780.28 would afford to perennial and intermittent streams. Section 515(b)(10)(B)(i) of SMCRA,[420] which, in relevant part, requires that surface coal mining operations be conducted ''so as to prevent, to the extent possible using the best technology currently available, additional contributions of suspended solids to streamflow, or runoff outside the permit area,'' provides the primary

[402] 30 U.S.C. 1257(b)(10), (11), and (14); 1258(a)(9) and (13); 1260(b); 1265(b)(2), (4), (9), (10), (14), (17), and (24); 1265(c)(4) and (e)(3); 1266(b)(4) and (b)(9) through (12).

[403] 30 U.S.C. 1260(b)(3).

[404] 30 U.S.C. 1202.

[405] 30 U.S.C. 1202(a).

[406] 30 U.S.C. 1202(c).

[407] 30 U.S.C. 1202(d).

[408] 30 U.S.C. 1202(f).

[409] 30 U.S.C. 1211(c)(2).

[410] *Id.*

[411] 30 U.S.C. 1211(c).

[412] 30 U.S.C. 1257 and 1258.

[413] *In re Permanent Surface Mining Regulation Litig.,* 653 F.2d 514, 527 (D.C. Cir. 1981) (en banc).

[414] *Id.* at 522.

[415] *PSMRL I, Round I,* 1980 U.S. Dist. LEXIS 17722 at *85 (D.D.C. 1980), 14 Env't Rep. Cas. (BNA) 1083, 10 Envtl. L. Rep. (Envtl. Law Inst.) 20208 (citing to *Mourning* v. *Family Publ'n Serv.,* 411 U.S. 356, 372 (1973)).

[416] 30 U.S.C. 1265(b)(23).

[417] 30 U.S.C. 1265(b)(2).

[418] 30 U.S.C. 1260(b)(10).

[419] 30 U.S.C. 1265(b)(10)(B)(i) and (b)(24).

[420] 30 U.S.C. 1265(b)(10)(B)(i).

statutory authority for that minimum buffer width. The prohibition on disturbing the buffer zone also would implement section 515(b)(24) of SMCRA,[421] which provides that surface coal mining and reclamation operations must be conducted to minimize disturbances to and adverse impacts on fish, wildlife, and related environmental values to the extent possible using the best technology currently available.

Proposed Paragraph (a): Clean Water Act Requirements

Proposed paragraph (a) would specify that a person may conduct surface mining activities in waters of the United States only if that person first obtains all necessary authorizations, certifications, and permits under the Clean Water Act, 33 U.S.C. 1251 *et seq.* This proposed paragraph is an informational provision that would be consistent with section 702(a) of SMCRA,[422] which provides that ''[n]othing in this Act shall be construed as superseding, amending, modifying, or repealing'' the Clean Water Act, any rule or regulation adopted under the Clean Water Act, or any state laws enacted pursuant to the Clean Water Act. Proposed paragraph (a) would operate in tandem with proposed 30 CFR 773.17(h), which would add a new permit condition requiring that the permittee obtain all necessary authorizations, certifications, and permits in accordance with Clean Water Act requirements before conducting any activities that require approval, authorization, or certification under the Clean Water Act. Permit conditions are directly enforceable under SMCRA. Therefore, addition of the permit condition in proposed 30 CFR 773.17(h) would mean that the SMCRA regulatory authority must take enforcement action if the permittee does not obtain all necessary Clean Water Act authorizations, certifications, and permits before beginning any activity under the SMCRA permit that also requires approval or authorization under the Clean Water Act.

Proposed Paragraph (b): When must I comply with this section?

Proposed paragraph (b)(1) would apply 30 CFR 780.28 to permit applications to conduct surface mining activities in or through a perennial, intermittent, or ephemeral stream or on the surface of lands within 100 feet, measured horizontally, of perennial or intermittent streams.[423] The 100-foot distance reflects the 100-foot buffer zone that 30 CFR 816.57(a) establishes for perennial and intermittent streams. The preamble to proposed 30 CFR 816.57(a) explains the rationale for the 100-foot buffer zone width. Activities include, but are not limited to, mining through or diverting streams; constructing sedimentation ponds, excess spoil fills, and coal mine waste disposal facilities in or near streams; and constructing stream crossings for roads and utilities, as well as the full range of mining and reclamation activities that the application may propose to take place outside the stream channel but on the surface of lands within 100 feet of the stream.

Proposed paragraph (b)(2), in combination with proposed paragraph (e)(2) and 30 CFR 816.57, would prohibit mining-related activities in or within 100 feet of perennial and intermittent streams unless the applicant demonstrates, and the regulatory authority finds in writing, that the proposed activity would not (i) preclude any premining use or any designated use under the Clean Water Act of the affected stream segment following the completion of mining and reclamation; (ii) result in the conversion of the affected stream segment from intermittent to ephemeral, from perennial to intermittent, or from perennial to ephemeral; (iii) cause or contribute to a violation of water quality standards under the Clean Water Act; or (iv) cause material damage to the hydrologic balance outside the permit area. Proposed paragraph (b)(2)(iv) would duplicate the finding required by 30 CFR 773.15(e). Proposed paragraphs (b)(2)(i) through (iii) are similar to subsets of the definition of material damage to the hydrologic balance outside the permit area, but they differ from the definition of that term and 30 CFR 773.15(e) in that they would apply within the permit area as well as outside it. Proposed paragraphs (b)(2)(i) and (ii) would apply to stream segments within the permit area only after the completion of mining and reclamation, consistent with section 515(b)(10) of SMCRA,[424] which provides for minimization, not prevention, of disturbances to the prevailing hydrologic balance at the minesite.

To enhance fish and wildlife habitat, as required by section 515(b)(24) of SMCRA,[425] proposed paragraph (b)(3)(i) would require that the permit application include plans for establishment of a riparian corridor at least 100 feet wide on each side of a perennial, intermittent, or ephemeral stream segment[426] that remains after mining or that is restored as part of the reclamation process. The preamble to proposed 30 CFR 780.16 explains why we selected the minimum 100-foot width for the riparian corridor.

Proposed paragraph (b)(3)(ii) would require that disturbed areas within the corridor be planted with native species, including species adapted to and suitable for planting in riparian zones within that corridor. It also would require use of native trees and shrubs in previously forested areas or in areas that would revert to forest under conditions of natural succession. Creation of a riparian corridor populated with native species is part of the best technology currently available to minimize adverse impacts on fish, wildlife, and related environmental values and to achieve enhancement of those resources, as required by section 515(b)(24) of SMCRA.[427] Nothing in proposed paragraph (b)(3) would require planting of hydrophilic species in riparian corridors or portions of riparian corridors that are incapable of providing the necessary moisture or other growing conditions. In those situations, proposed paragraph (b)(3)(ii) would require that the riparian corridor be planted with native species appropriate to the conditions.

Proposed paragraph (b)(3)(iii) would provide that the proposed riparian corridor requirement would not apply to prime farmland historically used for cropland because 30 CFR 785.17(e)(1) provides that the postmining land use of prime farmland historically used for cropland must be cropland. The proposed riparian corridor requirement also would not apply to situations in which revegetation would be incompatible with an approved postmining land use that is implemented during the revegetation responsibility period before final bond release. Finally, the riparian corridor requirement would not apply to stream segments buried beneath an excess spoil fill or a coal mine waste disposal facility pursuant to proposed paragraph (d).

Proposed Paragraph (c): What additional requirements apply to an application that proposed to mine through or divert a perennial, intermittent, or ephemeral stream?

Proposed paragraph (c)(1) would require that the proposed postmining drainage pattern of perennial,

[421] 30 U.S.C. 1265(b)(24).

[422] 30 U.S.C. 1292(a).

[423] See the discussion of proposed 30 CFR 780.16(c) in this preamble for an explanation of how this distance must be measured.

[424] 30 U.S.C. 1265(b)(10).

[425] 30 U.S.C. 1265(b)(24).

[426] See the discussion of proposed 30 CFR 780.16(c) in this preamble for an explanation of how this distance must be measured.

[427] 30 U.S.C. 1265(b)(24).

intermittent, and ephemeral stream channels to be restored after the completion of mining be similar to the premining drainage pattern. In addition to its ecological benefits, this requirement would better implement the requirement in section 515(b)(3) of SMCRA [428] that the permittee ''restore the approximate original contour of the land.'' The proposed rule would allow the regulatory authority to approve deviations from the premining drainage pattern when necessary to ensure stability, to promote enhancement of fish and wildlife habitat consistent with sections 515(b)(24) and 516(b)(11) of SMCRA,[429] or to prevent or minimize excessive downcutting (deepening) of reconstructed stream channels. For example, additional meanders may be needed to minimize channel erosion and downcutting when restoring streams in areas with a badlands-type topography that existed prior to mining.

Proposed paragraph (c)(2) would establish additional requirements for permit applications that propose to mine through or permanently or temporarily divert a perennial or intermittent stream. Proposed paragraph (c)(2)(i) would reiterate that the applicant must meet the requirements of proposed paragraphs (a) through (c)(1). Proposed paragraph (c)(2)(ii) would require that the applicant demonstrate that there is no reasonable alternative that would avoid mining through or diverting the stream. Proposed paragraph (c)(2)(iii) would require that the operation be designed to minimize the extent to which the stream will be mined through or diverted. Proposed paragraph (c)(2)(iv) would require that the applicant demonstrate that the techniques in the reclamation plan will restore the form and ecological function of the affected stream segment, as required by 30 CFR 816.57(b).

Proposed paragraph (c)(2)(iv)(A) would require the selective placement of aquitards (barriers to groundwater infiltration) within the backfill or fill when necessary to restore perennial and intermittent streams. Placement of a layer of lower-permeability spoil or other material near the surface but below the root zone for trees and shrubs could provide the subsurface flow needed to restore flow in perennial and intermittent stream segments. Construction of aquitards would have the additional benefit of quickly removing water that otherwise would have infiltrated the fill and could have emerged as leachate with undesirable concentrations of total dissolved solids or other parameters that could degrade downstream waters.

Proposed paragraph (c)(2)(iv)(B) would require that the permit application include a separate bond calculation for the costs of restoring the ecological function of the stream. It also would require that, before permit issuance, the permit applicant post a surety bond, a collateral bond, or a combination of surety and collateral bonds to cover that cost. A self-bond is not appropriate to guarantee restoration of a stream's ecological function because of the risk that the company may cease to exist during the time required to accomplish that restoration. In addition, a self-bond does not require that the permittee file financial instruments or collateral with the regulatory authority, nor is there any third party obligated to complete the reclamation or pay the amount of the bond if the permittee defaults on reclamation obligations.

Proposed paragraph (c)(2)(v) would require that the applicant comply with the stream restoration and stream-channel diversion design requirements in existing 30 CFR 816.43. As part of our effort to consolidate permitting requirements in subchapter G of our regulations, we propose to move the stream-channel diversion design provisions in the last sentence of existing 30 CFR 816.43(a)(3) and in paragraphs (b)(2) through (b)(4) of existing 30 CFR 816.43 to 30 CFR 780.28(c)(2)(v) and (vi).

We also propose to extend the design requirements of proposed paragraph (c)(2)(v)(A) and the design certification requirements of proposed paragraph (c)(2)(vi) to perennial and intermittent stream channels to be restored after the completion of mining. Our existing rules do not address restored stream channels, an oversight that we propose to correct because there is no legal or scientific basis for the absence of standards for the restoration of stream channels. Restored stream channels and permanent stream-channel diversions are equally important in terms of their value to the fish, wildlife, and related environmental values protected by section 515(b)(24) of SMCRA.[430] In addition, there is no legal, technical, or scientific reason why designs for restored stream channels should be subject to less rigorous certification standards than designs for stream-channel diversions.

Proposed paragraph (c)(2)(v)(A) would require that designs for permanent stream-channel diversions, temporary stream-channel diversions that will be in use for 2 or more years, and stream channels that are to be restored after the completion of mining replicate or approximate the premining characteristics of the original stream channel to promote the recovery and enhancement of the aquatic habitat and to minimize adverse alteration of stream channels on and off the site, including channel deepening or enlargement. This provision is similar to the last sentence of existing 30 CFR 816.43(a)(3), with a few exceptions.

First, the existing rule applies only to permanent stream-channel diversions. Applying the design requirements of proposed paragraph (c)(2)(v)(A) to temporary stream-channel diversions that will be in use for 2 or more years would reduce the damage to aquatic resources caused by temporary diversions that remain in use for extended periods, consistent with the requirement in section 515(b)(24) of SMCRA [431] to minimize adverse impacts on fish, wildlife, and related environmental values to the extent possible, using the best technology currently available. In recognition of the shorter lifespan of temporary diversions, we propose to specify that, for temporary stream-channel diversions that will remain in use for 2 or more years, the vegetation proposed for planting in the riparian zone need not include species that would not reach maturity until after the diversion is removed. In other words, faster-growing species like willows, alders, and poplars or early successional natural riparian vegetation would be acceptable.

Second, proposed paragraph (c)(2)(v)(A) would specify that the premining characteristics of the original stream channel include, but are not limited to, the baseline stream pattern, profile, dimensions, substrate, habitat, and natural vegetation growing in the riparian zone. The addition of this clarification is intended to make our regulations more consistent with similar requirements under section 404 of the Clean Water Act and its implementing regulations. It also would minimize adverse impacts on fish, wildlife, and related environmental values to the extent possible, using the best technology currently available, as required by section 515(b)(24) of SMCRA.[432]

Third, proposed paragraph (c)(2)(v)(A) would specify that the design must minimize adverse alteration of stream channels on and off the site, including channel deepening or enlargement. This provision would minimize adverse impacts on fish, wildlife, and related

[428] 30 U.S.C. 1265(b)(3).

[429] 30 U.S.C. 1265(b)(24) and 1266(b)(11).

[430] 30 U.S.C. 1265(b)(24).

[431] *Id.*

[432] *Id.*

environmental values to the extent possible, using the best technology currently available, as required by section 515(b)(24) of SMCRA,[433] because channel deepening or enlargement can reduce the frequency and volume of flows over the flood-plain and contribute sediment to streamflow and streambeds through streambank erosion.

Proposed paragraph (c)(2)(v)(B) would require that the stream-channel design ensure that the hydraulic capacity of all temporary and permanent stream-channel diversions is at least equal to the hydraulic capacity of the unmodified stream channel immediately upstream from the diversion and no greater than the hydraulic capacity of the unmodified stream channel immediately downstream from the diversion. Existing 30 CFR 816.43(b)(2) applies the same standard for the hydraulic capacity of the diversion both upstream and downstream of the diversion; *i.e.,* the designed hydraulic capacity of the diversion must be at least equal to the hydraulic capacity of the unmodified stream channel immediately upstream and downstream from the diversion. Our proposal to require that the designed hydraulic capacity of the diversion be no greater than (rather than at least equal to) the hydraulic capacity of the unmodified stream channel immediately downstream from the diversion would protect against the scouring and other adverse impacts that could result from a sudden constriction in channel capacity if the diversion was allowed to exceed the capacity of the unmodified stream channel downstream of the diversion. Therefore, proposed paragraph (c)(2)(v)(B) would be consistent with the requirement in section 515(b)(24) of SMCRA [434] to minimize adverse impacts on fish, wildlife, and related environmental values to the extent possible, using the best technology currently available.

Proposed paragraph (c)(2)(v)(C) would require that all temporary and permanent stream-channel diversions be designed so that the combination of channel, bank, and flood-plain configuration is adequate to pass safely the peak runoff of a 10-year, 6-hour precipitation event for a temporary diversion and a 100-year, 6-hour precipitation event for a permanent diversion. Proposed paragraph (c)(2)(v)(C) is substantively identical to existing 30 CFR 816.43(b)(3). We invite comment on whether the design event for a temporary diversion should be raised to the 25-year, 6-hour event to provide added safety and protection against overtopping.

Proposed paragraph (c)(2)(vi) would require submission of a certification from a qualified registered professional engineer that the designs for all stream-channel diversions and all stream channels to be restored after the completion of mining meet the design requirements of 30 CFR 780.28 and any additional design criteria established by the regulatory authority. Our proposed rule differs from the design certification elements of existing 30 CFR 816.43(b)(4) in that we propose to expand the design certification requirement to apply to all stream channels to be restored after the completion of mining, not just to stream-channel diversions as in the existing rule. As discussed above, there is no legal, technical, or scientific reason to apply less rigorous design and certification requirements to restored stream channels than to permanent stream-channel diversions. In addition, we propose to require that the engineer certify that the design meets the design requirements of 30 CFR 780.28, not the performance standards as in the existing rule, because performance standards do not apply directly to designs. Finally, we propose to specify that the certification may be limited to the location, dimensions, and physical characteristics of the stream channel; it need not include restoration of ecological function, which may be beyond the professional competency of an engineer.

Proposed Paragraph (d): What requirements apply to an application to construct an excess spoil fill or coal mine waste disposal facility in a perennial or intermittent streams?

Proposed paragraph (d)(1) would apply the requirements of proposed paragraph (d)(2) in place of the requirements of proposed paragraph (b)(2) if the applicant proposes to construct an excess spoil fill or coal mine waste disposal facility that would encroach upon any part of a perennial or intermittent stream. We are proposing paragraph (d) because we recognize that some of the requirements of proposed paragraph (b)(2) that would apply to activities in streams cannot be met with respect to a stream segment that is buried underneath an excess spoil fill or a coal mine waste disposal facility.

A permit application that contains a proposal to construct an excess spoil fill or a coal mine waste disposal facility that would not encroach upon any part of a perennial or intermittent stream would not be subject to the requirements of proposed paragraph (d)(2). However, if the proposed fill or disposal facility would disturb the surface of land within 100 feet of a perennial or intermittent stream,[435] the application would have to comply with the requirements of proposed paragraph (b)(2).

Proposed paragraph (d)(2) would identify the demonstrations that a permit application must include if the applicant proposes to construct an excess spoil fill or coal mine waste disposal facility in a perennial or intermittent stream. The legal authority for the proposed demonstration requirements is set forth in detail in the introductory paragraphs of the discussion of proposed 30 CFR 780.28 in this preamble and will not be repeated here. The demonstrations that we propose to require are a combination of other regulatory program and Clean Water Act requirements; measures that constitute the best technology currently available to minimize any adverse impacts on fish, wildlife, and related environmental values, as required by section 515(b)(24) of SMCRA; [436] and fish and wildlife enhancement measures intended to offset any unavoidable long-term damage to fish, wildlife, and related environmental values.

Proposed paragraph (d)(2)(i) would require that the applicant demonstrate that the operation has been designed to minimize the amount of excess spoil or coal mine waste generated, which would have the effect of minimizing the need for or the size of the excess spoil fill or coal mine waste disposal facility. This finding corresponds to proposed 30 CFR 780.35(b) for excess spoil. For coal mine waste, this finding in essence would require a description of the steps taken to minimize the amount of coal mine waste generated by the coal preparation process, such as the use of filter presses, or an explanation of why minimization measures are not practicable.

Proposed paragraph (d)(2)(ii) would require that the applicant demonstrate that, after evaluating all potential upland locations in the vicinity of the proposed operation, there is no practicable alternative that would avoid placement of excess spoil or coal mine waste in a perennial or intermittent stream. Potential upland locations that must be considered include, but are not limited to, abandoned mine lands and existing fills with excess capacity. The application must identify potential locations such as the examples

[433] *Id.*

[434] *Id.*

[435] See the discussion of proposed 30 CFR 780.16(c) in this preamble for an explanation of how this distance must be measured.

[436] *Id.*

mentioned above and explain why those locations are not suitable or practicable. We anticipate that, for excess spoil, the permit applicant and regulatory authority would conduct this analysis in a manner similar to that described in Kentucky Reclamation Advisory Memorandum (RAM) 145, which establishes a fill placement optimization process for steep-slope mining in Kentucky.[437] For coal mine waste, the application would have to explain why an alternative configuration, location, or coal mine waste disposal method is not practicable.

Proposed paragraph (d)(2)(iii) would require that the applicant demonstrate that, to the extent possible using the best technology currently available, the proposed excess spoil fill or coal mine waste disposal facility has been designed to minimize both placement of excess spoil or coal mine waste in a perennial or intermittent stream and adverse impacts on fish, wildlife, and related environmental values. This provision corresponds in part to the fill optimization requirements of proposed 30 CFR 780.35(c). We anticipate that the RAM 145 process mentioned above may assist in meeting this requirement. Proposed paragraph (d)(2)(iii) would implement, in part, section 515(b)(24) of SMCRA,[438] which provides that surface coal mining and reclamation operations must be conducted to minimize disturbances and adverse impacts on fish, wildlife, and related environmental values to the extent possible, using the best technology currently available.

Proposed paragraph (d)(2)(iv) would require that the applicant demonstrate that the fish and wildlife enhancement plan for the proposed operation includes measures that would fully and permanently offset any long-term adverse impacts that the fill, refuse pile, or coal mine waste impoundment would have on fish, wildlife, and related environmental values within the footprint of the fill, refuse pile, or coal mine waste impoundment. The regulatory authority would determine the meaning of ''fully and permanently offset'' on a case-by-case basis. At a minimum, riparian corridors must be protected by conservation easements (dedicated to an appropriate agency or organization) or deed restrictions so that the newly planted vegetation is not destroyed after bond release. We invite comment on whether the final rule could or should include more specific standards or criteria for determining the meaning of ''fully and permanently offset.'' We also invite comment on whether mitigation required pursuant to section 404 of the Clean Water Act[439] may satisfy this requirement and whether past Clean Water Act mitigation measures have been successful. We encourage submission of data to document the success or failure of those measures.

Proposed paragraph (d)(2)(v) would require that the applicant demonstrate that the excess spoil fill or coal mine waste disposal facility has been designed in a manner that will not cause or contribute to a violation of water quality standards or result in the formation of toxic mine drainage. The demonstration that this paragraph would require is intended to ensure the proposed operation will not cause material damage to the hydrologic balance outside the permit area. In particular, it is intended to ensure that discharges to surface water or groundwater from the excess spoil fill or coal mine waste disposal facility would not have a substantial adverse impact on water quality or aquatic biota in receiving streams. As defined in 30 CFR 701.5, toxic mine drainage means any discharge that ''contains a substance that through chemical or physical effects is likely to kill, injure, or impair biota commonly present in that area that might be exposed to it.''

Proposed paragraph (d)(2)(vi) would require that the applicant demonstrate that the revegetation plan submitted under proposed 30 CFR 780.12(g) requires reforestation of a completed excess spoil fill if the land is forested at the time of application or if it would revert to forest under conditions of natural succession. This measure is intended to minimize the adverse impacts of the fill on watershed hydrology, especially the quantity and quality of surface runoff, and aquatic life in the stream.

Proposed Paragraph (e): What are the regulatory authority's responsibilities?

Proposed paragraph (e)(1)(i) would require that the regulatory authority establish objective standards for determining when the ecological function of a restored or permanently-diverted perennial or intermittent stream has been restored. Objective standards are essential to fair enforcement of the requirement for restoration of the ecological function of streams and to enable permit applicants to develop appropriate and comprehensive reclamation plans. Proposed paragraph (e)(1)(ii) would require that, in establishing these standards, the regulatory authority coordinate with the Clean Water Act permitting authority to ensure compliance with all Clean Water Act requirements.

Proposed paragraph (e)(1)(iii) would specify that the standards established by the regulatory authority must comply with the functional restoration requirements of proposed 30 CFR 816.57(b)(2). In relevant part, proposed 30 CFR 816.57(b)(2) would require that a stream flowing through a restored stream channel or stream-channel diversion have a biological condition adequate to support the designated uses of the original stream segment under section 101(a) or 303(c) of the Clean Water Act[440] before mining. This provision may allow limited changes in the species composition of the array of insects, fish, and other aquatic organisms found in a stream flowing through a restored stream channel or stream-channel diversion, as long as the changes do not preclude existing uses or attainment of designated uses. Proposed 30 CFR 816.57(b)(2) also would require that the biological condition of the restored stream be determined using a protocol that meets the requirements of proposed 30 CFR 780.19(e)(2) and that populations of organisms used to determine the postmining biological condition of the stream segment be self-sustaining within that segment. We propose to include this provision because the presence of individual organisms that happen to drift into the reconstructed channel from other areas is not an indicator of restoration of the ecological function of the restored stream segment.

Proposed paragraph (e)(2) specifies that the regulatory authority may not approve an application that includes any activities included in proposed paragraph (a)(1) unless the regulatory authority first makes a written finding that the applicant has fully satisfied all applicable requirements of 30 CFR 780.28. It also would require that the finding be accompanied by a detailed explanation and rationale for the finding. These requirements are appropriate, given the purposes and provisions of SMCRA discussed in the introductory paragraphs of the preamble to 30 CFR 816.57 and the typically high value of perennial and intermittent streams to fish and wildlife.

[437] Kentucky Energy and Environment Cabinet, Department for Natural Resources, Reclamation Advisory Memorandum # 145 (December 16, 2009). Available at *http://minepermits.ky.gov/RAMS/RAM145.pdf* (last accessed June 25, 2015).

[438] *30 U.S.C. 1265(b)(24).*

[439] 33 U.S.C. 1344.

[440] 33 U.S.C. 1251(a) and 1313(c).

15. Section 780.29: What information must I include in the surface-water runoff control plan?

We propose to revise this section to require that each application include a surface-water runoff control plan. We propose to require this plan because uncontrolled surface-water runoff can and has been known to cause flooding downgradient of the operation, which in turn can result in material damage to the hydrologic balance outside the permit area, property damage, and loss of human life, as well as adverse impacts on fish, wildlife, and related environmental values. Section 510(b)(3) of SMCRA [441] provides that the regulatory authority may not approve a permit application unless the application affirmatively demonstrates and the regulatory authority finds in writing that the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area. Section 515(b)(24) of SMCRA [442] requires that surface coal mining and reclamation operations minimize adverse impacts on fish, wildlife, and related environmental values.

Proposed paragraph (a)(1) specifies that the plan must explain how surface-water runoff will be handled in a manner that will prevent peak discharges from the proposed permit area, both during and after mining and reclamation, from exceeding premining peak discharges from the same area for the same-size precipitation event. Proposed paragraph (a)(1) also requires use of the appropriate regional NRCS synthetic storm distribution to estimate peak discharges. Design criteria for hydraulic structures intended to handle overland flow from precipitation events are based in part on the peak runoff rate and/or runoff volume from the area draining to the structure. Actual precipitation records for small drainage areas generally are not available, so engineers typically rely upon mathematical models instead. The distribution of rainfall intensities is one of the primary inputs to those models. We propose to require use of the appropriate regional NRCS synthetic storm distribution to determine runoff intensities and peak flows because it is a widely accepted, prudent engineering design methodology.

Maximum runoff from a drainage area occurs when the peak intensity of the rainfall event coincides with the time of concentration (the length of time between the beginning of the rainfall event and the time when runoff from the entire drainage area first arrives at the outlet for the drainage area). Typically, for precipitation events with the same return interval (2 years, 10 years, 100 years, etc.), peak intensity is much greater for storms of short duration—the shorter the duration, the greater the maximum intensity and the greater the amount of peak flow from surface runoff. Traditionally, peak stormwater runoff from a drainage area was determined using a storm duration approximately 1.7 times greater than the time of concentration. Use of the NRCS synthetic storm distribution accomplishes this determination automatically. For example, precipitation intensity during the 1-hour or 6-hour increment with the highest rainfall amount within the 24-hour 10-year synthetic distribution (theoretical storm event) is identical to precipitation intensity and total rainfall during traditional 1-hour and 6-hour 10-year events. Therefore, it is not necessary to select a storm duration related to the time of concentration to capture the greater intensities of events of shorter duration.

Proposed paragraph (a)(2) specifies that the explanation in paragraph (a)(1) must consider the findings in the PHC determination prepared under § 780.20.

Proposed paragraph (b) would require that the plan include a surface-water runoff monitoring and inspection program that would provide sufficient precipitation and stormwater discharge data for the proposed permit area to evaluate the effectiveness of surface-water runoff control practices. The surface-water runoff monitoring and inspection program must specify criteria for monitoring, inspection, and reporting consistent with 30 CFR 816.34(d), which contains the corresponding performance standards. The program must contain a monitoring point density that adequately represents the drainage pattern and drainage distribution across the entire proposed permit area, with a minimum of one monitoring point for each watershed discharge point. We invite comment on whether the proposed minimum monitoring point density standard is too high or too low.

Proposed paragraph (c) would require that the permit application include descriptions, maps, and cross-sections of all runoff control structures, including diversions and other channels used to collect and convey surface-water runoff. Existing 30 CFR 780.29 applies this requirement only to diversions, which, under 30 CFR 816.43, could be construed as excluding channels constructed to collect and convey surface runoff from the area to be disturbed by the mining operations. Under proposed paragraph (c), all such channels would have to be designed in accordance with the standards in 30 CFR 816.43. Proposed paragraph (c) is intended to ensure that these channels are safe, stable, and of adequate capacity.

16. Section 780.35: What information must I provide concerning the minimization and disposal of excess spoil?

We propose to revise, reorganize, and expand our existing rules governing permitting requirements for the disposal of excess spoil.

Background and Rationale for the Proposed Rule Changes

Disposal of excess spoil and coal mine waste often involves the filling of substantial portions of stream valleys, especially in central Appalachia. Based upon our regulatory experience, updated science, and modern engineering practices, we propose to revise our regulations to minimize the creation of excess spoil and to ensure that excess spoil fills and coal mine waste disposal facilities are located and designed to minimize disturbances and adverse impacts on fish, wildlife, and related environmental values to the extent possible, using the best technology currently available, as required by sections 515(b)(24) and 516(b)(11) of SMCRA.[443]

Our existing regulations pertaining to the disposal of excess spoil primarily focus on ensuring that fills are safe and stable. We propose to add several requirements intended to promote environmental protection, including minimization of the adverse environmental impacts of fill construction in perennial and intermittent streams. We recognize that section 515(b)(22) of SMCRA,[444] which establishes standards for the disposal of excess spoil, does not include any requirements specifically oriented toward environmental protection, but instead focuses on engineering standards intended to promote stability, prevent mass movement, and control infiltration of water. However, section 515(b)(24) of SMCRA [445] does require that surface coal mining and reclamation operations be conducted in a manner that minimizes disturbances to, and adverse impacts on, fish, wildlife, and related environmental values to the extent possible, using the

[441] 30 U.S.C. 1260(b)(3).

[442] 30 U.S.C. 1265(b)(24).

[443] 30 U.S.C. 1265(b)(24) and 1266(b)(11).

[444] 30 U.S.C. 1265(b)(22).

[445] 30 U.S.C. 1265(b)(24).

best technology currently available. Section 515(b)(24) [446] applies to the disposal of excess spoil both by its own terms (disposal of excess spoil is a part of surface coal mining and reclamation operations) and through section 515(b)(22)(I),[447] which requires that the placement of excess spoil meet ''all other provisions of this Act.'' SMCRA contains numerous environmental protection requirements that apply to all surface coal mining and reclamation operations and all aspects of those operations, including the disposal of excess spoil. The fact that section 515(b)(22) [448] does not mention environmental protection in no way suggests that excess spoil fills need not comply with the environmental protection provisions of SMCRA or that we lack the authority to adopt regulations establishing environmental protection requirements for those structures.

The goal of the excess spoil minimization and fill size optimization requirements of proposed paragraphs (b) and (c) is to minimize fill footprints and thus minimize disturbances of forests, perennial and intermittent streams, and riparian vegetation, consistent with the requirement in sections 515(b)(24) and 516(b)(11) of SMCRA [449] to minimize disturbances and adverse impacts on fish, wildlife, and related environmental values to the extent possible using the best technology currently available.

As part of our oversight activities, we conducted studies in 1999 in Kentucky, Virginia, and West Virginia to determine how state regulatory authorities were administering SMCRA regulatory programs regarding restoration of approximate original contour. From our review of permit files and reclaimed mines, we determined that, typically, some of the spoil placed in excess spoil fills could have been retained on or returned to mined-out areas. See ''An Evaluation of Approximate Original Contour and Postmining Land Use in Kentucky'' (OSMRE, September 1999); ''An Evaluation of Approximate Original Contour Variances and Postmining Land Uses in Virginia'' (OSMRE, September 1999); and ''Final Report: An Evaluation of Approximate Original Contour and Postmining Land Use in West Virginia'' (OSMRE, May 1999).

In many instances, we found that the permit application overestimated the anticipated volume of excess spoil that the operation would produce. In addition, fills were designed and constructed larger than necessary to accommodate the anticipated excess spoil, which resulted in the unnecessary disturbance of additional land. Kentucky, Virginia, and West Virginia worked with us to develop enhanced guidance on material balance determinations, spoil management, and approximate original contour determinations to correct these problems to the extent feasible under the existing regulations. The regulatory authorities in those states have adopted policies based on that guidance for use in reviewing permit applications.[450] We also developed guidance for use under the Tennessee federal regulatory program.[451]

If adopted, the rule that we are proposing today would provide further authority for the policies in place in Kentucky, Tennessee, Virginia, and West Virginia. It would strengthen the enforceability of decisions based on those policies and provide national consistency by ensuring that certain basic requirements will be applied nationwide, including in those states that have not adopted such policies. The environment, the public, and the regulated community are best served by the adoption of national regulations to clarify environmental considerations concerning the generation and disposal of excess spoil.

Proposed Paragraph (a): Applicability.

This proposed paragraph would clarify that the provisions of 30 CFR 780.35 apply only to permit applications that propose to generate excess spoil.

Proposed Paragraph (b): Demonstration of Minimization of Excess Spoil

Proposed paragraph (b)(1) would require a demonstration, with supporting calculations and other documentation, that the operation has been designed to minimize, to the extent possible, the volume of excess spoil that the operation will generate. Designing the operation in this fashion should ensure that the maximum amount of overburden is returned to the mined-out area. Our goal is to ensure that the volume of overburden placed in excess spoil fills is minimized to the maximum extent possible. Minimizing the volume of overburden placed in excess spoil fills is critical to minimizing the amount of undisturbed land affected by fill construction and to ensuring that those fills bury or otherwise impact the shortest length of stream possible.

Proposed paragraph (b)(2) would specify the factors that the permit applicant and the regulatory authority must consider in determining whether the proposed operation has been designed to minimize the creation of excess spoil to the extent possible. It requires consideration of safety and stability needs and requirements; revegetation and postmining land use needs and requirements; the need for drainage structures, access roads, and berms; applicable regulations concerning backfilling, compaction, grading, and restoration of the approximate original contour; and other relevant regulatory requirements, in particular those pertaining to protection of water quality and fish, wildlife, and related environmental values. Some or all of those factors may limit the amount of spoil that can be returned to the mined-out area, especially the requirements related to safety, stability, and postmining land use. Also, if the regulatory authority does not approve the proposed postmining land use, the applicant and the regulatory authority would need to revisit the demonstration to determine whether it must be revised to reflect the needs and attributes of the postmining land use that is finally approved.

In addition, proposed paragraph (b)(2)(iii) would specify that drainage structures, access roads, and berms on the perimeter of the backfilled area must not exceed a total width of 20 feet unless the permit applicant can demonstrate a need for a greater width. This restriction would maximize placement of overburden material on the mined-out area and minimize the generation and placement of excess spoil. In many cases, construction of access roads or drainage controls wider or larger than necessary prevents maximum spoil placement within the mined-out area, thus creating larger excess spoil fills and burial of a greater length of perennial or intermittent stream segments than absolutely necessary. We propose to select 20 feet as the maximum width because that is the typical width of a drainage bench on the face of a fill or embankment. Twenty feet should provide adequate room for drainage and sediment controls during the period between final grading and establishment of vegetation. Twenty feet also would afford adequate access for equipment in the event that maintenance is required before final bond release. We seek comment on

[446] *Id.*

[447] 30 U.S.C. 1265(b)(22)(I).

[448] 30 U.S.C. 1265(b)(22).

[449] 30 U.S.C. 1265(b)(24) and 1266(b)(11).

[450] Kentucky Department of Natural Resources Reclamation Advisory Memorandum No. 145 (2009), Virginia Department of Mines, Minerals and Energy Guidance Memorandum 4–02 (2002), West Virginia Department of Environmental Protection Final Approximate Original Contour Document Guidance Policy (''AOC+'') (1999).

[451] OSMRE Knoxville Field Office Engineering Procedure 2.1: Steep Slope Mining: AOC and Excess Spoil Determination (2001).

whether the maximum width should be larger or smaller than 20 feet.

To attain the goal of minimizing both the amount of land disturbed and the length of perennial and intermittent stream segments buried or otherwise adversely affected, proposed paragraph (b)(3) would clarify that premining elevations do not operate as a cap on the elevation of backfilled areas. Instead, the final elevation would be determined on the basis of the factors listed in proposed 30 CFR 780.35(b)(2), together with the requirement that the final surface configuration be compatible with the surrounding terrain and be consistent with natural premining landforms. For the same reason, proposed paragraph (b)(4) would prohibit the creation of a final-cut impoundment under 30 CFR 816.49(b) or the placement of coal combustion residues or noncoal materials in the mine excavation if doing so would displace spoil removed from the excavation to the extent that the displaced mine spoil would have to be placed in an excess spoil fill.

Proposed Paragraph (c): Fill Capacity Demonstration

Proposed paragraph (c) would require that the application include a demonstration, with supporting calculations and other documentation, that the designed maximum cumulative volume of all proposed excess spoil fills within the permit area is no larger than the capacity needed to accommodate the anticipated cumulative volume of excess spoil that the operation will generate, as calculated under paragraph (b). This requirement is intended to prohibit the practice of designing an operation with a larger number and greater size of excess spoil fills than necessary and then constructing only part of each fill. This practice results in the filling of a greater length of stream than would be necessary if each fill was used to its maximum capacity, especially when using a bottom-up method of fill construction in which the entire footprint of the fill is disturbed either before or shortly after initial placement of excess spoil in the fill. Adoption of proposed paragraph (c) would minimize the adverse impacts of the operation on fish, wildlife, and related environmental values, as required by section 515(b)(24) of SMCRA,[452] by minimizing the amount of land and water disturbed to construct excess spoil fills.

Proposed Paragraph (d): Requirements Related to Perennial and Intermittent Streams

Proposed paragraph (d) would specify that a permit applicant proposing to construct an excess spoil fill in or within 100 feet of a perennial or intermittent stream[453] must comply with the requirements of proposed 30 CFR 780.28 concerning activities in or near perennial or intermittent streams.

Proposed Paragraph (e): Location

Proposed paragraph (e)(1) would require that a permit applicant submit maps and cross-section drawings or models showing the location and profile of all proposed excess spoil fills. This requirement corresponds to the first sentence of existing paragraph (a), which we propose to modernize to allow the use of models at the discretion of the permit applicant and the regulatory authority. Models can be more detailed than either maps or cross-sections. We also propose to require that the application include a profile of each excess spoil fill so that the regulatory authority is able to determine whether the completed fill would meet all applicable surface configuration requirements.

Proposed paragraph (e)(2) would specify that fills must be located on the most moderately sloping and naturally stable areas available. It also would specify that the regulatory authority will determine which areas are available for excess spoil fill construction after considering other requirements of the Act and the regulatory program. This paragraph corresponds to part of existing 30 CFR 816.71(c), which we propose to move to 30 CFR 780.35 because it is a permitting requirement, not a performance standard. We propose to add the provision specifying that the regulatory authority will determine which areas are available for excess spoil fill construction to improve consistency with section 515(b)(22)(E) of SMCRA,[454] which requires that excess spoil be placed ''upon the most moderate slope among those upon which, in the judgment of the regulatory authority, the spoil could be placed in compliance with all the requirements of the Act.'' Because one of the requirements of the Act is the provision in section 515(b)(24)[455] specifying that surface coal mining and reclamation operations must be conducted so as to minimize disturbances and adverse impacts on fish, wildlife, and related environmental values to the extent possible, using the best technology currently available, the location with the most moderate slopes in the vicinity of the proposed operation may not be available if construction of the fill at that location would have greater adverse impact on fish, wildlife, and related environmental values than would construction of the fill at a different location with steeper slopes. In other words, the requirement to place excess spoil on the most moderate slope is subordinate to compliance with other requirements of the Act and regulatory program.

Proposed paragraph (e)(3) provides that, whenever possible, the permit applicant must place fills on or above a natural terrace, bench, or berm if that location would provide additional stability and prevent mass movement. This paragraph corresponds to the remainder of existing 30 CFR 816.71(c), which we propose to move to 30 CFR 780.35 because it is a permitting requirement, not a performance standard. Proposed paragraph (e)(3) is consistent with section 515(b)(22)(E) of SMCRA,[456] which requires that excess spoil be placed ''where possible, upon, or above, a natural terrace, bench, or berm, if such placement provides additional stability and prevents mass movement.'' However, spoil placement upon or above a natural terrace, bench, or berm may not always be possible because section 515(b)(24) of SMCRA[457] provides that surface coal mining and reclamation operations must minimize disturbances and adverse impacts on fish, wildlife, and related environmental values to the extent possible, using the best technology currently available. Implementation of that requirement may entail placement of spoil in a location other than on or above a natural terrace, bench, or berm, provided the alternative location is stable and would have lesser overall adverse impacts on fish, wildlife, and related environmental values.

Proposed Paragraph (f): Design Plans

Proposed paragraph (f) requires that an application for an operation that would generate excess spoil include detailed design plans for each excess spoil fill, prepared in accordance with the requirements of proposed 30 CFR 780.35 and 816.71 through 816.74. Proposed paragraph (f) corresponds to the portion of existing 30 CFR 780.35(a) that requires that the design comply with 30 CFR 816.71 through 816.74. For

[452] 30 U.S.C. 1265(b)(24).

[453] See the discussion of proposed 30 CFR 780.16(c) in this preamble for an explanation of how this distance must be measured.

[454] 30 U.S.C. 1265(b)(22)(E).

[455] 30 U.S.C. 1265(b)(24).

[456] 30 U.S.C. 1265(b)(22)(E).

[457] 30 U.S.C. 1265(b)(24).

clarity and completeness, we propose to add language also requiring compliance with the requirements of 30 CFR 780.35, although those design requirements would apply anyway in the absence of this provision. Proposed paragraph (f) also would require that the applicant design the fill and appurtenant structures using current prudent engineering practices and any additional design criteria established by the regulatory authority. That requirement appears in the first sentence of existing 30 CFR 816.71(b)(1), which we propose to move to 30 CFR 780.35 because it is a design requirement, not a performance standard.

Proposed Paragraph (g): Geotechnical Investigation

Proposed paragraph (g) would require that the application include the results of a geotechnical investigation, with supporting calculations and analyses, of the site of each proposed excess spoil fill, with the exception of those sites at which spoil will be placed only on a preexisting bench under 30 CFR 816.74. This provision corresponds to existing paragraph (b). We propose to add a requirement that the applicant submit supporting calculations and analyses with the geotechnical investigation of the site of each proposed excess spoil fill. The additional data is essential for the permit application reviewer to determine the stability of the proposed design.

Proposed paragraphs (g)(1) through (6) identify information that would have to be submitted with the application to document the geotechnical investigation and its results.

Proposed paragraph (g)(1) would require sufficient foundation investigations, as well as any necessary laboratory testing of foundation material, to determine the design requirements for foundation stability for the site of each fill. This requirement currently appears in existing 30 CFR 816.71(d)(1). We propose to move it to 30 CFR 780.35(g) consistent with our effort to consolidate design requirements in the permitting rules rather than splitting them between the permitting rules and the performance standards. The foundation investigation is an element of the geotechnical investigation that is required for approval of a proposed excess spoil fill in a permit application.

Proposed paragraphs (g)(2) through (6) correspond to, and are substantively identical to, existing paragraphs (b)(1) through (5), except as discussed below.

We propose to revise paragraph (g)(3) to require that the applicant provide the geographic coordinates and a narrative description, rather than just a survey, of all springs, seepage, mine discharges, and groundwater flow observed or anticipated during wet periods in the area of the proposed fill. The added precision will assist the regulatory authority in evaluating the adequacy of the excess spoil fill design.

Proposed paragraph (g)(4) would require that the applicant provide an analysis of the potential effects of any underground mine workings within the proposed permit and adjacent areas, including the effects of any subsidence that may occur as a result of previous, existing, and future underground mining operations. The proposed requirement is similar to the portion of existing 30 CFR 816.71(d)(1) that requires that the analyses of foundation conditions take into consideration the effect of underground mine workings, if any, upon the stability of the fill and appurtenant structures. Existing 30 CFR 780.35(b)(3) also requires a survey of the potential effects of subsidence that may occur as a result of past and future underground mining operations. Our proposed revisions would require that the analysis also consider the potential effects of subsidence from existing underground mining operations, not just past and future operations. The design needs to be capable of withstanding all potential impacts of any subsidence that may occur during the life of the proposed structure. We propose to add the reference to the proposed permit and adjacent areas to ensure that the analysis includes all operations that have the potential to cause subsidence that may affect the proposed fill, not just operations within the proposed permit area.

Proposed paragraph (g)(6) is substantively identical to existing paragraph (b)(5), with the exception that we propose to revise this paragraph to clarify that the stability analyses that it requires must address static, seismic, and post-earthquake (liquefaction) conditions because those conditions are all part of a comprehensive stability analysis.

Proposed Paragraph (h): Operation and Reclamation Plans

Proposed paragraph (h) would require that the permit applicant submit plans for the construction, operation, maintenance, and reclamation of all excess spoil fills in accordance with the requirements of §§ 816.71 through 816.74. This requirement corresponds to a similar provision in existing paragraph (a). However, that provision includes a requirement for plans for the ''removal, if appropriate, of the site and structures.'' Because excess spoil fills are permanent, it is not appropriate to include plans for their removal in the application. Consequently, we propose to replace the requirement for plans for removal of the fills with a requirement for plans for their reclamation, which would consist of final site preparation and revegetation consistent with the approved postmining land use.

Proposed Paragraph (i): Additional Requirements for Bench Cuts or Rock-Toe Buttresses

Proposed paragraph (i) combines overlapping requirements in existing paragraph (c) and 30 CFR 816.71(d)(2) concerning application and design requirements for bench cuts or rock-toe buttresses. We propose to revise the existing requirements by replacing the term ''keyway cuts'' with ''bench cuts.'' The term ''keyway cut'' is technically a cut beneath a dam that is used to extend low-permeability fill material to, but not into, bedrock. The term ''bench cut'' is more appropriate here because it refers to cuts into bedrock, not just down to bedrock, which is essential in the context of fill construction under steep-slope conditions.

Proposed Paragraph (j): Design Certification

Proposed paragraph (j) would require that the application include a certification by a qualified registered professional engineer experienced in the design of earth and rock fills that the design of all fills and appurtenant structures meets the requirements of 30 CFR 780.35. This requirement currently appears in the second sentence of existing 30 CFR 816.71(b)(1), which we propose to move to 30 CFR 780.35 consistent with our effort to consolidate design requirements in the permitting rules rather than splitting them between the permitting rules and the performance standards. We propose no substantive changes to this provision.

17. Section 780.37: What information must I provide concerning access and haul roads?

We propose to revise and reorganize existing paragraphs (a)(1), (2), (3), and (5) into proposed paragraphs (a)(1) and (2) to improve clarity and to eliminate redundancies and unnecessary cross-references. Proposed paragraph (a)(3) would require that the applicant demonstrate how all proposed roads will comply with the applicable requirements of 30 CFR 780.28 (activities in, through, or near streams), 816.150 (general performance standards for roads), and 816.151 (performance standards for primary roads). Section

780.28 is an element of the rule that we are proposing today, while 30 CFR 816.150 and 816.151 are existing rules.

We propose to add paragraph (a)(4) to require that the application identify each road that would be located in or within 100 feet of the channel of a perennial or intermittent stream,[458] each proposed ford of a perennial or intermittent stream that would be used as a temporary route during road construction, any plans to alter or relocate a natural stream channel, and each proposed low-water crossing of a perennial or intermittent stream channel. The regulatory authority would need this information to determine compliance with the applicable requirements of proposed 30 CFR 780.28 and existing 30 CFR 816.150, and 816.151.

We also propose to add paragraph (a)(5) to require that the applicant explain why any proposed fords, alterations or relocations of natural stream channels, or low-water crossings are necessary and how they comply with the applicable requirements of proposed 30 CFR 780.28 and section 515(b)(18) of the Act.[459] Section 515(b)(18) of SMCRA [460] provides that surface coal mining and reclamation operations must ''refrain from the construction of roads or other access ways up a stream bed or drainage channel or in such proximity to such channel so as to seriously alter the normal flow of water.''

The proposed revisions are needed to ensure that the stream protection requirements of proposed 30 CFR 780.28 are applied to roads, which can have very damaging environmental impacts on streams.

H. Part 783: Underground Mining Permit Applications—Minimum Requirements for Information on Environmental Resources and Conditions

Part 783 contains the minimum requirements for information on environmental resources and environmental conditions when preparing applications for underground mining operations. It is the counterpart to part 779 for applications for surface mining operations. In general, part 783 is substantively identical to part 779, except for the substitution of ''underground mining activities'' for ''surface mining activities,'' the replacement of references to surface mining regulations with references to the corresponding underground mining regulations, and changes of a similar nature. Our proposed revisions to part 783 are similarly substantively identical to the corresponding revision that we propose in part 779. Therefore, this portion of the preamble discusses only those proposed revisions to part 783 that differ from the proposed revisions to the corresponding provisions of part 779. Otherwise, the rationale that we provide for the proposed revisions to part 779 applies with equal effect to our proposed revisions to part 783.

We also call attention to our proposed revisions to the definition of ''adjacent area'' in 30 CFR 701.5, which clarifies the size and extent of the area to which certain of the information requirements of part 783 would apply. As revised, the definition would include all areas that could experience adverse impacts from either a surface coal mining operation or underground mining activities, including potential impacts from any subsidence that may occur as a result of underground mining activities. The existing definition is limited to areas that either would be adversely impacted or could reasonably be expected to be adversely impacted. If adopted as proposed, the revised definition would ensure the collection of baseline and other data from all areas where adverse impacts are possible, not just from those areas where adverse impacts are probable. In other words, our proposed definition of ''adjacent area'' would include, at a minimum, the entire area overlying the proposed underground workings plus the area within a reasonable angle of draw from the perimeter of those workings.

1. Section 783.24: What maps, plans, and cross-sections must I submit with my permit application?

We propose to apply the requirements of 30 CFR 783.24(a)(5) to include the location of surface and subsurface man-made features within, passing through, or passing over the proposed permit and adjacent areas, rather than just the proposed permit area as in the corresponding proposed surface mining rules at 30 CFR 779.24(a)(5). The regulatory authority would need this information when evaluating the potential impacts of both the proposed underground mining operation and subsidence resulting from that operation on those features.

Proposed 30 CFR 783.24(a)(11) would be the underground mining counterpart to proposed 30 CFR 779.24(a)(11), which, as previously discussed, would add a new provision requiring mapping of all wellhead protection zones [461] located within one-half mile of the proposed permit area for surface mining operations. Proposed 30 CFR 783.24(a)(11) would expand that requirement to include all wellhead protection zones located within one-half mile of either the proposed permit area of an underground mine or the area overlying the proposed underground workings. This expansion is warranted to ensure that the permit application review process includes consideration of the potential impact of underground mining activities, and subsidence resulting from those activities, on these important zones and the water supplies that they protect. However, this provision is not intended to prohibit underground mining operations within wellhead protection zones when those operations can be conducted in a manner that will not endanger public water supplies or when the permit applicant can identify suitable alternative sources of water capable of providing water of equivalent quantity and quality.

Proposed 30 CFR 783.24(a)(13) also would require that the map include the location of any discharge into or from an active, inactive, or abandoned underground or surface mine when the discharge is located within one-half mile of the area overlying the proposed underground workings, rather than just when the discharge is located within one-half mile of the proposed permit area as in our proposed surface mining rules at 30 CFR 779.24(a)(13). The larger area is appropriate because the permit area for an underground mine does not include the area overlying the underground workings unless the mine disturbs the surface of those lands. However, the regulatory authority needs the discharge information from the expanded area to fully evaluate the potential impacts of the proposed underground mining operation on the hydrologic balance and to prepare the CHIA.

We propose to lift the suspension of existing 30 CFR 783.25(a)(3), (a)(8), and (a)(9) and remove those provisions from our rules. Our proposed actions are consistent with *PSMRL I, Round II,* in which the court remanded those provisions, which were then located at 30 CFR 783.25(c), (h), and (i), for further rulemaking proceedings because the preamble provided insufficient justification of the need for or usefulness of that information for

[458] See the discussion of proposed 30 CFR 780.16(c) in this preamble for an explanation of how this distance must be measured.

[459] 30 U.S.C. 1265(b)(18).

[460] *Id.*

[461] A wellhead protection zone or area is a surface and subsurface land area regulated under the Safe Drinking Water Act (42 U.S.C. 330f–300j) to prevent contamination of a well or well-field supplying a public water system.

proposed underground mining operations.[462] As discussed below in the context of 30 CFR 783.24(a)(21), (25), and (26), we are re-proposing those elements of the suspended rules that are relevant to underground mining operations and necessary or useful in the review of permit applications for underground mining operations.

Proposed 30 CFR 783.24(a)(21) would require that the application include information concerning the nature, depth, thickness, and commonly used names of the coal seams to be mined. Except for the names of the coal seams, this information currently is part of suspended 30 CFR 783.25(a)(3). Information concerning the depth and thickness of the coal seam would assist the regulatory authority in reviewing the subsidence control plan. Chemical characteristics of the coal seam play an important role in determining whether acid mine drainage may be a problem. The name of the coal seam would allow the regulatory authority to compare reported data with data representative of that seam. The remaining information required by suspended 30 CFR 783.25(a)(3) either is not relevant to underground mining or is covered by the geologic information requirements in proposed 30 CFR 784.19(f), which corresponds to existing 30 CFR 784.22.

Proposed 30 CFR 783.24(a)(23) would require that the application include a map and cross-sections showing the location and extent of known workings of active, inactive, or abandoned underground mines located either within the proposed permit area or within a 2,000-foot radius in any direction of the proposed underground workings. Existing 30 CFR 783.25(a)(5) applies this requirement to the permit and adjacent areas. The additional specificity in our proposed rule would ensure that the application contains location information for all other underground mine workings that could either impact or be impacted by the proposed operation.

Proposed 30 CFR 783.24(a)(25), like suspended 30 CFR 783.25(a)(8), would require that the application include maps identifying the location and extent of existing or previously surface-mined areas within the proposed permit area. This information is important in determining which postmining surface configuration and revegetation success standards apply, as well as evaluating eligibility for the remining provisions of 30 CFR 785.25.

Proposed 30 CFR 783.24(a)(26) closely resembles suspended 30 CFR 783.24(a)(9). It would require that the application include a map with the location and dimensions of existing areas of spoil, coal mine waste, noncoal waste disposal sites, dams, embankments, other impoundments, and water treatment facilities within the proposed permit area. Those features would affect the reclamation plan, and possibly the operations plan, for the mine, so they should be included on the permit application maps. The proposed rule differs from the suspended rule in that the proposed rule does not include ''waste,'' which is an undefined term of uncertain meaning. The proposed rule uses updated terminology concerning coal mine waste and, for the reasons discussed in the part of this preamble that explains our proposed removal of existing 30 CFR 780.15, it does not include air pollution control facilities.

Finally, proposed 30 CFR 783.24(a)(27), which corresponds to existing 30 CFR 783.25(a)(10), would expand the scope of the existing rule to include conventional gas and oil wells within both the proposed permit and adjacent areas, rather than just within the proposed permit area. As in the proposed surface mining counterpart rule at 30 CFR 779.24(a)(27), we also propose to require that the map include the extent of any directional or horizontal drilling for hydrocarbon extraction operations within both the proposed permit and adjacent areas. The permit area for an underground mine does not include the area overlying the underground workings or other areas where subsidence may occur. Therefore, the regulatory authority needs the information in proposed 30 CFR 783.24(a)(27) for both the proposed permit area and the adjacent area, not just the proposed permit area, when evaluating what impacts the proposed underground mining operation and any potential subsidence resulting from that operation may have on oil and gas operations.

I. Part 784: Underground Mining Permit Applications—Minimum Requirements for Reclamation and Operation Plans

Part 784 contains the minimum requirements for operation and reclamation plans when preparing applications for underground mining operations. It is the counterpart to part 780 for applications for surface mining operations. In general, part 784 is substantively identical to part 780, except for the substitution of ''underground mining activities'' for ''surface mining activities,'' the replacement of references to surface mining regulations with references to the corresponding underground mining regulations, and changes of a similar nature. Our proposed revisions to part 784 are similarly substantively identical to the corresponding revisions that we propose in part 780. Therefore, this portion of the preamble discusses only those proposed revisions to part 784 that differ from the proposed revisions to the corresponding provisions of part 780. Otherwise, the rationale that we provide for the proposed revisions to part 780 applies with equal effect to our proposed revisions to part 784.

We also call attention to our proposed revisions to the definition of ''adjacent area'' in 30 CFR 701.5, which could significantly affect the scope of some of the plans that part 784 requires. As revised, the definition would include all areas that could experience adverse impacts from either a surface coal mining operation or underground mining activities, including potential impacts from any subsidence that may occur as a result of underground mining activities. At a minimum, this area would include the entire area overlying proposed underground workings plus the area encompassed by an appropriate angle of draw from the perimeter of those workings. It also would include all areas with underground mine pools that could be affected as well as areas that could be affected by any mine pool that forms after closure of the underground mine and any areas that could be affected by landslides or blowouts resulting from the formation of that mine pool.

The existing definition is limited to areas that either would be adversely impacted or could reasonably be expected to be adversely impacted. If adopted as proposed, the revised definition would require that the reclamation plan address all areas where adverse impacts are possible, not just those areas where adverse impacts are probable.

1. Section 784.11: What must I include in the general description of my proposed operation?

We propose to add language in paragraph (b)(5) to clarify that the narrative required by paragraph (b) must address underground mine ventilation boreholes, fans, and access roads.

2. Section 784.13: What additional maps and plans must I include in the reclamation plan?

Proposed 30 CFR 784.13(a)(4), which would combine existing 30 CFR 784.23(b)(1) and (13), would require that the application include a map showing the location of all buildings, utility corridors, and other facilities to be used or constructed within the proposed

[462] *PSMRL I, Round II,* 1980 U.S. Dist. LEXIS 17660 at *23–24 (D.D.C. 1980), 19 ERC (BNA) 1477.

permit area, together with identification of each facility that will remain as a permanent feature after the completion of underground mining activities.

We also propose to remove existing 30 CFR 784.23(b)(11), which requires a cross-section profile of the anticipated final surface configuration of the affected area, because this requirement duplicates part of proposed 30 CFR 784.12(d).

The preamble to 30 CFR 780.13 includes a discussion of the proposed removal of existing 30 CFR 780.13(b)(7) concerning air pollution. There is no counterpart to existing 30 CFR 780.13(b)(7) in the underground mining regulations at 30 CFR 784.23, so the discussion of our proposed removal of that paragraph does not pertain to proposed 30 CFR 784.13. Paragraph numbering adjustments need to be made accordingly when applying the discussion in this preamble concerning 30 CFR 780.13 to 30 CFR 784.13.

3. Section 784.19: What baseline information on hydrology, geology, and aquatic biology must I provide?

Proposed paragraph (a) differs from its counterpart in proposed 30 CFR 780.19(a) only in that it contains an additional requirement in paragraph (a)(5) that the baseline information collected be in sufficient detail to assist in preparing the subsidence control plan under 30 CFR 784.30. In the existing rules, this requirement appears in 30 CFR 784.22(a)(4) and applies only to geologic information.

Proposed paragraph (c) is substantively identical to its counterpart in proposed 30 CFR 780.19(c) with the exception that we propose to add paragraph (c)(3)(D) to the surface-water quantity description. This new paragraph would require that the description include seepage-run sampling determinations, if the application proposes to deploy a longwall panel beneath a perennial or intermittent stream or employ other types of full-extraction mining methods beneath a perennial or intermittent stream. Seepage runs are a series of in-stream flow measurements taken to determine the discharge rate of the stream at various points. The measurement begins upstream of any probable impacts from the proposed underground mine, proceeds through the reach of the stream that lies above the proposed mine workings, and continues to a point in the stream downgradient of any probable impacts from the proposed mine. At each measurement point, the stream width is divided into segments and an average velocity is measured for each segment. The average velocity is determined by either a single measurement taken at a point located six-tenths of the distance from the surface of the stream to the bottom of the stream or an average of two measurements taken at two-tenths and eight-tenths of the distance from the surface of the stream to the bottom of the stream. The discharge rate of each stream segment then is calculated based on the cross-sectional area and the average velocity. The sum of the discharge rates for all stream segments is the total streamflow at that point.

Subsidence resulting from longwall mining can cause a loss of part or all of the streamflow. Where the overburden is sufficiently thick (>100 to 150 meters), streamflow may be diverted into dilated fractures in the rocks immediately underlying the stream. This is especially true for sandstone units which, when fractured, tend to remain open, allowing significant transmission of streamflow to groundwater. Groundwater flow through fractures behaves in a cubic-root function in that doubling of the size of a fracture aperture enables the fracture to transmit approximately eight times the original flow.[463] The dilation of fractures caused by subsidence resulting from longwall mining can and frequently does result in diversion of surface streamflow into the groundwater via these fractures. Where this happens, the loss may be spatially limited; *i.e.,* once the stream passes beyond the impact footprint of the mine, the flow generally returns to the surface at a level expected at that point based on area-normalized flow criteria (*e.g.,* liters per minute per hectare drained).

Seepage-run determinations are necessary to accurately determine the impacts of longwall mining on streamflow. Minor to moderate loss of streamflow often is not noticeable by visual observation. So, seepage run determinations are needed to quantify the impacts. Seepage run determinations also are needed to quantify streamflow should it return in reaches that are beyond the impact of mining.

Proposed paragraph (e) sets forth the baseline information on the biological condition of streams that the application must include. The proposed requirements are substantively identical for both surface and underground mining operations, with the exception that applicants for underground mining operations must submit the required information for all perennial and intermittent streams within the adjacent area that might possibly be impacted by subsidence resulting from the proposed operation. As discussed in the preamble to our proposed definition of material damage to the hydrologic balance outside the permit area in 30 CFR 701.5, the regulatory authority may not approve any proposed operation that is predicted to cause subsidence that would result in the dewatering of perennial or intermittent streams or that is predicted to result in other adverse impacts that would cause the stream to no longer be capable of supporting existing or reasonably foreseeable uses or that would preclude attainment of designated uses under section 101(a) or 303(c) of the Clean Water Act.[464] However, the regulatory authority still would need the information that this paragraph would require for both the area overlying the proposed underground workings and the area within a reasonable angle of draw from the perimeter of those workings to determine whether the operation has created material damage to the hydrologic balance outside the permit area as a result of unanticipated subsidence. This information also would provide a standard for determining when any material damage to the stream has been corrected under 30 CFR 817.121(a).

We propose to add paragraph (f)(1)(iv) to the requirements for baseline geologic information for proposed underground mining operations. The new paragraph would require a description of the composition of the base of each perennial and intermittent stream within the proposed permit and adjacent areas, together with a prediction of how that base would be affected by subsidence and how subsidence of the streambed would impact streamflow. This information would be of value in preparation of the PHC determination under proposed 30 CFR 784.20 and the CHIA under proposed 30 CFR 784.21 and in determining whether the proposed operation may result in material damage to the hydrologic balance outside the permit area.

Proposed paragraph (h) establishes conditions under which the regulatory authority may grant an exception from the requirement to provide baseline information on the biological condition of streams. It is substantively identical to proposed 30 CFR 780.19(h)(2), except that it includes a provision clarifying that the exception is not available if the proposed operation could cause

[463] Witherspoon, P.A., J.S.K. Wang, K. Iwai, and J.E. Gale, 1979. Validity of Cubic Law for Fluid Flow in a Deformable Rock Fracture, *Water Resources Research,* Vol. 16, No. 6, pp. 1016–1024.

[464] 33 U.S.C. 1251(a) and 1313(c).

subsidence resulting in changes in the base flow of perennial or intermittent streams or in pooling of those streams.

Unlike proposed 30 CFR 780.19(h), proposed 30 CFR 784.19(h) does not include an exception for proposed operations for which the area from which coal is to be extracted includes only lands eligible for remining. The purpose of this exception for surface mining operations under proposed 30 CFR 780.19(h)(1) is to provide an incentive to remine previously mined areas by surface mining methods and then reclaim the redisturbed acreage with no expenditure of public funds. However, underground mining operations do not involve surface mining, apart from preparation of the face-up for the underground mine entries. Therefore, underground mining operations are unlikely to result in the remining and reclamation of previously mined areas to any significant extent. Thus, an exception intended to promote the remining and reclamation of previously mined areas would serve little purpose in rules that apply only to underground mining operations.

4. Section 784.20: How must I prepare the determination of the probable hydrologic consequences of my proposed operation (PHC determination)?

Proposed section 784.20, which appears at 30 CFR 784.14(e) in the existing rules, is substantively identical to the corresponding proposed rule concerning surface mining at 30 CFR 780.20, with the exception of paragraphs (a)(3), (a)(6), and (a)(7). Proposed paragraph (a)(3), like the existing rule at 30 CFR 784.14(e)(3)(iv), includes provisions consistent with the water replacement requirements of section 720 of SMCRA [465] for underground operations rather than the water replacement requirements of section 717(b) of SMCRA,[466] which apply only to surface mines. We propose to add paragraph (a)(6) to require that the PHC determination include a finding on what impact subsidence resulting from the proposed operation may have on perennial and intermittent streams. This finding is critical to a determination of whether the proposed operation would cause material damage to the hydrologic balance outside the permit area, as required by 30 CFR 773.15(e) and section 510(b)(3) of SMCRA.[467]

In addition, we propose to add paragraph (a)(7), which would require that the PHC determination include a finding on whether the proposed underground workings would flood after mine closure and, if so, a statement and explanation of the highest anticipated potentiometric surface of the mine pool after closure; whether, where, and when the mine pool is likely to result in a surface discharge; and the predicted quality of any discharge from the mine pool. The regulatory authority would use this information, in combination with models and calculations of void space and adjacent mine barrier seepage, to predict the probability of a blowout, where and when blowouts might occur, and the likelihood that water discharged as a result of the blowout will require treatment to meet water quality standards or any applicable effluent limitations.

The biggest environmental threat from an underground mine is the formation of a post-closure point-source discharge or baseflow discharge that is acidic in character (and thus usually high in metal concentrations) or that contains high total dissolved solids, which result in elevated electrical conductivity in receiving streams. Either characteristic can substantially degrade water quality and the biological condition of streams. Our proposed requirement that the PHC determination include information and a finding on mine pools should enable the applicant to make a business decision as to whether revenue from the proposed operation would be sufficient to justify the cost of preventing future noncompliant discharges of a perpetual nature. It also would enable the regulatory authority to prepare a better CHIA and require the applicant to take discharge prevention measures or change the mining plan to avoid creating a post-closure discharge that would cause material damage to the hydrologic balance outside the permit area in violation of section 510(b)(3) of SMCRA.[468]

Proposed paragraph (a)(7) also would require that the PHC determination include a statement and explanation of the predicted impact of the mine pool on the hydrologic balance of the proposed permit and adjacent areas after the mine pool reaches equilibrium, the potential for a mine pool blowout or other hydrologic disturbances, the potential for the mine pool to destabilize surface features, and the potential impact of roof collapses on mine pool behavior and equilibrium. Both the permit applicant and the regulatory authority need this information to determine whether any preventive or remedial measures are necessary to address adverse impacts related to mine pools.

5. Section 784.21: What requirements apply to preparation and review of the cumulative hydrologic impact assessment (CHIA)?

Proposed 30 CFR 784.21 is substantively identical to the CHIA requirements for surface mine permits in proposed 30 CFR 780.21, with one exception: Our proposed CHIA requirements for a permit for an underground mine do not contain a counterpart to the requirement in proposed 30 CFR 780.21(b)(8)(iv) that the regulatory authority find that the proposed operation has been designed to protect the quantity and quality of water in any aquifer that significantly ensures the prevailing hydrologic balance. That provision does not apply to underground mines because section 516(b)(9) of SMCRA,[469] which is the underground mining counterpart to section 515(b)(10),[470] does not include a counterpart to section 515(b)(10)(D), which requires restoration of the recharge capacity of the mined area to approximate premining conditions. As Congress further recognized in adopting section 720 of SMCRA,[471] underground mining operations will necessarily dewater some aquifers. In those situations, section 720 specifies what actions the permittee must take to replace water supplies protected under that section of the law.

6. Section 784.22: What information must I include in the hydrologic reclamation plan and what information must I provide on alternative water resources?

Proposed 30 CFR 780.22(a) is substantively identical to the corresponding requirements for surface mine permit applications in proposed 30 CFR 780.22(a), with one exception: Our proposed hydrologic reclamation plan requirements for a permit application for an underground mine do not contain a counterpart to the requirement in proposed 30 CFR 780.22(a)(2)(ix) that the plan demonstrate how the operation will restore the approximate premining recharge capacity. Not including a counterpart to this provision in the underground mining rules is consistent with the difference between sections 515 and 516 of SMCRA,[472] as discussed above in the preamble to proposed 30

[465] 30 U.S.C. 1309a.

[466] 30 U.S.C. 1307(b).

[467] 30 U.S.C. 1260(b)(3).

[468] 30 U.S.C. 1260(b)(3).

[469] 30 U.S.C. 1266(b)(9).

[470] 30 U.S.C. 1265(b)(10).

[471] 30 U.S.C. 1309a.

[472] 30 U.S.C. 1265 and 1266.

CFR 784.21. Section 515(b)(10)(D) of SMCRA [473] requires that surface coal mining operations restore the recharge capacity of the mined area to approximate premining conditions. However, this requirement does not appear in the corresponding provision for underground coal mining operations in section 516(b)(9) of SMCRA.[474]

We also propose to add paragraph (b) to require that an underground mining permit application contain information on alternative water sources. The existing rules concerning underground mining permit applications do not include a similar provision. However, the addition of this requirement would enhance the ability of both the permittee and the regulatory authority to ensure that the water supply replacement requirements of 30 CFR 817.40 and section 720 of SMCRA [475] are properly implemented. Proposed paragraph (b) is substantively identical to the corresponding proposed surface mining requirement at 30 CFR 780.22(b), with the exception that paragraph (b)(1) of section 784.22 reflects the different scope of water supply replacement requirements for underground mining operations, as specified in 30 CFR 817.40 and section 720 of SMCRA.[476]

7. Section 784.23: What information must I include in my plans for the monitoring of groundwater, surface water, and the biological condition of streams during and after mining?

Proposed 30 CFR 784.23 is substantively identical to the corresponding monitoring plan requirements for surface mine permit applications in proposed 30 CFR 780.23, except as discussed below.

Proposed 30 CFR 784.23(a)(1)(iii) does not include a requirement that the groundwater monitoring plan provide for monitoring wells to be placed in backfilled portions of the permit area. We did not include this requirement because surface excavations associated with underground mining operations typically are small in size relative to surface mines and do not involve ongoing backfilling and grading activities. Any changes in water quality detected by wells placed in backfilled areas would not be useful in planning changes in future phases of the operation, because there would be no future phases. Instead, we propose to require that the groundwater monitoring plan include at least one monitoring well to be located in the mine pool after mine closure. This requirement would allow both the permittee and the regulatory authority to monitor changes in mine pool elevation and to evaluate the accuracy of the PHC determination's prediction of whether the mine pool ultimately will rise to the level that a surface discharge will result. This information is important because water quality in mine pools is often poor,[477] which means that any surface discharge would need to be treated, potentially in perpetuity.

Proposed paragraphs (a)(1)(iii) and (b)(1)(iv) would require that upgradient and downgradient monitoring points for groundwater and surface water be located at a distance sufficiently close to the underground mine workings to detect changes as the mining operation progresses. The plan must include a schedule and map for moving these sites as the underground workings advance. Without this provision, the upgradient and downgradient monitoring points could be located so far away from the active underground workings that they would provide no meaningful data for purposes of analyzing impacts of current operations on groundwater or surface water.

Proposed paragraph (d) establishes conditions under which the regulatory authority may grant an exception from the requirement to monitor the biological condition of streams. It is substantively identical to proposed 30 CFR 780.23(d)(2), except that it includes a provision clarifying that the exception is not available if the proposed operation could cause subsidence resulting in changes in the base flow of a perennial or an intermittent stream or in pooling of a perennial or an intermittent stream.

Unlike proposed 30 CFR 780.23(d) for permit applications for surface mines, proposed 30 CFR 784.23(d) does not include an exception for proposed underground mining operations for which the area from which coal is to be extracted includes only lands eligible for remining. The purpose of this exception for surface mining operations under proposed 30 CFR 780.23(d)(1) is to provide an incentive to remine previously mined areas by surface mining methods and then reclaim the redisturbed acreage with no expenditure of public funds. However, underground mining operations do not involve surface mining, apart from preparation of the face-up or mine entries, which means that any redisturbance–and hence reclamation—of previously mined areas would be comparatively minimal. Therefore, an exception intended to promote the surface mining and reclamation of previously mined areas would serve no purpose in rules that apply only to underground mining operations.

8. Section 784.24: What requirements apply to the postmining land use?

Proposed section 784.24 is substantively identical to its proposed surface mining counterpart in 30 CFR 780.24. Both proposed 30 CFR 780.24 and 784.24 would include a modified version of the interpretive rules concerning postmining land use changes for underground mines at 30 CFR 784.200 and 817.200(d)(1), which we propose to remove in concert with this rule change. Please refer to the preamble to proposed 30 CFR 780.24(c) for a discussion of this proposed rule change.

9. Why are we proposing to remove existing 30 CFR 784.26?

We propose to remove existing 30 CFR 784.26 because the references to fugitive dust and cross-references to 30 CFR 817.95 in the existing rule refer to provisions that we removed in 1983 in response to a court decision striking down our authority to regulate air pollution under SMCRA, except for air pollution attendant to erosion. The court held that ''the legislative history indicates that Congress only intended to regulate air pollution related to erosion'' [478] and that ''the Secretary's authority to regulate [air] pollution is limited to activities related to erosion.'' [479] The court remanded former 30 CFR 816.95 and 817.95 (1979), which contained performance standards for fugitive dust control, for revision. However, the court did not address the parallel permitting requirements at 30 CFR 780.15 and 784.26.

The 1983 rulemaking removed all requirements in 30 CFR 817.95 for fugitive dust control practices, including requirements for monitoring of fugitive dust to determine compliance with federal and state air quality standards. That rulemaking also changed the section heading of 30 CFR 817.95 from ''Air resources protection'' to ''Stabilization of surface areas'' and replaced the air quality performance standards formerly located in 30 CFR 817.95 with soil stabilization

[473] 30 U.S.C. 1265(b)(10)(D).

[474] 30 U.S.C. 1266(b)(9).

[475] 30 U.S.C. 1309a.

[476] *Id.*

[477] Donovan, J. J., B. Leavitt, E. Werner, E. Perry, and K. McCoy, 2000, Long-term Hydrogeological and Geochemical Response to Flooding of an Abandoned Below-drainage Pittsburgh Coal Mine, in the Proceedings of the Twenty-First West Virginia Surface Mine Drainage Task Force Symposium, Morgantown, WV, pp. 139–160.

[478] *PSMRL I, Round II,* 1980 U.S. Dist. LEXIS 17660 at *43–44, 19 Env't Rep. Cas. (BNA) 1477.

[479] *Id.* at *42.

requirements that contain no mention of fugitive dust or air quality monitoring. See 48 FR 1160–1163 (Jan. 10, 1983).

However, the 1983 rulemaking did not remove the parallel permitting requirements in 30 CFR 784.26. Instead, we stated in the preamble to that rulemaking that we agreed with a commenter that we also needed to amend the permit application rules at 30 CFR 780.15 and 784.26 for consistency with the revisions to 30 CFR 816.95 and 817.95, and that we would do so in a subsequent independent rulemaking.[480] Adoption of this proposed rule would fulfill that long-delayed commitment.

With respect to air pollution attendant to erosion, proposed 30 CFR 784.12(f) would add a permitting counterpart to the existing performance standard at 30 CFR 817.95(a), which provides that all exposed surface areas must be protected and stabilized to effectively control erosion and air pollution attendant to erosion. We also propose to add cross-references to the dust control performance standards for roads in 30 CFR 817.150 and 817.151.

We also propose to redesignate existing 30 CFR 784.25, which contains requirements pertaining to the return of coal processing waste to abandoned underground mine workings, as new 30 CFR 784.26.

10. Section 784.26: What information must I provide if I plan to return coal processing waste to abandoned underground workings?

We propose to redesignate existing 30 CFR 784.25 as 30 CFR 784.26. We propose to revise redesignated 30 CFR 784.26 by replacing the word ''backfill'' and its variants with ''backstow'' or equivalent terminology to avoid any confusion with the process of backfilling open pits or our proposed definition of ''backfill'' in 30 CFR 701.5. Proposed paragraph (b)(2) would add a requirement for a description of all chemicals used to process the coal, the quantity of those chemicals remaining in the coal processing waste, and the likely impact of those chemicals on groundwater and any persons, aquatic life, or wildlife using or exposed to that groundwater. We propose to revise paragraph (c) to require that the backstowing plan include plans for monitoring the chemicals contained in the coal processing waste and a description of the anticipated effect on biological communities. The regulatory authority needs the information described above to determine whether the proposed backstowing operation would cause material damage to the hydrologic balance outside the permit area in violation of section 510(b)(3) of SMCRA.[481]

We propose to add paragraph (c)(6), which would require that the backstowing plan submitted to the regulatory authority include the measures to be taken to comply with the underground mine discharge requirements of 30 CFR 817.41, when applicable. The inclusion of this provision would serve as a reminder that the permitting requirements of 30 CFR 784.26 are not the only regulations that may apply to review of applications of this nature.

We also propose to revise paragraph (d) to clarify that the surface-water and groundwater monitoring plans for the proposed backstowing operation must comply with the requirements of 30 CFR 784.23, which apply to all operations subject to part 784.

Finally, we propose to revise paragraph (e) to specify that the regulatory authority may exempt pneumatic backstowing operations from compliance with these requirements if the applicant demonstrates, and the regulatory authority finds in writing, that the proposed pneumatic backstowing operation will not adversely impact surface water, groundwater, or water supplies. The corresponding existing rule at 30 CFR 784.25(e) lacks any requirement for a demonstration by the applicant and it has no criteria for determining when the regulatory authority may grant an exception. Such an open-ended provision is not consistent with the environmental protection purposes and provisions of SMCRA. We invite comment on whether any of the requirements of paragraphs (a) through (d) should apply to all pneumatic backstowing operations, either because the regulatory authority needs that information to decide whether to grant an exemption or because those requirements are needed to ensure that the operation is conducted in an environmentally sound manner.

We also invite comment on whether we should adopt similar requirements that would apply to backstowing of coal processing waste in abandoned underground mines when that activity occurs in connection with either a surface coal mine or a coal preparation plant regulated under 30 CFR 785.21.

11. Section 784.28: What additional requirements apply to proposed surface activities in, through, or adjacent to streams?

Proposed 30 CFR 784.28 is substantively identical to its surface mining counterpart at proposed 30 CFR 780.28, except that proposed 30 CFR 784.28 includes language clarifying that it applies to activities conducted on the land surface. Like existing 30 CFR 784.28, proposed 30 CFR 784.28 would not apply to activities conducted underground or to surface impacts resulting from subsidence caused by underground workings.

12. Section 784.30: When must I prepare a subsidence control plan and what information must that plan include?

We propose to redesignate existing 30 CFR 784.20 as 30 CFR 784.30. Proposed 30 CFR 784.30 is substantively identical to existing 30 CFR 784.20. However, existing 30 CFR 784.20(a)(3) contains language that we suspended on December 22, 1999 (64 FR 71652–71653), in response to a court order vacating those provisions.[482] We propose to lift the suspension and then remove the previously suspended language. Specifically, we propose to delete the language in existing 30 CFR 784.20(a)(3) that requires a pre-subsidence survey of the condition of all noncommercial buildings or occupied residential dwellings and related structures that might be materially damaged by subsidence, or have their reasonably foreseeable value diminished by subsidence, within the area encompassed by the angle of draw. Proposed 30 CFR 784.30(a)(3) would retain the requirement in existing 30 CFR 784.20(a)(3) for a pre-subsidence survey of the condition of the quantity and quality of all drinking, domestic, and residential water supplies within the proposed permit area and the adjacent area.

13. Section 784.35: What information must I provide concerning the minimization and disposal of excess spoil?

Proposed 30 CFR 784.35 is substantively identical to its proposed surface mining counterpart at 30 CFR 780.35. Existing 30 CFR 784.19, which is the current underground mining counterpart to 30 CFR 780.35, contains an ambiguous cross-reference to the requirements of 30 CFR 780.35, ''if appropriate.'' We propose to replace this cross-reference with actual regulatory text and thus eliminate the ambiguity.

[480] 48 FR 1161 (Jan. 10, 1983).

[481] 30 U.S.C. 1260(b)(3).

[482] *Nat'l Mining Ass'n* v. *Babbitt,* 173 F.3d 906 (D.C. Cir. 1999).

Proposed 30 CFR 784.35 also contains revisions to provide consistency with the definition of coal mine waste in 30 CFR 701.5, which we adopted on September 26, 1983 (48 FR 44006). Among other things, that definition reclassified underground development waste as coal mine waste, which means that fills constructed of underground development waste must adhere to the requirements for refuse piles instead of the requirements applicable to excess spoil fills. At the same time that we adopted the definition of coal mine waste in 1983, we revised our performance standards at 30 CFR 817.71 through 817.74 to eliminate the language that combined underground development waste with excess spoil for purposes of performance standards for underground mines. Because the definition of coal mine waste includes underground development waste, the disposal of underground development waste is subject to the performance standards for refuse piles at 30 CFR 817.83 rather than the performance standards for the disposal of excess spoil that applied under the pre-1983 rules.

The design requirements for fills in existing 30 CFR 784.19 apply to both underground development waste and excess spoil, which means that those permitting requirements are inconsistent with the 1983 changes to the corresponding performance standards. Proposed 30 CFR 784.35 would apply only to the disposal of excess spoil, consistent with the 1983 changes to our definitions and performance standards regarding coal mine waste. For the same reason, we propose to remove all references to underground development waste in existing 30 CFR 784.19 and to revise the section heading accordingly in concert with our proposed redesignation of existing 30 CFR 784.19 as 30 CFR 784.35. Under proposed 30 CFR 784.35, the permitting requirements for refuse piles in proposed 30 CFR 784.25, not the excess spoil requirements of proposed 30 CFR 784.35, would govern the disposal of underground development waste.

Proposed 30 CFR 784.35 parallels proposed 30 CFR 780.35, which contains the permit application requirements for the disposal of excess spoil generated by surface mining activities. As noted above, the existing rule at 30 CFR 784.19 includes those requirements by cross-reference in a somewhat ambiguous fashion. Adding specific language in place of the cross-reference to 30 CFR 780.35 in the existing rule would be consistent with the pattern established in most of our other rules for surface and underground mines, in which separately codified provisions for surface and underground mines are nearly identical except for cross-references and the type of operation to which they apply. In addition, adding specific language in place of the cross-reference to 30 CFR 780.35 will allow the inclusion of cross-references to the appropriate underground mining performance standards in part 817 rather than having to use the cross-references in 30 CFR 780.35 to the surface mining performance standards in part 816.

14. Why are we proposing to remove existing 30 CFR 784.200?

Existing 30 CFR 784.200 contains only one interpretive rule, which addresses the use of the permit revision process for postmining land use changes for underground mines. We propose to include this interpretive rule in 30 CFR 784.24 in revised form to the extent that it contains unique provisions not already present in other regulations. Specifically, proposed 30 CFR 784.24(c) would require that any proposed change to a higher or better postmining land use must be processed as a significant permit revision. Please refer to the preamble to proposed 30 CFR 780.24(c) for a discussion of this proposed rule change. We will remove 30 CFR 784.200 if we adopt proposed 30 CFR 784.24(c).

J. Part 785: Requirements for Permits for Special Categories of Mining

1. Section 785.14: What special provisions apply to proposed mountaintop removal mining operations?

We propose to revise and reorganize 30 CFR 785.14 in accordance with plain language principles. However, we will not discuss those changes here because they are nonsubstantive in nature.

With regard to substantive changes, we propose to move existing paragraph (b) to 30 CFR 701.5 as part of our proposed definition of mountaintop removal mining. In proposed paragraph (b)(1), which corresponds to existing paragraph (c)(1), we propose to replace ''land to be affected'' with ''land to be disturbed'' to be consistent with the definitions of ''affected area'' and ''disturbed area'' in 30 CFR 701.5. This change also would reflect the fact that only lands to be disturbed by the mining operation would have a proposed postmining land use.

We propose to remove existing 30 CFR 785.14(c)(3), which provides that the requirements of 30 CFR part 824 must be made a specific condition of the permit. This provision is redundant and unnecessary because the performance standards of 30 CFR part 824 are independently enforceable. Making those performance standards a specific condition of the permit condition adds nothing of value. Furthermore, nothing in SMCRA requires this permit condition. Proposed 30 CFR 785.14(b)(8), like existing 30 CFR 785.14(c)(2), would continue to require that the applicant demonstrate, and the regulatory authority find, that the proposed operation has been designed to comply with the requirements of 30 CFR part 824.

Proposed paragraph (b)(9) would replace existing 30 CFR 824.11(a)(9), which prohibits damage to natural watercourses below the lowest coal seam to be mined. We propose to delete the clause limiting the scope of that prohibition to watercourses below the lowest coal seam to be mined because that clause does not appear in the underlying statutory provision. Instead, section 515(c)(4)(D) of SMCRA [483] provides that ''no damage will be done to natural watercourses.'' However, SMCRA does not define either ''damage'' or ''natural watercourses.''

Proposed paragraph (b)(9) would specify that we will consider no damage to have occurred to other natural watercourses if the applicant demonstrates and the regulatory authority finds in writing that all the following conditions exist:

- The proposed operation will not increase the amount or concentration of parameters of concern in discharges to groundwater and surface water from the proposed permit area, when compared to the discharges that would occur if the operation were designed to adhere to approximate original contour restoration requirements.
- The proposed operation will not result in changes in the size or frequency of peak flows from the proposed permit area that would cause an increase in damage from flooding, when compared to the impacts that would occur if the operation were designed to adhere to approximate original contour restoration requirements.
- The total volume of flow from the proposed permit area, during every season of the year, will not vary in a way that would adversely affect any existing or reasonably foreseeable use of surface water or groundwater or any designated use of surface water under section 101(a) or 303(c) of the Clean Water Act.[484]

[483] 30 U.S.C. 1265(c)(4)(D).

[484] 33 U.S.C. 1251(a) and 1313(c), respectively.

These requirements are intended to ensure that the proposed operation is designed to prevent material damage to the hydrologic balance outside the permit area, as required by 30 CFR 773.15(e) and section 510(b)(3) of SMCRA,[485] and as we propose to define that term in 30 CFR 701.5.

We invite comment on whether we can or should instead adopt a rule that would allow the approval of mountaintop removal mining operations that would damage natural watercourses within the permit area if the applicant can demonstrate that the damage will be fully offset by implementation of the fish and wildlife enhancement measures proposed under 30 CFR 780.16.

Under proposed paragraph (b)(10), the revegetation plan proposed under 30 CFR 780.12(g) for the operation would have to require that those portions of the proposed permit area that are forested at the time of application or that would revert to forest under conditions of natural succession be revegetated using native tree and understory species to the extent that this requirement is not inconsistent with attainment of the proposed postmining land use. Addition of this requirement would improve implementation of the revegetation requirements of section 515(b)(19) of SMCRA.[486] It also would be consistent with section 515(b)(24) of SMCRA,[487] which provides that, to the extent possible, surface coal mining and reclamation operations must minimize disturbances to and adverse impacts on fish, wildlife, and related environmental values and enhance those resources where practicable, using the best technology currently available.

Proposed paragraph (b)(11) would require that the bond posted for the permit under part 800 of this chapter include an amount equal to the cost of regrading the site to its approximate original contour and revegetating the regraded land in the event that the approved postmining land use is not implemented before expiration of the revegetation responsibility period under § 816.115. As an alternative to requiring posting of this bond amount at the time of permit issuance, we are considering adopting a rule that would prohibit release of any bond amount for the entire permit until the approved postmining land use has been implemented. We invite comment on which alternative would be more effective in preventing abuse of this exception from the AOC restoration requirements of SMCRA.

Proposed paragraph (b)(13) would require that the permit clearly identify the acreage and location of mountaintop removal mining areas. Many permits include several types of mining, so the permittee, the regulatory authority, and other interested persons need this information to determine which portions of the permit area are subject to the mountaintop removal mining provisions.

Finally, in proposed paragraph (c), we propose to replace the permit review requirements of existing paragraphs (d)(1) and (2) with a cross-reference to the permit review requirements of proposed 30 CFR 774.10(a)(2). Existing paragraph (d)(1) requires a permit review within the sixth month preceding the third year from the date of permit issuance, before each permit renewal, and not later than the middle of each permit term. Proposed 30 CFR 774.10(a)(2) would replace both this provision and a corresponding provision in existing 30 CFR 774.10(a)(3) with language that is consistent with the underlying statutory provision in section 515(c)(6) of SMCRA,[488] which requires that permits of this type be reviewed not more than 3 years from the date of permit issuance, unless the permittee affirmatively demonstrates that the proposed development is proceeding in accordance with the terms of the approved schedule and reclamation plan. This review is a one-time requirement, not a recurring event.

2. Section 785.16: What special requirements apply to proposed variances from approximate original contour restoration requirements for steep-slope mining?

Proposed Paragraph (a): Application and Approval Requirements

We propose to revise 30 CFR 785.16(a) to clarify that a variance approved under this section may apply to only a portion of the permit area rather than to the entire permit area. This change would emphasize that a variance should be limited to the smallest area necessary to accommodate the proposed postmining land use for which the variance is granted.

We propose to include the criteria in existing 30 CFR 816.133(d) and 817.133(d) for approval of a variance from approximate original contour requirements in 30 CFR 785.16 because those variances may be granted only for steep-slope mining operations. Consolidation of all steep-slope variance provisions into 30 CFR 785.16 would make our regulations easier to understand and more user-friendly.

Proposed paragraph (a)(8) would allow approval of a variance only if the variance will not result in the construction of a fill in a perennial or an intermittent stream. Sacrificing perennial or intermittent stream segments for the purpose of creating a different postmining land use is neither appropriate nor warranted in view of paragraphs (a) and (d) of section 102 of SMCRA.[489] Those paragraphs provide that two of the purposes of SMCRA are to establish a nationwide program to protect society and the environment from the adverse effects of surface coal mining operations and to assure that those operations are conducted in a manner that protects the environment.

Proposed paragraph (a)(8) is consistent with section 515(b)(23) of SMCRA,[490] which requires that surface coal mining and reclamation operations ''meet such other criteria as are necessary to achieve reclamation in accordance with the purposes of this Act, taking into consideration the physical, climatological, and other characteristics of the site.'' Addition of this provision also would be consistent with sections 515(b)(24) and 516(b)(11) of SMCRA,[491] which require that surface coal mining and reclamation operations be conducted so as to minimize disturbances and adverse impacts on fish, wildlife, and related environmental values to the extent possible, using the best technology currently available.

Proposed paragraph (a)(9) would revise the criteria in existing 30 CFR 785.16(a)(3) for determining when the watershed of the proposed permit area and the adjacent area will be deemed improved by the proposed operation. The proposed revisions, which we summarize and discuss below, would promote environmental protection in keeping with the purposes of SMCRA in paragraphs (a), (d), and (f) of section 102 of the Act.[492] They also would be consistent with our proposed definition of ''material damage to the hydrologic balance outside the permit area'' in 30 CFR 701.5.

Proposed paragraph (a)(9)(i) would require a demonstration that the proposed operation would reduce the amount or concentration of total suspended solids or other parameters of concern in discharges to groundwater or surface water. The proposed rule corresponds to the first part of existing

[485] 30 U.S.C. 1260(b)(3).

[486] 30 U.S.C. 1265(b)(19).

[487] 30 U.S.C. 1265(b)(24).

[488] 30 U.S.C. 1265(c)(6).

[489] 30 U.S.C. 1202(a) and (d).

[490] 30 U.S.C. 1265(b)(23).

[491] 30 U.S.C. 1265(b)(24) and 1266(b)(11).

[492] 30 U.S.C. 1202(a), (d), and (f).

30 CFR 785.16(a)(3)(i), which does not mention concentration. We propose to add a reference to concentration because the concentration of parameters of concern in discharges may be more ecologically important than actual amounts under certain conditions. In addition, the existing rule refers to pollutants rather than parameters of concern. We propose to replace ''pollutants'' with ''parameters of concern'' because the latter term potentially encompasses a broader range of ecologically important discharge characteristics than would the term ''pollutants.'' We also propose to delete the somewhat ambiguous language in the existing rule that refers to improvement of public or private uses or the ecology of the water. The language proposed for deletion is not necessary because the critical factor is whether the proposed operation would reduce the amount or concentration of parameters of concern.

We propose to revise paragraph (a)(9)(ii), which corresponds to the last part of existing 30 CFR 785.16(a)(3)(i), by adding a reference to the ''size or frequency'' of peak-flow discharges. Both size and frequency factor into damage from floods, so the applicant and the regulatory authority should consider both factors.

Proposed paragraph (a)(9)(iv) would add a requirement for a demonstration that the proposed operation would result in a lesser adverse impact on the aquatic ecology of the cumulative impact area than would occur if the area were to be mined and restored to its approximate original contour.

Proposed paragraph (a)(9)(v) would add a requirement for a demonstration that the proposed operation would result in less impact on perennial and intermittent streams than would occur if the land were to be mined and restored to its approximate original contour. The proposed rule would allow the regulatory authority to consider fish and wildlife enhancement measures approved under proposed 30 CFR 780.16 and 784.16 in making this determination. However, fish and wildlife enhancement measures approved under proposed 30 CFR 780.16 and 784.16 may not be used to avoid the prohibition on excess spoil fills in proposed paragraph (a)(8).

Proposed paragraphs (a)(10)(i) and (ii) contain the same surface owner consent provisions as existing 30 CFR 785.16(a)(4). We propose to add paragraph (a)(10)(iii), which would specify that the surface owner has not and will not receive any monetary compensation, item of value, or other consideration in exchange for requesting the variance. Proposed paragraph (a)(10)(iii) is consistent with section 102(b) of SMCRA,[493] which provides that one of the purposes of the Act is to assure that the rights of surface landowners are fully protected from surface coal mining operations. It also is consistent with section 102(a) of SMCRA,[494] which seeks to ''protect society and the environment from the adverse effects of surface mining,'' by ensuring that variances are requested because they are necessary and appropriate to achieve the approved postmining land use and not due to coercion, deception, or monetary compensation.

Proposed paragraph (a)(11) would require a demonstration that the proposed deviations from the premining surface configuration are necessary and appropriate to achieve the approved postmining land use. The intent of this provision is to ensure that variances are granted only for the area necessary to accommodate legitimate postmining land use needs.

Proposed paragraph (a)(12) would require the use of native tree and understory species to revegetate all portions of the permit area that are forested at the time of the application or that would revert to forest under conditions of natural succession. This requirement would not apply to permanent impoundments, roads and other impervious surfaces to be retained following the completion of mining and reclamation. It also would not apply to those portions of the permit area covered by the variance if compliance with this requirement would be inconsistent with the attainment of the postmining land use. The intent of this provision is to encourage reforestation of reclaimed lands, where appropriate, and to minimize adverse impacts on fish, wildlife, and related environmental values, as required by sections 515(b)(24) and 516(b)(11) of SMCRA.[495]

Proposed paragraph (a)(13) would require that the performance bond posted for the permit include an amount equal to the cost of regrading the site to its approximate original contour and revegetating the regraded land in the event that the approved postmining land use is not implemented before expiration of the revegetation responsibility period under 30 CFR 816.115 or 817.115. The intent of this proposed provision is to ensure that variances are granted only for legitimate immediate postmining land use needs. If the postmining land use is not implemented before expiration of the revegetation responsibility period, the proposed rule would require that the regulatory authority order the permittee to restore the variance area to approximate original contour and plant it with the vegetation that would have been required had no variance been granted. The bond that this proposed paragraph would require would ensure that the regulatory authority has sufficient funds to complete the reclamation in the event that the permittee fails to do so.

As an alternative to requiring posting of this bond amount at the time of permit issuance, we are considering adopting a rule that would prohibit release of any bond amount for the entire permit area until the postmining land use for which the variance was granted has been implemented. We invite comment on which alternative would be more effective in preventing abuse of this exception from the AOC restoration requirements of SMCRA.

Proposed Paragraph (b): Regulatory Authority Responsibilities

We propose to remove existing paragraph (b)(1), which provides that the requirements of 30 CFR 816.133(d) or 817.133(d) must be included as a specific permit condition. There is no counterpart in SMCRA for this provision. Performance standards are just as enforceable as permit conditions, so there is no reason why these particular performance standards should be made a permit condition.

Proposed paragraph (b)(2) would replace the permit review requirements of existing paragraphs (c) and (d) with a cross-reference to the corresponding permit review requirements of 30 CFR 774.10(a), which we propose to revise to be consistent with the underlying statutory provisions in section 515(e)(6) of SMCRA.[496]

Proposed paragraphs (b)(3) and (4) would include existing paragraphs (e) and (f), respectively, in substantively identical form.

Proposed paragraph (b)(5) would require that, before approving a steep-slope variance from approximate original contour, the regulatory authority find and document in writing that the surface-owner consent requirements of proposed paragraph (a)(10) have been met. Proposed paragraph (b)(5) is consistent with section 102(b) of SMCRA,[497] which provides that one of the purposes of the Act is to assure that the rights of surface landowners are fully protected from

[493] 30 U.S.C. 1202(b).

[494] 30 U.S.C. 1202(a).

[495] 30 U.S.C. 1265(b)(24) and 1266(b)(11).

[496] 30 U.S.C. 1265(e)(6).

[497] 30 U.S.C. 1202(b).

surface coal mining operations. It also is consistent with section 102(a) of SMCRA,[498] which seeks to ''protect society and the environment from the adverse effects of surface mining,'' by ensuring that variances are requested because they are necessary and appropriate to achieve the approved postmining land use and not due to coercion, deception, or monetary compensation.

3. Section 785.25: What special provisions apply to proposed operations on lands eligible for remining?

We propose to revise 30 CFR 785.25 to improve clarity and to specify that the potential environmental and safety problems that could reasonably be anticipated to occur must be the result of prior mining activities within the proposed permit area. In addition, we propose to specify that the identification of these anticipated problems may be based upon, among other things, a record review of operations near the site and any relevant available information, including data from prior mining activities and remining operations on similar sites.

Finally, we propose to delete the term ''mitigative'' when referring to the measures that will be taken to ensure that reclamation requirements will be met. Mitigation refers to measures to be taken to compensate for the inability to meet reclamation requirements. Hence, the term is not appropriate in the context in which it is used in existing 30 CFR 785.25.

K. Part 800: Bond, Financial Assurance, and Liability Insurance Requirements for Surface Coal Mining and Reclamation Operations.

We propose to revise part 800 by adding provisions for the use of financial assurances to guarantee treatment of long-term discharges, modifying the provisions governing alternative bonding systems, and adding more specific criteria and procedures to the provisions governing bond release. In the latter case, we propose to split existing 30 CFR 800.40 into five separate sections (30 CFR 800.40 through 800.44) that address various aspects of the bond release process in greater detail. We also propose to adopt other changes and clarifications, which we discuss below on a section-by-section basis. In addition, for the reasons explained in Part VIII of this preamble, we propose to revise elements of part 800 in accordance with plain language principles.

1. How do we propose to guarantee treatment of long-term discharges?

We propose to add 30 CFR 800.18 and revise other sections of part 800 as appropriate to require that permittees post suitable financial instruments (known as ''financial assurances'') to guarantee that sufficient funds will be available for the treatment of long-term or perpetual discharges for which a surface or underground coal mine or other facility regulated under SMCRA is responsible. We also propose to add a definition of financial assurance in 30 CFR 800.5 and include necessary and appropriate references to, and provisions for, financial assurances in proposed 30 CFR 800.1, 800.4, 800.13, 800.15, 800.30, and 800.42.

Under 30 CFR 773.15(e) and section 510(b)(3) of SMCRA,[499] the regulatory authority may not issue a permit unless the application demonstrates, and the regulatory authority finds, that the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area. In addition, under 30 CFR 773.15(b) and section 510(b)(2) of SMCRA,[500] the regulatory authority may not issue a permit unless the application demonstrates, and the regulatory authority finds, that reclamation as required by the Act and the applicable regulatory program can be accomplished under the reclamation plan approved in the permit. Further, the policy entitled ''Hydrologic Balance Protection: Policy Goals and Objectives on Correcting, Preventing, and Controlling Acid/Toxic Mine Drainage'' [501] that we issued on March 31, 1997, states, ''[i]n no case should a permit be approved if the determination of probable hydrologic consequences or other reliable hydrologic analysis predicts the formation of a postmining pollutional discharge that would require continuing long-term treatment without a defined endpoint.'' [502]

Improved permitting practices and advances in predictive techniques have almost eliminated acid mine drainage with respect to surface mining permits issued in the last three decades. For example, in Pennsylvania, a state in which acid mine drainage has historically been a widespread and significant problem, a 1999 study [503] found that only 17 (one percent) of the 1,699 surface mining permits issued in Pennsylvania between1987 and1996 had long-term postmining discharges that required treatment. In contrast, long-term postmining discharges that required treatment developed on an average of 17 percent of permits issued between1977 and 1983 before the introduction of a science-based permit review program in 1984.

However, legacy discharges from older mines remain a concern, as do potential discharges from underground mines after closure. Long-term discharges vary in quality and rate of attenuation. According to one study and literature review, ''surface mines and below-drainage underground mines improve in discharge quality relatively rapidly (20–40 years), [but] above-drainage underground mines are not as easily predicted.'' [504] The researchers examined discharges from 44 underground mines in the Pittsburgh and Upper Freeport coal seams in 1968 and again in 1999–2000. During the intervening 30+ years, there were no significant changes in pH, but iron decreased an average of 80 percent, sulfate decreased between 50 percent and 75 percent on average, and total acidity decreased between 56 percent and 79 percent on average.[505] While 34 of the 44 mines showed significant improvement in total acidity, 10 showed no change, and 3 became much worse.[506] This variability supports our proposal to require that financial assurances for long-term discharges be calculated using a worst-case scenario (treatment in perpetuity) to ensure that sufficient funds will be available for treatment at all times. In addition, there are few studies evaluating the length of time treatment may be needed for other parameters of concern.

Section 509(e) of SMCRA [507] requires that the regulatory authority adjust the amount of bond or deposit required and the terms of acceptance of the bond ''where the cost of future reclamation changes.'' This requirement applies whenever an unanticipated discharge requiring long-term treatment develops. However, conventional bond instruments (surety bonds, collateral bonds, and self-bonds) are not optimal for this purpose because, under conditions of forfeiture, they provide a one-time lump sum payout rather than the income stream needed to fund

[498] 30 U.S.C. 1202(a).

[499] 30 U.S.C. 1260(b)(3).

[500] 30 U.S.C. 1260(b)(2).

[501] See *www.osmre.gov/lrg/docs/amdpolicy033197.pdf (last accessed August 6, 2014).*

[502] *Id.,* p. 5.

[503] Pennsylvania Department of Environmental Protection, ''Evaluation of Mining Permits Resulting in Acid Mine Drainage 1987–1996: A Post Mortem Study'' (March 1999).

[504] Demchak, J.; J. Skousen; and L. M. McDonald. Longevity of Acid Discharges from Underground Mines Located above the Regional Water Table, *J. Environ. Qual.* 33:656–668 (2004), p. 656.

[505] *Id.*

[506] *Id.*

[507] 30 U.S.C. 1259(e).

treatment of long-term discharges. Surety bonds and self-bonds are especially ill-suited for this purpose because (1) the need for discharge treatment may outlast the surety or the permittee and (2) neither a surety bond nor a self-bond requires that funds or other assets be physically placed with the regulatory authority or in an account dedicated solely to the regulatory authority, which means that funds would not necessarily be available to continue treatment if the surety and the permittee go out of business before the need for treatment ends. Furthermore, surety companies normally do not underwrite a bond when there is no expectation of release of liability, as would be the case with almost all long-term discharges because there is no reliable prospect of fully abating the source of the discharge.

Section 509(c) of SMCRA [508] provides that ''the Secretary may approve as part of a State or Federal program an alternative system that will achieve the objectives and purposes of the bonding program pursuant to this section.'' This provision affords statutory authority for our proposal in 30 CFR 800.18 to allow the use of financial assurances in place of conventional bonds when a continuing income stream is needed to meet ongoing treatment requirements for long-term discharges. Existing 30 CFR 800.11(e), which we propose to redesignate as 30 CFR 800.9, provides that, to meet the objectives and purposes of the bonding program, the alternative system (1) ''must assure that the regulatory authority will have available sufficient money to complete the reclamation plan for any areas which may be in default at any time;'' and (2) ''must provide a substantial economic incentive for the permittee to comply with all reclamation provisions.'' Establishment of a financial assurance in the form of a trust fund or annuity would satisfy the first criterion, while the permittee's provision of the moneys needed to establish the trust fund or annuity and the express terms of the trust would satisfy the second criterion.

We relied upon this statutory authority to adopt similar financial assurance provisions at 30 CFR 942.800 as part of the Tennessee federal regulatory program.[509] As we did in the Tennessee rulemaking, we propose to elaborate upon and incorporate into regulation pertinent elements of the policy entitled ''Hydrologic Balance Protection: Policy Goals and Objectives on Correcting, Preventing, and Controlling Acid/Toxic Mine Drainage'' [510] that we adopted on March 31, 1997. Specifically, Objective 2 under the ''Environmental Protection'' policy goal includes the following strategies:

> Strategy 2.2—If, subsequent to permit issuance, monitoring identifies acid- or toxic-forming conditions which were not anticipated in the mining and operation plan, the regulatory authority should require the operator to adjust the financial assurance.
>
> Strategy 2.3—Where inspections conducted in response to bond release requests identify surface or subsurface water pollution, bond in an amount adequate to abate the pollution should be held as long as water treatment is required, unless a financial guarantee or some other enforceable contract or mechanism to ensure continued treatment exists.[511]

The policy acknowledges that ''the required financial assurance may take a form other than those associated with a traditional performance bond.'' [512] In 2002, we published an advance notice of proposed rulemaking entitled ''Bonding and Other Financial Assurance Mechanisms for Treatment of Long-Term Pollutional Discharges and Acid/Toxic Mine Drainage (AMD) Related Issues.'' See 67 FR 35070 (May 17, 2002). In that notice, we sought comments on, among other things, the form and amount of financial assurance that should be required to guarantee treatment of postmining discharges. Commenters disagreed as to whether financial assurance should be required, but they largely agreed that, if it was, surety bonds are not the best means—or even an appropriate means—of accomplishing that purpose because a surety bond is not designed to provide the income stream needed to fund ongoing treatment.

We provided the following explanation of the statutory basis for the requirement that permittees post financial guarantees for treatment of long-term discharges.

> Section 509(a) of the Act requires that each permittee post a performance bond conditioned upon faithful performance of all the requirements of the Act and the permit. Paragraph (b) of this Section of the Act specifies that ''[t]he amount of the bond shall be sufficient to assure the completion of the reclamation plan if the work had to be performed by the regulatory authority in the event of forfeiture.'' The hydrologic reclamation plan is part of the reclamation plan to which this section refers. Section 519(c) of SMCRA authorizes release of this bond only when the regulatory authority is satisfied that the reclamation required by the bond has been accomplished, and paragraph (c)(3) specifies that ''no bond shall be fully released until all reclamation requirements of this Act are fully met.'' Furthermore, section 519(b) of the Act provides that whenever a bond release is requested, the regulatory authority must conduct an inspection to evaluate the reclamation work performed, including ''whether pollution of surface or subsurface water is occurring, the probability of continuance of future occurrence of such pollution, and the estimated cost of abating such pollution.'' Therefore, there is no doubt that, under SMCRA, the permittee must provide a financial guarantee to cover treatment of postmining discharges when such discharges develop and require treatment.[513]

The financial assurance elements of this proposed rule rely upon the same rationale. In addition, our financial assurance requirements in proposed 30 CFR 800.18 derive support from the following discussion in a Federal district court decision affirming our disapproval of a West Virginia regulatory program amendment that would have authorized final bond release upon installation of a passive treatment system for long-term discharges:

> SMCRA and its accompanying regulations comprise an intricate and complicated scheme, which contains a wealth of Congressional policies and purposes. *See, e.g.,* 30 U.S.C. 1201, 1202. Further, the overriding policies of SMCRA, minimization of environmental damage and maximization of coal production, necessarily are in tension with each other. It is within this delicate framework that OSM regulates.
>
> * * * * *
>
> The balance in the Director's approach, consistent with congressional direction, is readily ascertainable. The Director begins with the proposition that complete prevention of AMD [acid mine drainage] *during mining and reclamation* may not be possible and the associated environmental burden, with treatment, is judged tolerable resulting in a permit being issued. At this interim juncture, then, environmental considerations give way to the goal of maximizing coal production for the nation's energy requirements. Once an operator decides to close up shop and leave, however, it then would be inconsistent to allow the treatment guarantee to lapse, potentially saddling the taxpayers and adjoining landowners with a perpetual financial and environmental problem that should have been internalized by the operator. At this final stage, environmental considerations and cost internalization assume ultimate priority over the goal of maximization of production to require the total abatement of AMD.
>
> The Director has thus struck a reasonable balance in the face of Congressional ambiguity and difficult, conflicting policy considerations. Given satisfaction of the

[508] 30 U.S.C. 1259(c).

[509] 72 FR 9616 (Mar. 2, 2007).

[510] See *www.osmre.gov/lrg/docs/amdpolicy033197.pdf (last accessed August 6, 2014).*

[511] *Id.,* p. 6.

[512] Id., p. 15 (response to comment 16).

[513] *Id.,* pp. 14–15 (response to comment 16).

Chevron inquiry, the Court is bound to defer to that interpretation.[514]

The court noted that ''a bedrock principle of SMCRA is the obligation of the mine operator to bear the costs associated with surface mining, from the permitting of a mining operation through to the conclusion of the reclamation process.'' [515] In a footnote, the court observed that—

Even were treatment acceptable for bond release, the lingering difficulty with the proposed amendment is its hands-off approach to passive treatment. An operator conceivably could erect a passive treatment system, gain release and the system could later fail, leaving the taxpayers and adjoining landowners with a burden contrary to the policy of cost internalization. Such a burden could not have been intended by Congress.[516]

Proposed 30 CFR 800.18 seeks to avoid precisely this burden and result.

Finally, finding 1.b.(2) in the preamble to the document announcing our decision on another West Virginia program amendment provision contains the following rationale for requiring that permittees post performance bonds adequate to guarantee ongoing treatment of discharges:

For conventional bonds, 30 CFR 800.14(b) provides that ''the amount of the bond shall be sufficient to assure the completion of the reclamation plan if the work had to be performed by the regulatory authority in the event of forfeiture.'' Under 30 CFR 780.18(b)(9), 780.21(h), 784.13(b)(9), and 784.14(g), the reclamation plan must include the steps to be taken to comply with all applicable effluent limitations and State and Federal water quality laws and regulations. These steps include treatment. Therefore, when the mining and reclamation plan indicates that treatment will be needed on a temporary basis during mining and the early stages of reclamation, the bond must be calculated to include an amount adequate to provide for continued temporary treatment in the event forfeiture occurs within the timeframe during which treatment is needed. Also, under 30 CFR 800.15(a), the regulatory authority is required to adjust the amount and terms of a conventional bond whenever the cost of future reclamation changes. Therefore, if an unanticipated treatment need arises, the regulatory authority has an obligation to order an increase in the minimum bond required for the site. This amount must be adequate to cover all foreseeable treatment costs. This interpretation is consistent with the preamble to 30 CFR 800.17, which under the heading ''Section 800.17(c)'' states that:

''Performance bonding continues to be required at § 800.17(a) for surface disturbances incident to underground mining to ensure that the reclamation plan is completed for those areas. Completion of the reclamation plan as it relates to mine drainage and protection of the hydrologic balance would continue to be covered by the bond with respect to requirements included in § 784.14. 48 FR 32948, July 19, 1983.''

Sections 780.21(h) and 784.14(g) require a hydrologic reclamation plan showing how surface and underground mining operations will comply with applicable State and Federal water quality laws and regulations. Furthermore, section 519(b) of SMCRA requires the regulatory authority, when evaluating bond release requests, to consider whether pollution of surface and ground water is occurring, the probability of any continuing pollution, and the estimated cost of abating such pollution. Section 519(c)(3) of SMCRA and the implementing regulations at 30 CFR 800.40(c)(3) provide that no bond shall be fully released until all the reclamation requirements of the Act, the regulatory program, and the permit have been met. These requirements include abatement of surface and ground water pollution resulting from the operation.[517]

While proposed 30 CFR 800.18 focuses on financial assurance instruments (trust funds and annuities) to provide the necessary income stream, it also recognizes that collateral bonds can, under certain circumstances, be a satisfactory means of guaranteeing treatment of long-term discharges because collateral bonds require the posting of cash, securities, or other collateral. Specifically, proposed 30 CFR 800.18(b)(2) would allow the use of collateral bonds provided that the amount of the collateral bond posted includes the cost of treating the discharge during the time required to collect and liquidate the bond and convert the proceeds to a financial instrument that will generate interest in an amount sufficient to cover future treatment costs and associated administrative expenses.

2. How do we propose to revise the definitions in 30 CFR 800.5?

We propose to revise existing 30 CFR 800.5(b)(6), which is part of the definition of ''collateral bond,'' to delete the reference to ''investment-grade rated securities having a rating of AAA, AA, or A or an equivalent rating issued by a nationally recognized securities rating service.'' According to the Department of the Treasury regulations at 12 CFR 16.2, a security is considered investment grade if it is rated in one of the top four rating categories by each nationally recognized statistical rating organization that has rated the security. Our rules include only those securities with ratings in the top three categories. In addition, unlike the Treasury regulations, we do not require that the security receive these ratings from all organizations that have rated the security. Therefore, we propose to revise 30 CFR 800.5(b)(6) to eliminate the reference to ''investment-grade'' securities and to instead use language consistent with a similar provision in 30 CFR 800.23(b)(3)(i). We also propose to replace the term ''nationally recognized securities ratings service'' with the term found in the Credit Rating Agency Reform Act of 2006 (Pub. L. 109–291) and used by the Securities and Exchange Commission: ''Nationally recognized statistical rating organization.'' As revised, our proposed rule would include securities with a rating of ''A'' or higher from either Moody's Investors Service or Standard and Poor's or an equivalent rating issued by any other nationally recognized statistical rating organization registered with the Securities and Exchange Commission.

In existing paragraph (d), we propose to define ''financial assurance'' as ''a trust fund, an annuity, or a combination thereof.'' We invite comment on whether there are other investment vehicles that could provide the income stream needed to guarantee treatment of long-term discharges and therefore should be included in this definition.

3. Section 800.9: What requirements apply to alternative bonding systems?

We propose to redesignate the provisions for alternative bonding systems in existing 30 CFR 800.11(e) as new 30 CFR 800.9(a). Proposed 30 CFR 800.9(b) would clarify that the alternative bonding system will apply in lieu of the performance bond requirements of part 800 to the extent specified in the regulatory program and the document in which we approve the alternative bonding system as part of a state or federal program. Proposed paragraph (b) also would specify that all alternative bonding systems must include provisions analogous to the bond release provisions of proposed 30 CFR 800.40 through 800.44 and the bond forfeiture provisions of 30 CFR 800.50. This provision is necessary to ensure that the regulatory program, including the alternative bonding system, remains consistent with section 519 of SMCRA,[518] which governs bond release, which in turn determines when the regulatory authority may terminate jurisdiction over the operation in accordance with 30 CFR 700.11(d). Proposed 30 CFR 800.9(c) would clarify that an alternative bonding system may be structured to include only certain

[514] *West Virginia Mining and Reclamation Ass'n et al.* v. *Babbitt,* 970 F. Supp. 506, 517, 518 (S.D. W.Va. 1997).

[515] *Id.* at 512 (citing *Cat Run Coal Co.* v. *Babbitt,* 932 F.Supp. 772, 780–81 (S.D.W.V 1996)).

[516] *Id.* at 517, n. 12.

[517] 60 FR 51902 (Oct. 4, 1995).

[518] 30 U.S.C. 1269.

phases of reclamation under proposed 30 CFR 800.42, provided that the other phases are covered by one of the forms of bond listed in 30 CFR 800.12. This provision would ensure that the entire operation has bond coverage, as required by section 509 of SMCRA.[519]

Proposed 30 CFR 800.9(d)(1) would prohibit an alternative bonding system from covering restoration of the ecological function of a stream under 30 CFR 780.28, 784.28, 816.57, and 817.57. Alternative bonding systems are not appropriate or reliable mechanisms to guarantee restoration of the ecological function of a stream, given the length of time that we anticipate will be required to restore that function. Furthermore, restoration should be the responsibility of the individual, company, or other mining entity that makes the decision to mine through a stream. Existing alternative bonding systems were not established with the expectation that they might have to cover the costs of restoring the ecological function of a stream. Exposing those systems to these unanticipated costs could compromise their fiscal integrity.

Proposed 30 CFR 800.9(d)(2)(i) would prohibit an alternative bonding system from covering treatment of long-term discharges that come into existence after the effective date of paragraph (d), unless, upon discovery of the discharge, the permittee contributes an amount sufficient to cover all costs that the alternative bonding system will incur to treat the discharge in perpetuity and the alternative bonding system sets that money aside in a separate account dedicated solely to treatment of that discharge. Otherwise, consistent with proposed 30 CFR 800.18, the permittee would be required to post a financial assurance, a collateral bond, or a combination thereof to cover this obligation. Financial assurances are preferred because they produce an income stream, but the permittee has the option of posting a sufficiently large collateral bond to cover all foreseeable treatment and reclamation costs.

Self-bonds are neither appropriate nor reliable for this purpose because they do not require the deposit of any funds with the regulatory authority or under the control of the regulatory authority. Therefore, the regulatory authority may not be able to recover the necessary funds if the permittee goes out of business. In that case, there would be no dedicated funding set aside to ensure continued treatment of the discharge, which means either that treatment would cease, resulting in environmental damage, or that a governmental entity would assume treatment, meaning that the public would bear the cost of avoiding environmental damage.

Under proposed 30 CFR 800.9(d)(2)(ii), long-term discharges that came into existence before the effective date of paragraph (d) would continue to be covered by any applicable state alternative bonding system unless the regulatory authority amends its program to specifically establish an earlier effective date. The proposed rule would require that the permittee of a site with a discharge subject to paragraph (d)(2)(ii) contribute to the alternative bonding system an amount sufficient to cover all costs that the regulatory authority estimates that the alternative bonding system will incur to treat the discharge for as long as the discharge requires active or passive treatment to meet Clean Water Act standards or pertinent SMCRA-related requirements. The proposed rule would require that the alternative bonding system place that amount in a separate account available only for treatment of the discharge for which the contribution is made. The proposed rule further provides that a permittee unable to make this contribution must post a financial assurance, a collateral bond, or a combination thereof to cover this obligation.

4. Section 800.11: When and how must I file a bond?

We propose to redesignate existing 30 CFR 800.11(e) as 30 CFR 800.9. We propose to streamline the remaining provisions of existing 30 CFR 800.11 and improve the wording and structure to clarify their meaning. We also propose to add a requirement that the bond be filed in the amount that the regulatory authority determines necessary under 30 CFR 800.14.

In addition, we propose to delete a mostly obsolete provision in existing 30 CFR 800.11(c) specifying that an operator ''may not extend any underground shafts, tunnels or operations'' before the regulatory authority accepts the performance bond required for that area. This provision is inconsistent with section 509(a) of SMCRA,[520] which requires a performance bond only for that area of land within the permit area upon which the operator will conduct surface coal mining and reclamation operations. Paragraphs (27) and (28) of section 701 of SMCRA [521] define surface coal mining and reclamation operations, in relevant part, as ''activities conducted on the surface of lands'' and ''the areas upon which such activities occur or where such activities disturb the natural land surface.'' Therefore, SMCRA does not require posting of performance bond for underground workings.

Proposed paragraph (d) would replace the mostly obsolete provision in existing paragraph (c) with a prohibition on disturbing any surface area (by any type of surface coal mining operation) or extending any vertical underground mine shaft or other vertical underground mine opening for which a performance bond is required before the regulatory authority accepts the performance bond required for that area or extension. A performance bond is required for extension of vertical underground mine shafts and other vertical underground mine openings because those openings must be filled upon the completion of mining and the depth of the opening will affect the cost of reclamation.

5. Section 800.12: What form of bond is acceptable?

The first sentence of existing 30 CFR 800.12 provides that the regulatory authority must prescribe the form of the bond. We propose to redesignate this sentence as paragraph (a). The remainder of existing 30 CFR 800.12 provides that the regulatory authority may allow the permittee to post a surety bond, a collateral bond, a self-bond, or a combination of these forms of bond. We propose to redesignate this provision as paragraph (b) and add paragraphs (c) through (e) to identify exceptions and special requirements. Proposed paragraph (c) would clarify that an alternative bonding system approved under proposed 30 CFR 800.9 is not subject to 30 CFR 800.12. Proposed paragraph (d) reflects the fact that proposed 30 CFR 800.18 would require that a permittee post either a financial assurance or a collateral bond to guarantee treatment of a long-term discharge.

Consistent with proposed 30 CFR 780.28(c), 784.28(c), 816.57(b), and 817.57(b), proposed paragraph (e) would require that the permittee post a surety bond, a collateral bond, or a combination thereof to guarantee restoration of the ecological function of a stream segment. A self-bond is not an appropriate mechanism to guarantee restoration of a stream's ecological function because of the risk that the company may cease to exist during the time required to accomplish that restoration. In addition, a self-bond does not require that the permittee file financial instruments or collateral with the regulatory authority, nor is there any third party obligated to complete the

[519] 30 U.S.C. 1259.

[520] 30 U.S.C. 1259(a).

[521] 30 U.S.C. 1291(27) and (28).

reclamation or pay the amount of the bond if the permittee defaults on reclamation obligations.

6. Section 800.13: What is the liability period for a bond?

Existing 30 CFR 800.13(b) allows separate bonding of isolated and clearly defined portions of the permit area that require extended liability. We propose to revise this paragraph to allow those provisions to apply to the bond posted to guarantee restoration of a stream's ecological function under proposed 30 CFR 780.28, 784.28, 816.57, and 817.57. The proposed addition would recognize that restoring the premining ecological function of a stream segment is a lengthy process. We also propose to revise paragraph (b) to require that access routes to any separately bonded areas be included within those areas. Under the existing rule, bonding of these routes is discretionary on the part of the regulatory authority. However, we see no basis under section 509 of SMCRA to exclude any disturbed areas from bonding requirements unless those areas are fully reclaimed and are no longer used for any activity related to mining and reclamation.

Existing paragraph (d) provides that the permittee is responsible under the bond for restoring the disturbed area to a condition capable of supporting the approved postmining land use. It further provides that the permittee's responsibility does not extend to actual implementation of the approved use. We propose to revise this paragraph to reflect the proposed revisions to 30 CFR 785.16(a)(13), which would impose alternative reclamation requirements on the permittee if the postmining land use forming the basis for a variance from the approximate original contour restoration requirements is not implemented by the end of the revegetation responsibility period. We also propose to add a provision clarifying that proposed 30 CFR 800.18 would govern the liability period for long-term treatment of discharges.

7. Section 800.14: How will the regulatory authority determine the amount of bond required?

We propose to revise existing 30 CFR 800.14(a) by adding the biological condition of perennial and intermittent streams within the permit area to the list of factors that the regulatory authority must consider in establishing bond amounts. This revision is consistent with our proposal to require restoration of the ecological function of perennial and intermittent streams under 30 CFR 780.28, 784.28, 816.57, and 817.57. Streams with a more pristine biological condition may be more difficult to restore and thus may require a higher bond amount.

We propose to revise existing 30 CFR 800.14(b) by adding paragraph (b)(2) to require that the calculations used to determine the bond amount specifically identify the amount of bond needed to restore stream function. Under proposed paragraph (b)(2), the permittee then would have the option of either posting a separate bond for that amount or incorporating it into the bond posted for the entire permit or increment.

We propose to redesignate existing 30 CFR 800.14(c) as paragraph (f) and add a new paragraph (c) to reflect the proposed revisions to 30 CFR 785.16(a)(13), which would impose alternative reclamation requirements on the permittee if the postmining land use forming the basis for a variance from approximate original contour restoration requirements is not implemented by the end of the revegetation responsibility period. Specifically, we propose to require that the amount of the bond be sufficient to restore the variance area to its approximate original contour if the approved postmining land use is not implemented by the end of the applicable revegetation responsibility period. This proposed requirement is intended to minimize any potential abuse of the steep-slope variance provision.

Proposed 30 CFR 800.14(d) would clarify that proposed 30 CFR 800.18 would govern the amount of the financial assurance required to guarantee long-term treatment of discharges.

Proposed 30 CFR 800.14(e) is substantively identical to the provision in existing paragraph (b) establishing that the total bond posted for the entire area under one permit may not be less than $10,000, as required by the last clause of section 509(a) of SMCRA.[522]

8. Section 800.15: When must the regulatory authority adjust the bond amount and when may I request adjustment of the bond amount?

We propose to revise existing 30 CFR 800.15(a) to more clearly distinguish between bond adjustments under section 509(e) of SMCRA [523] and bond releases under section 519 of SMCRA.[524] Specifically, as discussed below, we propose to incorporate into regulation our interpretation of section 509(e) of SMCRA,[525] which we explain in the preamble to the existing rules and in Directive TSR–1, ''Handbook for Calculation of Reclamation Bond Amounts.'' [526] Section 509(e) of SMCRA provides that ''[t]he amount of the bond or deposit required and the terms of each acceptance of the applicant's bond shall be adjusted by the regulatory authority from time to time as affected land acreages are increased or decreased or where the cost of future reclamation changes.'' The preamble to existing 30 CFR 800.15(c) states that ''reduction of bond is considered a bond adjustment if the reduction is based on a change in method of operation or other circumstances which reduces the estimated cost for the regulatory authority to reclaim.'' [527] It further states that ''any reduction in bond amount for reclamation work performed on disturbed areas'' does not qualify as a bond adjustment because ''bond for disturbed areas can only be released or reduced through formal release procedures of § 800.40.'' [528]

Proposed 30 CFR 800.15(a) would clarify that, consistent with existing policy, the changes in the cost of reclamation to which section 509(e) of SMCRA [529] refers are limited to decreases in the cost of future reclamation as a result of (1) the approval of revisions to the operation and reclamation plan in the permit or (2) changes in the unit costs of future reclamation; *e.g.,* the cost of moving a cubic yard of spoil *x* number of feet, the cost of planting *x* number of trees, or the hourly cost to operate a specified piece of equipment. Situations that qualify for bond reduction through the bond adjustment process on this basis would include technological advances that would reduce the unit costs of reclamation, approved revisions to the operation plan (such as a decision not to remove the lowest coal seam) that would result in an operation of more limited extent than originally approved and bonded, and approved revisions to the reclamation plan (such as an alteration in the postmining land use) that would reduce reclamation costs.

A bond reduction under 30 CFR 800.15 on the basis of a change in the cost of reclamation must be justified solely upon a demonstration that the reclamation cost estimates that form the basis for the existing bond amount are no longer valid for reasons other than completion of elements of the reclamation process. We propose to add language specifying that the bond

[522] 30 U.S.C. 1259(a).

[523] 30 U.S.C. 1259(e).

[524] 30 U.S.C. 1269.

[525] 30 U.S.C. 1259(e).

[526] *http://www.osmre.gov/LRG/docs/directive882.pdf* (last accessed October 28, 2014).

[527] 48 FR 32944 (Jul. 19, 1983).

[528] *Id.* at 32945.

[529] 30 U.S.C. 1259(e).

adjustment provisions may not be used to reduce the amount of the performance bond to reflect decreases in the cost of future reclamation as a result of completion of activities required under the reclamation plan approved in the permit. Bond reduction for completed reclamation activities such as backfilling or topsoil replacement may be accomplished only in accordance with the bond release requirements and procedures of proposed 30 CFR 800.40 through 800.44. Any bond reduction requested as a result of reclamation work performed must be submitted and processed as an application for bond release under proposed 30 CFR 800.40 through 800.44.

Under proposed 30 CFR 800.15(e), the regulatory authority would have to require that appropriate bond or financial assurance be posted in accordance with proposed 30 CFR 800.18 whenever a discharge that will require long-term treatment is identified.

Proposed 30 CFR 800.15(f) would prohibit reduction of the bond amount to reflect the failure of the permittee to restore the approximate original contour or when the reclamation plan was improperly modified to reflect the level of reclamation completed rather than the level of reclamation required under the regulatory program.

9. Section 800.16: What are the general terms and conditions of the bond?

Existing 30 CFR 800.16(e) states that the bond must provide a mechanism for banks and sureties to give prompt notice to the regulatory authority and the permittee of any action filed alleging the insolvency or bankruptcy of the permittee, bank, or surety or alleging any violations that would result in suspension or revocation of the bank's or surety's license or charter to do business. We propose to revise this paragraph so that it would apply not just to banks and sureties, but also to any other responsible financial entity that issues bonds. We see no logical or legal reason to limit the scope of this requirement to banks and sureties.

We also propose to move existing 30 CFR 800.16(e)(2), which sets forth the actions that the permittee and regulatory authority must take in the event of incapacity of a bank or surety, to 30 CFR 800.30(b). This provision is not a term or condition of the bond. Therefore, it is more appropriately located in 30 CFR 800.30, which is the section that contains requirements for replacement of bonds.

10. Why are we proposing to remove existing 30 CFR 800.17?

Existing 30 CFR 800.17 contains bond requirements for underground coal mines and long-term coal-related surface facilities and structures. We propose to remove this section because it largely duplicates provisions of other sections of part 800. The only unique provision authorizes the posting of bond instruments with defined expiration dates, provided the bond is conditioned upon extension, replacement, or payment in full 30 days before the expiration date. The rule also requires that the regulatory authority initiate bond forfeiture proceedings if the permittee has not filed a term extension or a replacement bond 30 days before the expiration date.

This provision was originally adopted under the authority of section 516(d) of SMCRA,[530] which requires consideration of ''the distinct difference between surface and underground coal mining'' in developing regulations applying the bond requirements of section 509 of SMCRA [531] to underground mines. Specifically, section 800.17 provides a limited exception to the following provision in section 509(b) of SMCRA: ''Liability under the bond shall be for the duration of the surface coal mining and reclamation operation and for a period coincident with [the] operator's responsibility for revegetation requirements in section 515.'' This exception is no longer necessary because underground mines can obtain letters of credit and other bonds just as other surface coal mining operations do.

11. Section 800.18: What special provisions apply to financial guarantees for treatment of long-term discharges?

Proposed 30 CFR 800.18 would establish performance bond and financial assurance requirements that would apply whenever any discharge from a surface or underground coal mine or other facility regulated under SMCRA requires treatment and continues or may reasonably be expected to continue after the completion of mining, backfilling, grading, and the establishment of revegetation. Part IX.K.1. of this preamble explains the rationale for requiring a bond or financial assurance to guarantee treatment of long-term discharges and for the use of financial assurances in place of conventional bond instruments.

We also propose to apply these requirements to situations in which the regulatory authority finds that a discharge requiring long-term treatment will develop in the future, provided that the quantity and quality of the future discharge can be determined with reasonable probability. In these situations, it would be prudent to require that the permittee establish a trust fund or annuity during the mining phase when revenues are available. If the regulatory authority does not require establishment of a trust fund or annuity until the discharge actually develops, the permittee may no longer be in business or may lack the resources to establish a trust fund or annuity. One example of an operation that would meet these criteria is an underground mine that creates a mine pool that will reach surface elevations and begin to discharge at some point after mine closure.

Proposed paragraph (b) would specify that only financial assurances and collateral bonds are acceptable forms of bond to guarantee treatment of long-term discharges. As discussed in Part IX.K.1. of this preamble, surety bonds and self-bonds are not appropriate instruments because neither would produce the income stream needed to cover treatment expenses and because there is a distinct possibility that the discharge would outlast both the permittee and the surety. If the permittee elects to post a collateral bond rather than a financial assurance, the rule would require that the amount of the collateral bond include the cost of treating the discharge during the time needed to collect and liquidate the bond and convert the proceeds to a financial instrument that will generate interest in an amount sufficient to cover future treatment costs and associated administrative expenses. To minimize threats to the solvency of alternative bonding systems, we propose to prohibit those systems from covering treatment of long-term discharges unless the permittee posts an amount equal to the cost of treating the discharge in perpetuity and the alternative bonding system places that money in a separate account dedicated solely to treatment of that discharge. However, the proposed rule would grandfather in operations with discharges covered by an alternative bonding system on the effective date of this new provision.

Proposed paragraph (c) would specify that the amount of financial assurance or collateral bond required must include the cost of treating the discharge to meet all applicable numerical standards or limits that are in effect at the time that the regulatory authority issues an order requiring posting of a financial assurance or bond. The numerical

[530] 30 U.S.C. 1266(d).

[531] 30 U.S.C. 1259.

standards or limits may be established in a SMCRA permit (the criteria for material damage to the hydrologic balance outside the permit area), in a permit or authorization issued under the Clean Water Act (an NPDES permit, a section 404 dredge or fill permit or authorization, or a section 401 water quality certification), or in regulations implementing the Clean Water Act.

Proposed paragraph (d) would establish requirements for the financial assurance instrument itself. We based these provisions on the experience of the Pennsylvania and Tennessee regulatory authorities in establishing and managing trust funds and annuities to guarantee long-term treatment of discharges. Proposed paragraph (d) would require that the trust fund or annuity be in a form approved by the regulatory authority and contain all terms and conditions required by the regulatory authority. The trust fund or annuity would have to be established in a manner that guarantees that sufficient moneys will be available when needed to pay for treatment costs in perpetuity (unless the permittee demonstrates, and the regulatory authority finds, based on scientifically proven facts, that treatment will be needed for a lesser time, either because the discharge will attenuate or because its quality will improve); periodic maintenance, renovation, and replacement of treatment and support facilities; final reclamation of the sites upon which treatment facilities are located and areas used in support of those facilities; and administrative costs incurred by the regulatory authority or trustee. Calculations of the amount required for the trust fund or annuity would have to be based on a conservative anticipated rate of return on the proposed investments that is consistent with long-term historical rates of return for similar investments. The regulatory authority would be required to specify the investment objectives of the trust fund or annuity to ensure that those objectives are consistent with production of an income stream adequate to meet ongoing treatment needs. The trust fund or annuity must irrevocably establish the regulatory authority as the beneficiary of the trust fund or of the proceeds from the annuity for the purpose of treating mine drainage or other mining-related discharges to protect the environment and users of surface water.

Proposed paragraph (d)(1)(i) would allow permittees a reasonable time to fully fund trust funds and annuities rather than requiring a lump-sum deposit as would be required for collateral bonds. Under the proposed rule, the regulatory authority could accept an arrangement by which the permittee builds the amount of the trust fund or annuity over time, provided that the permittee continues to treat the discharge during that time; and the regulatory authority retains all performance bonds posted for the permit until the trust fund or annuity reaches a self-sustaining level as determined by the regulatory authority. This provision is needed because some permittees may require additional time to obtain the financing needed to establish a trust fund or annuity for treatment of unanticipated discharges. Insisting on immediate funding of the full cost of a trust fund or annuity could force the permittee into a default on reclamation or other obligations, which could be counterproductive if it results in the permittee ceasing treatment or if it disrupts or precludes the allocation of funds for treatment or other reclamation activities.

Proposed paragraph (d)(6) would require that the trust fund or annuity provide that disbursement of money from the trust fund or annuity may be made only upon written authorization of the regulatory authority or according to a schedule established in the agreement accompanying the trust fund or annuity. We anticipate that a fully funded trust or annuity may include provisions for disbursements to the permittee as a mechanism to cover the cost of water treatment, especially for those permittees no longer generating income from the mining of coal. Disbursements from the income stream of a fully funded trust fund or annuity would not be considered a bond release or a bond forfeiture because we propose to adopt these financial assurance provisions as an alternative bonding system for the specific purpose of producing the income stream needed to pay for treatment and related costs.

Proposed paragraph (d)(7) would provide that the financial institution or company serving as a trustee or issuing an annuity must be one of the following:

- A national bank chartered by the Office of the Comptroller of the Currency.
- An operating subsidiary of a national bank chartered by the Office of the Comptroller of the Currency.
- A bank or trust company chartered by the state in which the operation is located.
- An insurance company licensed or authorized to do business in the state in which the operation is located or designated by the pertinent regulatory body of that state as an eligible surplus lines insurer.
- Any other financial institution or company with trust powers and with offices located in the state in which the operation is located, provided that the institution's or company's activities are examined or regulated by a state or federal agency.

This proposed restriction is intended to ensure that only competent, reliable, and properly capitalized and insured companies are eligible for selection as trustees. We invite comment on whether the proposed list is too inclusive or exclusive.

Proposed paragraph (e) would allow termination of a trust fund or annuity only upon the demise of the trustee or the company issuing the annuity or as specified by the regulatory authority upon a determination that one of the following situations exists:

- No further treatment or other reclamation measures are necessary.
- A satisfactory replacement bond or financial assurance has been posted.
- The terms of the trust fund or annuity establish conditions for termination and those conditions have been met.
- The trustee's administration of the trust fund or annuity is unsatisfactory to the regulatory authority, in which case the permittee or the regulatory authority must procure a new trustee.

We invite comment on whether there are any other situations in which termination should be allowed or required.

Proposed paragraph (f) would require that the regulatory authority establish a schedule for reviewing the performance of the trustee, the adequacy of the trust fund or annuity, and the accuracy of the assumptions upon which the trust fund or annuity is based. We propose to require that these reviews occur on at least an annual basis, but we invite comment on whether a different review frequency would be more appropriate and why. The rule would require that the regulatory authority order the permittee to provide additional resources to the trust fund or annuity whenever the review or any other information available to the regulatory authority at any time demonstrates that the financial assurance is no longer adequate to meet the purpose for which it was established.

Proposed paragraph (g) provides that the bond replacement provisions of 30 CFR 800.30(a) would govern the replacement of any financial assurance.

Proposed paragraph (h) specifies that release of reclamation liabilities and obligations under financial assurances would be subject to the applicable bond release provisions of proposed 30 CFR 800.40 through 800.44.

Proposed paragraph (i) provides that the permittee may apply for, and the regulatory authority may approve, release of any bonds posted for the permit or permit increment for which the regulatory authority has approved a financial assurance, provided that the permittee and the regulatory authority comply with the bond release requirements and procedures in proposed §§ 800.40 through 800.44. This provision would apply only if the financial assurance is in place and fully funded, the permit or permit increment fully meets all applicable reclamation requirements (with the exception of the discharge and the presence of associated treatment and support facilities), and the financial assurance will serve as the bond for reclamation of the portion of the permit area required for postmining water treatment facilities and access to those facilities. Release of all other bonds for the site would be appropriate under these conditions because the fully funded trust fund or annuity would be available to fund treatment and reclamation activities in the event of a permittee's bankruptcy or dissolution.

12. Section 800.21: What additional requirements apply to collateral bonds?

We propose to revise existing 30 CFR 800.21(a)(3) to allow the acceptance of certificates of deposit issued by financial institutions other than banks. We also propose to revise existing 30 CFR 800.21(a)(4) and (d)(4) to eliminate references to the now-defunct Federal Savings and Loan Insurance Corporation and references to the obsolete $100,000 maximum on the amount insured by the Federal Deposit Insurance Corporation. The proposed revisions would make this section consistent with the current structure and nomenclature of the financial industry and its regulators.

13. Section 800.23: What additional requirements apply to self-bonds?

We propose to revise existing 30 CFR 800.23(b)(3)(i) to allow the use of any nationally recognized statistical rating organization (NRSRO) registered with the Securities and Exchange Commission in determining whether a corporation is eligible to self-bond. The existing rule allows use of only Moody's Investors Service and Standard and Poor's. The proposed revision is consistent with the Credit Rating Agency Reform Act of 2006 (Pub. L. 109–291), which facilitated the entry of new credit rating organizations into the market by abolishing the authority of the Securities and Exchange Commission (SEC) to designate NRSROs by no-action letters and replacing that process with a provision that, to be recognized as an NRSRO, a rating agency must register with the SEC. As stated in section 2(5) of the Credit Rating Agency Reform Act of 2006, ''the 2 largest credit rating agencies serve the vast majority of the market, and additional competition is in the public interest.'' Therefore, our existing rule requiring use of either Moody's or Standard and Poor's in determining self-bonding eligibility is no longer appropriate.

14. Section 800.30: When may I replace a bond or financial assurance instrument and when must I do so?

We propose to revise this section by combining existing 30 CFR 800.30(a) and (b) into paragraph (a) and by deleting an unnecessary sentence in existing 30 CFR 800.30(b) stating that replacement of a performance bond does not constitute bond release. We also propose to extend the applicability of this section to financial assurances under proposed 30 CFR 800.18, and to redesignate the mandatory bond replacement provisions of existing 30 CFR 800.16(e)(2) as 30 CFR 800.30(b).

Proposed paragraph (a) would allow the regulatory authority to decline to accept a proffered replacement surety bond if, in the judgment of the regulatory authority, the new surety does not have adequate reinsurance or other resources sufficient to cover the default of one or more mining companies for which the surety has provided bond coverage. This proposed provision is intended to avoid a repeat of the situation involving Frontier Insurance Company in the 1980s in which the surety could not meet its obligations.

Proposed paragraph (b) would extend the applicability of existing 30 CFR 800.16(e)(2) to include other responsible financial entities issuing bonds. The existing language in 30 CFR 800.16(e)(2) applies only to banks and sureties, but we see no logical reason to exclude other bond-issuing entities from the scope of this paragraph. We also propose to revise this paragraph to clarify that failure to replace a bond within the specified time is a violation for which the regulatory authority must issue a notice of violation. Operating without bond coverage would be a violation of the permit condition required under 30 CFR 773.17(a).

15. Section 800.40: How do I apply for release of all or part of a bond?

We propose to redesignate existing 30 CFR 800.40(a) as new section 800.40, with two substantive revisions. First, we propose to require that the applicant submit a certified copy of the required newspaper advertisement. Addition of the certification requirement would provide independent documentation that the newspaper advertisement has indeed been published for the required 4 weeks. Second, we propose to require that the description of the results achieved under the approved reclamation plan include an analysis of the results of the monitoring of groundwater, surface water, and the biological condition of perennial and intermittent streams under 30 CFR 816.35 through 816.37 or 817.35 through 817.37. This analysis is critical to a determination of whether reclamation requirements relating to protection of the hydrologic balance have been met.

16. Section 800.41: How will the regulatory authority process my application for bond release?

We propose to redesignate existing 30 CFR 800.40(b)(1) as section 800.41 and restructure the existing rule as paragraphs (a) and (b) of section 800.41. We also propose two substantive revisions. First, proposed paragraph (a)(1) would specify that the regulatory authority's clock for processing the application begins only upon submittal of a complete application rather than upon receipt of any application. Second, proposed paragraph (a)(2) would clarify that a complete application for bond release is one that includes all items required under 30 CFR 800.40. The proposed additions would benefit both the applicant and the regulatory authority by ensuring that an application is complete before the review process begins, which would have the additional benefit of promoting the efficient use of resources.

17. Section 800.42: What are the criteria for bond release?

We propose to redesignate existing 30 CFR 800.40(c) as 30 CFR 800.42, with a number of substantive revisions. Proposed paragraph (a) sets forth the general requirements that would have to be met before the regulatory authority may approve an application for bond release and release all or part of the bond in accordance with the other paragraphs of 30 CFR 800.42. Proposed paragraph (a) would apply to all types of bond release applications (Phase I through Phase III). In general, sections 509(a) and 519(b) of SMCRA [532] provide authority for the proposed revisions. Section 509(a) [533] provides, in relevant part, that the amount of bond in place for a surface coal mining and

[532] 30 U.S.C. 1259(a) and 1269(b).

[533] 30 U.S.C. 1259(a).

reclamation operation ''shall be sufficient to assure the completion of the reclamation plan if the work had to be performed by the regulatory authority in the event of forfeiture.'' The new requirements in proposed paragraphs (a)(2) through (a)(6) are intended to ensure that the regulatory authority retains sufficient bond to complete the reclamation plan if the work has to be performed by the regulatory authority in the event of forfeiture. Section 519(b) of SMCRA [534] provides that the regulatory authority's evaluation of a bond release application must ''consider, among other things, the degree of difficulty to complete any remaining reclamation, whether pollution of surface and subsurface water is occurring, the probability of continuance of future occurrence of such pollution, and the estimated cost of abating such pollution.'' Proposed paragraphs (a)(2) through (a)(6) are intended to ensure that the regulatory authority takes these factors into consideration.

Proposed paragraph (a)(2) would not allow the regulatory authority to release any bond if, after an evaluation of the monitoring data for groundwater, surface water, and the biological condition of perennial and intermittent streams submitted under proposed 30 CFR 816.35 through 816.37 or 817.35 through 817.37, it determines that adverse trends exist that may result in material damage to the hydrologic balance outside the permit area. This provision is intended to prevent premature release of bond that may be needed to correct potentially expensive damage to the hydrologic balance. This proposed requirement is consistent with section 515(b)(23) of SMCRA,[535] which requires that surface coal mining and reclamation operations ''meet such other criteria as are necessary to achieve reclamation in accordance with the purposes of this Act, taking into consideration the physical, climatological, and other characteristics of the site.''

Proposed paragraph (a)(3) would prohibit the release of any portion of the bond unless and until the permittee posts a financial assurance or collateral bond under proposed 30 CFR 800.18 if a discharge requiring long-term treatment exists either on the permit area or at a point that is hydrologically connected to the permit area. Adoption of this proposed paragraph would incorporate into regulation one of the strategies in the policy entitled ''Hydrologic Balance Protection: Policy Goals and Objectives on Correcting, Preventing, and Controlling Acid/Toxic Mine Drainage'' that we issued on March 31, 1997. Specifically, Strategy 2.3 of Objective 2 under the ''Environmental Protection'' goal provides that—

> Strategy 2.3—Where inspections conducted in response to bond release requests identify surface or subsurface water pollution, bond in an amount adequate to abate the pollution should be held as long as water treatment is required, unless a financial guarantee or some other enforceable contract or mechanism to ensure continued treatment exists.[536]

Proposed paragraph (a)(4) would apply whenever the permit area or increment includes a variance under 30 CFR 785.16 from restoration of the approximate original contour. In that case, the proposed rule would prohibit release of the portion of the bond described in proposed 30 CFR 785.16(a)(13), in whole or in part, until the approved postmining land use is implemented or until the site is restored to the approximate original contour and revegetated in accordance with 30 CFR 816.111 and 816.116 or 817.111 and 817.116. This provision is intended to prevent abuse of the steep-slope variance provision and to ensure that variances are requested and granted only when there is a reasonable likelihood of achieving the alternative postmining land use, as provided in the requirements for approval of higher or better land uses under section 515(b)(2) of SMCRA.[537] Authority for this provision derives in part from section 515(e)(5) of SMCRA,[538] which provides that the regulatory authority ''shall promulgate specific regulations to govern the granting of variances in accord with the provision of this subsection, and may impose such additional requirements as he deems to be necessary.''

Proposed paragraph (a)(5) pertains to buildings and structures to be retained as part of the approved postmining land use. It would prohibit release of the bond amount described in proposed 30 CFR 780.24(d)(2) or 784.24(d)(2) either until the structure is in use as part of the postmining land use or until the structure is removed and the site upon which it was located is reclaimed in accordance with part 816 or part 817. This provision is intended to ensure that only structures with actual utility for the postmining land use are retained. Unused and unmaintained mine buildings can become dangerous attractive nuisances and a visual blight on the landscape. There would be no funds available to remove structures retained as part of the postmining land use at the time of bond release if they subsequently deteriorate.

Proposed 30 CFR 800.42(a)(6) would require that the regulatory authority consider the results of the evaluation required under proposed 30 CFR 816.41(a)(3) when determining the amount of bond to release. Proposed 30 CFR 816.41(a)(3) requires that the evaluation consider, among other factors, the degree of difficulty to complete any remaining reclamation, whether pollution of surface and subsurface water is occurring, the probability of future occurrence of such pollution, and the estimated cost of abating such pollution. The factors listed in the proposed rule are identical to the factors listed in section 519(b) of SMCRA.[539]

Proposed paragraph (b) would include the criteria for Phase I bond release in existing 30 CFR 800.40(c)(1). We propose to revise the existing criteria by adding a provision clarifying that restoration of the form of perennial and intermittent stream segments mined through under 30 CFR 816.57 or 817.57 is part of the backfilling and grading process and therefore must be accomplished before the area is eligible for Phase I bond release. We also propose to add a provision stating that the amount of bond that the regulatory authority retains after Phase I release must be adequate to ensure that the regulatory authority will have sufficient funds for a third party to complete the remaining portion of the reclamation plan, including restoration of the ecological function of perennial and intermittent streams under 30 CFR 816.57 or 817.57 and completion of any fish and wildlife enhancement measures required in the permit in accordance with 30 CFR 780.16 or 784.16, in the event of forfeiture. The proposed additional requirements are necessary and appropriate to ensure compliance with section 509(a) of SMCRA,[540] which provides, in relevant part, that the amount of bond in place for a surface coal mining and reclamation operation ''shall be sufficient to assure the completion of the reclamation plan if the work had to be performed by the regulatory authority in the event of forfeiture.''

[534] 30 U.S.C. 1269(b).

[535] 30 U.S.C. 1265(b)(23).

[536] ''Policy Goals and Objectives on Correcting, Preventing and Controlling Acid/Toxic Mine Drainage,'' OSMRE, March 31, 1997. Available at *www.osmre.gov/lrg/docs/amdpolicy033197.pdf* (last accessed August 27, 2014), p. 6.

[537] 30 U.S.C. 1265(b)(2).

[538] 30 U.S.C. 1265(e)(5).

[539] 30 U.S.C. 1269(b).

[540] 30 U.S.C. 1259(a).

Section 519(c)(1) of SMCRA [541] authorizes ''release of 60 per centum of the bond or collateral for the applicable permit area'' upon the completion of backfilling, grading, and drainage control. Proposed paragraph (b) would clarify that section 519(c)(1) of SMCRA [542] does not stand alone; *i.e.,* that release of the entire 60 percent is neither required nor allowed if releasing that amount of money would result in retention of insufficient bond to cover remaining reclamation costs, as required by section 509(a) of SMCRA.[543]

Proposed paragraph (c) would include the criteria for Phase II bond release in existing 30 CFR 800.40(c)(2). Proposed paragraph (c)(1) would revise the existing criteria by adding a requirement that the regulatory authority establish standards for determining when revegetation has been successfully established for purposes of this paragraph. Establishment connotes an element of permanence. However, except for prime farmland, revegetation need not meet the entire suite of revegetation success standards under 30 CFR 816.116 or 817.116 to qualify for Phase II bond release. Otherwise, there would be little practical difference between the criteria for Phase II and Phase III bond release if the revegetation responsibility period must expire before a site is eligible for Phase II bond release. We invite comment on whether we should provide national standards for establishment of revegetation for purposes of Phase II bond release or whether this decision is best left to the judgment of the regulatory authority, based on local conditions.

We also propose to add a provision in proposed paragraph (c)(2) stating that the amount of bond that the regulatory authority retains after Phase II release must be adequate to ensure that the regulatory authority will have sufficient funds for a third party to complete the remaining portion of the reclamation plan, including restoration of the ecological function of perennial and intermittent streams under 30 CFR 816.57 or 817.57 and completion of any fish and wildlife enhancement measures required in the permit in accordance with 30 CFR 780.16 or 784.16, in the event of forfeiture. The proposed additional requirements are necessary and appropriate to ensure compliance with section 509(a) of SMCRA,[544] which provides, in relevant part, that the amount of bond in place for a surface coal mining and reclamation operation ''shall be sufficient to assure the completion of the reclamation plan if the work had to be performed by the regulatory authority in the event of forfeiture.''

Proposed paragraph (c)(5) would replace the reference to ''subchapter K of this chapter'' in existing 30 CFR 800.40(c)(2) with more specific cross-references to the regulations pertaining to permanent impoundments; *i.e.,* 30 CFR 816.49(b) and 816.56 or 817.49(b) and 817.56. We invite comment on the meaning of ''silt dam'' as used in proposed paragraph (c)(5) and in section 519(c)(2) of SMCRA.[545]

Proposed paragraph (d) would include the criteria for Phase III (final) bond release in existing 30 CFR 800.40(c)(3). We propose to add language in proposed paragraph (d)(2) emphasizing that Phase III reclamation is not completed until the permittee restores the ecological function of perennial and intermittent streams under 30 CFR 816.57 or 817.57 and completes any fish and wildlife enhancement measures required in the permit in accordance with 30 CFR 780.16 or 784.16.

18. Section 800.43: When and how must the regulatory authority provide notification of its decision on a bond release application?

Proposed 30 CFR 800.43(a) is substantively identical to existing 30 CFR 800.40(b)(2). Proposed 30 CFR 800.43(b) and (c) are substantively identical to existing 30 CFR 800.40(d) and (e), respectively.

19. Section 800.44: Who may file an objection to a bond release application and how must the regulatory authority respond to an objection?

Proposed 30 CFR 800.44 is comprised of paragraphs (a) through (c), which are substantively identical to existing 30 CFR 800.40(f) through (h), respectively.

L. Part 816: Permanent Program Performance Standards—Surface Mining Activities

In this preamble, we typically discuss only those sections and paragraphs for which we propose substantive revisions. For the reasons explained in Part VIII of this preamble, we propose to revise other sections and paragraphs within this part in accordance with plain language principles, to update cross-references, and to improve consistency. In general, we do not discuss those proposed changes because no substantive change in meaning is intended.

1. Section 816.1: What does this part do?

Existing 30 CFR 816.1 provides that part 816 sets forth the minimum environmental protection performance standards to be adopted and implemented under regulatory programs for surface mining activities. However, the content requirements and approval criteria for state regulatory programs are located at 30 CFR parts 730 through 732. Therefore, we propose to revise this section to simply state that it sets forth the environmental protection performance standards for surface mining activities under the Act.

2. Section 816.2: What is the objective of this part?

Existing 30 CFR 816.2 provides that the objective of part 816 is to ensure that all surface mining activities are conducted in a manner that preserves and enhances environmental and other values in accordance with the Act. However, SMCRA does not require preservation and enhancement of all values in all cases. Instead, as stated in section 102(f) of the Act,[546] one of the purposes of the Act is to ''strike a balance between protection of the environment and agricultural productivity and the Nation's need for coal as an essential source of energy.'' Therefore, we propose to revise 30 CFR 816.2 to state that the objective of part 816 is to ensure that surface mining activities are conducted in an environmentally sound manner in accordance with the Act.

3. Section 816.11: What signs and markers must I post?

The existing rules contain four requirements to mark buffer zones for perennial and intermittent streams—one in the stream buffer zone rule for surface mining operations at 30 CFR 816.57(b), one in the stream buffer zone rule for underground mining operations at 30 CFR 817.57(b), one in the requirements for signs and markers for surface mining operations at 30 CFR 816.11(e), and one in the requirements for signs and markers for underground mining operations at 30 CFR 817.11(e). We propose to consolidate those requirements into 30 CFR 816.11(e) and 817.11(e). Proposed 30 CFR 816.11(e) would provide that the boundaries of any buffer to be maintained between surface mining activities and perennial or intermittent streams in accordance with proposed 30 CFR 780.28 and 816.57 must be clearly marked to avoid disturbance by surface mining activities.

[541] 30 U.S.C. 1269(c)(1).

[542] 30 U.S.C. 1269(c)(1).

[543] 30 U.S.C. 1259(a).

[544] 30 U.S.C. 1259(a).

[545] 30 U.S.C. 1269(c)(2).

[546] 30 U.S.C. 1202(f).

4. Section 816.22: How must I handle topsoil, subsoil, and other plant growth media?

General Discussion of Basis for Proposed Revisions

In general, our proposed revisions to this section would improve implementation of section 515(b)(6) of SMCRA,[547] which requires that surface coal mining operations ''restore the topsoil or the best available subsoil which is best able to support vegetation,'' and section 515(b)(5) of SMCRA,[548] which states that surface coal mining operations must—

remove the topsoil from the land in a separate layer, replace it on the backfill area, or if not utilized immediately, segregate it in a separate pile from other spoil and when the topsoil is not replaced on a backfill area within a time short enough to avoid deterioration of the topsoil, maintain a successful cover by quick growing plant or other means thereafter so that the topsoil is preserved from wind and water erosion, remains free of any contamination by other acid or toxic material, and is in a usable condition for sustaining vegetation when restored during reclamation, except if topsoil is of insufficient quantity or of poor quality for sustaining vegetation, or if other strata can be shown to be more suitable for vegetation requirements, then the operator shall remove, segregate, and preserve in a like manner such other strata which is best able to support vegetation.

Existing 30 CFR 816.22 focuses primarily on topsoil handling. We propose to revise this section and its permitting counterpart at 30 CFR 780.12(e) to require salvage, protection, and redistribution of soil materials in addition to the topsoil to ensure that the reconstructed soil on the reclaimed minesite provides a root zone of sufficient depth and comprised of appropriate soil and overburden materials that will create a plant growth medium suitable for the vegetation to be planted. The existing regulations are either unclear on this point (see existing paragraphs (a)(1)(ii) and (2), which sometimes have been interpreted as meaning that soil materials other than topsoil need be salvaged, stored, and redistributed only if the topsoil is less than 6 inches thick or is of poor quality) or, in the case of existing paragraph (e), make salvage of soil materials other than topsoil discretionary on the part of the regulatory authority.

The revised performance standards in proposed paragraphs (a), (b), and (e) of 30 CFR 816.22 and the soil-handling plan required by proposed 30 CFR 780.12(e) would require salvage, protection, storage, and redistribution of whatever soil materials are necessary to ensure that the site will be restored ''to a condition capable of supporting the uses which it was capable of supporting prior to any mining, or higher or better uses of which there is reasonable likelihood,'' as required by section 515(b)(2) of SMCRA,[549] and to ensure that the site will be able to meet the revegetation requirements of paragraphs (b)(19) and (20) of section 515 of the Act.[550] The preamble discussion of proposed 30 CFR 780.12(e), to which we are proposing to move paragraphs (b) and (e) of existing 30 CFR 816.22 in revised form, provides additional background on the basis and purpose for the proposed revisions. In addition, Forest Reclamation Advisory No. 8 (one of the publications implementing and supporting the Forestry Reclamation Approach) states that deep soil is required for productive tree growth and that ''[s]alvaging and re-spreading only the upper few inches or horizons of soil is unlikely to restore premining capability unless additional materials suitable for reforestation are added.'' [551]

Furthermore, the following excerpt from a U.S. District Court for the District of Columbia decision in *PSMRL I, Round I* concerning the 1979 version of our regulations at 30 CFR 816.22(d), which required segregation of the B horizon and portions of the C horizon if the regulatory authority determined that those materials were necessary or desirable to ensure soil productivity, provides support for our proposed revisions:

Section 515(b)(5) [of SMCRA] authorizes segregation [of materials other than topsoil] if the topsoil cannot sustain vegetation or if other strata enhance post-mining vegetation. This is essentially what the regulations command. They focus on ''soil productivity,'' and grant the regulatory authority power to require segregation if necessary to improve such productivity.[552]

Proposed Paragraph (a): Removal and Salvage

Proposed paragraph (a) would require that the permittee separately remove and salvage all topsoil and other soil materials identified for salvage and use as postmining plant growth media in the soil-handling plan approved in the permit under § 780.12(e). The rule would require completion of removal and salvage of these materials from the area to be disturbed before any drilling, blasting, mining, or other surface disturbance takes place on that area. Like the existing rule, it provides an exemption for minor disturbances.

The proposed rule differs from the existing rule primarily in that it requires removal and salvage of all topsoil and other soil and overburden materials needed to reconstruct a suitable postmining plant growth medium throughout the root zone required to support the vegetation to be planted after the completion of mining. The existing rule requires removal and salvage of only topsoil, topsoil substitutes, or the top 6 inches of material when the topsoil is less than 6 inches in depth. As discussed above, in most cases, that material would result in a postmining plant growth medium of insufficient depth to support all land uses that the land was capable of supporting before any mining, which would be inconsistent with section 515(b)(2) of SMCRA.[553]

Proposed Paragraph (b): Storage

The stockpiling requirements and temporary distribution provisions of proposed paragraph (b) are substantively identical to those of existing paragraph (c), with the exception that we propose to add a requirement that any species used to establish a vegetative cover on stockpiles be non-invasive to avoid endangering the success of efforts to revegetate the site with plants native to the area.

Proposed Paragraph (c): Soil Substitutes and Supplements

Proposed paragraph (c) provides that when the soil handling plan approved in the permit in accordance with § 780.12(e) provides for the use of substitutes for or supplements to the existing topsoil or subsoil, the permittee must salvage, store, and redistribute the overburden materials selected and approved for that purpose in a manner consistent with paragraphs (a), (b), and (e) of section 816.22. It is the counterpart to existing paragraph (a)(1)(ii), but differs in that it applies to all soil substitutes and supplements, not just to topsoil substitutes and supplements. We propose to move the approval standards for soil substitutes and supplements from existing paragraph (b) to 30 CFR 780.12(e) as part of our effort to consolidate permitting requirements in subchapter G rather than having them split between

[547] 30 U.S.C. 1265(b)(6).

[548] 30 U.S.C. 1265(b)(5).

[549] 30 U.S.C. 1265(b)(2).

[550] 30 U.S.C. 1265(b)(19) and (20).

[551] Skousen, J., C. Zipper, J. Burger, C. Barton, and P. Angel. ''Forest Reclamation Advisory No. 8: Selecting Materials for Mine Soil Construction when Establishing Forests on Appalachian Mine Sites.'' (July 2011), p. 2. Available at *http://arri.osmre.gov/FRA/Advisories/FRA_No.8%20Soil%20Materials.pdf* (last accessed November 19, 2014).

[552] *PSMRL I, Round I, Mem. Op. at 54.*

[553] 30 U.S.C. 1265(b)(2).

the permitting requirements of subchapter G and the performance standards of subchapter K.

Proposed Paragraph (d): Site Preparation

Proposed paragraph (d)(1) would require that the permittee minimize grading of backfilled areas to avoid compaction of the reconstructed root zone, as specified in the soil-handling plan approved in the permit in accordance with § 780.12(e). The rule would allow compaction only to the extent necessary to ensure stability and to comply with water-quality standards.

Loosely graded soil materials have less compaction, greater water infiltration, and less erosion than more intensely graded soil materials.[554] Greater infiltration generally makes more water available for plant growth and less erosion may result in a reduced frequency for cleanouts of sedimentation ponds.[555] As stated in one research report:

Third-year results show that intensive grading did not result in better ground cover establishment or erosion control. In fact, erosion was highest on the intensively graded plots.[556]

Limited compaction is also more favorable to tree root growth, which will increase survival and growth rates and promote the establishment of productive forest land on reclaimed minesites.[557]

Proposed paragraph (d)(2) would require that, if necessary, the permittee rip, chisel-plow, or otherwise mechanically treat backfilled and graded areas before topsoil redistribution to reduce potential slippage of redistributed material placed on slopes and to promote root penetration. This provision is substantively identical to existing paragraph (d)(2) except that we propose to specify that the treatment must be mechanical in nature (ripping and chisel-plowing are the two most common methods) because we are not aware of any other effective type of treatment.

[554] Sweigard, R., J. Burger, C. Zipper, J. Skousen, C. Barton, and P. Angel. ''Forest Reclamation Advisory No. 3: Low Compaction Grading to Enhance Reforestation Success on Coal Surface Mines'' (July 2007), pp. 1 and 6. Available at *http://arri.osmre.gov/FRA/Advisories/FRA_No.3.pdf* (last accessed November 19, 2014).

[555] *Id.*

[556] Torbert, J. L. and J. A. Burger, Influence of Grading Intensity on Ground Cover Establishment, Erosion, and Tree Establishment on Steep Slopes, Virginia Polytechnic Institute and State University, in ''Proceedings of the International Land Reclamation and Mine Drainage Conference and the Third International Conference on the Abatement of Acidic Drainage,'' 1994, p. 230.

[557] Sweigard, *op. cit.*

Proposed Paragraph (e): Redistribution

Proposed paragraph (e) includes soil redistribution requirements analogous to those of existing paragraph (d)(1). The proposed rule differs from the redistribution requirements in the existing rule primarily in that the proposed rule would apply to all salvaged soil and soil substitute materials, not just to topsoil and topsoil substitutes and supplements, as in the existing rule. In addition, the proposed rule not only would require minimization of compaction to the extent possible (a requirement that is similar to the existing rule's ban on excess compaction); it would require that the permittee take measures to alleviate any excess compaction that does occur, which would minimize adverse impacts on site productivity and plant growth.

We propose to remove existing paragraph (d)(4), which requires application of nutrients and soil amendments to initially-redistributed soil material when necessary to reestablish vegetative cover. The revegetation component of the reclamation plan required under proposed 30 CFR 780.12 governs the use of nutrients and soil amendments.

Finally, proposed paragraph (e) would require use of a statistically-valid sampling technique to document that soil materials have been redistributed in the locations and to the depths required by the soil-handling plan approved in the permit in accordance with § 780.12(e). We encourage use of EPA's Data Quality Objectives model,[558] which is a seven-step method to assist in assuring that the appropriate type, quantity, and quality of data are collected for decision-making purposes. Site-specific variability should be taken into account when designing a sampling program and caution is recommended in the selection of composite versus discrete sampling methods for certain soil constituents. We invite comment on whether use of the EPA Data Quality Objectives model or its equivalent should be mandatory.

Proposed Paragraph (f): Organic Matter

Proposed paragraph (f) would require the salvage of organic matter found on the site, including duff, other organic litter, and vegetative materials such as tree tops, small logs, and root balls. We propose to prohibit the burning or burying of these materials. Instead, for the reasons discussed at slightly greater length in the preamble to proposed 30 CFR 780.12(e), proposed paragraph (f) would require that the permittee redistribute the salvaged materials across the regraded surface or incorporate them into the soil to control erosion, promote growth of vegetation, serve as a source of native plant seeds and inoculants such as mycorrhizae, speed restoration of the soil's ecological community and ecosystem processes, and increase the moisture retention capability of the soil. Proposed paragraph (f) is consistent with Forest Reclamation Advisory No. 8, which states that ''[w]hen soil is obtained from forested areas prior to mining, the salvage operation should take stumps, roots, and woody debris left on the site, transport them to the reclaimed area, and re-spread them with the soil.'' [559] The rule also would allow the use of woody debris for stream restoration purposes and to construct fish and wildlife habitat enhancement features.

Proposed paragraph (f) would enhance implementation of section 515(b)(19) of SMCRA,[560] which requires that surface coal mining and reclamation operations establish ''a diverse, effective, and permanent vegetative cover of the same seasonal variety native to the area of land to be affected and capable of self-regeneration and plant succession.'' It also would improve implementation of section 515(b)(24) of SMCRA,[561] which requires that surface coal mining and reclamation operations, ''to the extent possible using the best technology currently available, minimize disturbances and adverse impacts of the operation on fish, wildlife, and related environmental values, and achieve enhancement of such resources where practicable.''

5. Section 816.34: How must I protect the hydrologic balance?

This new section would incorporate, reorganize, and consolidate paragraphs (a), (b), and (d) of existing 30 CFR 816.41. Those paragraphs contain general requirements for protection of the hydrologic balance as well as provisions specific to protection of groundwater and surface water.

Proposed Paragraph (a)

Proposed paragraph (a) is primarily comprised of existing 30 CFR 816.41(a). However, proposed paragraph (a)(3) would add a requirement to protect streams within the permit area, unless

[558] ''Guidance on Systematic Planning Using the Data Quality Objectives Process,'' (EPA QA/G–4), EPA/240/B–06/001, February 2006; available at *http://www.epa.gov/quality/qa_docs.html* (last accessed August 7, 2014).

[559] Skousen, et al. (2011), *op. cit.* at 3.

[560] 30 U.S.C. 1265(b)(19).

[561] 30 U.S.C. 1265(b)(24).

otherwise approved in the permit in accordance with proposed 30 CFR 780.28 and 816.57. This provision would enhance implementation of section 515(b)(24) of SMCRA,[562] which requires that surface coal mining and reclamation operations be conducted to minimize adverse impacts on fish, wildlife, and related environmental values to the extent possible using the best technology currently available.

In addition, proposed paragraphs (a)(4) and (5) would clarify and refine the scope of existing 30 CFR 816.41(a), which requires the ''protection or replacement of water rights.'' Proposed paragraph (a)(4) would require that the permittee assure the protection or replacement of water supplies to the extent required by 30 CFR 816.40. Proposed paragraph (a)(5) would require that the permittee protect existing water rights under state law. (Water rights are determined by state law.) Proposed paragraphs (a)(4) and (5) better reflect the provisions of section 717 of SMCRA,[563] which contains the water rights and water supply replacement requirements applicable to surface mines. With respect to water rights, section 717(a) [564] provides that nothing in SMCRA ''shall be construed as affecting in any way the right of any person to enforce or protect, under applicable law, his interest in water resources affected by a surface coal mining operation.'' With respect to water supply replacement, section 717(b) [565] provides that—

> The operator of a surface coal mine shall replace the water supply of an owner of interest in real property who obtains all or part of his supply of water for domestic, agricultural, industrial, or other legitimate use from an underground or surface source where such supply has been affected by contamination, diminution, or interruption proximately resulting from such surface coal mine operation.

Proposed paragraph (a)(4) relates to section 717(b) of SMCRA,[566] while proposed paragraph (a)(5) relates to section 717(a) of SMCRA.[567]

Proposed paragraphs (a)(8) and (10) correspond to existing 30 CFR 816.41(b)(1) and (d)(1), respectively. We propose to revise the existing rules by adopting language that more closely follows the language of section 515(b)(10)(A) of SMCRA.[568] Specifically, we propose to replace requirements in the existing rules to minimize acidic or toxic drainage with requirements to avoid acid or toxic mine drainage. In addition, we propose to add a requirement for use of the best technology currently available. Section 515(b)(10) of SMCRA [569] uses this phrase only in paragraph (B)(i), which pertains to suspended solids. However, proposed paragraphs (a)(8) and (10) of this rule would require use of the best technology currently available to meet the requirements of section 515(b)(10)(A) [570] as well. Application of this standard to all surface-water and groundwater protection activities is appropriate because section 515(b)(24) of SMCRA [571] requires use of the best technology currently available to minimize adverse impacts on fish, wildlife, and related environmental values. Surface water and groundwater quality are related environmental values in this context.

In proposed paragraph (a)(11), which is the counterpart to existing 30 CFR 816.41(d)(2), we propose to add a cross-reference to the surface-water runoff control plan that would be required by proposed 30 CFR 780.29.

Proposed Paragraph (b)

Proposed paragraph (b)(1) is substantively identical to the last sentence in existing 30 CFR 816.41(a) except that we propose to expand its scope to include a requirement that the permittee use mining and reclamation practices that minimize adverse impacts on stream biota rather than relying upon water treatment to minimize those impacts. The existing rule applies only to water pollution and changes in flow. We also propose to revise the existing rule to clarify that this requirement is not absolute and that it applies only to the maximum extent practicable.

The addition of a reference to streams and their biota recognizes the importance of those features to the hydrologic balance, watershed ecology, and environmental values related to fish and wildlife. This requirement also would benefit the permittee because using mining and reclamation practices that avoid the creation of discharges requiring treatment is economically advantageous, especially for selenium where recent settlement agreements and court orders have resulted in the construction of treatment plants and implementation of treatment plans that will cost tens of millions of dollars.

Proposed paragraph (b)(2) is substantively identical to the last sentence of existing 30 CFR 816.41(d)(1).

Proposed Paragraph (c)

Proposed paragraph (c) is substantively identical to the middle sentence of existing 30 CFR 816.41(a).

Proposed Paragraph (d)

Proposed paragraph (d) would establish examination and reporting requirements for the surface-runoff control structures identified in the surface-water runoff control plan approved in the permit under proposed 30 CFR 780.29. Section 515(b)(10)(B)(i) of SMCRA,[572] which requires that surface coal mining operations be conducted ''so as to prevent, to the extent possible using the best technology currently available, additional contributions of suspended solids to streamflow, or runoff outside the permit area,'' provides legal authority for adoption of these requirements.

In general, hydraulic structures for sediment control are designed to retain surface runoff from the 10-year, 24-hour precipitation event within the permit area and then discharge the retained runoff at a rate that does not exacerbate downstream and off-permit impacts. In other words, by retaining surface runoff on the minesite, peak flow, stream scour, and sediment deposition in receiving streams does not increase beyond the level that would occur in the absence of mining. The structures act as ''flow equalization chambers.''

Proposed paragraph (d)(1) would require that the permittee examine the entire surface-water control system promptly after the cessation of each precipitation event of a specified size. The size of the precipitation event generating the examination would differ depending on average annual precipitation amounts. For consistency, we propose to use the same average annual precipitation amounts as section 515(b)(20) of SMCRA [573] uses to determine the length of revegetation responsibility periods; *i.e.,* our proposed examination requirements would differ depending on whether the permit lies in an area with average annual precipitation of 26.0 inches or less.

Bankfull flow in a stream in an area with an average annual precipitation of more than 26.0 inches generally occurs in response to a precipitation event with a recurrence interval between 1.5 and 2 years. Bankfull flow is the stage at which water in the stream just fills the stream channel to the top of its banks;

[562] 30 U.S.C. 1265(b)(24).
[563] 30 U.S.C. 1307.
[564] 30 U.S.C. 1307(a).
[565] 30 U.S.C. 1307(b).
[566] 30 U.S.C. 1307(b).
[567] 30 U.S.C. 1307(a).
[568] 30 U.S.C. 1265(b)(10)(A).
[569] 30 U.S.C. 1265(b)(10).
[570] 30 U.S.C. 1265(b)(10)(A).
[571] 30 U.S.C. 1265(b)(24).
[572] 30 U.S.C. 1265(b)(10)(B)(i).
[573] 30 U.S.C. 1265(b)(20).

i.e., it is the point at which any further increase in the elevation of streamflow would cause water to begin to flow onto the flood plain. Under natural conditions, any precipitation event greater than the 2-year event would be expected to result in some flooding—and possibly flood-related damage. However, the more modest flows from smaller, more frequent events often transport the greatest quantity of sediment material over time.[574]

Hydraulic structures for surface coal mining and reclamation operations are typically designed with a combination of sediment and stormwater runoff storage capacity well in excess of the estimated surface runoff from the 2-year event. Failure to maintain these structures by removing accumulated sediment can result in a reduction of stormwater storage capacity, which in turn may result in a discharge that causes property damage or material damage to the hydrologic balance outside the permit area.

Therefore, for areas with an average annual precipitation of more than 26.0 inches, proposed paragraph (d)(1)(i) would apply the examination and reporting requirements to all precipitation events that equal or exceed the 2-year recurrence interval. We invite comment on whether a precipitation event with a 2-year recurrence interval is an appropriate threshold for requiring examination of sediment control systems in mesic regions or whether we should allow variations based upon differences in terrain, storm frequency, the nature of sedimentation control structures, and the frequency with which discharges from sedimentation control structures occur.

In contrast, our experience indicates that discharges from sedimentation ponds are extremely rare in areas with an average annual precipitation of 26.0 inches or less. A review of representative mines in the West determined that approximately one percent of all impoundments discharge in any single year. Another survey indicated that discharges occurred in only one of the past 10 years. Therefore, for areas with an average annual precipitation of 26.0 inches or less, proposed paragraph (d)(1)(ii) would apply the examination and reporting requirements only to significant precipitation events. The regulatory authority would be responsible for establishing that threshold, either as part of the regulatory program or in the permit. We invite comment on whether we should establish more specific criteria for examination of hydraulic structures in arid and semiarid regions.

Proposed paragraph (d)(2) would require that the permittee prepare a report after the occurrence of each precipitation event that equals or exceeds the applicable threshold. The proposed rule would require that the report discuss the performance of the hydraulic structures, identify and describe any material damage to the hydrologic balance outside the permit area that occurred, and identify and describe the remedial measures taken in response to that damage. The proposed rule also would require that the report be certified by a registered professional engineer and be submitted to the regulatory authority within 48 hours of cessation of the applicable precipitation event to ensure that the regulatory authority has the ability to take prompt action to correct any deficiencies.

6. Section 816.35: How must I monitor groundwater?

Proposed 30 CFR 816.35 is substantively identical to existing 30 CFR 816.41(c), except as discussed below.

Proposed Paragraph (a)

Proposed paragraph (a)(1)(i) is substantively identical to the first sentence of existing 30 CFR 816.41(c)(1). Proposed paragraph (a)(1)(ii) would require adherence to the data collection, analysis, and reporting requirements of proposed 30 CFR 777.13(a) and (b) when conducting groundwater monitoring. This provision would be consistent with section 517(b)(2) of SMCRA, which requires that monitoring data collection and analysis ''be conducted according to standards and procedures set forth by the regulatory authority in order to assure their reliability and validity.''

Proposed paragraph (a)(2) includes the requirement in existing 30 CFR 816.41(c)(3) that groundwater monitoring proceed through mining and continue during reclamation until bond release. However, we propose to revise the existing language to clarify that monitoring must continue until the entire bond amount for the monitored area has been fully released under proposed 30 CFR 800.42(d), not just partial or Phase I or II bond release. This change is appropriate because the time required to achieve saturation of backfilled areas or underground mine voids typically is measured in years, which means that mining-related impacts on groundwater outside the permit area may not occur until years after completion of mining and land reclamation. Even after complete saturation, groundwater migration rates typically are measured in only feet per day.

Therefore, proposed paragraph (a)(2) would require that groundwater monitoring continue through mining and during reclamation until the entire bond amount for the monitored area has been fully released under proposed 30 CFR 800.42(d), which generally will not occur until expiration of the revegetation responsibility period. In addition, proposed 30 CFR 800.42(a) would provide that the regulatory authority may not release any portion of the bond if an evaluation of monitoring data indicates that adverse trends exist that could result in material damage to the hydrologic balance outside the permit area. Any shorter time could result in a failure to detect impacts, given the combination of slow saturation and migration rates.

Proposed Paragraphs (b) and (c)

Proposed paragraphs (b) and (c) are substantively identical to existing 30 CFR 816.41(c)(2).

Proposed Paragraph (d)

Proposed paragraph (d) is the counterpart to those elements of existing 30 CFR 816.41(c)(3) that pertain to modification of the groundwater monitoring plan. We propose to remove existing 30 CFR 816.41(c)(3)(ii) because it provides that the regulatory authority may approve a permit revision that would allow the cessation of groundwater monitoring based on a finding that monitoring is no longer necessary to achieve the purposes of the monitoring plan. As discussed in the preamble to proposed paragraph (a) above, cessation of monitoring before the entire bond amount for the monitored area has been fully released under proposed 30 CFR 800.42(d) is inappropriate, based on the time required for saturation of the backfill and slow groundwater migration rates. Proposed paragraph (d) would continue to allow the regulatory authority to approve a permit revision to otherwise modify the parameters monitored and the sampling frequency under certain conditions. We invite comment on whether we should establish a minimum sampling frequency or place other restrictions on the regulatory authority's ability to modify monitoring requirements.

However, to supplement the demonstrations required by existing 30 CFR 816.41(c)(3)(i) before the regulatory authority may approve a permit revision of this nature, we propose to add requirements that the permittee demonstrate that future changes in

[574] Rosgen, Dave. ''Applied River Morphology.'' Wildland Hydrology (1996).

groundwater quantity or quality are unlikely and that the operation has preserved or restored the biological condition of perennial and intermittent streams with base flows originating in whole or in part from groundwater within the permit or adjacent areas. See proposed paragraphs (d)(1) and (2)(iii). The additional criteria are intended to ensure that groundwater monitoring requirements are not reduced or modified prematurely.

In addition, we propose to replace the requirement in existing 30 CFR 816.41(c)(3)(i) for a demonstration that the water quantity and quality are suitable to support approved postmining land uses with a requirement for a demonstration that the operation has maintained the availability and quality of groundwater in a manner that can support existing and reasonably foreseeable uses. Our proposed replacement language parallels the terminology in our proposed definition of ''material damage to the hydrologic balance outside the permit area'' in 30 CFR 701.5.

Proposed Paragraph (e)

Proposed paragraph (e) corresponds to the second sentence of existing 30 CFR 816.41(c)(1), which provides that the regulatory authority may require additional monitoring when necessary. We propose to modify the existing language to specify that the regulatory authority must require additional monitoring when information available to the regulatory authority indicates that additional monitoring is necessary to protect the hydrologic balance, detect hydrologic changes, or meet other requirements of the regulatory program. We also propose to specify that the regulatory authority must issue a permit revision order under § 774.10(b) when requiring changes to the monitoring plan approved in the permit.

Proposed Paragraph (f)

Like existing 30 CFR 816.41(c)(4), proposed paragraph (f) would require that the permittee install, maintain, operate, and, when no longer needed, remove all equipment, structures, and other devices used in conjunction with monitoring groundwater. We propose to add cross-references to 30 CFR 816.13 and 816.39, which also contain requirements pertinent to the closure or disposition of monitoring wells.

7. Section 816.36: How must I monitor surface water?

Proposed 30 CFR 816.36 is substantively identical to existing 30 CFR 816.41(e), except as discussed below.

Proposed Paragraph (a)

Proposed paragraph (a)(1)(I) is substantively identical to the first sentence of existing 30 CFR 816.41(e)(1). Proposed paragraph (a)(1)(ii) would require adherence to the data collection, analysis, and reporting requirements of proposed 30 CFR 777.13(a) and (b) when conducting groundwater monitoring. This provision would be consistent with section 517(b)(2) of SMCRA, which requires that monitoring data collection and analysis ''be conducted according to standards and procedures set forth by the regulatory authority in order to assure their reliability and validity.''

Proposed paragraph (a)(2) includes the requirement in existing 30 CFR 816.41(e)(3) that surface-water monitoring proceed through mining and continue during reclamation until bond release. However, we propose to revise the existing language to remove any ambiguity concerning the meaning of ''bond release'' and clarify that monitoring must continue until the entire bond amount posted for the monitored area has been fully released under proposed 30 CFR 800.42(d), not just partial or Phase I or II bond release. As discussed above in the portion of the preamble concerning proposed 30 CFR 816.35(a), this change is appropriate because the time required to achieve saturation of backfilled areas or underground mine voids typically is measured in years, which means that mining-related impacts on groundwater, and hence surface water fed by groundwater, outside the permit area may not occur until years after the completion of mining and land reclamation. Even after complete saturation, groundwater migration rates typically are measured in only feet per day.

Therefore, proposed paragraph (a)(2) would require that surface-water monitoring continue through mining and during reclamation until the entire bond amount posted for the monitored area has been fully released under proposed 30 CFR 800.42(d), which generally will not occur until expiration of the revegetation responsibility period. In addition, proposed 30 CFR 800.42(a) would provide that the regulatory authority may not release any portion of the bond if an evaluation of monitoring data indicates that adverse trends exist that could result in material damage to the hydrologic balance outside the permit area. Any shorter time could result in a failure to detect impacts on surface water fed by groundwater, given the combination of slow saturation and migration rates for groundwater.

Proposed Paragraphs (b) and (c)

Proposed paragraphs (b) and (c) are substantively identical to existing 30 CFR 816.41(e)(2).

Proposed Paragraph (d)

Proposed paragraph (d) would be the counterpart to those elements of existing 30 CFR 816.41(e)(3) that pertain to modification of the surface-water monitoring plan. We propose to remove existing 30 CFR 816.41(e)(3)(ii) because it provides that the regulatory authority may approve a permit revision that would allow the cessation of surface-water monitoring based on a finding that monitoring is no longer necessary to achieve the purposes of the monitoring plan. As discussed in the preamble to paragraph (a) above, cessation of monitoring before the entire bond amount for the monitored area has been fully released under proposed 30 CFR 800.42(d) is inappropriate, based on the time required for saturation of the backfill and slow groundwater migration rates. Proposed paragraph (d) would continue to allow the regulatory authority to approve a permit revision to otherwise modify the parameters monitored and the sampling frequency under certain conditions. We invite comment on whether we should establish a minimum sampling frequency or place other restrictions on the regulatory authority's ability to modify monitoring requirements.

However, as in the similar provision in proposed 30 CFR 816.35 relating to groundwater monitoring, we propose to add requirements that the permittee demonstrate that future changes in surface-water quantity or quality are unlikely and that the operation has preserved or restored the biological condition of perennial and intermittent streams within the permit and adjacent areas. See proposed paragraphs (d)(1) and (2)(iii). The additional criteria are intended to ensure that surface-water monitoring requirements are not reduced or modified prematurely.

In addition, we propose to replace the requirement in existing 30 CFR 816.41(e)(3)(i) for a demonstration that the water quantity and quality are suitable to support approved postmining land uses with a requirement for a demonstration that the operation has maintained the availability and quality of surface water in a manner that can support existing and reasonably foreseeable uses and that does not preclude attainment of designated uses under section 101(a) or 303(c) of the Clean Water Act.[575] Our

[575] 33 U.S.C. 1251(a) and 1313(c), respectively.

proposed replacement language parallels the terminology of our proposed definition of material damage to the hydrologic balance outside the permit area in 30 CFR 701.5, which also relies upon existing, reasonably foreseeable, and designated uses under section 101(a) or 303(c) of the Clean Water Act. We propose to retain the requirement in the last clause of existing 30 CFR 816.41(e)(3)(i) for a demonstration that the water rights of other users have been protected or replaced.

Proposed Paragraph (e)

Proposed paragraph (e) corresponds to the second sentence of existing 30 CFR 816.41(e)(1), which provides that the regulatory authority may require additional monitoring when necessary. We propose to modify the existing language to specify that the regulatory authority must require additional monitoring when information available to the regulatory authority indicates that additional monitoring is necessary to protect the hydrologic balance, detect hydrologic changes, or meet other requirements of the regulatory program. We also propose to specify that the regulatory authority must issue a permit revision order under § 774.10(b) when requiring changes to the monitoring plan approved in the permit.

Proposed Paragraph (f)

Like existing 30 CFR 816.41(e)(4), proposed paragraph (f) would require that the permittee install, maintain, operate, and, when no longer needed, remove all equipment, structures, and other devices used in conjunction with monitoring surface water.

8. Section 816.37: How must I monitor the biological condition of streams?

We propose to add this section to require monitoring of the biological condition of perennial and intermittent streams, consistent with the monitoring plan approved in the permit in accordance with proposed 30 CFR 780.23(c). The proposed rule would require annual monitoring during mining and reclamation until the entire bond amount for the monitored area has been fully released under proposed 30 CFR 800.42(d). The annual frequency is intended to provide sufficient data to evaluate the impacts of mining and reclamation without depleting the stream segment of aquatic life, as more frequent sampling might do. Monitoring would enable the permittee and the regulatory authority to determine whether the predictions in the permit application are accurate and to take timely corrective measures if the predictions turn out to be inaccurate. The proposed monitoring requirements generally parallel the requirements for water monitoring under 30 CFR 816.35 and 8816.36, but in simplified form.

9. Section 816.38: How must I handle acid-forming and toxic-forming materials?

Proposed section 816.38 would replace and revise existing 30 CFR 816.41(f), which requires that drainage from acid-forming and toxic-forming materials into surface water and groundwater be avoided by appropriate storage, burial, and treatment practices. We propose to flesh out the existing rule to more completely implement section 515(b)(14) of SMCRA,[576] which requires that all acid-forming materials and toxic materials be ''treated or buried and compacted or otherwise disposed of in a manner designed to prevent contamination of ground or surface waters,'' and section 515(b)(3) of SMCRA,[577] which provides that ''overburden or spoil shall be shaped and graded in such a way as to prevent slides, erosion, and water pollution.'' Proposed 30 CFR 816.38 also would more completely implement section 515(b)(10) of SMCRA,[578] which provides that surface coal mining and reclamation operations must be conducted to ''minimize the disturbances to the prevailing hydrologic balance at the mine-site and in associated offsite areas and to the quality and quantity of water in surface and ground water systems both during and after surface coal mining operations and during reclamation by *** avoiding acid or other toxic mine drainage.''

We propose to revise the introductory text of 30 CFR 816.38 to require that the permittee use the best technology currently available to handle acid-forming and toxic-forming materials in a manner that will avoid the creation of acid or toxic mine drainage into surface water and groundwater. The phrase ''best technology currently available'' does not appear in the sections of SMCRA mentioned above. However, application of this standard to the handling of acid-forming and toxic-forming materials is appropriate because section 515(b)(24) of SMCRA [579] requires use of the best technology currently available to minimize adverse impacts on fish, wildlife, and related environmental values. The handling of acid-forming and toxic-forming materials would affect surface-water and groundwater quality, which are related environmental values in the context of fish and wildlife.

Proposed paragraphs (a) through (f) contain more specific provisions on how the permittee must implement this requirement.

Proposed paragraph (a) would require that the permittee identify potential acid-forming and toxic-forming materials in overburden strata and the stratum immediately below the lowest coal seam to be mined. We invite comment on whether there are generally-accepted tests for potential acid-forming and toxic-forming materials in overburden strata that the final rule should require.

Proposed paragraph (a) also would require that the permittee cover exposed coal seams and the stratum immediately beneath the lowest coal seam mined with a layer of compacted material with a hydraulic conductivity at least two orders of magnitude lower than the hydraulic conductivity of the adjacent less-compacted spoil to minimize contact and interaction with water. Covering the coal seam and the underlying stratum with material that has a lower permeability than the adjacent spoil would reduce the amount of water that could either reach or leave the coal seam and underlying stratum. Reduced water transmission will inhibit both the creation and migration of acid or toxic mine drainage. Use of materials with such a great difference in permeability should result in the low-permeability material behaving as an aquitard. The groundwater and infiltrating surface water should preferentially flow through the surrounding high-permeability material and not through the low-permeability material encapsulating the acid-forming or toxic-forming materials.

Proposed paragraph (b) would require that the permittee identify the anticipated postmining groundwater level for all locations at which acid-forming or toxic-forming materials are to be placed. This information is critical to a determination of whether the materials will remain in an environment that will prevent formation or migration of acid or toxic mine drainage.

Proposed paragraph (c) would require that the permittee selectively handle and place acid-forming and toxic-forming materials within the backfill in accordance with the plan approved in the permit, unless the permit allows placement of those materials in an excess spoil fill or a coal mine waste refuse pile. Proposed paragraph (c) identifies three acceptable handling techniques for acid-forming and toxic-forming materials to be placed in the

[576] 30 U.S.C. 1265(b)(14).
[577] 30 U.S.C. 1265(b)(3).
[578] 30 U.S.C. 1265(b)(10).
[579] 30 U.S.C. 1265(b)(24).

backfill: (1) Complete isolation of acid-forming and toxic-forming materials from contact or interaction with surface water or groundwater by surrounding those materials with compacted material with a hydraulic conductivity at least two orders of magnitude lower than the hydraulic conductivity of the adjacent less-compacted spoil; (2) placement of acid-forming and toxic-forming materials in a location below the water table where they will remain fully saturated at all times, provided that the permittee demonstrates, and the regulatory authority finds in writing in the permit, that complete saturation will prevent the formation of acid or toxic leachate; and (3) treatment to neutralize the acid-forming and toxic-forming potential of those materials. The last technique may be used in combination with either of the first two methods. Under the proposed rule, the permittee must use the technique or combination of techniques approved in the permit in accordance with proposed 30 CFR 780.12(d)(4). The permittee must demonstrate and the regulatory authority must confirm that the selected technique will be effective for each parameter of concern. For example, a technique that may be effective in preventing the formation of acid drainage might not be effective in preventing leaching of selenium. The regulatory authority may require that the permittee or permit applicant submit additional information, including fate and transport modeling, if deemed necessary.

Isolation of acid-forming and toxic-forming materials from contact with groundwater or surface water can be accomplished by completely surrounding those materials with compacted material with a hydraulic conductivity at least two orders of magnitude lower than the hydraulic conductivity of the adjacent less-compacted spoil to minimize interaction with water. Situations requiring saturation rather than isolation arise most frequently in the relatively flat terrain of coalfields in the Midwest and the West. Saturation may not be suitable for materials with the potential for forming toxic compounds through processes other than pyritic oxidation.

Proposed paragraph (d) would allow placement of acid-forming and toxic-forming materials in an excess spoil fill or a coal mine waste refuse pile when approved in the permit. The proposed rule would require the use of isolation or treatment or a combination of those techniques whenever the permittee places acid-forming or toxic-forming materials in an excess spoil fill or a coal mine waste refuse pile. The proposed rule would not authorize use of the saturation technique because saturation could jeopardize the stability of the fill or refuse pile. Saturation also could result in discharges with high levels of total dissolved solids, which in turn could adversely impact the biological condition of streams and cause material damage to the hydrologic balance outside the permit area.

Alternatively, prohibition of placement of acid-forming or toxic-forming materials in an excess spoil fill would provide an additional layer of protection against the development of seeps containing acid or toxic mine drainage. We invite comment on whether we should revise our rule to include such a prohibition.

Proposed paragraph (e) would modify the requirements in existing 30 CFR 816.41(f)(1)(ii) for temporary storage of acid-forming and toxic-forming materials to emphasize that storage may be used only when the regulatory authority specifically approves temporary storage as necessary and finds in writing in the permit that the proposed storage method will protect surface water and groundwater by preventing erosion, the formation of polluted runoff, and the infiltration of polluted water into aquifers. The proposed rule would require that the regulatory authority specify a maximum time for temporary storage, which may not exceed the period until burial first becomes feasible. We also propose to add a provision prohibiting temporary storage if doing so would result in a risk of adverse impacts to the biological condition of perennial or intermittent streams. Minimizing the need for, and duration of, temporary storage is critical because the oxidation of pyritic materials continues while the material is exposed. Precipitation may infiltrate and percolate through the pile, which can result in an increase in the concentration of total dissolved solids leaving the site. The weathering products of pyrite oxidation essentially become ''stored acidity,'' which presents a greater risk to the hydrologic balance if the permanent placement technique ultimately is not successful. Our proposed revisions to the temporary storage requirements for acid-forming and toxic-forming materials would improve implementation of section 515(b)(10) of SMCRA.[580]

Proposed paragraph (f) would require that disposal, treatment, and storage practices for acid-forming and toxic-forming materials be consistent with other material handling and disposal provisions of the regulatory program. This paragraph is substantively identical to existing 30 CFR 816.41(f)(2).

10. Section 816.40: What responsibility do I have to replace water supplies?

Proposed 30 CFR 816.40 would replace and revise existing 30 CFR 816.41(h), which contains performance standards to implement section 717(b) of SMCRA.[581] That paragraph of SMCRA provides that—

> The operator of a surface coal mine shall replace the water supply of an owner of interest in real property who obtains all or part of his supply of water for domestic, agricultural, industrial, or other legitimate use from an underground or surface source where such supply has been affected by contamination, diminution, or interruption proximately resulting from such surface coal mine operation.

Proposed 30 CFR 816.40 would further flesh out the requirements of this statutory provision by incorporating paragraphs (a) and (b) of the existing definition of ''replacement of water supply'' in 30 CFR 701.5. We propose to move those paragraphs to 30 CFR 816.40(a)(2) through (4) because they effectively function as performance standards and are not definitional in nature. We also propose to require adherence to the water supply replacement provisions of proposed 30 CFR 780.22(b) when the permit anticipates that damage to water supplies will occur. Finally, we propose to add the following provisions that would apply when unanticipated damage to a protected water supply occurs:

- The permittee would have to provide an emergency temporary water supply within 24 hours of notification of unanticipated damage to a protected water supply. The temporary supply must be adequate in quantity and quality to meet normal household needs.
- The permittee would have to develop and submit a plan for a permanent replacement supply to the regulatory authority within 30 days of receiving notice of unanticipated damage.

[580] 30 U.S.C. 1265(b)(10). This provision of SMCRA specifies that surface coal mining and reclamation operations must be conducted to—

> minimize the disturbances to the prevailing hydrologic balance at the mine-site and in associated offsite areas and to the quality and quantity of water in surface and ground water systems both during and after surface coal mining operations and during reclamation by—
>
> (A) avoiding acid or other toxic mine drainage by such measures as, but not limited to—
>
> (i) preventing or removing water from contact with toxic producing deposits[.]

[581] 30 U.S.C. 1307(b).

• The permittee would have to provide a permanent replacement water supply within 2 years of receiving notice of unanticipated damage.

The proposed timeframes for replacement of water supplies for which damage is unanticipated differ somewhat from those set forth in the preamble to the existing definition of ''replacement of water supply'' in 30 CFR 701.5. That preamble defines prompt replacement as providing an emergency drinking water supply within 48 hours of notification, a temporary water supply hookup within 2 weeks of notification, and a permanent replacement supply within 2 years of notification.[582] We propose to replace the timeframes in that preamble with the times set forth in proposed 30 CFR 816.40 as discussed above. The proposed timeframes would better protect society and the environment from the adverse effects of surface coal mining operations, in keeping with the purpose of SMCRA set forth in section 102(a) of the Act.[583]

11. Section 816.41: Under what conditions may I discharge to an underground mine?

Proposed section 816.41 would inlude existing 30 CFR 816.41(i) and add four new requirements that must be met before the regulatory authority may approve a proposed discharge to any type of underground mine. First, proposed paragraph (a)(1)(ii) would require a demonstration that the discharge will be made in a manner that will prevent material damage to the hydrologic balance of the area in which the underground mine receiving the discharge is located. Second, proposed paragraph (a)(1)(iii) would require a demonstration that the discharge will be made in a manner that will not adversely impact the biological condition of perennial or intermittent streams. Third, proposed paragraph (a)(3)(ii) would allow the regulatory authority to approve discharges of water that exceed the effluent limitations for pH and total suspended solids only if available evidence indicates that there is no direct hydrologic connection between the underground mine and other waters and that the discharge would not cause material damage to the hydrologic balance outside the permit area. All three of the proposed revisions discussed above are intended to more fully implement section 510(b)(3) of SMCRA,[584] which prohibits approval of a permit application unless the applicant demonstrates, and the regulatory authority finds, that the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area.

The fourth proposed revision would add paragraph (a)(5), which would require that the permit applicant obtain written permission from the owner of the mine into which the discharge is to be made and provide a copy of that authorization to the regulatory authority.

12. Section 816.42: What are my responsibilities to comply with water quality standards and effluent limitations?

We propose to redesignate existing 30 CFR 816.42 as paragraph (a) of this section. We also propose to revise this paragraph by replacing the reference to the effluent limitations in 40 CFR part 434 with a reference to the effluent limitations established in the NPDES permit for the operation. This change would make our regulations consistent with the policy and practice of the EPA, which recognizes only the effluent limitations in the NPDES permit as being enforceable.

Proposed paragraph (b) would require that discharges of overburden (including excess spoil), coal mine waste, and other materials into waters of the United States be made in compliance with section 404 of the Clean Water Act [585] and its implementing regulations. While the language would be new, the requirement would not—SMCRA permittees always have been required to comply with the Clean Water Act, as emphasized in section 702(a) of SMCRA,[586] which provides that ''[n]othing in this Act shall be construed as superseding, amending, modifying, or repealing'' the Clean Water Act (33 U.S.C. 1251 *et seq.*), any rule or regulation adopted under the Clean Water Act, any state laws enacted pursuant to the Clean Water Act, ''or other Federal laws relating to preservation of water quality.'' We invite comment on whether the provisions of proposed paragraph (b) should be considered informational in nature like the provisions of section 702(a) of SMCRA [587] or whether they should be directly enforceable under SMCRA.

Proposed paragraphs (c) through (e) would establish enforceable performance standards requiring proper operation and maintenance of water treatment facilities and environmentally appropriate disposition of precipitates from those facilities. They are intended to improve implementation of section 515(b)(10)(A)(ii) of SMCRA,[588] which requires that surface coal mining and reclamation operations avoid acid or other toxic mine drainage by ''treating drainage to reduce toxic content which adversely affects downstream water upon being released to water courses.''

Specifically, proposed paragraph (c) would require the permittee to construct water treatment facilities for discharges from the operation as soon as the need for those facilities becomes evident. Proposed paragraph (d) would require that the permittee remove precipitates and otherwise maintain all water treatment facilities involving the use of settling ponds or lagoons as necessary to maintain the functionality of the ponds or lagoons. The permittee would be required to dispose of the precipitates removed either in an approved solid waste landfill or in a location within the permit area. Proposed paragraph (e) would require that the permittee operate and maintain water treatment facilities until the regulatory authority authorizes their removal based upon monitoring data demonstrating that influent to the facilities meets all applicable water quality standards and effluent limits without treatment.

13. Section 816.43: How must I construct and maintain diversions and other channels to convey water?

We propose to revise this section to reflect plain language principles. In addition, we propose several substantive changes. First, proposed paragraph (a)(3) would require the construction of channels that meet temporary diversion design criteria to convey surface runoff to siltation structures whenever the sedimentation control plan approved in the permit pursuant to 30 CFR 816.45 involves the use of siltation structures. This requirement would not apply if the entire disturbed area would naturally drain to the siltation structure without the construction of channels. Requiring that these channels meet temporary diversion design criteria would minimize the potential for failure and the resulting possibility of offsite impacts. Diversion failures have resulted in subsequent failures of larger structures. For example, in West Virginia in 2003, the failure of a diversion ditch caused erosion and the breaching of a reclaimed impoundment, resulting in a flow of water, slurry, and coarse refuse downstream. This event

[582] 60 FR 16727 (Mar. 31, 1995).

[583] 30 U.S.C. 1202(a).

[584] 30 U.S.C. 1260(b)(3).

[585] 33 U.S.C. 1344.

[586] 30 U.S.C. 1292(a).

[587] *Id.*

[588] 30 U.S.C. 1265(b)(10)(A)(ii).

isolated residents along Ned's Branch, blocked roads and a major railroad, and contaminated the Guyandotte River.

Existing 30 CFR 816.43(a) requires that diversions be designed to minimize adverse impacts to the hydrologic balance within the permit and adjacent areas. Proposed paragraph (a)(4)(ii) would clarify that this provision includes a requirement to minimize adverse impacts to perennial and intermittent streams within that area.

Existing 30 CFR 816.43(a) requires that diversions be designed to ''prevent material damage outside the permit area.'' Proposed paragraph (a)(4)(iii) would revise this language to require that diversions be designed to prevent material damage to the hydrologic balance outside the permit area. The revised language would make this provision consistent with the terminology of 30 CFR 773.15(e) and section 510(b)(3) of SMCRA,[589] which require that surface coal mining and reclamation operations be designed to prevent material damage to the hydrologic balance outside the permit area.

We propose to combine existing 30 CFR 816.43(a)(2)(ii) and (c)(3) into a new paragraph (a)(5)(ii). Existing paragraph (a)(2)(ii) provides that each diversion and its appurtenant structures must be designed, located, constructed, maintained, and used to provide protection against flooding and resultant damage to life and property. Existing paragraph (c)(3) states that this requirement will be deemed met when the combination of channel, bank, and floodplain configuration is adequate to safely pass the peak runoff of a 2-year, 6-hour precipitation event for a temporary diversion and a 10-year, 6-hour precipitation event for a permanent diversion. Proposed paragraph (a)(5)(ii) would replace existing paragraph (a)(2)(ii) with a slightly modified version of existing paragraph (c)(3) because existing paragraph (c)(3) effectively negates existing paragraph (a)(2)(ii). Proposed paragraph (a)(5)(ii) would not contain the reference to floodplain configuration in existing paragraph (c)(3) because use of a floodplain to convey flows from storm runoff is appropriate in naturally-functioning streams and in restored streams, but not with temporary or permanent diversions.

Proposed paragraph (a)(5)(ii) also would require that each diversion be designed using the appropriate regional NRCS synthetic storm distribution to determine peak flows. The preamble to proposed 30 CFR 780.29 explains the rationale for this proposed requirement.

Proposed paragraph (a)(5)(iii) would include existing paragraph (a)(2)(iii). We propose to add a reference to runoff outside the permit area to be consistent with the underlying statutory provision in section 515(b)(10)(B)(i) of SMCRA,[590] which requires that surface coal mining operations be conducted ''so as to prevent, to the extent possible using the best technology currently available, additional contributions of suspended solids to streamflow, or runoff outside the permit area.''

The last sentence of existing paragraph (a)(3) and the entirety of existing paragraph (b) contain approval, design, and construction requirements for temporary and permanent diversions of perennial, intermittent, and ephemeral streams. We propose to move the approval and design provisions to 30 CFR 780.28(c) and the construction requirements to 30 CFR 816.57(b) to consolidate requirements concerning activities in, through, or adjacent to streams in those sections. Proposed paragraph (b) would specify that 30 CFR 780.28 and 816.57 contain additional requirements applicable to diversions of perennial and intermittent streams.

Lastly, we propose to revise paragraph (c)(1) of the existing rules to limit the scope of paragraph (c), which applies to diversions of miscellaneous flows, to surface-water flows other than perennial and intermittent streams. The existing rule is internally inconsistent in that it specifically includes groundwater discharges, but expressly excludes perennial and intermittent streams. However, any flow resulting from a groundwater discharge would be a perennial or intermittent stream under both the existing and proposed definitions of those terms in 30 CFR 701.5. Therefore, diversions of groundwater discharges would be subject to the stream-channel diversion requirements referenced in proposed paragraph (b) rather than standards for miscellaneous flows under paragraph (c).

We invite comment on whether we should revise paragraph (c) to apply the same design events for temporary and permanent diversions of miscellaneous flows as apply to temporary and permanent diversions of perennial and intermittent streams because there is no readily apparent hydrologic reason to apply different standards based on the flow regime of the stream. Instead, it may be more logical to prescribe design events based upon the length of time that the diversion is expected to remain in existence; *i.e.,* whether it is temporary or permanent. Under this approach, temporary diversions of miscellaneous flows would have to be designed and constructed to safely pass the peak runoff from the 10-year, 6-hour precipitation event rather than the 2-year, 6-hour event. Similarly, permanent diversions of miscellaneous flows would have to be designed and constructed to safely pass the peak runoff from the 100-year, 6-hour precipitation event rather than the 10-year, 6-hour event. We also invite comment on whether we should raise the design event for temporary diversions to the 25-year, 6-hour event to provide an added margin of safety.

14. Section 816.45: What sediment control measures must I use?

We propose to remove the second sentence of 30 CFR 816.45(b), which reads as follows: ''The sedimentation storage capacity of practices in and downstream from the disturbed areas shall reflect the degree to which successful mining and reclamation techniques are applied to reduce erosion and control sediment.'' The meaning of this sentence is unclear, but it appears to be predicated on the assumption that all mines will have a sedimentation pond or other siltation structure located downstream of the disturbed area. That assumption is inconsistent with the court decision remanding former 30 CFR 816.46(b)(2) (1983).[591] Furthermore, not all sediment control practices include sedimentation storage capacity. Therefore, we propose to remove this sentence to avoid any conflict with either the court decision or current technology.

15. Section 816.46: What requirements apply to siltation structures?

We propose to remove existing paragraph (b)(1) of this section because it duplicates 30 CFR 816.45(a)(1), both of which require use of the best technology currently available to prevent additional contributions of suspended solids to streamflow or runoff outside the permit area to the extent possible. Section 816.45 is the more appropriate location for this provision because section 816.46 covers only siltation structures, whereas section 816.45 encompasses all methods of sediment control. Section 816.45 sets forth various measures and techniques that may constitute the best technology currently available for sediment control,

[589] 30 U.S.C. 1260(b)(3).

[590] 30 U.S.C. 1265(b)(10)(B)(i).

[591] *PSMRL II, Round III,* 620 F. Supp. 1519, 1566–1568 (D.D.C. 1985), as discussed at 73 FR 75854 (Dec. 12, 2008). See also 51 FR 41961 (Nov. 20, 1986).

although applicants and regulatory authorities are not limited to those measures and techniques.

Paragraph (b)(2) of 30 CFR 816.46 and 817.46 (1983) required that all surface drainage from the disturbed area be passed through a siltation structure before leaving the permit area. In essence, that paragraph prescribed siltation structures (sedimentation ponds and other treatment facilities with point-source discharges) as the best technology currently available for sediment control. However, paragraph (b)(2) was struck down upon judicial review because the court found that the preamble to the rulemaking in which it was adopted did not articulate a sufficient basis for the rule under the Administrative Procedure Act. The court stated that the preamble did not adequately discuss the benefits and drawbacks of siltation structures and alternative sediment control methods and did not enable the court ''to discern the path taken by [the Secretary] in responding to commenters' concerns'' that siltation structures in the West are not the best technology currently available. See *In re: Permanent Surface Mining Regulation Litigation II, Round III,* 620 F. Supp. 1519, 1566–1568 (D.D.C. July 15, 1985).

On November 20, 1986 (51 FR 41961), we suspended the rules struck down by the court. In a technical rule that corrected various errors in citations, cross-references, and other inadvertent errors, we lifted that suspension and removed paragraph (b)(2) from our regulations on September 29, 2010 (75 FR 60272, 60275). However, on February 14, 2014, the court's decision in *NPCA* reinstated the version of 30 CFR 816.46(b) in effect before adoption of the stream buffer zone rule on December 12, 2008. This action had the effect of reinstating the suspension, which we codified in a final rule published on December 22, 2014. See 79 FR 76227–76233. We now propose to lift this suspension, remove paragraph (b)(2) of sections 816.46 and 817.46, and redesignate the remaining paragraphs of those sections accordingly.

In addition, we propose to redesignate as paragraph (b)(1) the provision in existing paragraph (b)(3) requiring that the permittee construct siltation structures for an area before initiating any surface mining activities in the area. We also propose to revise this paragraph to clarify that the requirement to construct siltation structures applies only when the approved permit requires the use of siltation structures to achieve the sediment control requirements of 30 CFR 816.45. This revision is needed because, as the courts have recognized, siltation structures are not always the best technology currently available for sediment control.[592] Proposed paragraph (b)(2) would retain only the requirement in existing paragraph (b)(3) that the construction of siltation structures be certified by a qualified registered professional engineer or a qualified registered professional land surveyor.

Finally, we propose to—

- Revise existing paragraph (b)(5), which we propose to redesignate as paragraph (b)(4), to remove the prohibition on removing siltation structures sooner than 2 years after the last augmented seeding. The standard is too inflexible and it is arguably inconsistent with the decision in *PSMRL II, Round III* discussed above, in which the court held that we had not demonstrated that siltation structures are always the best technology currently available to control sediment in runoff from the minesite. Applying that rationale, the permittee should have the option of using other methods of sediment control in lieu of retaining the siltation structures for 2 years after the last augmented seeding. In addition, the remaining standard in the rule, which prohibits removal of siltation structures until the disturbed area is stabilized and revegetated, is sufficient to ensure an appropriate level of environmental protection.
- Revise existing paragraph (b)(6), which we propose to redesignate as paragraph (b)(5), to clarify that the exemption for sedimentation ponds approved by the regulatory authority for retention as permanent impoundments under 30 CFR 816.49(b) is contingent upon meeting the maintenance requirements of 30 CFR 800.42(c)(5). The latter rule implements the statutory provision in section 519(c)(2) of SMCRA [593] establishing bond release requirements for silt dams to be retained as permanent impoundments.
- Remove existing paragraph (c)(1)(i), which provides that sedimentation ponds must be used individually or in series. This provision adds nothing meaningful to our regulations because there is no other way in which sedimentation ponds could be used.
- Revise existing paragraph (c)(1)(ii), which we propose to redesignate as paragraph (c)(1)(i), to provide that the prohibition on locating sedimentation ponds in stream channels applies to both perennial and intermittent stream channels, not just to perennial stream channels as in the existing rule. In addition, we propose to clarify that any exceptions to this prohibition must comply with 30 CFR 780.28, which contains the permitting requirements for activities in, through, or adjacent to perennial and intermittent streams, and the performance standards concerning sedimentation control structures in streams in 30 CFR 816.57(c). The statutory basis for these proposed changes is the same as the statutory basis for the stream protection measures proposed in 30 CFR 780.28.
- Revise existing paragraph (c)(1)(iii)(H), which we propose to redesignate as paragraph (c)(1)(ii)(H), to replace the prohibition on the use of acid-forming or toxic-forming coal processing waste in the construction of sedimentation ponds with a prohibition on the use of any acid-forming or toxic-forming materials in the construction of sedimentation ponds. This change is both appropriate and necessary because coal processing waste is not the only form of acid-forming or toxic-forming materials that could conceivably be used in the construction of sedimentation ponds. The proposed change also would better implement section 515(b)(10)(A)(i) of SMCRA,[594] which requires the avoidance of acid or other toxic mine drainage by ''preventing or removing water from contact with toxic producing deposits.''

16. Section 816.47: What requirements apply to discharge structures for impoundments?

We propose to revise this section by updating the terminology to reflect our 1983 rulemaking in which we introduced the term ''coal mine waste'' and replaced the term ''coal processing waste dams and embankments'' with coal mine waste impounding structures. See 48 FR 44006 (Sept. 26, 1983).

17. Section 816.49: What requirements apply to impoundments?

We propose to update the hazard classifications and incorporations by reference in existing paragraph (a)(1) of this section to be consistent with those in 30 CFR 780.25, which contains the permitting requirements for impoundments. Specifically we propose to update the incorporation by reference of the NRCS publication ''Earth Dams and Reservoirs,'' Technical Release No. 60 (210–VI–TR60, October 1985), by replacing the reference to the October 1985 edition with a reference to the superseding July 2005 edition. Consistent with the terminology in the newer edition, we proposed to replace

[592] *PSMRL II, Round III,* 620 F. Supp. 1519, 1566–1568 (D.D.C. 1985), as discussed at 73 FR 75854 (Dec. 12, 2008).

[593] 30 U.S.C. 1269(c)(2).

[594] 30 U.S.C. 1265(b)(10)(A)(i).

references to Class B or C dam criteria throughout section 816.49 with references to Significant Hazard Class or High Hazard Class dam criteria, respectively. Only the terminology has changed—the actual criteria remain the same as before. The newer publication is not available from the National Technical Information Service, but is available online from the NRCS. Consequently, we propose to delete the ordering information pertinent to the National Technical Information Service and replace it with the URL (Internet address) at which the publication may be reviewed and from which it may be downloaded without charge.

We propose to revise our permanent impoundment requirements in paragraph (b) by adding three new criteria for approval of permanent impoundments. Proposed paragraph (b)(7) would require a demonstration that approval of the impoundment would not result in retention of spoil piles or ridges that are inconsistent with the definition of approximate original contour. Proposed paragraph (b)(8) would require a demonstration that approval of the impoundment would not result in the creation of an excess spoil fill elsewhere within the permit area. These two proposed changes are intended to provide a safeguard against the retention of final-cut impoundments and associated spoil ridges that are inconsistent with the requirement in section 515(b)(3) of SMCRA [595] to ''restore the approximate original contour of the land with all highwalls, spoil piles, and depressions eliminated.''

Proposed paragraph (b)(9) would require a demonstration that the impoundment has been designed with dimensions and other characteristics that would enhance fish and wildlife habitat to the extent that doing so is not inconsistent with the intended use of the impoundment. This provision would improve implementation of section 515(b)(24) of SMCRA,[596] which requires use of the best technology currently available to the extent possible to enhance fish, wildlife, and related environmental values where practicable.

18. Section 816.57: What additional performance standards apply to activities in, through, or adjacent to a perennial or intermittent stream?

General Discussion of Basis for Proposed Changes

We propose to replace existing 30 CFR 816.57 with provisions that would better protect perennial and intermittent streams, consistent with the June 11, 2009, MOU discussed in Part VI of this preamble. Part II of this preamble summarizes both the terrestrial impacts of surface coal mining operations and the impacts of those operations on streams, as documented by scientific studies. Among other things, our proposed rule is intended to prevent or minimize the adverse impacts on fish, wildlife, and related environmental values, including streams, documented in those studies. The authority for our proposed revisions to 30 CFR 816.57 is identical to our authority for the corresponding permitting requirements in proposed 30 CFR 780.28 and is discussed at length in the introductory portion of the preamble to that proposed rule.

Proposed Paragraph (a)

Existing paragraph (a) provides that ''[n]o land within 100 feet of a perennial or intermittent stream shall be disturbed by surface mining activities, unless the regulatory authority specifically authorizes surface mining activities closer to, or through, such a stream.'' The rule further specifies that the regulatory authority may provide that authorization only upon finding that the activities will not cause or contribute to the violation of applicable state or federal water quality standards and that they will not adversely affect the water quantity and quality or other environmental resources of the stream. The regulatory authority also must find that if there will be a temporary or permanent stream-channel diversion, it will comply with 30 CFR 816.43, which contains the performance standards for diversions.

As described in more detail in Part VI of this preamble, existing paragraph (a) has been subject to differing interpretations over the years. In an effort to provide greater clarity, proposed paragraph (a)(1) would retain only the provision that prohibits disturbance of land within 100 feet of a perennial or intermittent stream without regulatory authority approval. We propose to replace the criteria for regulatory authority approval in the existing rule with new permit application requirements and approval criteria and requirements in 30 CFR 780.28. We also propose to expand protections for perennial and intermittent streams, as discussed below.

Proposed paragraph (a)(1) would prohibit the conduct of surface mining activities in or through a perennial or intermittent stream, or that would disturb the surface of land within 100 feet, measured horizontally,[597] of a perennial or intermittent stream, unless the regulatory authority authorizes those activities in the permit after making the findings that would be required by proposed 30 CFR 780.28. Part VI of this preamble discusses the history of stream buffer zone rules under SMCRA, all of which have established a minimum buffer zone width of 100 feet on either side of the stream. The preamble to our 1979 rules explains the rationale for that width. See 44 FR 15176–15177 (Mar. 13, 1979). A more recent literature review documents that a vegetative filter strip width of 100 feet generally will attenuate sediment in runoff from disturbed areas.[598]

Section 515(b)(10)(B)(i) of SMCRA,[599] which, in relevant part, requires that surface coal mining operations be conducted ''so as to prevent, to the extent possible using the best technology currently available, additional contributions of suspended solids to streamflow, or runoff outside the permit area,'' provides the primary statutory authority for the minimum buffer width that we propose to establish in paragraph (a)(1). The prohibition on disturbing the buffer zone also would implement section 515(b)(24) of SMCRA,[600] which provides that surface coal mining and reclamation operations must be conducted to minimize disturbances to and adverse impacts on fish, wildlife, and related environmental values to the extent possible using the best technology currently available.

Proposed paragraph (a)(2) would reiterate that surface mining activities may be conducted in waters of the United States only if the permittee first obtains all necessary authorizations, certifications, and permits under the Clean Water Act, 33 U.S.C. 1251 *et seq.* This proposed paragraph is an informational provision that would be consistent with section 702(a) of SMCRA,[601] which provides that ''[n]othing in this Act shall be construed as superseding, amending, modifying, or repealing'' the Clean Water Act, any rule or regulation adopted under the Clean Water Act, or any state laws enacted pursuant to the Clean Water Act. Proposed paragraph (a)(2) would operate in tandem with proposed 30

[595] 30 U.S.C. 1265(b)(3).

[596] 30 U.S.C. 1265(b)(24).

[597] See the discussion of proposed 30 CFR 780.16(c) in this preamble for an explanation of how this distance must be measured.

[598] Wenger, S. ''A Review of the Scientific Literature of Riparian Buffer Width, Extent and Vegetation.'' Institute of Ecology, University of Georgia, Athens, GA, 1999.

[599] 30 U.S.C. 1265(b)(10)(B)(i).

[600] 30 U.S.C. 1265(b)(24).

[601] 30 U.S.C. 1292(a).

CFR 773.17(h), which would add a new permit condition requiring that the permittee obtain all necessary authorizations, certifications, and permits in accordance with Clean Water Act requirements before conducting any activities that require approval or authorization under the Clean Water Act. Permit conditions are directly enforceable under SMCRA. Therefore, addition of the permit condition in proposed 30 CFR 773.17(h) would mean that the SMCRA regulatory authority must take enforcement action if the permittee does not obtain all necessary Clean Water Act authorizations, certifications, and permits before beginning any activity under the SMCRA permit that also requires approval, authorization, or certification under the Clean Water Act.

Proposed Paragraph (b)

Existing paragraph (b) requires that the permittee mark the buffer zone that is not to be disturbed. We propose to move this provision to 30 CFR 816.11(e), which contains a similar requirement, to consolidate the marking requirement in the signs and markers section.

Proposed paragraph (b) would establish requirements specific to mining through or diverting perennial or intermittent streams. Proposed paragraph (b)(1) would require compliance with the design and construction and maintenance plans approved in the permit. Proposed paragraph (b)(2) would require that the permittee restore the hydrological form and ecological function of the stream segment as expeditiously as practicable. In essence, this provision would require that the permittee take timely steps to restore the stream, first by constructing an appropriate channel as soon as surface mining is completed in the area in which the channel is to be located, then by planting appropriate vegetation in the riparian corridor in the first appropriate season following channel construction, followed by whatever other action may be needed to restore the stream's ecological function.

Proposed paragraph (b)(2) does not mean that we anticipate rapid restoration of the ecological function of the stream. We recognize that a considerable amount of time may be needed to accomplish that requirement, particularly if restoration of the ecological function requires establishment of substantial canopy cover. Appendix B of a 2012 EPA publication describes a scenario in which high-gradient stream channels devoid of aquatic life on an abandoned minesite in West Virginia may be restored to biological health in an estimated 10 years.[602] This time is roughly consistent with the time required for restoration of low-gradient streams in Illinois and Indiana, as discussed in Part II of this preamble. Other studies suggest that a much longer, as-yet-undetermined length of time may be needed to restore formerly high-quality Appalachian streams to a biological condition comparable to their premining biological condition.[603] However, as discussed in connection with proposed paragraph (b)(2)(ii), re-establishment of the premining biological condition is not necessarily required to restore the ecological function of the stream.

Proposed paragraph (b)(2)(i) would provide that a restored stream channel or a stream-channel diversion need not exactly replicate the channel morphology that existed before mining, but it must have a channel morphology comparable to the premining form of the affected stream segment in terms of baseline stream pattern, profile, and dimensions, including channel slope, sinuosity, water depth, bankfull depth, bankfull width, width of the flood-prone area, and dominant in-stream substrate. These characteristics are critical to restoration of the premining hydrological form or the ecological function of the stream or both. The proposed paragraph also would use terminology that would improve consistency with corresponding requirements under section 404 of the Clean Water Act. Finally, proposed paragraph (b)(2)(i) would include a clause specifying that, for degraded streams, the enhancement provisions of proposed paragraph (b)(4) would apply in place of the requirement in proposed paragraph (b)(2)(i) for restoration of streams to their premining form. This clause is necessary to ensure that the proposed rule would not require restoration of a degraded stream to its degraded premining form and condition.

Proposed paragraph (b)(2)(ii)(A) would specify that a stream flowing through a restored stream channel or a stream-channel diversion must meet the functional restoration criteria established by the regulatory authority in consultation with the Clean Water Act agency under proposed 30 CFR 780.28(e)(1). Proposed paragraph (b)(2)(ii)(B) would clarify that a stream flowing through a restored stream channel or a stream-channel diversion need not contain precisely the same biota or have the same biological condition as the original stream segment did before mining, but it must have a biological condition that is adequate to support the uses that existed before mining and that would not preclude attainment of the designated uses of the original stream segment under section 101(a) or 303(c) of the Clean Water Act[604] before mining. This provision is intended to allow some change in the species composition of the array of insects, fish, and other aquatic organisms found in a stream flowing through a restored stream channel or stream-channel diversion, provided that the change in species composition would preclude neither any use that existed before mining nor attainment of any designated use before mining.

Proposed paragraph (b)(2)(ii)(C) would require that the biological condition of the restored stream be determined using a protocol that meets the requirements of proposed 30 CFR 780.19(e)(2). In effect, it would require use of a scientifically-valid multimetric bioassessment protocol used by agencies responsible for implementing the Clean Water Act, with modifications to meet SMCRA-related needs. At a minimum, the protocol must be based upon the measurement of an appropriate array of aquatic organisms, including benthic macroinvertebrates. It must require identification of benthic macroinvertebrates to the genus level; result in the calculation of index values for both habitat and macroinvertebrates; and provide a correlation of index values to the capability of the stream to support designated uses under section 101(a) or 303(c) of the Clean Water Act, as well as any other existing or reasonably foreseeable uses. We seek comment on the effectiveness of using index scores from bioassessment protocols to ascertain impacts on existing, reasonably foreseeable, or designated uses. We also invite commenters to suggest other approaches that may be equally or more effective.

Finally, proposed paragraph (b)(2)(ii)(D) would specify that populations of organisms used to determine the postmining biological condition of the stream segment must be self-sustaining within that segment. We

[602] Harman, W., R. Starr, M. Carter, K. Tweedy, M. Clemmons, K. Suggs, C. Miller. 2012. *A Function-Based Framework for Stream Assessment and Restoration Projects.* U.S. Environmental Protection Agency, Office of Wetlands, Oceans, and Watersheds, Washington, DC EPA 843–K–12–006, pp. 336–339.

[603] See, *e.g.,* Pond, G.J., M.E. Passmore, N.D. Pointon, J.K. Felbinger, C.A. Walker, K.J.G. Krock, G.B. Fulton, and W.L. Nash. 2014. Long-Term Impacts on Macroinvertebrates Downstream of Reclaimed Mountaintop Mining Valley Fills in Central Appalachia. *Environmental Management 54*(4), 919–933.

[604] 33 U.S.C. 1251(a) and 1313(c).

propose to include this provision because the presence of individual organisms that happen to drift into the reconstructed channel from other areas is not an indicator of restoration of the ecological function of the restored stream segment.

Our proposed performance standards in paragraph (b) would complement our proposed permitting requirements at 30 CFR 780.12(b)(3) (one of the steps in the reclamation timetable is restoration of the form of perennial and intermittent stream segments), 780.12(b)(7) (one of the steps in the reclamation timetable is restoration of the ecological function of perennial and intermittent stream segments), 780.12(h) (the reclamation plan must include a detailed stream restoration plan), 780.28(c) (detailed permit application requirements for mining through or diverting a perennial or intermittent stream segment), and 780.28(e)(2) (the regulatory authority must make a specific written finding before approving mining through or diversion of a perennial or intermittent stream segment).

Proposed paragraph (b)(2)(iii)(A) would require that performance bond calculations for the operation include a specific line item for restoration of the ecological function of the stream segment. See also proposed 30 CFR 800.14(b)(2). In addition, proposed paragraph (b)(2)(iii)(B) would require that the permittee post a surety bond, a collateral bond, or a combination of surety and collateral bonds to cover the cost of restoration of the ecological function of the stream segment. A self-bond is not an appropriate mechanism to guarantee restoration of a stream's ecological function because of the risk that the company may cease to exist during the time required to accomplish that restoration. In addition, a self-bond does not require that the permittee file financial instruments or collateral with the regulatory authority, nor is there any third party obligated to complete the reclamation or pay the amount of the bond if the permittee defaults on reclamation obligations.

Proposed paragraph (b)(2)(iii)(C) would require that the permittee demonstrate full restoration of the physical form of the restored stream segment before the site would qualify for final bond release under proposed 30 CFR 800.42(d). Proposed 30 CFR 800.42(b)(1) would define Phase I reclamation as including restoration of the form of perennial and intermittent streams, which means that no bond could be released until the permittee restores the hydrological form of any stream segment within the area to which the bond release application applies.

Proposed paragraph (b)(2)(iii)(D) would require that the permittee demonstrate full restoration of the ecological function of the restored stream segment before the site would qualify for final bond release under proposed 30 CFR 800.42(d). Under proposed 30 CFR 800.42(b)(2) and (c)(2), the amount of bond retained following Phase I and II reclamation, respectively, must be sufficient to restore the ecological function of the stream segments that were restored in form as part of Phase I reclamation.

Proposed paragraph (b)(3) would specify that, upon completion of construction of a stream-channel diversion or restored stream channel, the permittee must obtain a certification from a qualified registered professional engineer that the stream-channel diversion or restored stream channel meets all construction requirements of this section (except those pertaining to restoration of the ecological function) and is in accordance with the design approved in the permit. A similar requirement appears in existing 30 CFR 816.43(b)(4). We propose to move it to 30 CFR 816.57 to consolidate performance standards for the diversion and restoration of perennial and intermittent streams. We also propose to expand its scope to include restored stream channels because proper construction of those channels is no less important in terms of stability, hydraulic capacity, and ecological restoration than is construction of stream-channel diversions. This certification requirement applies only to the construction of the channel; it does not extend to restoration of ecological function or biological requirements, which may lie beyond the engineer's sphere of professional competence.

Finally, proposed paragraph (b)(4) would provide that if the stream segment to be mined through or diverted is in a degraded condition before mining, the permittee must implement measures to enhance the form and ecological function of the segment as part of the restoration or diversion process. This provision is intended to ensure that stream segments degraded by prior mining or other human activities are improved to the fullest extent possible, not just restored to the condition that existed before the current mining operation. It also would implement section 515(b)(24) of SMCRA,[605] which provides that surface coal mining and reclamation operations must ''achieve enhancement'' of fish, wildlife, and related environmental values where practicable, to the extent possible using the best technology currently available.

Nothing in our proposed stream restoration requirements would exempt the permittee from meeting any additional onsite or offsite mitigation requirements that the U.S. Army Corps of Engineers may require under section 404 of the Clean Water Act.[606]

We invite commenters to—

- Identify studies pertinent to restoration of the functions of perennial and intermittent streams, particularly headwaters streams, after mining or similar disturbances.
- Weigh in on whether our rule should differentiate between low-gradient and high-gradient streams on the theory that high-gradient streams are more difficult to restore in backfilled areas because of the lack of a competent substrate and the removal of perched aquifers.

Proposed Paragraph (c)

Proposed paragraph (c)(1) would prohibit the use of perennial or intermittent streams as waste treatment systems to convey surface runoff from the disturbed area to a sedimentation pond. It also would prohibit construction of a sedimentation pond in a perennial or an intermittent stream. Almost all perennial and intermittent streams are of high value to fish and wildlife. Therefore, prohibiting the use of those streams for sedimentation control purposes is consistent with section 515(b)(24) of SMCRA,[607] which provides that to the extent possible, surface coal mining and reclamation operations must use the best technology currently available to minimize disturbances to and adverse impacts on fish, wildlife, and related environmental values. Our experience indicates that there are almost always reasonable alternatives to using perennial and intermittent streams as waste treatment systems.

However, in steep-slope areas, those alternatives may not have the least overall adverse impact on fish, wildlife, and related environmental values because of the extensive disturbance and excavation that would be needed to construct diversions and sedimentation ponds outside streams in that topography. Therefore, proposed paragraph (c)(2) would exempt excess spoil fills or coal mine waste disposal facilities in steep-slope areas from this prohibition when use of a perennial or intermittent stream segment as a waste treatment system for sediment control and construction of a sedimentation

[605] 30 U.S.C. 1265(b)(24).

[606] 33 U.S.C. 1344.

[607] 30 U.S.C. 1265(b)(24).

pond in a perennial or an intermittent stream would have less overall adverse impact on fish, wildlife, and related environmental values than construction of diversions and sedimentation ponds on slopes above the stream.

Proposed paragraph (c)(3) would require that the adverse impacts of using a stream segment as a waste treatment system on fish, wildlife, and related environmental values be minimized by keeping the length of the stream segment used as a waste treatment system as short as possible and, when practicable, maintaining an undisturbed buffer at least 100 feet in width along that segment. The proposed rule would require placement of the sedimentation pond as close to the toe of the excess spoil fill or coal mine waste disposal structure as possible. We also propose to require that the permittee remove the sedimentation pond and restore the hydrological form and ecological function of the stream segment in accordance with proposed paragraph (b)(2) following the completion of construction and revegetation of the fill or coal mine waste disposal structure.

Both the 1979 and 1983 versions of our permanent regulatory program regulations prohibit the placement of sedimentation ponds in perennial streams unless approved by the regulatory authority. See 30 CFR 816.46(a)(2) (1979) and 816.46(c)(1)(ii) (1983). However, the preamble to the 1979 rules explains that construction of sedimentation ponds in streams typically is a necessity in steep-slope mining conditions:

> Sedimentation ponds must be constructed prior to any disturbance of the area to be drained into the pond and as near as possible to the area to be disturbed. [Citation omitted.] Generally, such structures should be located out of perennial streams to facilitate the clearing, removal and abandonment of the pond. Further, locating ponds out of perennial streams avoids the potential that flooding will wash away the pond. However, under design conditions, ponds may be constructed in perennial streams without harm to public safety or the environment. Therefore, the final regulations authorize the regulatory authority to approve construction of ponds in perennial streams on a site-specific basis to take into account topographic factors.
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> Commenters suggested allowing construction of sedimentation ponds in intermittent and perennial streams. Because of the physical, topographic, or geographical constraints in steep slope mining areas, the valley floor is often the only possible location for a sediment pond. Since the valleys are steep and quite narrow, dams must be high and must be continuous across the entire valley in order to secure the necessary storage.
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> The Office recognizes that mining and other forms of construction are presently undertaken in very small perennial streams. Many Soil Conservation Service (SCS) [now the Natural Resources Conservation Service] structures are also located in perennial streams. Accordingly, OSM believes these cases require thorough examination. Therefore, the regulations have been modified to permit construction of sedimentation ponds in perennial streams only with approval by the regulatory authority.

44 FR 15159–15160 (Mar. 13, 1979) (citations omitted).

In short, what was true in 1979 remains true today; *i.e.,* sedimentation ponds must be constructed where there is sufficient storage capacity, which, in narrow valleys lacking natural terraces, typically means in the stream.

Our proposed rule is consistent with a March 1, 2006, letter from Benjamin Grumbles, Assistant Administrator of the EPA, to John Paul Woodley, Assistant Secretary of the Army (Civil Works). Among other things, that letter states that the sedimentation pond must be constructed as close to the toe of the fill as practicable to minimize temporary adverse environmental impacts associated with construction and operation of the waste treatment system.

19. Section 816.71: How must I dispose of excess spoil?

We propose to revise our excess spoil rules to minimize the extent to which excess spoil fills adversely impact perennial and intermittent streams, to improve fill stability, and to enhance fill aesthetics and compatibility with surrounding landforms. As previously discussed in the portions of this preamble concerning 30 CFR 780.35, we propose to move paragraphs (b)(1) (design certification), (c) (location), and (d)(1) (foundation investigations) of the existing version of 30 CFR 816.71 to 30 CFR 780.35 as part of our effort to place provisions that are solely design considerations and requirements in our permitting regulations in subchapter G rather than in the performance standards in subchapter K.

Proposed Paragraph (a): General Requirements

Both the existing and proposed versions of paragraph (a) require that excess spoil be placed in a controlled manner. However, we propose to revise the introductory language of this paragraph to specifically require that excess spoil be transported and placed by mechanical means. The added language is intended to more fully implement 515(b)(22)(A) of SMCRA,[608] which requires that excess spoil be ''transported and placed in a controlled manner in position for concurrent compaction and in such a way to assure mass stability and to prevent mass movement.'' Our existing rules at 30 CFR 816.73 allow end-dumping of excess spoil down steep slopes into a valley. This practice relies upon gravity transport, rather than mechanical transport, of spoil to its final location. We no longer consider gravity transport of spoil to its final location to be controlled placement under section 515(b)(22)(A) of SMCRA.[609] The preamble to our proposed removal of 30 CFR 816.73 explains the shortcomings of end-dumping and durable rock fills in greater detail. However, nothing in the proposed revisions to our excess spoil requirements would prohibit the construction of valley fills, head-of-hollow fills, sidehill fills, or any type of fill other than durable rock fills.

We propose to revise existing paragraphs (a)(1) through (3) and add paragraphs (a)(4) through (7) as follows:

- Proposed paragraph (a)(1) is substantively identical to existing paragraph (a)(1) except that we propose to add a requirement that excess spoil placement will minimize adverse effects of leachate and surface-water runoff on the biological condition of perennial and intermittent streams within the permit area, not just adverse effects on surface water and groundwater as in the existing rule. The new requirement would implement section 515(b)(24) of SMCRA [610] more fully by minimizing adverse impacts of the operation on fish, wildlife, and related environmental values.
- Proposed paragraph (a)(2) is substantively identical to existing paragraph (a)(2).
- We propose to revise paragraph (a)(3) to be more consistent with the underlying requirement in section 515(b)(22)(G) of SMCRA,[611] which provides that excess spoil must be placed in a manner that will ensure that ''the final configuration is compatible with the natural drainage pattern and surroundings and suitable for intended uses.'' As revised, proposed paragraph (a)(3) would require that the final surface configuration of the fill be suitable for revegetation and the postmining land use or uses and be compatible with the natural drainage pattern and surroundings. The existing

[608] 30 U.S.C. 1265(b)(22)(A).

[609] *Id.*

[610] 30 U.S.C. 1265(b)(24).

[611] 30 U.S.C. 1265(b)(22)(G).

rule does not mention the final configuration of the fill or the natural drainage pattern. Our proposed revisions would correct those omissions.

• Proposed paragraph (a)(4) would add a requirement that excess spoil be placed in a manner that would minimize disturbances to and adverse impacts on fish, wildlife, and related environmental values to the extent possible, using the best technology currently available. This provision parallels the language of section 515(b)(24) of SMCRA,[612] which applies to all aspects of surface coal mining and reclamation operations, including the disposal of excess spoil.

• Proposed paragraph (a)(5) would require that excess spoil be placed in a manner that would ensure that the fill will not change the size or frequency of peak flows from precipitation events or thaws in a way that would result in an increase in damage from flooding when compared with the impacts of premining peak flows.

• Proposed paragraph (a)(6) would require that excess spoil be placed in a manner that would ensure that the fill will not preclude any existing or reasonably foreseeable use of surface water or groundwater or, for surface water downstream of the fill, preclude attainment of any designated use under section 101(a) or 303(c) of the Clean Water Act.[613] The proposed language parallels the terminology in our proposed definition of ''material damage to the hydrologic balance outside the permit area'' in 30 CFR 701.5, which relies in large measure upon the status of existing, reasonably foreseeable, and designated uses of water.

• Proposed paragraph (a)(7) would require that excess spoil be placed in a manner that would ensure that the fill will not cause or contribute to an exceedance of any applicable federal, state, or tribal water quality standards.

Proposed paragraphs (a)(5) through (7) would more fully implement sections 510(b)(3) and 515(b)(10) of SMCRA.[614] Section 510(b)(3)[615] prohibits approval of a permit application unless the applicant demonstrates and the regulatory authority finds that the proposed operation ''has been designed to prevent material damage to the hydrologic balance outside the permit area.'' Section 515(b)(10)[616] requires that surface coal mining and reclamation operations be conducted so as to ''minimize disturbances to the prevailing hydrologic balance at the mine-site and in associated offsite areas and to the quality and quantity of water in surface and ground water systems both during and after surface coal mining operations and during reclamation.'' The proposed revisions also are consistent with our proposed definition of ''material damage to the hydrologic balance outside the permit area'' in 30 CFR 701.5, which focuses on mining-related impacts to uses of groundwater and surface water.

Proposed Paragraph (b): Stability Requirements

We propose to move existing paragraph (b))(1), which pertains to certification of the design for the excess spoil fill and appurtenant structures, to 30 CFR 780.35 as part of our effort to move permitting requirements from the performance standards of subchapter K to the permitting provisions of subchapter G. We propose to redesignate existing paragraph (b)(2) as paragraph (b)(1) and revise it to require that the fill not only be designed to attain a minimum static safety factor of 1.5 as required by the existing rules, but that the fill actually be constructed to attain that safety factor. This change is consistent with section 515(b)(22)(A) of the Act,[617] which requires that all excess spoil be placed in a way that ensures mass stability and prevents mass movement.

We also propose to redesignate existing paragraph (d)(2), which requires keyway cuts for excess spoil fills built on steep slopes, as paragraph (b)(2). In addition, we propose to replace the term ''keyway cuts'' with ''bench cuts.'' The term ''keyway cut'' is technically a cut beneath a dam that is used to extend low-permeability fill material to, but not into, bedrock. The term ''bench cut'' is more appropriate here because it refers to cuts into bedrock, not just down to bedrock. Fill construction under steep-slope conditions requires that cuts be made into bedrock, not just down to bedrock, to ensure stability. Therefore, our proposed revisions would provide greater fill stability than the existing regulations.

Proposed Paragraph (c): Compliance With Permit

We propose to move the fill location requirements of existing paragraph (c) to 30 CFR 780.35 because those requirements pertain primarily to the fill design and thus are more appropriately codified as part of the permitting provisions of subchapter G. We propose to replace those requirements with a performance standard reminding the permittee that the fill must be constructed in accordance with the design and plans approved in the permit. Proposed paragraph (c) would require that fills be built on the sites selected under section 780.35 in a manner consistent with the designs submitted under those sections and approved as part of the permit.

Proposed Paragraph (d): Requirements for Handling of Organic Matter and Soil Materials

We propose to move the foundation investigation requirements of existing paragraph (d)(1) to 30 CFR 780.35 to consolidate those provisions with a similar and overlapping foundation investigation requirement in that section. We also propose to redesignate existing paragraph (d)(2) as paragraph (b)(2) as discussed above.

We propose to redesignate existing paragraph (e)(1) as new paragraph (d). Proposed paragraph (d) would require that soil and organic matter, including vegetative materials, in the footprint of excess spoil fills be salvaged, stored, and redistributed or otherwise used in a manner consistent with our proposed revisions to 30 CFR 780.12(e) and 816.22.

Proposed Paragraph (e): Surface Runoff Control Requirements

As discussed above, we propose to redesignate existing paragraph (e)(1) as new paragraph (d). In addition, we propose to redesignate existing paragraphs (e)(2) through (5) as paragraphs (g)(1), (h), (i), and (g)(3), respectively.

We propose to redesignate existing 30 CFR 816.72(a) as 30 CFR 816.71(e) and revise it to apply to all fills because control of surface-water runoff from the fill and adjacent areas is critical to the stability of all types of fills, not just valley and head-of-hollow fills. Proposed paragraph (e)(1), like existing 30 CFR 816.72(a), would require that runoff from areas above the fill and runoff from the surface of the fill be directed into stabilized channels designed to meet the requirements of 30 CFR 816.43 and to safely pass the runoff from a 100-year, 6-hour precipitation event. We do not consider surface runoff diversions constructed under proposed 30 CFR 816.71(e)(1) to be stream-channel diversions or restored streams, nor would they qualify as offsetting fish and wildlife enhancement measures under proposed 30 CFR 780.28(d)(2).

In proposed paragraph (e)(1)(ii), we propose to add a requirement that those

[612] 30 U.S.C. 1265(b)(24).

[613] 33 U.S.C. 1251(a) and 1313(c), respectively.

[614] 30 U.S.C. 1265(b)(3) and (10).

[615] 30 U.S.C. 1265(b)(3).

[616] 30 U.S.C. 1265(b)(10).

[617] 30 U.S.C. 1265(b)(22)(A).

channels be designed using the appropriate regional NRCS synthetic storm distribution. The preamble to proposed 30 CFR 780.29 explains the rationale for this proposed requirement.

Like its counterpart in existing 30 CFR 816.72(a), proposed paragraph (e)(2) would prohibit directing uncontrolled surface runoff over the outslope of the fill. Like the existing rule, it also would require that the permittee grade the top surface of a completed fill such that the final slope after settlement will be toward properly designed drainage channels.

Proposed Paragraph (f): Control of Water Within the Footprint of the Fill

Our proposed revisions to this paragraph focus on underdrain requirements, with particular emphasis on ensuring the use of hard, weather-resistant materials and construction techniques that will promote long-term stability. We propose to require that the underdrain system be designed to carry the anticipated infiltration of water due to precipitation, snowmelt, and water from seeps and springs in the foundation of the disposal area away from the excess spoil fill. This requirement would minimize the phreatic level within the fill. We also propose to require that the underdrain system be protected from material piping, clogging, and contamination by an adequate filter system designed and constructed using current, prudent engineering practices to ensure the long-term functioning of the underdrain system. A long-term functioning filter using natural materials generally requires multiple lifts of material specifically sized, graded, and placed so that the overlying lift is progressively smaller in diameter. Geotextile material may be used for filter construction. Filter construction is vital to providing a long-term functioning underdrain.

We propose to prohibit the use of perforated pipe as an alternative to hard, weather-resistant rock for two reasons. First, minor shifts within a fill mass can result in a broken and consequently dysfunctional pipe underdrain, but a rock underdrain of sufficient size is likely to be flexible enough to retain sufficient continuity to transport infiltrated water from the fill. Second, a pipe with small perforations and limited to a single flow-through orifice is more likely to clog than a porous rock underdrain with multiple alternative pathways for water transport.

Future changes in local surface-water and groundwater hydrology may result in water infiltration into the fill in excess of what is anticipated. Therefore, we propose to allow the use of perforated pipe in an underdrain system only for the purpose of enhancing the capability of the underdrain to pass water in excess of the anticipated maximum infiltration. However, the rock underdrain must be capable of transporting the anticipated maximum water infiltration out of the fill independent of the presence of the perforated pipe. In addition, the perforated pipe must be made of materials that are not susceptible to corrosion (not just corrosion-resistant materials as in the existing rules) and sufficiently crush-resistant to withstand pressures at the depth at which the pipe will be buried.

Finally, we propose to specify that only hard rock that is resistant to weathering, for example, well-cemented sandstone and massive limestone, and that is not acid-forming or toxic-forming may be used to construct durable rock underdrains. The proposed rule would require that the underdrain be free of both soil and fine-grained, clastic rocks such as siltstone, shale, mudstone, and claystone. All rock used to construct underdrains would have to meet the criteria in the following table:

Test	ASTM standard	AASHTO standard	Acceptable results
Los Angeles Abrasion	C 131 or C 535	T 96	Loss of no more than 50 percent of test sample by weight.
Sulfate Soundness	C 88 or C 5240	T 104	Sodium sulfate test: Loss of no more than 12 percent of test sample by weight. Magnesium sulfate test: Loss of no more than 18 percent of test sample by weight.

Section 515(b)(22) of SMCRA [618] and most of the rules implementing that statutory provision focus on the long-term stability of excess spoil fills. Long-term stability is of great importance because the industry does not provide maintenance for fills following final bond release, nor does the regulatory authority monitor fills after final bond release. An effective underdrain system is a critical factor in ensuring fill stability.

A functional underdrain system allows water from surface-water infiltration into the fill mass and from seeps and springs in the fill's foundation to freely pass from the fill. The absence of an effective underdrain can result in the formation of a phreatic surface and the associated potential for destabilization because of increased pore-water pressures within the fill mass. The effectiveness of an underdrain depends on whether the material is sufficiently permeable or hydraulically conductive to convey all subsurface water from the fill. This in turn depends on the presence of large and interconnected pores or voids between the material particles. For this reason, it is important that the underdrains be composed of large, blocky rock. For an underdrain to function well over the long term, the rock must be resistant to weathering and hard enough to withstand the effects of blasting and conveyance from the blast site to the site at which the underdrain system is being constructed. Rock that is not resistant to weathering effects, *i.e.,* rock that is not ''sound,'' will disintegrate into fragments too small to act as an effective filter and consequently make the underdrain much less permeable.

Historically, the criterion governing whether rock is suitable as underdrain material has been its ''durability.'' Existing 30 CFR 816.71(f)(3) requires that the rock underdrains of excess spoil fills ''be constructed of durable, nonacid-, nontoxic-forming rock (*e.g.,* natural sand and gravel, sandstone, limestone, or other durable rock) that does not slake in water or degrade to soil material, and which is free of coal, clay or other nondurable material.'' Similar language appears in existing 30 CFR 816.73(b) for durable rock fills. The durable rock fill construction technique has been the predominant construction method for the last 30 years. Unlike other construction methods, it does not require underdrain construction prior to spoil placement or bottom-to-top spoil placement in thin lifts. Instead, spoil is end-dumped into valleys in a single lift or multiple lifts, during which gravity segregation theoretically forms a free-draining zone of large-sized rock in the lower one-third of the fill.

The existing regulations do not specify how the durability of rock is to

[618] 30 U.S.C. 1265(b)(22).

be determined. In general, both the mining industry and regulatory authorities have relied upon the slake durability index (SDI) for this purpose. This test involves the placement of oven-dried rock samples in 2 mm wire mesh drums 1/3 immersed in water, which are then rotated at 20 rpm for 10 minutes for two cycles. The weight of the sample remaining in the drum is divided by the weight of the original sample and multiplied by 100 to obtain a percentage. SDI values of 90 percent or more are generally considered durable.

OSMRE studies and inspection reports indicated that some of the rock material being used in durable rock fill construction was weak and non-durable despite documentation in the permit that the materials being used were considered durable based on SDI tests. The apparent failure of the SDI tests to adequately distinguish between durable and nondurable rock was attributed to the nature of the test and the behavior of shale and other mudstones as they slake or disintegrate into soil. Frequently, samples with those geologic compositions would turn into loose flakes or mud balls that would not pass through the wire mesh during the test. State and federal regulatory authorities have developed a broad consensus that the SDI test is not adequate for surface coal mining and excess spoil fill construction purposes.

In response, we developed and tested an alternative testing protocol and classification system called the ''Strength Durability Classification'' (Welsh et al., 1991).[619] The initial phase of the Strength Durability Classification protocol, the jar-slake test, consists of soaking oven-dried rock samples in water for 24 hours to identify very low-durability rock by its short-term slaking behavior. Samples with minimal breakdown are then subjected to a second phase of free-swell and point-load tests. The free-swell test entails measuring the swell of an oven-dried sample immersed in water for 4 hours. The degree of swell reflects the amount of water absorbed into the void spaces of the rock. Rocks that absorb more water generally weather more rapidly. The point-load strength test involves placing samples between opposite conical platens that are pressed or ''loaded'' against the sample until it fails. The amount of load needed to generate failure is the point-load strength of the sample. The test is performed on at least 20 samples for statistical validity. After plotting the point-load strength and swell-test data on a graph, the points are compared to two ''zones'' on the same graph representing the acceptable value ranges for durable rock fill underdrains and more conventional, selectively placed rock underdrains. The Strength Durability Classification protocol has proven to be more discriminating than the SDI, but some critics claim that its durability standards are unrealistically stringent.

In 2002, we conducted a study in which we visually estimated the percent of durable rock in 44 durable rock fills under construction and judged whether a discernible underdrain was forming by gravity segregation. Of 44 fills under construction, 28 appeared to have less than 80 percent durable rock and 5 fills showed no visual evidence of having a functioning underdrain. The study found that excess spoil fills in Appalachia generally have been stable, but it recommended improvement in the design, construction, and regulation of fills to ensure long-term stability. One recommendation urged continued work on the development of a more discriminating method for determining rock durability. The study suggested that the amount of sandstone available at a minesite should be one criterion for approving a proposed durable rock fill. It also stated that it might be feasible to develop a quantitative method of assessing gravity-segregated underdrain formation.[620]

In a 2006 special study, we and the Kentucky Department of Surface Mine Reclamation and Enforcement found that 4 of 29 durable rock fills evaluated had ''questionable'' underdrains.[621]

Given the problems with rock durability determination discussed above, application of the SDI or other tests of comparable rigor will not ensure a functioning underdrain in any type of fill. While the SDI can distinguish rocks that will quickly slake or disintegrate into soil material, it does not adequately assess whether they can withstand crushing or weakening from blasting and handling in a mine operation or resist the long-term effects of weathering. Although the Strength Durability Classification protocol is somewhat more discriminatory than the SDI, it also is not sufficiently representative of the short-term and long-term dynamics of a surface mine site. The jar-slake and free-swell tests in particular do not adequately assess the long-term weathering resistance of the rock and the point-load test may not be sufficiently representative of the dynamic effects of blasting, collision, and abrasion.

Although there are other classification systems relating to rock durability in the literature, many are designed for rocks unlike those encountered in coal mining. Other protocols apply only to shale, include SDI in addition to other tests or indices, or measure the properties of in-place rock slopes.

Therefore, we propose to base the acceptability of rock for use in underdrains on the rock's hardness and resistance to weathering. Underdrains in a fill constructed in lifts occupy narrow corridors within the fill mass even when properly sized to handle anticipated maximum drainage discharge. Any clogging within these limited zones will quickly engender fill instability. Consequently, criteria for underdrain materials must be selected with the goal of ensuring that the underdrain system will remain effective on a long-term basis, not just until final bond release.

Our proposed rule would establish criteria based on rock lithology and the results of two methods that measure the rock's hardness and soundness via laboratory tests. First, materials used to construct underdrains must consist of hard rock that is resistant to weathering, such as well-cemented sandstone and massive limestone, and that is not acid-forming or toxic-forming (and thus would not result in acid or toxic mine drainage). In addition, materials used to construct underdrains must be free of both soil and fine-grained, clastic rocks such as siltstone, shale, mudstone, and claystone, which generally are weaker and more prone to rapid weathering than sandstones and limestone. Fine-grained rocks also are problematic in that they produce a fine-grained, impermeable soil when highly weathered. From field observations of durable rock fills under construction, we know that the appearance of shale boulders can be deceptive. Large shale particles that appear competent soon after being end-dumped often quickly disintegrate from natural weathering processes, the stress resulting from being buried at depth, and abrasion

[619] Welsh, R.A., Jr., Vallejo, L.E., Lovell, L.W., and Robinson, M.K., 1991, The U.S. Office of Surface Mining (OSM) Proposed Strength-Durability Classification System, in ''Proceedings of Symposium on Detection of and Construction at the Soil/Rock Interface'' (W.F. Kane and B. Amadei, eds.), ASCE Geotechnical Special Publication No. 28, American Society of Civil Engineers, New York, NY, pp. 19–24.

[620] Office of Surface Mining, ''Long-Term Stability of Valley Fills'' (2002) in Appendices A, B, and C of ''Draft Programmatic Environmental Impact Statement—Mountaintop Mining/Valley Fills in Appalachia,'' U.S. Environmental Protection Agency, 2003, EPA 9–03–R–00013, EPA Region 3, Philadelphia, PA, available at *http://www.epa.gov/region3/mtntop/eis2003.htm.*

[621] Kentucky Department of Natural Resources and U.S. Office of Surface Mining, ''Excess Spoil Fill Stability,'' Evaluation Year 2006 Special Study, OSM open file report, Lexington, KY, 2006.

from handling. Even if tests find some shale to be hard and sound enough for underdrain material, the certifying engineer would have difficulty ensuring that all rock placed in the underdrain was correctly selected.

Second, the materials must meet certain threshold criteria as determined by the Los Angeles abrasion test and either the sodium sulfate or magnesium sulfate soundness test.[622] Highway departments frequently use both tests to assess the suitability of rock for the construction of roads and riprap-lined drainage channels. The Los Angeles abrasion test focuses on rock hardness. It consists of placement of the rock sample in a steel drum containing a prescribed number of steel spheres. After rotating the drum 1,000 times, the sample is removed and sieved. The amount of degradation of the sample is reported as the percent (by weight) of the sample lost through the sieve. The shocks, collisions, and abrasions that the sample experiences are reasonably representative of the dynamics and handling of materials at a minesite.

The sodium sulfate and magnesium sulfate soundness tests measure the susceptibility of rock to weathering. In these tests, the rock sample is immersed in a saturated solution of sodium sulfate or magnesium sulfate, after which the sample is placed in an oven to dehydrate the salts, which precipitate in the voids between the rock particles. The process is then repeated on the sample for a specified number of cycles to simulate freezing and thawing. The external expansive force of the salt crystals during the immersion phase of each cycle simulates the expansion of water upon freezing. We acknowledge that freezing of water in rocks and soil does not occur in all climates. Furthermore, its occurrence is limited to a relatively shallow depth below the surface and consequently is not a process that would affect most of the buried underdrain. However, an underdrain is only as good as its weakest point and, like the natural weathering process, this test exploits openings and weaknesses in rock such as fractures and the porous zones of weakly cemented grains. The sulfate soundness tests measure the rock's ability to withstand repeated freeze-thaw cycles and thus facilitate identification of those rock materials most likely to remain competent on a long-term basis.

[622] See *http://www.pavementinteractive.org/index.php?title=Sulfate_Soundness_Test* (last accessed January 19, 2015).

Proposed Paragraph (g): Placement of Excess Spoil

Proposed paragraph (g)(1) is the counterpart to existing paragraph (e)(2). We propose to move the provision of existing paragraph (e)(2) requiring that the fill be covered with topsoil or other suitable materials to proposed paragraph (d), which contains all requirements related to soils. We also propose to eliminate the provision in existing paragraph (e)(2) that would allow the regulatory authority to approve an exception to the requirement that excess spoil be placed in horizontal lifts of no more than 4 feet in thickness. Placement in lifts exceeding 4 feet in thickness will not uniformly result in the concurrent compaction necessary to minimize the volume of void spaces in the fill. Minimization of the volume of void spaces is critical to minimizing the adverse impact on fish and wildlife because the volume of void spaces correlates directly with the amount of dissolved solids that migrate from the fill into the receiving stream. An increase in dissolved solids can have a substantial adverse impact on aquatic life.

Proposed paragraph (g)(1) would require the use of mechanized equipment to transport and place excess spoil. Similarly, proposed paragraph (g)(2) would prohibit the use of any excess spoil transport and placement technique that involves end-dumping, wing-dumping, cast-blasting, gravity placement, or casting spoil downslope, all of which are not conducive to concurrent compaction or placement in lifts no greater than 4 feet in thickness. As noted above, section 515(b)(22)(A) of SMCRA [623] provides that all excess spoil material resulting from surface coal mining operations must be ''transported and placed in a controlled manner in position for concurrent compaction and in such a way to assure mass stability and to prevent mass movement.'' Our proposed prohibition on the placement of excess spoil in horizontal lifts greater than 4 feet in thickness would improve implementation of this provision of SMCRA, especially the requirements for controlled placement and concurrent compaction. As explained in our discussion of proposed paragraph (a), our existing rules at 30 CFR 816.73 allow end-dumping of excess spoil down steep slopes into a valley. This practice relies upon gravity transport of spoil to its final location. We no longer consider gravity transport of spoil to its final location to be controlled placement under section 515(b)(22)(A) of SMCRA.[624] Only mechanical transport meets that statutory requirement. The preamble to our proposed removal of 30 CFR 816.73 explains the shortcomings of end-dumping and durable rock fills in greater detail.

Furthermore, we have found that gravity placement in single or large lifts has resulted in elevated suspended solids during storm events because of the flushing of fine material from the loose-dumped excess spoil and from the typically large unvegetated active free face associated with this construction method. Placement in smaller lifts with concurrent compaction would decrease the permeability of the fill, inhibiting infiltration, allowing revegetation of the fill face concurrent with construction of the fill, and reducing discharges of both suspended and dissolved solids.

Proposed paragraph (g)(3) is the counterpart to existing paragraph (e)(5). Proposed paragraph (g)(3)(i) would require that acid-forming and toxic-forming materials be handled and placed in accordance with 30 CFR 816.38 and in a manner that will minimize adverse effects on plant growth and the approved postmining land use. Under proposed 30 CFR 816.38(d), the only acceptable techniques for the placement of acid-forming and toxic-forming materials would be isolation and treatment. The proposed rule would not authorize use of saturation techniques because of the stability risk that saturation poses for fills and because of the possibility that use of saturation techniques would increase discharges of total dissolved solids, which could have adverse impacts on aquatic life in streams that receive those discharges. Proposed paragraph (g)(3)(ii) would require that the permittee cover combustible materials with noncombustible materials in a manner that will prevent sustained combustion and minimize adverse effects on plant growth and the approved postmining land use.

Proposed paragraph (g)(3) is consistent with section 515(b)(14) of SMCRA,[625] which requires that all acid-forming materials and toxic materials be ''treated or buried and compacted or otherwise disposed of in a manner designed to prevent contamination of ground or surface waters'' and which requires that materials constituting a fire hazard be treated or buried to prevent sustained combustion. Section 515(b)(22)(I) of SMCRA,[626] which provides that excess spoil must be placed in a manner that meets ''all other

[623] 30 U.S.C. 1265(b)(22)(A).

[624] *Id.*

[625] 30 U.S.C. 1265(b)(14).

[626] 30 U.S.C. 1265(b)(22)(I).

requirements of this Act,'' provides additional authorization for proposed paragraph (g)(3).

Proposed Paragraph (h): Final Configuration

Proposed paragraph (h) is the counterpart to existing paragraph (e)(3), which requires that the final configuration of the fill be suitable for the approved postmining land use. Proposed paragraph (h)(1) would add requirements that the final configuration of the fill be compatible with the natural drainage pattern and the surrounding terrain and, to the extent practicable, consistent with natural landforms. The added provisions would better implement section 515(b)(22)(G) of SMCRA,[627] which requires that the final configuration be ''compatible with the natural drainage pattern and surroundings and suitable for intended uses.''

Proposed paragraph (h)(2) is substantively identical to the provisions of existing paragraph (e)(3) concerning terracing.

Proposed paragraph (h)(3)(i) would add a new requirement for the use of geomorphic reclamation principles for the final surface configuration of the fill. Specifically, it would require that the top surface of the fill be graded to create a topography that includes ridgelines and valleys with varied hillslope configurations when practicable, compatible with stability and postmining land use considerations, and generally consistent with the premining topography. Geomorphic reclamation principles are intended to produce a final surface configuration with greater erosional stability and more ecological benefits than other techniques. Proposed paragraph (h)(3)(ii) would allow the final surface elevation of the fill to exceed the elevation of the surrounding terrain when necessary to minimize placement of excess spoil in perennial and intermittent streams, provided the final configuration complies with the compatibility and postmining land use requirements of proposed paragraphs (a)(3) and (h)(1).

Sections 515(b)(10)(B)(i) and 515(b)(24) of SMCRA provide the primary statutory authority for proposed paragraphs (h)(3)(i) and (ii). Section 515(b)(10)(B)(i) of SMCRA [628] requires that surface coal mining operations be conducted to prevent, to the extent possible using the best technology currently available, additional contributions of suspended solids to streamflow or runoff outside the permit area. Section 515(b)(24) of SMCRA [629] requires that, to the extent possible using the best technology currently available, surface coal mining and reclamation operations be conducted so as to minimize disturbances and adverse impacts of the operation on fish, wildlife, and related environmental values and to achieve enhancement of those resources where practicable.

Finally, we propose to add paragraph (h)(3)(iii), which would provide that the geomorphic reclamation requirements of paragraph (h)(3)(i) do not apply in situations in which they would result in burial of a greater length of perennial or intermittent streams than traditional fill design and construction techniques. Allowing use of reclamation techniques that would bury a greater length of stream than other techniques would not be consistent with section 515(b)(24) of SMCRA as discussed above.

Proposed Paragraph (i): Impoundments and Depressions

Proposed paragraph (i) is the counterpart to existing paragraph (e)(4), which prohibits the construction of permanent impoundments on the completed fill and establishes criteria for the construction of small depressions on the surface of the fill. The proposed rule is substantively identical to the existing rule with the exception that we propose to further restrict the conditions under which small depressions may be constructed or retained on the completed fill. Specifically, we propose to allow small depressions only when they are consistent with the hydrologic reclamation plan approved in the permit in accordance with 30 CFR 780.22 and when infiltration resulting from those depressions would not result in elevated levels of parameters of concern (especially sulfate and other ions that increase specific conductance and electrical conductivity in streams) in discharges from the fill. The proposed revisions would assist in ensuring that discharges from the fill will not cause material damage to the hydrologic balance outside the permit area, in compliance with section 510(b)(3) of SMCRA.[630] It also would minimize ''disturbances to the prevailing hydrologic balance at the mine-site and in associated offsite areas and to the quality and quantity of water in surface and ground water systems'' as required by section 515(b)(10) of SMCRA.[631]

Proposed Paragraph (j): Surface Area Stabilization

Proposed paragraph (j) is substantively identical to existing paragraph (g).

Proposed Paragraph (k): Inspections and Examinations

Proposed paragraph (k) is the counterpart to existing paragraph (h), which establishes inspection requirements for excess spoil fills. We propose to revise the professional inspection requirements for excess spoil fills by specifying that the engineer or other specialist must conduct additional complete inspections during critical construction periods to ensure that the fill is constructed properly. Proposed paragraphs (k)(2)(i) and (ii) would require that the engineer or specialist conduct daily examinations during placement and compaction of fill materials and maintain a log of those examinations. Proposed paragraph (k)(3)(iii) would require that the certified report that the engineer or specialist submits for each complete inspection include a review and summary of the daily examination logs. If the report identifies any evidence of instability, structural weakness, or other hazardous conditions, proposed paragraph (k)(3)(ii) would require that the permittee submit an application for a permit revision that includes appropriate remedial design specifications. The proposed revisions are intended to ensure that excess spoil fills are constructed in compliance with the stability requirements of section 515(b)(22) of SMCRA.[632]

Placement of the underdrain and the placement of the filter are each considered critical construction phases. Therefore, two separate inspections are required if the underdrain is constructed first and the filter system is constructed later. However, these two phases can be concurrent, in which case one inspection may suffice for both phases. We invite comment on whether the rule should require additional specific oversight by the engineer when segregated, graded, natural material is used to construct the filter system.

Finally, we propose to remove existing paragraph (h)(3)(ii), which pertains to durable rock fills constructed under 30 CFR 816.73, consistent with our proposal to prohibit that method of fill construction. The preamble concerning our proposed removal of 30 CFR 816.73 explains our rationale for that proposed action.

[627] 30 U.S.C. 1265(b)(22)(G).

[628] 30 U.S.C. 1265(b)(10)(B)(i).

[629] 30 U.S.C. 1265(b)(24).

[630] 30 U.S.C. 1260(b)(3).

[631] 30 U.S.C. 1265(b)(10).

[632] 30 U.S.C. 1265(b)(22).

Proposed Paragraph (l): Coal Mine Waste

Proposed paragraph (l) would establish requirements for the disposal of coal mine waste in excess spoil fills. Proposed paragraph (l) is substantively identical to existing paragraph (i) except that we propose to add proposed paragraph (l)(1), which would allow disposal of coal mine waste in excess spoil fills only if the permittee demonstrates, and the regulatory authority finds in writing, that there is no credible evidence that the disposal of coal mine waste in the excess spoil fill will cause or contribute to a violation of applicable water quality standards or effluent limitations or result in material damage to the hydrologic balance outside the permit area. The proposed addition would assist in ensuring that the hydrologic balance protection requirements of sections 510(b)(3) and 515(b)(10) of SMCRA are met.[633] In addition, we propose to add a cross-reference to 30 CFR 816.81 to clarify that the coal mine waste must be placed in accordance with the general coal mine waste disposal requirements of 30 CFR 816.81, not just the refuse pile requirements of 30 CFR 816.83.

Proposed Paragraph (m): Underground Disposal

Proposed paragraph (m) is substantively identical to existing paragraph (j).

20. Why are we proposing to remove the provisions for rock-core chimney drains in existing 30 CFR 816.72(b)?

We propose to remove existing 30 CFR 816.72(b) because mine operators are no longer constructing fills with rock-core chimney drains. A rock-core chimney drain is a vertical column of durable rock extending from the toe of the fill to the head of the fill and from the base of the fill to the surface of the fill. A few small fills constructed decades ago included rock-core chimney drains, but, to the best of our knowledge, the technique has not been used recently or on large fills.

Our proposed removal of 30 CFR 816.72(b) would not prohibit the construction of head-of-hollow or valley fills without rock-core chimney drains. However, all proposed head-of-hollow and valley fills would have to meet the permitting requirements of proposed 30 CFR 780.28 and 780.35. If approved, these fills would have to comply with the performance standards of proposed 30 CFR 816.71.

21. Why are we proposing to remove the provisions for durable rock fills in existing 30 CFR 816.73?

Existing 30 CFR 816.73 allows excess spoil fills to be constructed by end-dumping, in which overburden is pushed or dumped over the side of the mountain to cascade into the valley below. In theory, the larger rocks roll to the bottom of the valley to form an underdrain by gravity segregation. We propose to remove this section for four reasons. First, further scrutiny of the statutory provisions governing disposal of excess spoil indicates that this method of fill construction does not comply fully with section 515(b)(22)(A) of SMCRA.[634] That provision of SMCRA requires that surface coal mining and reclamation operations place all excess spoil material in such a manner that the ''spoil is transported and placed in a controlled manner in position for concurrent compaction and in such a way [as] to assure mass stability and to prevent mass movement.'' End-dumping of excess spoil relies upon gravity both for transport after dumping and to determine final placement, which does not comport well with the statutory requirement for transport and placement in a controlled manner.

Second, as discussed in the preamble to proposed 30 CFR 816.71(f), we have observed inconsistent formation of underdrains in durable rock fills. Non-functional underdrains may compromise the stability of the fill by raising the moisture content of the fill material, which increases the ability of that material to move. Saturated fills are prone to buckling and landslides.

Third, as discussed in detail below, durable rock fills may increase the risk of flooding and associated damage because of the large size of the fill face and the length of time that the face remains unvegetated.

Fourth, the lack of compaction during the construction of durable rock fills creates the potential for increased levels of total dissolved solids in discharges from those fills because of the greater amount of pore space and reactive surface compared with other types of fills. Higher levels of total dissolved solids in discharges from the fill translate to elevated electrical conductivity in streams downgradient of the fill. As summarized in Part II of this preamble, elevated electrical conductivity can adversely impact the capability of the stream to support certain species of benthic macroinvertebrates, which in turn reduces the capability of the stream to support species of fish dependent upon those macroinvertebrates as a food source.

Therefore, we propose to refine our existing regulations by removing 30 CFR 816.73, which allows construction of durable rock fills by gravity transport and placement. With respect to other types of excess spoil fills, proposed 30 CFR 816.71(g) would require use of mechanized equipment to transport and place the excess spoil in lifts no greater than 4 feet, which would greatly increase both control and compaction. Increased compaction of the spoil placed in the fill would increase the density of each unit of excess spoil and thus decrease the amount of space that it occupies. The resulting reduction in the amount of spoil storage space needed would (or at least could) reduce the footprint of the fill, which should reduce the number and length of stream segments buried by the fill.

Increased compaction also should reduce discharges of total dissolved solids and other parameters of concern, thus minimizing the adverse impacts on fish, wildlife, and related environmental values as required by section 515(b)(24) of the Act.[635] Finally, construction of fills using mechanized methods of transport and placement would facilitate the special handling of acid-forming and toxic-forming materials, which should result in a reduction in the concentration and volume of toxic materials, such as selenium, in water discharged from the fill, which would further minimize adverse impacts on fish, wildlife, and related environmental values.

As mentioned above, some durable rock fills have exacerbated flooding during and after precipitation events. Flooding may threaten public safety and cause property damage downstream of the fill. The following case studies describe how durable rock fills may contribute to flooding and damage from flooding.

Snap Creek, West Virginia

On June 13, 2010, an area near the town of Man in Logan County, West Virginia, received approximately 4.8 inches of rain within 24 hours. Flood-related damage occurred downstream from an end-dumped durable rock fill on the Snap Creek minesite (Permit S–5013–96) south of Man. Stormwater runoff flowing down the face of the fill completely filled the sedimentation pond near the toe of the fill. The sediment-laden runoff then scoured the flood plain of the Left Fork of Rich Creek down to bedrock for a distance of

[633] 30 U.S.C. 1260(b)(3) and 1265(b)(10).

[634] 30 U.S.C. 1265(b)(22)(A).

[635] 30 U.S.C. 1265(b)(24).

approximately 0.25 mile. The scoured material, along with spoil from the face of the fill, was deposited on the flood plain and along the stream channel for an additional 0.25 mile to its confluence with Rich Creek. Sedimentation continued along Rich Creek approximately 0.25 mile further to the stream's confluence with the Guyandotte River. No one was injured and little property damage occurred because most of the affected areas were uninhabited.

The fill was being graded to its final configuration when the rainfall event occurred. The finer fractions of the soil exposed on the face of an end-dumped fill during final grading are very susceptible to erosion, particularly during heavy rainfall events. Protecting downstream areas from this type of mudflow at this stage of fill construction is nearly impossible, which provides additional justification for prohibiting the construction of durable rock fills.

Kayford South, West Virginia

On June 13, 2010, a significant rainfall event occurred near the town of Dorothy in Raleigh County, West Virginia, resulting in flooding, erosion, and deposition of eroded mine spoil downstream from a durable rock fill associated with a surface mine (Permit S–3008–00). The event eroded the face of the fill, which was being graded for reclamation, with the sediment completely filling the sedimentation pond below the toe of the fill. After filling the pond, water and mobilized sediment flowed down Gardner Branch approximately 0.5 mile to the confluence with the Clear Fork of the Coal River. The flow scoured the stream channel and deposited sediment along the length of Gardner Branch. In this case, no one was injured and little property damage occurred because the affected areas were uninhabited.

The fill was being graded to its final configuration when the rainfall event occurred. A primary issue at this site and other durable rock fills is the time lag between completion of excess spoil placement and final grading because of the top-down construction method. In this case, the lag was more than 2 years. During this time, the face of the fill was completely exposed and susceptible to erosion.

Lyburn, West Virginia

On July 19, 2002, a flood event on Winding Shoals Branch in Lyburn, Logan County, West Virginia, destroyed ten residences and damaged vehicles and property. Stormwater runoff, rock, mud, and debris from a surface mine (Permit S–5023–93) flooded the narrow stream valley. The primary cause of the significant damage at Lyburn was the condition of the durable rock fill and its proximity to structures. At the time of the storm, the company was reclaiming this end-dumped fill. As is typical of an end-dumped durable rock fill during reclamation, soil and small rock particles on the face of the fill were exposed and highly susceptible to erosion.

Our proposal to remove 30 CFR 816.73 and the authority that it provides to construct durable rock fills using end-dumping and gravity segregation is intended to prevent the recurrence of events like those discussed above. Fills constructed from the bottom up in accordance with 30 CFR 816.71 are much less susceptible to erosion and much less likely to contribute to flooding than are durable rock fills, which are constructed from the top down. The faces of fills constructed in accordance with 30 CFR 816.71 can be reclaimed and revegetated in stages, which reduces surface runoff and susceptibility to erosion, while the faces of durable rock fills cannot be reclaimed and revegetated until the fill is completed.

22. Section 816.74: What special requirements apply to the disposal of excess spoil on a preexisting bench?

We propose to revise 30 CFR 816.74(a) to clarify that the term ''preexisting bench'' applies only to features located on previously mined areas or on bond forfeiture sites. This term does not apply to benches created as part of an earlier phase of the mining operation that generated the excess spoil to be disposed of under this provision.

We propose to revise 30 CFR 816.74(b) for consistency with our proposed changes to 30 CFR 780.12(e) and 816.22 concerning the removal, salvage, storage, and redistribution of soil and organic matter. We propose to revise 30 CFR 816.74(c) by adding a requirement that underdrains comply with proposed 30 CFR 816.71(f)(3). In addition, proposed 30 CFR 816.74(e)(2), which is the counterpart to existing 30 CFR 816.74(d)(2), would require the use of all reasonably available spoil to eliminate all preexisting highwalls, consistent with the regulations governing backfilling and grading of previously mined areas under 30 CFR 816.106.

Finally, we propose to remove the gravity-transport provisions in 30 CFR 816.74(h) because this method of transporting spoil from one bench to another is not fully consistent with section 515(b)(22)(A) of SMCRA,[636] which provides that all excess spoil material resulting from surface coal mining operations must be ''transported and placed in a controlled manner in position for concurrent compaction and in such a way to assure mass stability and to prevent mass movement.'' Gravity transport is not transport in a controlled manner.

23. Section 816.81: How must I dispose of coal mine waste?

Proposed Paragraph (a): General Requirements

Proposed paragraph (a) is substantively identical to the first sentence of existing paragraph (a), except that we propose to add language requiring compliance with the refuse pile requirements of 30 CFR 816.83 and the coal mine waste impounding structure requirements of 30 CFR 816.84 when applicable.

Proposed Paragraph (b): Basic Performance Standards

Proposed paragraph (b) would include the remaining provisions of existing paragraph (a). Proposed paragraph (b)(1) would revise existing paragraph (a)(1) to require that the coal mine waste disposal facility minimize adverse effects not only on the quality and quantity of surface water and groundwater as in the existing rule, but also on the biological condition of perennial and intermittent streams within the permit area to the extent possible, using the best technology currently available. Our proposed revisions are consistent with section 515(b)(24) of SMCRA,[637] which requires that, to the extent possible using the best technology currently available, surface coal mining and reclamation operations be conducted so as to minimize disturbances and adverse impacts of the operation on fish, wildlife, and related environmental values and to achieve enhancement of those resources where practicable.

We propose to add paragraph (b)(6), which would require that the coal mine waste disposal facility not change the size or frequency of peak flows from precipitation events or thaws in a way that would result in increased damage from flooding when compared with the impacts of premining peak flows. We also propose to add paragraph (b)(7), which would require that the coal mine waste disposal facility not preclude any existing or reasonably foreseeable use of surface water or groundwater or, for surface wates downstream of the

[636] 30 U.S.C. 1265(b)(22)(A).

[637] 30 U.S.C. 1265(b)(24).

facility, preclude attainment of any designated use under section 101(a) or 303(c) of the Clean Water Act.[638] The proposed language parallels the terminology in our proposed definition of ''material damage to the hydrologic balance outside the permit area'' in 30 CFR 701.5, which relies in large measure upon the status of existing, reasonably foreseeable, and designated uses of water. In addition, we propose to add paragraph (b)(8), which would require that the coal mine waste disposal facility not cause or contribute to an exceedance of any applicable water quality standards. Finally, we propose to add paragraph (b)(9), which would require that the disposal facility not discharge acid or toxic mine drainage.

The proposed addition of paragraphs (b)(6) through (9) is intended to improve implementation of sections 510(b)(3) and 515(b)(10) of SMCRA. Section 510(b)(3)[639] prohibits approval of a permit application unless the applicant demonstrates and the regulatory authority finds that the proposed operation ''has been designed to prevent material damage to the hydrologic balance outside the permit area.'' Section 515(b)(10)[640] requires that surface coal mining and reclamation operations be conducted so as to ''minimize disturbances to the prevailing hydrologic balance at the mine-site and in associated offsite areas and to the quality and quantity of water in surface and ground water systems both during and after surface coal mining operations and during reclamation.'' The proposed revisions also are consistent with our proposed definition of ''material damage to the hydrologic balance outside the permit area'' in 30 CFR 701.5, which focuses on mining-related impacts to uses of groundwater and surface water. Finally, the proposed revisions are consistent with section 702(a) of SMCRA,[641] which provides that nothing in SMCRA may be construed as superseding, amending, modifying, or repealing the Clean Water Act or state laws enacted pursuant to the Clean Water Act.

Proposed Paragraph (c): Coal Mine Waste From Outside the Permit Area

Proposed paragraph (c) is substantively identical to existing paragraph (b).

Proposed Paragraph (d): Design and Construction Requirements

Proposed paragraph (d) would include existing paragraph (c) in revised form. Proposed paragraph (d)((1)(i) would require that coal mine waste disposal facilities be constructed in accordance with current, prudent engineering practices and any criteria established by the regulatory authority. The existing regulations require that the design of the facility meet those requirements, but they do not address the construction process, which also is important in ensuring that the structure is stable and performs as intended.

Proposed paragraph (d)(1)(ii) would require that, as part of the design certification, the engineer specifically certify that any existing and planned underground mine workings in the vicinity of the disposal facility will not adversely impact the stability of the structure. The Martin County Slurry Spill incident in Martin County, Kentucky on October 11, 2000, illustrates the magnitude of environmental damage that can result when impounded coal refuse slurry breaks through into adjacent underground mine workings that open to the surface. In this case, the mine openings discharged 306 million gallons of slurry into two tributaries of the Tug Fork River (Coldwater Fork and Wolf Creek). The slurry covered nearby residents' yards to a depth of as much as 5 feet, visibly polluted more than 100 miles of waterways, including the Big Sandy and Ohio Rivers, and devastated aquatic life in 70 miles of stream. Six public water intakes were adversely affected and alternative water supplies had to be arranged for 27,000 residents. Cleanup costs were approximately $59 million.[642]

Proposed paragraph (d)(1)(ii) is intended to ensure that each coal mine waste disposal facility is designed to prevent similar events. This design requirement would benefit the public, the environment, and mine operators by reducing the probability of breakthroughs into underground mine workings and the environmental and property damage and cleanup expenses that may result from those breakthroughs.

Proposed paragraph (d)(1)(iii) would require that the coal mine waste disposal facility be constructed in accordance with the design and plans submitted under 30 CFR 780.25 and approved in the permit and that a qualified registered professional engineer experienced in the design and construction of similar earth and waste structures certify that the facility has been constructed in accordance with the approved design. Proposed paragraph (d)(1)(iii) would provide additional safeguards for protection of the environment, public health and safety, and property. Thus, it would better implement section 102(a) of SMCRA,[643] which states that one of the purposes of SMCRA is to ''establish a nationwide program to protect society and the environment from the adverse effects of surface coal mining operations.'' To the extent that proposed paragraph (d)(1)(iii) would improve stability, it also would improve implementation of section 515(b)(11) of SMCRA,[644] which requires that all waste piles be stabilized in designated areas, and sections 515(b)(13) and 515(f) of SMCRA,[645] which include provisions intended to ensure that coal mine waste impoundments are constructed in a manner that would protect public safety and public and private property. And the proposed revisions would be consistent with section 515(b)(23) of SMCRA,[646] which requires surface coal mining and reclamation operations to ''meet such other criteria as are necessary to achieve reclamation in accordance with the purposes of this Act, taking into consideration the physical, climatological, and other characteristics of the site.''

Proposed Paragraph (e): Foundation Investigations

Proposed paragraph (e) is substantively identical to existing paragraph (d), except that we propose to add language requiring that the analysis of foundation conditions for the coal mine waste disposal facility take into consideration the effect of any underground mine workings located in either the permit area or the adjacent area. The rationale for this proposed change is the same as the rationale for proposed paragraph (d), as discussed above.

Proposed Paragraph (f): Soil Handling Requirements

Proposed paragraph (f) would require that vegetation, organic matter, and soil materials be salvaged, stored, and redistributed or otherwise handled in accordance with proposed 30 CFR

[638] 33 U.S.C. 1251(a) and 1313(c), respectively.

[639] 30 U.S.C. 1260(b)(3).

[640] 30 U.S.C. 1265(b)(10).

[641] 30 U.S.C. 1292(a).

[642] See *http://www.sourcewatch.org/index.php?title=Martin_County_sludge_spill* (last accessed February 4, 2015) and *http://www.jackspadaro.com/news_articles/2003/10_12_03/herald-leader10_12_03.html* (last accessed February 4, 2015).

[643] 30 U.S.C. 1202(a).

[644] 30 U.S.C. 1265(b)(11).

[645] 30 U.S.C. 1265(b)(13) and (f).

[646] 30 U.S.C. 1265(b)(23).

816.22. While 30 CFR 816.22 would apply in the absence of this rule, the addition of this paragraph would reaffirm the applicability of that rule to coal mine waste disposal facilities.

Proposed paragraphs (g) and (h): Emergency Procedures and Underground Disposal

Proposed paragraphs (g) and (h) are substantively identical to existing paragraphs (e) and (f), respectively.

24. Section 816.83: What special performance standards apply to coal mine waste refuse piles?

Proposed 30 CFR 816.83 is substantively identical to existing 30 CFR 816.83 except as discussed below. We propose to revise paragraph (b), which includes existing paragraph (a), to specify that the refuse pile must be constructed with the diversions and underdrains included in the approved design.

In proposed paragraph (b)(3), which corresponds to part of existing paragraph (a)(2), we propose to add a requirement that diversion channels be designed using the appropriate regional NRCS synthetic storm distribution to determine the peak flow from surface runoff from a 100-year, 6-hour precipitation event. The preamble to proposed 30 CFR 780.29 explains the rationale for this proposed requirement.

We propose to remove existing paragraph (c)(1) because it duplicates the soil handling requirements of proposed 30 CFR 816.81, which 30 CFR 816.83(a) cross-references.

In proposed paragraph (d)(2), which corresponds to existing paragraph (c)(3), we propose to delete language in the existing rule that allows the creation and retention of small depressions on the completed refuse pile. Removal of this provision is justified because depressions promote infiltration and because discharges filtered through coal mine waste typically contain higher levels of total dissolved solids, metals, and other parameters of concern than discharges filtered through mine spoil. The proposed revision would improve implementation of sections 510(b)(3) and 515(b)(10) of SMCRA.[647] Section 510(b)(3)[648] prohibits approval of a permit application unless the applicant demonstrates and the regulatory authority finds that the proposed operation ''has been designed to prevent material damage to the hydrologic balance outside the permit area.'' Section 515(b)(10)[649] requires that surface coal mining and reclamation operations be conducted so as to ''minimize disturbances to the prevailing hydrologic balance at the mine-site and in associated offsite areas and to the quality and quantity of water in surface and ground water systems both during and after surface coal mining operations and during reclamation.''

In proposed paragraph (e), which corresponds to existing paragraph (d), we propose to delete the existing inspection standards and requirements and replace them with a cross-reference to the corresponding inspection and examination requirements for excess spoil fills that we propose to adopt as part of 30 CFR 816.71. Excess spoil fills and coal mine waste refuse piles are similar structures in terms of engineering needs and requirements. Therefore, they should have identical inspection and examination requirements.

25. Section 816.84: What special requirements apply to coal mine waste impounding structures?

Proposed 30 CFR 816.84 is substantively identical to existing 30 CFR 816.84 except as discussed below. Proposed paragraph (b), which is the counterpart to existing paragraph (a), would clarify that coal mine waste may not be used to construct impounding structures unless the use of coal mine waste will not result acid drainage or toxic seepage through the impounding structure. The existing rule only refers to acid seepage. Our proposed revision of the scope of this rule to include toxic seepage is appropriate because section 515(b)(10)(A) of SMCRA[650] requires avoidance of ''acid or other toxic mine drainage.'' We also propose to replace the term ''acid seepage'' in the existing rule with ''acid drainage'' because that is the term that we define in 30 CFR 701.5. However, we propose to use the term toxic seepage in recognition of the mechanism by which we anticipate that any toxic mine drainage might develop.

Proposed paragraph (e), which is the counterpart to existing paragraph (d), would specify that diversions must be both designed and constructed to meet the requirements of 30 CFR 816.43. The existing rule contains only the design requirement. The performance standards of 30 CFR 816.43 apply to all diversions subject to regulation under SMCRA and our proposed revision would reiterate that principle. We also propose to specify that the diversions must be designed using the appropriate regional NRCS synthetic storm distribution to determine the peak flow from surface runoff from a 100-year, 6-hour precipitation event. The preamble to proposed 30 CFR 780.29 explains the rationale for this proposed requirement.

Finally, we propose to move existing paragraph (e) to 30 CFR 780.25(d) because it is a permitting requirement rather than a performance standard. Our goal is to move permitting requirements now located in the performance standards of subchapter K to the permitting provisions of subchapter G whenever feasible.

26. Section 816.95: How must I protect surface areas from wind and water erosion?

We propose to revise 30 CFR 816.95(b) to replace the references to topsoil with references to soil and soil substitutes to be consistent with 30 CFR 780.12(e) and 816.22(c), which allow the use of topsoil and subsoil substitutes and supplements under certain conditions.

27. Section 816.97: How must I protect and enhance fish, wildlife, and related environmental values?

Unless otherwise noted, our proposed substantive revisions to 30 CFR 816.97, as discussed below, are intended to more fully implement section 515(b)(24) of SMCRA,[651] which provides that ''to the extent possible using the best technology currently available'' surface coal mining and reclamation operations must be conducted so as to ''minimize disturbances and adverse impacts of the operation on fish, wildlife, and related environmental values, and achieve enhancement of such resources where practicable.'' A few of the proposed revisions also would provide more detail on the measures and procedures needed to ensure compliance with the Endangered Species Act. Proposed requirements for the use of native species and reforestation would more completely implement section 515(b)(19) of SMCRA,[652] which requires establishment of a ''permanent vegetative cover of the same seasonal variety native to the area of land to be affected and capable of self-regeneration and plant succession.''

Proposed Paragraph (a): General Requirements

Proposed paragraph (a) would require that the permittee, to the extent possible using the best technology currently available, minimize disturbances and adverse impacts on fish, wildlife, and related environmental values and

[647] 30 U.S.C. 1260(b)(3) and 1265(b)(10).

[648] 30 U.S.C. 1260(b)(3).

[649] 30 U.S.C. 1265(b)(10).

[650] 30 U.S.C. 1265(b)(10)(A).

[651] 30 U.S.C. 1265(b)(24).

[652] 30 U.S.C. 1265(b)(19).

achieve enhancement of those resources where practicable, as described in detail in the fish and wildlife protection and enhancement plan approved in the permit in accordance with 30 CFR 780.16. Proposed paragraph (a) is substantively identical to both section 515(b)(24) of SMCRA [653] and to existing paragraph (a), with the exception that we propose to add a reminder that the permittee must comply with the fish and wildlife protection and enhancement plan approved in the permit.

Proposed Paragraph (b): Species Listed or Proposed for Listing as Threatened or Endangered

Existing 30 CFR 816.97(b) and (d) contain provisions that pertain to threatened and endangered species. We propose to consolidate those provisions in proposed paragraph (b). Proposed paragraph (b)(1) would set forth requirements concerning species that the U.S. Fish and Wildlife Service has listed or proposed for listing under the Endangered Species Act.

Proposed paragraphs (b)(1)(i) through (iii) are substantively identical to the requirements of existing 30 CFR 816.97(b) with respect to federally-listed species, with four exceptions. First, we propose to replace the terms ''consult'' and ''consultation'' in the existing regulations with ''contact and coordinate'' and ''in coordination with'' to clarify that, in this context, these regulations do not refer to consultation under section 7(a)(2) of the Endangered Species Act.

Second, we propose to expand the scope of paragraph (b)(1)(i) to include species proposed for listing as threatened or endangered under the Endangered Species Act, not just species actually listed under that law. We are proposing this change in response to discussions with the U.S. Fish and Wildlife Service. The proposed change is consistent with section 7(a)(4) of the Endangered Species Act, which provides that ''[e]ach Federal agency shall confer with the Secretary on any agency action which is likely to jeopardize the continued existence of any species proposed to be listed under section 4 or result in the destruction or adverse modification of critical habitat proposed to be designated for such species.'' It also would assist in implementing the fish and wildlife protection provisions of sections 515(b)(24) and 516(b)(11) of SMCRA. The conferencing requirement of section 7(a)(4) of the Endangered Species Act is not the same as the consultation requirement for threatened and endangered species under section 7(a)(2) of the Endangered Species Act.

Third, in proposed paragraph (b)(1)(ii), we propose to add a sentence clarifying that the requirement that the permittee report to the regulatory authority the presence of any federally-listed threatened or endangered species within the permit area applies regardless of whether the species was listed before or after permit issuance. We also propose to expand this notification requirement to apply to both the permit area and the adjacent area, not just the permit area as under the existing rule. We are proposing this change in response to discussions with the U.S. Fish and Wildlife Service concerning compliance with the Endangered Species Act.

We are considering whether to limit the notification requirement of proposed paragraph (b)(1)(ii) to the active mining phase of the operation; *i.e.,* whether the final rule should specify that the notification requirement expires at the time of Phase II bond release because of the typical lack of activity on the site after that stage of reclamation. We invite comment on this question.

Fourth, in proposed paragraph (b)(1)(iii)(A), we propose to add a requirement that the regulatory authority issue a permit revision order under 30 CFR 774.10(b) when necessary to implement the results of the coordination process with state and federal fish and wildlife agencies following receipt of notification under proposed paragraphs (b)(1)(ii) and (iii). This requirement would apply only when revision of the operation and reclamation plan approved in the permit is necessary to ensure protection of federally-listed threatened and endangered species.

Proposed paragraph (b)(1)(iv) would expressly require compliance with any species-specific protective measures required by the regulatory authority in coordination with the U.S. Fish and Wildlife Service. While proposed paragraph (b)(1)(iv) would be a new regulation, the requirement itself is a longstanding component of the result of a formal section 7(a)(2) consultation under the Endangered Species Act with respect to the continuation and approval of surface coal mining and reclamation operations under a SMCRA regulatory program.

Proposed paragraph (b)(1)(v) is substantively identical to those elements of existing paragraph (d) that pertain to the Endangered Species Act; *i.e.,* it would provide that nothing in our regulations authorizes the taking of a threatened or endangered species in violation of the Endangered Species Act. Only the U.S. Fish and Wildlife Service may quantify allowable take of species listed as threatened or endangered.

Proposed paragraph (b)(2) would set forth requirements pertaining to species listed as threatened or endangered under state statutes similar to the Endangered Species Act. It would include reporting and related requirements analogous to those of proposed paragraphs (b)(1)(ii) and (iii).

Proposed Paragraph (c): Bald and Golden Eagles

Existing paragraphs (c) and (d) both contain provisions that pertain to bald and golden eagles. We propose to consolidate those provisions in proposed paragraph (c). Proposed paragraphs (c)(1) through (3) are substantively identical to existing paragraph (c). Proposed paragraph (c)(4) would consist of those elements of existing paragraph (d) that pertain to the Bald and Golden Eagle Protection Act; *i.e.,* it would provide that nothing in our regulations authorizes the taking of a bald or golden eagle, its nest, or its eggs in violation of the Bald and Golden Eagle Protection Act.

Proposed Paragraph (d): Miscellaneous Protective Measures for Other Species of Fish and Wildlife

We propose to redesignate existing paragraph (e), which contains miscellaneous provisions relating to protection of fish and wildlife in general, as paragraph (d). Proposed paragraph (d)(1) is substantively identical to existing paragraph (e)(1) with one exception. We propose to remove the clause allowing the regulatory authority to determine that is unnecessary to ensure that electric power transmission lines and other transmission facilities used for, or incidental to, surface mining activities on the permit area are designed and constructed to minimize electrocution hazards to raptors. We are not aware of any situations in which these precautions are not necessary or appropriate. We also propose to expand the scope of this paragraph to include all avian species with large wingspans, not just raptors, consistent with recommendations of the Avian Power Line Interaction Committee in a 2006 publication,[654] which found that non-raptor avian species with large wingspans including, but not limited to,

[653] 30 U.S.C. 1265(b)(24).

[654] Avian Power Line Interaction Committee (APLIC). 2006. *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006.* Edison Electric Institute, APLIC, and the California Energy Commission. Washington, DC and Sacramento, CA.

ravens, magpies, storks, and cranes, are subject to electrocution by power lines.

Proposed paragraph (d)(2) would require that the permittee locate, construct, operate, and maintain haul and access roads and sedimentation control structures in a manner that avoids or minimizes impacts on important fish and wildlife species or other species protected by state or federal law. It is substantively identical to existing paragraph (e)(2), except that we propose to add the words ''construct'' and ''maintain'' to be more consistent with the language of section 515(b)(17) of SMCRA,[655] which requires that surface coal mining and reclamation operations be conducted so as to ''insure that the construction, maintenance, and postmining conditions of access roads into and across the site of operations will control or prevent erosion and siltation, pollution of water, damage to fish or wildlife or their habitat, or public or private property.'' We also propose to apply the requirements of proposed paragraph (d)(2) to sedimentation control structures to more effectively implement the fish and wildlife protection requirements of section 515(b)(24) of SMCRA.[656]

Proposed paragraphs (d)(3) and (4) are substantively identical to existing paragraphs (e)(3) and (4).

Proposed paragraph (d)(5) would require that the permittee reclaim and reforest lands that were forested at the time of application and lands that would revert to forest under conditions of natural succession in a manner that enhances recovery of the native forest ecosystem as expeditiously as practicable. This provision would assist in implementation of the fish and wildlife protection provisions of section 515(b)(24) of SMCRA [657] and the revegetation requirements of section 515(b)(19) of SMCRA.[658]

Proposed Paragraph (e): Wetlands and Habitat of Unusually High Value for Fish and Wildlife

We propose to redesignate existing paragraph (f), which pertains to wetlands, vegetation along rivers and streams and bordering ponds and lakes, and habitat of unusually high value for fish and wildlife, as paragraph (e) and revise it for clarity and to be consistent with section 515(b)(24) of SMCRA.[659] The existing rule allows the permittee to select one of four options with respect to wetlands, vegetation bordering streams and water bodies, and habitat of unusually high value for fish and wildlife: (1) Avoid disturbances to them, (2) enhance them where practical, (3) restore them, or (4) replace them. Hence, the existing rule is not fully consistent with section 515(b)(24) of SMCRA, which requires both minimization of disturbances and adverse impacts on fish, wildlife, and related environmental values to the extent possible and enhancement of those resources where practicable. Proposed paragraph (e) would improve consistency with section 515(b)(24) of SMCRA by requiring the permittee to enhance those resources where practical in all cases and by adding the qualifier ''to the extent possible'' with respect to the requirement to avoid disturbances to and restore or replace those resources. In accordance with accepted scientific terminology, we also propose to use the term ''lentic'' to refer to vegetation bordering lakes and ponds. As proposed, paragraph (e) would require the permittee to avoid disturbances to, restore or replace, and, where practicable, enhance, wetlands, riparian vegetation along rivers and streams, lentic vegetation bordering ponds and lakes, and habitat of unusually high value for fish and wildlife.

Proposed Paragraph (f): Vegetation Requirements for Fish and Wildlife Habitat Postmining Land Use

We propose to redesignate existing paragraph (g) as paragraph (f) and revise it by removing the requirement that plants used to revegetate areas with a fish and wildlife habitat postmining land use be arranged to maximize edge effect. Maximizing edge effect means that plantings would be designed to include the greatest amount of boundary areas between different types of natural habitats. It promotes the greatest species diversity, but also results in habitat fragmentation, which has deleterious effects on wildlife species that require large blocks of continuous habitat. We propose to replace that requirement with a provision that would require that the permittee select and arrange plant species to maximize the benefits to fish and wildlife. This change reflects current wildlife management philosophy, which emphasizes preservation or restoration of entire natural communities, rather than just those species that would benefit from the creation of edge effect.

In addition, we propose to require the use of native species, prohibit the use of invasive plant species that are known to inhibit natural succession, and add a requirement that plant species be selected on the basis of their ability to sustain natural succession by allowing the establishment and spread of plant species across ecological gradients. These changes would improve implementation of section 515(b)(19) of SMCRA,[660] which requires establishment of a ''permanent vegetative cover of the same seasonal variety native to the area of land to be affected and capable of self-regeneration and plant succession.'' Section 515(b)(19) [661] also provides that ''introduced species may be used * * * where desirable and necessary to achieve the approved postmining land use plan.'' We cannot envision any scenario in which introduced species would be either desirable or necessary to achieve a fish and wildlife habitat postmining land use.

Proposed Paragraph (g): Vegetation Requirements for Cropland Postmining Land Use

We propose to redesignate existing paragraph (h) as paragraph (g). Both paragraphs are substantively identical, but we propose to remove the phrase ''throughout the harvested area'' from the existing rule. That phrase is both unclear and unnecessary.

Proposed Paragraph (h): Vegetation Requirements for Forestry Postmining Land Uses

Proposed paragraph (h) would provide that any lands with either a managed or unmanaged forestry postmining land use must be replanted with native tree and understory species to the extent that doing so is not inconsistent with the type of forestry to be practiced as part of the postmining land use. This new paragraph also would require that plantings of commercial species be interspersed with plantings with native trees and shrubs of high value to wildlife, regardless of the type of forestry postmining land use. Proposed paragraph (h) would improve implementation of the revegetation requirements of section 515(b)(19) of SMCRA [662] and the provisions of section 515(b)(24) of SMCRA [663] concerning protection and enhancement of fish, wildlife, and related environmental values, as previously discussed.

Proposed Paragraph (i): Vegetation Requirements for Other Postmining Land Uses

We propose to revise existing paragraph (i) to add commercial and

[655] 30 U.S.C. 1265(b)(17).
[656] 30 U.S.C. 1265(b)(24).
[657] *Id.*
[658] 30 U.S.C. 1265(b)(19).
[659] 30 U.S.C. 1265(b)(24).
[660] 30 U.S.C. 1265(b)(19).
[661] 30 U.S.C. 1265(b)(24).
[662] 30 U.S.C. 1265(b)(19).
[663] 30 U.S.C. 1265(b)(24).

intensive recreational uses to the list of postmining land uses for which the permittee must establish greenbelts to provide food and cover to wildlife. The uses that we propose to add are similar in intensity to the uses in the existing rule; therefore, the same requirements should apply. Proposed paragraph (i)(1) would require that the plants used to create the greenbelts be native and non-invasive, consistent with section 515(b)(19) of SMCRA [664] and the purpose of the greenbelts. In addition, proposed paragraph (i)(1) would create an exception to the greenbelt requirement when greenbelts would be inconsistent with the approved postmining land use for that site.

Proposed paragraph (i)(2) would add another requirement for lands with the postmining land uses listed in the introductory text of proposed paragraph (i). Specifically, proposed paragraph (i)(2)(i) would require the establishment of a 100-foot buffer [665] comprised of native species, including species adapted to and suitable for planting in riparian zones, along each bank of all perennial and intermittent streams within the portion of the permit area for which these postmining land uses are approved. The species planted must consist of native tree and understory species if the land was forested at the time of application or if it would revert to forest under conditions of natural succession. The proposed requirements would improve implementation of the revegetation requirements of section 515(b)(19) of SMCRA [666] and the provisions of section 515(b)(24) of SMCRA [667] concerning protection and enhancement of fish, wildlife, and related environmental values, as previously discussed. Proposed paragraph (i)(2)(i) would provide an exception from the riparian buffer requirement when such a buffer would be incompatible with an approved postmining land use that is implemented during the revegetation responsibility period before final bond release under proposed § 800.42(d).

Proposed Paragraph (j): Planting Arrangement Requirements

Proposed paragraph (j) would require that plantings on all reclaimed areas be designed and arranged in a manner that will optimize benefits to wildlife to the extent practicable and consistent with the approved postmining land use. The proposed requirement would improve implementation of the provisions of section 515(b)(24) of SMCRA [668] concerning protection and enhancement of fish, wildlife, and related environmental values.

28. Section 816.99: What measures must I take to prevent and remediate landslides?

We propose to revise this section to improve adherence to plain language principles and to delete the reference to erosion in existing 30 CFR 816.99(a). The proposed deletion is appropriate because retention of an undisturbed natural barrier at the elevation of the lowest coal seam to be mined would not and could not play a role in preventing erosion on the disturbed area above the barrier. The role of such a barrier is limited to stability and preventing landslides.

29. Section 816.100: What are the standards for keeping reclamation contemporaneous with mining?

We propose to revise this section to improve adherence to plain language principles and to add stream restoration to the list of reclamation activities that are subject to the contemporaneous reclamation requirement. Existing 30 CFR 816.100 states that reclamation activities include, but are not limited to, those specifically listed in the rule. Therefore, we consider our proposed addition of stream restoration to the list of activities to be a clarification of the existing regulation.

30. Why are we proposing to remove existing 30 CFR 816.101?

As adopted on December 17, 1991, 30 CFR 816.101 established time and distance requirements for rough backfilling and grading following coal removal. However, we subsequently suspended this section, effective August 31, 1992, as a result of a Joint Stipulation of Dismissal in litigation following the issuance of that rule. See 57 FR 33874, 33875 (Jul. 31, 1992) and *Nat'l Coal Ass'n et al.* v. *U.S. Dep't of the Interior, et al.,* Civ. No. 92–0408–CRR (D.D.C.). We now propose to lift the suspension and remove this section as part of our rewrite of the backfilling and grading requirements. Removal of a section that has not been in effect for almost 20 years would improve the clarity of our requirements and avoid the confusion that can result on the part of persons who are not aware of the suspension.

The contemporaneous reclamation requirements of 30 CFR 816.100, in combination with the site-specific reclamation timetable approved in the permit, should be sufficient to ensure that permittees complete rough backfilling and grading in a timely manner. The reclamation timetable requirement currently appears in existing 30 CFR 780.18(b)(3), which we propose to redesignate as 30 CFR 780.12(b). Proposed 30 CFR 780.12(b) also would require that the reclamation timetable include application for each phase of bond release under proposed 30 CFR 800.42 because reclamation cannot be considered complete until the regulatory authority releases all bond posted for the site in accordance with proposed 30 CFR 800.42(d).

31. Section 816.102: How must I backfill the mined area and configure the land surface?

We propose to revise and restructure this section to clarify exactly when and where our approximate original contour restoration requirements apply, consistent with our proposed revisions to the definition of approximate original contour in 30 CFR 701.5 and other statutory and regulatory requirements. Section 515(b)(3) of SMCRA [669] provides the primary statutory basis for both the existing rules and the changes that we are proposing. In relevant part, section 515(b)(3) requires that surface coal mining and reclamation operations ''compact (where advisable to insure stability or to prevent leaching of toxic materials), and grade in order to restore the approximate original contour of the land with all highwalls, spoil piles, and depressions eliminated (unless small depressions are needed in order to retain moisture to assist revegetation or as otherwise authorized pursuant to this Act).'' It also provides exceptions to this requirement for mountaintop removal mining operations and thin and thick overburden situations.

Proposed Paragraph (a)

We propose to revise the introductory language of paragraph (a) to clarify that the backfilling requirement applies only to mined areas, while the grading requirement applies to the entire disturbed area. The existing rule applies the backfilling requirement to the entire disturbed area. However, those portions of the disturbed area outside the mined area do not contain a pit or similar excavation that requires backfilling. (See the preamble discussion of our proposed definition of backfill in 30 CFR 701.5.) Those areas only require grading to restore the approximate original contour in compliance with

[664] 30 U.S.C. 1265(b)(19).

[665] See the discussion of proposed 30 CFR 780.16(c) in this preamble for an explanation of how this distance must be measured.

[666] 30 U.S.C. 1265(b)(19).

[667] 30 U.S.C. 1265(b)(24).

[668] *Id.*

[669] 30 U.S.C. 1265(b)(3).

section 515(b)(3) of SMCRA.[670] We also propose to require that the backfilling and grading of the minesite adhere to the plan approved in the permit in accordance with 30 CFR 780.12(d).

Proposed paragraphs (a)(1)(i) through (ix) list exceptions from the requirement to restore the approximate original contour as the final surface configuration of the backfilled and regraded area. The exceptions in proposed paragraphs (a)(1)(i) through (v) correspond to the exceptions that appear in existing paragraph (k) and are substantively identical to those exceptions. We propose to reword the exception in proposed paragraph (a)(1)(v) to emphasize that the exception for remining operations applies only to the extent specified in 30 CFR 816.106(b); *i.e.,* it is limited to an exception from the highwall elimination requirement. This proposed revision would not change existing law, policy, or practice, but it would add clarity concerning the scope of the exception.

Proposed paragraphs (a)(1)(vi) and (vii) would clarify that excess spoil fills constructed in accordance with 30 CFR 816.71 or 816.74 and refuse piles constructed in accordance with 30 CFR 816.83 do not need to comply with approximate original contour restoration requirements. The rationale for these two exceptions appears in the preamble discussion of our proposed revisions to the definition of approximate original contour in 30 CFR 701.5.

Proposed paragraph (a)(1)(viii) would clarify that permanent impoundments that meet the requirements of proposed paragraph (a)(3)(ii) and proposed § 780.35(b)(4) are exempt from compliance with approximate original contour restoration requirements. The proposed exception is consistent with the definition of approximate original contour in section 701(2) of SMCRA,[671] which contains a clause specifying that ''water impoundments may be permitted'' if they comply with the permanent impoundment provisions of section 515(b)(8) of SMCRA.[672] The regulations implementing section 515(b)(8) of SMCRA are located at 30 CFR 816.49(b). Proposed 30 CFR 816.102(a)(3)(ii) would require compliance with 30 CFR 816.49(b). Approval of a permanent impoundment would not exempt the permittee from complying with all applicable approximate original contour restoration requirements on the remainder of the disturbed area.

Proposed paragraph (a)(1)(ix) would allow the placement of overburden that otherwise would be classified as excess spoil on the mined-out area to heights in excess of the premining elevation when necessary to avoid or minimize construction of excess spoil fills on undisturbed land, provided that the placement occurs in accordance with proposed 30 CFR 780.35(b)(3). This provision would harmonize the approximate original contour restoration requirement of section 515(b)(3) of SMCRA [673] with section 515(b)(24) of SMCRA,[674] which requires that surface coal mining and reclamation operations use the best technology currently available to ''minimize disturbances and adverse impacts of the operation on fish, wildlife, and related environmental values'' to the extent possible. Streams are generally recognized as among the habitats with the highest value to fish, wildlife, and related environmental values. To minimize both the amount of land disturbed and the length of stream segments buried or otherwise adversely affected, proposed 30 CFR 780.35(b)(3) provides that premining elevations would not operate as a cap on the elevation of backfilled areas. Instead, the final elevation would be determined on the basis of the factors listed in proposed 30 CFR 780.35(b)(2)(ii) through (v), together with the requirement in 30 CFR 780.35(b)(3) that the final surface configuration be compatible with the natural drainage pattern and the surrounding terrain.

Proposed paragraph (a)(2) is substantively identical to existing paragraph (g), with the exception of a proposed requirement that backfilling and grading be conducted in a manner that minimizes the creation of uniform slopes and cut-and-fill terraces. Both uniform slopes and cut-and-fill terraces are rarely found in nature and thus normally would not be considered consistent with the concept of approximate original contour restoration. However, the definition of approximate original contour in section 701(2) of SMCRA [675] contains language allowing terracing. Therefore, the proposed rule would continue to allow the construction of cut-and-fill terraces under certain conditions for specified purposes, as in the existing rules.

Proposed paragraph (a)(3), like existing paragraph (a)(2), would require the elimination of all highwalls, spoil piles, and depressions, with certain exceptions. We propose to add impoundments to this list for clarity, although this addition would not be a substantive change.

Proposed paragraph (a)(3)(i)(A), like existing paragraph (h), would allow the construction of small depressions if they are needed to retain moisture, minimize erosion, create or enhance wildlife habitat, or assist revegetation. Proposed paragraph (a)(3)(i) would add two other requirements that must be met before small depressions may be created or retained. First, proposed paragraph (a)(3)(i)(B) would require that the depressions be consistent with the hydrologic reclamation plan approved in the permit in accordance with proposed 30 CFR 780.22. Second, proposed paragraph (a)(3)(i)(C) would require that the permittee demonstrate that the depressions would not result in elevated levels of parameters of concern (*e.g.,* total dissolved solids and selenium) in discharges from the backfilled and graded area. The two new requirements are intended to ensure protection of the hydrologic balance in accordance with section 515(b)(10) of SMCRA,[676] which provides that surface coal mining and reclamation operations must be conducted to ''minimize the disturbances to the prevailing hydrologic balance at the mine-site and in associated offsite areas and to the quality and quantity of water in surface and ground water systems both during and after surface coal mining operations and during reclamation.'' Proposed paragraphs (a)(3)(i)(B) and (C) also would improve implementation of section 515(b)(3) of SMCRA,[677] which requires, in pertinent part, that surface coal mining and reclamation operations shape and grade overburden or spoil ''in such a way as to prevent * * * water pollution.''

Proposed paragraph (a)(3)(ii), like existing paragraph (i), would allow the retention of permanent impoundments if they are suitable for the approved postmining land use and if they meet the requirements of 30 CFR 816.49 and 816.56. We propose to add a provision allowing the retention of permanent impoundments only if the permittee has demonstrated compliance with the future maintenance requirements of proposed 30 CFR 800.42(c)(5). The new provision would improve implementation of section 519(c)(2) of SMCRA,[678] which provides that ''[w]here a silt dam is to be retained as a permanent impoundment pursuant to section 515(b)(8) [679] [the statutory counterpart to 30 CFR 816.49(b)],''

[670] *Id.*

[671] 30 U.S.C. 1291(2).

[672] 30 U.S.C. 1265(b)(8).

[673] 30 U.S.C. 1265(b)(3).

[674] 30 U.S.C. 1265(b)(24).

[675] 30 U.S.C. 1291(2).

[676] 30 U.S.C. 1265(b)(10).

[677] 30 U.S.C. 1265(b)(3).

[678] 30 U.S.C. 1269(c)(2).

[679] 30 U.S.C. 1265(b)(8).

Phase II bond may be released ''so long as provisions for sound future maintenance by the operator or the landowner have been made with the regulatory authority.'' In addition, proposed paragraph (a)(3)(ii)(D) would specify that the permittee must have obtain all necessary approvals and authorizations under section 404 of the Clean Water Act before a previously temporary impoundment may be retained as a permanent impoundment. This provision would apply only when the impoundment is located in waters of the United States. It is intended to encourage coordination and cooperation with the Clean Water Act permitting authority.

Proposed paragraph (a)(3)(iii), like existing paragraph (a)(2), would allow the permittee to retain highwalls on previously mined areas to the extent provided in § 816.106(b).

Proposed paragraph (a)(3)(iv) would allow retention of modified highwall segments to the extent necessary to replace similar natural landforms; *i.e.,* cliffs or bluffs, removed by the mining operation. The proposed rule would harmonize two provisions of section 515(b)(3) of SMCRA [680] that may pose a potential conflict in certain situations: the requirement to restore the approximate original contour and the requirement to eliminate all highwalls. The proposed rule would allow the retention of highwall segments to replace cliffs or bluffs destroyed by mining, but only if the highwall segments are modified to closely resemble the features destroyed by mining and to restore the ecological functions of those features. For example, ledges may need to be blasted into the highwall face to provide nesting habitat for raptors and other cliff-dwelling wildlife and microhabitats may need to be created at the base of the highwall remnant. The proposed rule would specify that the number, length, and height of any modified highwall segments retained may not exceed the number, length, and height of the premining features that they replace. In addition to harmonizing potentially-conflicting requirements within section 515(b)(3) of SMCRA,[681] the proposed rule would require restoration of valuable wildlife habitat, which would improve implementation of section 515(b)(24) of SMCRA.[682] Section 515(b)(24) requires that, to the extent possible, surface coal mining and reclamation operations use the best technology currently available to minimize disturbances and adverse impacts on fish, wildlife, and related environmental values and to achieve enhancement of those resources where practicable.

Under the proposed rule, the regulatory authority would have to amend its regulatory program to establish the conditions under which highwall segments may be retained and the modifications that must be made to those highwall segments to ensure that the retained segment restores the form and ecological function of similar premining landforms. We have already approved highwall retention provisions of this nature as part of the New Mexico and Utah regulatory programs.[683]

The New Mexico program provision, CSMC Rule 20–102(a)(2), allows the retention of limited stretches of highwall if similar features were part of the natural landscape of the mine area prior to mine operations. In addition, the following requirements apply:

- The highwall must have a static safety factor of 1.3.
- The highwall must not pose a hazard to persons or wildlife in the area.
- The highwall must be backfilled to cover the uppermost coal seam to a minimum depth of 4 feet.
- The retained portion of the highwall may not exceed 800 feet in length and must be a minimum of at least 3,000 feet from any other portion of any other highwall remnant approved for retention as part of the postmining land use.
- The highwall is necessary to replace cliff-type habitats that existed in the natural topography prior to mining.
- The ends of the highwall left standing must be contoured into the surrounding topography with slopes of 3:1 or less.

The Utah program provision (Utah Administrative Code R645–301–553.650) allows a permittee to seek approval to retain highwalls when the proposed highwall remnant would meet all stability requirements and the following criteria:

- The remaining highwall will not be greater in height or length than the cliffs and cliff-like escarpments that were replaced or disturbed by the mining operations.
- The remaining highwall will replace a preexisting cliff or similar natural premining feature and will resemble the structure, composition, and function of the natural cliff it replaces.
- The remaining highwall will be modified, if necessary, as determined by the regulatory authority, to restore cliff-type habitats used by the flora and fauna existing prior to mining.
- The remaining highwall will be compatible with the postmining land use and the visual attributes of the area.
- The remaining highwall will be compatible with the geomorphic processes of the area.

We invite comment on whether we should include any of these specific state program criteria in our rule for national applicability.

Proposed paragraph (a)(4) is substantively identical to existing paragraph (a)(3).

Proposed paragraph (a)(5), like existing paragraph (a)(4), would require that backfilling and grading be conducted to minimize erosion and water pollution both on and off the site. We propose to add language clarifying that the requirement to minimize water pollution includes discharges of parameters of concern for which no numerical effluent limitations or water quality standards have been established. Our proposed revision is in accordance with section 515(b)(10) of SMCRA,[684] which provides that surface coal mining and reclamation operations must be conducted to ''minimize the disturbances to the prevailing hydrologic balance at the mine-site and in associated offsite areas and to the quality and quantity of water in surface and ground water systems both during and after surface coal mining operations and during reclamation.''

Proposed paragraph (a)(6) is identical to existing paragraph (a)(5).

Proposed Paragraph (b)

Existing paragraph (b) requires that all spoil except excess spoil disposed of in accordance with 30 CFR 816.71 or 816.74 be returned to the mined-out area. We propose to revise this paragraph by adding an exception in proposed paragraph (b)(2) for mountaintop removal mining operations. Under section 515(c)(4)(E) of SMCRA,[685] spoil from mountaintop removal mining operations need not be returned to the mined-out area, provided any spoil not returned to the mined-out area is placed in accordance with the excess spoil disposal requirements of section 515(b)(22) of SMCRA.[686] Mountaintop removal mining operations are designed to create a level plateau or gently rolling contour where mountainous topography existed before mining, which limits the amount

[680] 30 U.S.C. 1265(b)(3).

[681] 30 U.S.C. 1265(b)(3).

[682] 30 U.S.C. 1265(b)(24).

[683] 45 FR 86459 (Dec. 31, 1980) and 58 FR 48600 (Sept. 17, 1993), respectively.

[684] 30 U.S.C. 1265(b)(10).

[685] 30 U.S.C. 1265(c)(4)(E).

[686] 30 U.S.C. 1265(b)(22).

of spoil that can be returned to the mined-out area.

Proposed paragraph (b)(3) would include the exception in existing paragraph (d) for spoil used to blend the mined-out area into the surrounding terrain, with revisions to reflect our proposed changes to 30 CFR 816.22 concerning the salvage, storage, redistribution, and use of soil materials and organic matter. We also propose to remove existing paragraph (d)(3), which requires that spoil used for blending be backfilled and graded in accordance with the requirements of 30 CFR 816.102. Existing paragraph (d)(3) is redundant because the requirements of 30 CFR 816.102 automatically apply to all backfilling and grading activities unless specifically exempted.

Proposed Paragraph (c)

Existing paragraph (c) requires the compaction of spoil and waste materials where advisable to ensure stability or to prevent the leaching of toxic materials. For clarity and consistency with the terminology used elsewhere in our regulations, we propose to replace the phrase ''the leaching of toxic materials'' with ''the formation of acid or toxic mine drainage.''

We also propose to add a requirement to avoid compacting materials placed in what will be the root zone of the species planted under the revegetation plan approved in the permit in accordance with proposed 30 CFR 780.12(g) to the extent possible. As discussed in the portion of this preamble concerning proposed 30 CFR 780.12(e) and 816.22, soil compaction is a major inhibitor of plant growth and productivity, especially for trees and shrubs. Therefore, compaction of the root zone must be minimized to achieve the revegetation requirements of section 515(b)(19) of SMCRA [687] and the postmining land use capability requirements of section 515(b)(2) of SMCRA.[688]

Proposed Paragraph (d)

Proposed paragraph (d) would include existing paragraph (f), which requires the covering or treatment of all exposed coal seams and acid-forming materials, toxic-forming materials, and combustible materials. We propose to revise the existing rule by establishing separate requirements for exposed coal seams, acid-forming and toxic-forming materials, and combustible materials to reflect the different nature of these materials and to clarify which requirements apply to which materials.

Proposed paragraph (d)(1) would require that all exposed coal seams be covered with material that is noncombustible, nonacid-forming, and nontoxic-forming to prevent coal seam fires and the development of acid or toxic mine drainage. Proposed paragraph (d)(2) would require that all other combustible materials exposed, used, or produced during mining be handled and disposed of in accordance with 30 CFR 816.89 (noncoal waste materials) in a manner that will prevent sustained combustion. Proposed paragraph (d)(3) would require that the permittee handle and place all other acid-forming or toxic-forming materials in compliance with the plan approved in the permit in accordance with proposed 30 CFR 780.12(d)(4); in compliance with 30 CFR 816.38, which governs the handling and placement of acid-forming and toxic-forming materials; in compliance with the hydrologic reclamation plan approved in the permit in accordance with proposed 30 CFR 780.22(a); and in a manner that will minimize adverse effects on plant growth and the approved postmining land use.

The proposed revisions described above would improve implementation of section 515(b)(10) of SMCRA,[689] which provides that surface coal mining and reclamation operations must be conducted to ''minimize the disturbances to the prevailing hydrologic balance at the mine-site and in associated offsite areas and to the quality and quantity of water in surface and ground water systems both during and after surface coal mining operations and during reclamation.'' They also would more fully implement those provisions of section 515(b)(3) of SMCRA [690] that discuss the handling of acid-forming and toxic materials during backfilling and grading, as well as section 515(b)(14) of SMCRA,[691] which contains requirements for the handling and disposal of acid-forming and toxic materials and materials constituting a fire hazard.

Proposed Paragraph (e)

We propose to revise this paragraph by updating the terminology to reflect our 1983 rulemaking in which we introduced the term ''coal mine waste'' to include both coal processing waste and underground development waste.[692]

Proposed Paragraph (f)

Proposed paragraph (f) is substantively identical to existing paragraph (j) except that we propose to revise this paragraph by replacing the references to ''topsoil'' with the term ''soil materials'' to be consistent with our proposed changes to 30 CFR 816.22.

32. Section 816.104: What special provisions for backfilling, grading, and surface configuration apply to sites with thin overburden?

We propose to revise this section, which implements the thin overburden exception in section 515(b)(3) of SMCRA,[693] for clarity. Our proposed revisions to existing paragraph (a) would resolve ambiguities and convert the definition to a description of the situations in which the thin overburden provisions of 30 CFR 816.104 would apply. In proposed paragraph (a)(1), we propose to replace the term ''land'' with ''mined area'' to emphasize that the determination as to whether the postmining surface configuration closely resembles the premining surface configuration must be made with respect to the mined area, not the surrounding area. We also propose to insert ''any'' before ''mining'' to clarify that, when the permit area has been previously mined, the premining surface configuration must be the surface configuration that existed before any mining, not the surface configuration of the existing previously mined area. The preamble to our proposed revisions to the definition of approximate original contour in 30 CFR 701.5 contains further discussion of these matters.

In proposed paragraph (b), we propose to retain the existing performance standards for thin overburden at 30 CFR 816.104(b)(1) and (2), with appropriate plain language and citation changes. Among other things, the existing standards require that the permittee use all spoil and waste materials available from the entire permit area to attain the lowest practicable grade that does not exceed the angle of repose. This requirement is consistent with section 515(b)(3) of SMCRA,[694] which provides—

> That in surface coal mining which is carried out at the same location over a substantial period of time where the operation transects the coal deposit, and the thickness of the coal deposits relative to the volume of the overburden is large and where the operator demonstrates that the overburden and other spoil and waste materials at a particular point in the permit

[687] 30 U.S.C. 1265(b)(19).

[688] 30 U.S.C. 1265(b)(2).

[689] 30 U.S.C. 1265(b)(10).

[690] 30 U.S.C. 1265(b)(3).

[691] 30 U.S.C. 1265(b)(14).

[692] See 48 FR 44006 (Sept. 26, 1983).

[693] 30 U.S.C. 1265(b)(3).

[694] *Id.*

area or otherwise available from the entire permit area is insufficient, giving due consideration to volumetric expansion, to restore the approximate original contour, the operator, at a minimum, shall backfill, grade, and compact (where advisable) using all available overburden and other spoil and waste materials to attain the lowest practicable grade but not more than the angle of repose, to provide adequate drainage and to cover all acid-forming and other toxic materials, in order to achieve an ecologically sound land use compatible with the surrounding region[.]

We propose to add a reminder that the permittee must backfill all mined areas and grade all disturbed areas in accordance with the backfilling and grading plan approved in the permit under proposed 30 CFR 780.12(d). We also propose to require that the permittee ensure that the final surface configuration blends into and complements the drainage pattern of the surrounding terrain to the extent possible. This requirement is intended to harmonize the reclaimed area with surrounding areas.

33. Section 816.105: What special provisions for backfilling, grading, and surface configuration apply to sites with thick overburden?

We propose to revise this section, which implements the thick overburden exception in section 515(b)(3) of SMCRA,[695] for clarity. Our proposed revisions to existing paragraph (a) would resolve ambiguities and convert the definition to a description of the situations in which the thick overburden provisions of 30 CFR 816.105 would apply. In proposed paragraph (a)(1), we propose to replace the term ''land'' with ''mined area'' to emphasize that the determination as to whether the postmining surface configuration closely resembles the premining surface configuration must be made with respect to the mined area, not the surrounding area. We also propose to insert ''any'' before ''mining'' to clarify that, when the permit area has been previously mined, the premining surface configuration must be the surface configuration that existed before any mining, not the surface configuration of the existing previously mined area. The preamble to our proposed revisions to the definition of approximate original contour in 30 CFR 701.5 contains further discussion of these matters.

We also propose to delete the provision in our existing rules that a thick overburden situation exists when the amount of material to be returned to the mined-out area is so large that it is not possible to achieve a surface configuration that blends into and complements the drainage pattern of the surrounding terrain. We are aware of no circumstances in which this situation would exist.

We propose to revise the performance standards for thick overburden operations in existing paragraph (b) by adding an introductory reminder that all backfilling and grading activities must comply with the backfilling and grading plan approved in the permit under proposed 30 CFR 780.12(d). We also propose to revise existing paragraph (b) to improve consistency with the underlying statutory provisions and to reflect other rule changes that we are proposing. In relevant part, section 515(b)(3) of SMCRA [696] provides—

> That in surface coal mining where the volume of overburden is large relative to the thickness of the coal deposit and where the operator demonstrates that due to volumetric expansion the amount of overburden and other spoil and waste materials removed in the course of the mining operation is more than sufficient to restore the approximate original contour, the operator shall after restoring the approximate original contour, backfill, grade, and compact (where advisable) the excess overburden and other spoil and waste materials to attain the lowest grade but not more than the angle of repose, and to cover all acid-forming and other toxic materials, in order to achieve an ecologically sound land use compatible with the surrounding region and that such overburden or spoil shall be shaped and graded in such a way as to prevent slides, erosion, and water pollution and is revegetated in accordance with the requirements of the Act[.]

To implement this provision, proposed 30 CFR 816.105(b)(1) would require that the permittee backfill the mined-out area to the approximate original contour and then place the remaining spoil and waste materials on top of the backfilled area to the extent possible, as determined in accordance with the excess spoil minimization requirements of proposed 30 CFR 780.35(b). Section 515(b)(3) of SMCRA could be interpreted as requiring return of all spoil and waste materials to the mined-out area, but such a reading would not be the best interpretation of the statute. Nor is it technically possible to return all spoil from many steep-slope mining operations to the mined-out area.

Section 515(b)(22) of SMCRA [697] recognizes that mining operations may generate excess spoil. Accordingly, it establishes requirements governing placement of excess spoil outside the mined-out area. To harmonize these two statutory provisions, proposed 30 CFR 816.105(b)(1) would require adherence to the excess spoil minimization requirements in proposed 30 CFR 780.35(b) to ensure that spoil and waste materials are returned to the mined-out area to the extent possible after considering the technical, postmining land use, environmental, and other factors listed in proposed 30 CFR 780.35(b)(2)(i) through (v).

Proposed 30 CFR 816.105(b)(2) would require that the spoil and waste materials placed on top of the backfilled area be graded to the lowest practicable grade that is ecologically sound, consistent with the postmining land use, and compatible with the surrounding region. No slope may exceed the angle of repose. Proposed paragraph (b)(2) would be consistent with the language in section 515(b)(3) of SMCRA,[698] which requires that the operator ''backfill, grade, and compact (where advisable) the excess overburden and other spoil and waste materials to attain the lowest grade but not more than the angle of repose * * * in order to achieve an ecologically sound land use compatible with the surrounding region.''

Proposed 30 CFR 816.105(b)(3), like existing 30 CFR 816.105(b)(2), would continue to require compliance with most of the backfilling, spoil and soil placement, grading, and surface configuration requirements of 30 CFR 816.102, with the notable exception of the requirement in 30 CFR 816.102(a)(1) for restoration of the approximate original contour as the final surface configuration. Among other things, proposed paragraph (b)(3) would implement or facilitate implementation of those provisions of section 515(b)(3) of SMCRA that require (1) covering of all acid-forming and other toxic materials, (2) compaction of spoil and waste materials where advisable, (3) shaping and grading of overburden and spoil ''in such a way as to prevent slides, erosion, and water pollution,'' and (4) revegetation.

Proposed 30 CFR 816.105(b)(4), like existing 30 CFR 816.105(b)(3), would continue to require that any excess spoil be placed in accordance with the excess spoil disposal requirements of 30 CFR 816.71 or 816.74. As provided in our proposed definition of excess spoil in 30 CFR 701.5, this requirement would apply to all spoil material placed above the approximate original contour within the mined-out area as part of the continued construction of an excess spoil fill with a toe located outside the mined-out area.

[695] 30 U.S.C. 1265(b)(3).

[696] 30 U.S.C. 1265(b)(3).

[697] 30 U.S.C. 1265(b)(22).

[698] 30 U.S.C. 1265(b)(3).

Proposed paragraph (b)(5) would require that the final surface configuration blend into and complement the drainage pattern of the surrounding terrain to the extent possible. This requirement is intended to harmonize the reclaimed area with surrounding areas.

34. Section 816.106: What special provisions for backfilling, grading, and surface configuration apply to previously mined areas with a preexisting highwall?

We propose to modify the cross-references in existing paragraph (b) to be consistent with the other rule changes that we are proposing today. We also propose to revise the language of existing paragraph (b) to clarify that it does not grant an exception to any of the general backfilling and grading requirements of 30 CFR 816.102 except the requirement to eliminate all highwalls. All other proposed changes would improve adherence to plain language principles and are nonsubstantive.

35. Section 816.107: What special provisions for backfilling, grading, and surface configuration apply to steep slopes?

We propose to revise existing paragraph (d) of this section, which governs the disposal of woody materials on steep-slope mining sites, for consistency with proposed 30 CFR 816.22(f). The existing rule provides that woody materials may not be buried in the backfill unless the regulatory authority determines that doing so would not create stability problems. However, as discussed in the preamble to proposed 30 CFR 816.22(f), woody materials are sufficiently valuable for revegetation and fish and wildlife enhancement purposes that they should be used for those purposes rather than being buried or burned. Therefore, we propose to revise 30 CFR 816.107(d) to prohibit the burial of woody materials in the backfill and to require that the permittee instead handle those materials in accordance with proposed 30 CFR 816.22(f).

36. Section 816.111: How must I revegetate the area disturbed by mining?

We propose to revise and restructure this section for clarity and consistency with other proposed rule changes. We also propose to move existing paragraphs (b) and (c) and most of existing paragraph (d) to proposed 30 CFR 780.12(g) because they are permitting requirements that pertain to development of the revegetation plan. We propose to delete the sentence in existing paragraph (d) stating that the requirements of 30 CFR part 823 apply to prime farmland. This sentence is unnecessary because by its own terms 30 CFR part 823 applies to all prime farmland. In addition, we propose to redesignate existing 30 CFR 816.113 and 816.114 as proposed paragraphs (e) and (d), respectively, of 30 CFR 816.111.

Most of our proposed substantive revisions are intended to improve the implementation of section 515(b)(2) of SMCRA,[699] which requires that surface coal mining and reclamation operations ''restore the land affected to a condition capable of supporting the uses which it was capable of supporting prior to any mining, or higher or better uses of which there is reasonable likelihood,'' and section 515(b)(19) of SMCRA,[700] which provides that surface coal mining and reclamation operations must—

> establish on the regraded areas, and on all other lands affected, a diverse, effective, and permanent vegetation cover of the same seasonal variety native to the area of land to be affected and capable of self-regeneration and plant succession at least equal in extent of cover to the natural vegetation of the area; except, that introduced species may be used in the revegetation process where desirable and necessary to achieve the approved postmining land use plan[.]

The proposed revisions are necessary in part because an approved higher or better postmining land use is not always implemented during the revegetation responsibility period. Requiring initial revegetation with native species would promote environmentally-sound reclamation and enhance fish and wildlife habitat without precluding implementation of the higher or better use at a later date. The increased emphasis on revegetation with native species also would prevent proliferation of instances in which backfilled and graded minesites have not been revegetated with a permanent vegetative cover of the same seasonal variety native to the area, as required by section 515(b)(19) of SMCRA.

Proposed Paragraph (a)

We propose to revise existing paragraph (a) to clarify that the revegetation requirements of 30 CFR 816.111 do not apply to rock piles and other rock or non-vegetative features created to restore or enhance wildlife habitat under the fish and wildlife protection and enhancement plan approved in the permit in accordance with 30 CFR 780.16. We also propose to clarify that the revegetation exemption also applies to any other area that contains an impervious surface, such as a building or a parking lot, approved as part of or in support of the postmining land use and constructed before expiration of the revegetation responsibility period. Finally, we propose to clarify that the revegetation exemption for water areas applies only to water areas approved as part of or in support of the postmining land use or approved as part of the fish and wildlife protection and enhancement plan in the permit.

Proposed Paragraph (b)

Proposed paragraph (b) would require that the reestablished vegetative cover comply with the revegetation plan approved in the permit in accordance with proposed 30 CFR 780.12(g). It also would require that the vegetative cover be consistent with both the approved postmining land use and establishment of the plant communities described in the permit application as required by proposed 30 CFR 779.19. In addition, proposed paragraph (b) would require that the vegetative cover be capable of stabilizing the soil surface and, in the long term, preventing erosion in excess of what would have occurred naturally had the site not been disturbed. Background erosion levels on undisturbed sites vary from region to region and site to site, depending on geology, soils, topography, and climate. Further, proposed paragraph (b) would require that the vegetative cover not inhibit the establishment of woody plants when the revegetation plan requires the use of woody plants.

Extensive herbaceous ground cover can inhibit the establishment and growth of trees and shrubs, which would provide more effective long-term surface stabilization and erosion control in areas that are naturally forested. The dense herbaceous ground covers often used in the past to control erosion on regraded sites compete with newly-planted trees and tree seedlings for soil nutrients, water, and sunlight and provide habitat and cover for rodents and other animals that damage tree seedlings and young trees. An article in a technical publication provides the following summary of the effects of ground cover on establishment of trees on mined lands:

> The negative effects of overly abundant and aggressive ground cover on the survival and growth of trees planted on reclaimed mine lands has long been known. Trees planted into introduced, aggressive forages [especially tall fescue and sericea lespedeza] often are overtopped by the grass or legume and are unable to break free (Burger and Torbert, 1992; Torbert et al., 1995). The seedlings are pinned to the ground and have

[699] 30 U.S.C. 1265(b)(2).

[700] 30 U.S.C. 1265(b)(19).

little chance for survival. If it is known that trees are to be planted, a tree-compatible ground cover should be seeded that will be less competitive with trees. Tree-compatible ground cover should be slow growing, sprawling or low growing, not allopathic, and non-competitive with trees (Burger and Torbert, 1992). Plass (1968) reported that after four growing seasons the height growth of sweetgum and sycamore planted into an established stand of tall fescue on spoil banks was significantly retarded. Andersen et al. (1989) found that survival and height growth for red oak and black walnut was significantly greater on sites where ground cover was chemically controlled.[701]

Researchers from the University of Maine determined that even a small amount (less than 20 percent) of herbaceous ground cover around tree seedlings will substantially reduce early stand growth.[702] Another study of revegetation of mined lands in Appalachia found that dense ground covers prevent the natural seeding-in of native plants, while low ground cover seeding rates allowed the invasion of light-seeded native trees such as yellow poplar, red maple, and birches.[703]

The amount of vegetative ground cover necessary to control erosion on any particular site is a function of the site topography, composition of the surface material, precipitation frequency and intensity, and the degree of soil compaction. Loosely graded or uncompacted material, particularly if placed on a relatively gentle slope, may have virtually no runoff or erosion and would require little or no herbaceous vegetative ground cover to control erosion. Conversely, highly-compacted material placed on a steep slope severely limits infiltration and increases runoff so that a dense vegetative cover may be needed to control erosion.

We invite comment on whether proposed paragraphs (b)(4) and (5) strike the proper balance between the need for erosion control and the conditions required to promote establishment of native trees and shrubs, or whether adjustments are needed.

Proposed Paragraph (c)

Proposed paragraph (c) would allow volunteer plants of species that are desirable components of the plant communities described in the permit application under proposed 30 CFR 779.19 and that are not inconsistent with the postmining land use to be considered in determining whether the revegetation requirements of 30 CFR 816.111 and 816.116 have been met. Proposed paragraph (c) would be consistent with existing practice and with the requirement to establish a vegetative cover capable of self-regeneration and plant succession in section 515(b)(19) of SMCRA.[704]

Proposed Paragraph (d)

Proposed paragraph (d), which would include existing 30 CFR 816.114, would require that all areas upon which soil materials have been redistributed be stabilized either by establishing a temporary vegetative cover consisting of noncompetitive and non-invasive species or by applying a hay mulch (native hay would be required when commercially available) that is free of weed and noxious plant seeds. These methods could be used alone or in combination. In addition, proposed paragraph (d) would allow the regulatory authority to waive this requirement if it determines that neither method is necessary to stabilize the surface and control erosion. Proposed paragraph (d) is intended to promote establishment of ''a diverse, effective, and permanent vegetative cover of the same seasonal variety native to the area of land to be affected and capable of self-regeneration and plant succession,'' as required by section 515(b)(19) of SMCRA.[705] The preamble to proposed paragraph (b) explains the obstacle that dense herbaceous ground covers comprised of aggressive perennial species like tall fescue and sericea lespedeza present to the establishment of trees and shrubs and, hence, to achieving the type of postmining plant community that SMCRA requires.

Proposed Paragraph (e)

Proposed paragraph (e), which concerns the timing of revegetation, is substantively identical to existing 30 CFR 816.113. We propose to add a cross-reference to the revegetation plan approved in the permit in accordance with proposed 30 CFR 780.12(g).

37. Why are we proposing to remove existing 30 CFR 816.113 and 816.114?

We propose to consolidate existing 30 CFR 816.113 and 816.114 into 30 CFR 816.111 with the other general performance standards for revegetation. We propose to redesignate 30 CFR 816.113 and 816.114 as 30 CFR 816.111(e) and (d), respectively.

38. Section 816.115: How long am I responsible for revegetation after planting?

Proposed 30 CFR 816.115 is substantively identical to the provisions concerning revegetation responsibility periods in existing 30 CFR 816.116(c), with one exception.

Proposed paragraph (a)(2) would provide that the initial planting of small areas that are regraded and planted as a result of the removal of sediment control structures and associated structures and facilities (*e.g.,* diversion ditches, disposal and storage areas for accumulated sediment, sediment pond embankments, and ancillary roads used to access those structures) need not be considered an augmented seeding necessitating an extended or separate revegetation responsibility period. This proposed paragraph is not a new proposal; its adoption would merely incorporate into regulation the policy upon which we previously provided notice and opportunity for comment [706] and subsequently adopted in the context of the approval of several state regulatory program amendments.[707]

The following discussion from the preamble to our approval of the Illinois program amendment sets forth the rationale for our policy:

> Section 515(b)(20) of SMCRA provides that the revegetation responsibility period shall commence ''after the last year of augmented seeding, fertilizing, irrigation, or other work'' needed to assure revegetation success. In the absence of any indication of Congressional intent in the legislative history, OSM interprets this requirement as applying to the increment or permit area as a whole, not individually to those lands within the permit area upon which revegetation is delayed solely because of their use in support of the reclamation effort on the planted area. As implied in the preamble discussion of 30 CFR 816.46(b)(5), which prohibits the removal of ponds or other siltation structures until two years after the last augmented seeding, planting of the sites from which such structures are removed need not itself be considered an augmented seeding necessitating an extended or separate liability period (48 FR 44038–44039, September 26, 1983).
>
> The purpose of the revegetation responsibility period is to ensure that the mined area has been reclaimed to a condition capable of supporting the desired permanent vegetation. Achievement of this purpose will not be adversely affected by this

[701] King, J. and J. Skousen, ''Tree Survival on a Mountaintop Surface Mine in West Virginia,'' West Virginia University Morgantown, American Society of Mining and Reclamation, 2003 (unpaginated document).

[702] Wagner, R. G., ''Top 10 Principles for Managing Competing Vegetation to Maximize Regeneration Success and Long-Term Yields,'' University of Maine (unpaginated document).

[703] Burger, J. A. and C. E. Zipper, ''How to Restore Forests on Surface-Mined Land,'' Virginia Polytechnic Institute and State University, Powell River Project, Virginia Cooperative Extension Publication 460–123, Revised 2002 (unpaginated document).

[704] 30 U.S.C. 1265(b)(19).

[705] *Id.*

[706] See 58 FR 48333 (Sept. 15, 1993).

[707] See, *e.g.,* Colorado (61 FR 26792, 26796–26797 (May 29, 1996)), Illinois (62 FR 55765–55769 Oct. 22, 1997)), and Ohio (63 FR 51829–51833 (Sept. 29, 1998)).

interpretation of section 515(b)(20) of SMCRA since (1) the lands involved are relatively small in size and either widely dispersed or narrowly linear in distribution and (2) the delay in establishing revegetation on these sites is due not to reclamation deficiencies or the facilitation of mining, but rather to the regulatory requirement that ponds and diversions be retained and maintained to control runoff from the planted area until the revegetation is sufficiently established to render such structure unnecessary for the protection of water quality.

In addition, the areas affected likely would be no larger than those which could be reseeded (without restarting the revegetation period) in the course of performing normal husbandry practices, as that term is defined in 30 CFR 816.116(c)(4) and explained in the preamble to that rule (53 FR 34636, 34641; September 7, 1988; 52 FR 28012, 28016; July 27, 1987). Areas this small would have a negligible impact on any evaluation of the permit area as a whole.

Most importantly, this interpretation is unlikely to adversely affect the regulatory authority's ability to make a statistically valid determination as to whether a diverse, effective permanent vegetative cover has been successfully established in accordance with the appropriate revegetation success standards. From a practical standpoint, it is usually difficult to identify precisely where such areas are located in the field once revegetation is established in accordance with the approved reclamation plan.[708]

Neither the policy nor the state program amendment approvals extend to the removal of haul roads or other primary roads. Because of the difficulty in reestablishing vegetation on the surfaces of primary roads, that type of road may need to be bonded separately for purposes of the revegetation liability period, unless the road is approved for retention as part of the postmining land use.

39. Section 816.116: What are the standards for determining the success of revegetation?

We propose to reorient our regulations concerning revegetation success standards away from focusing on a single postmining land use, which may or may not be implemented, to standards pertinent to a determination of whether the site has been restored ''to a condition capable of supporting the uses which it was capable of supporting prior to any mining, or higher or better uses of which there is reasonable likelihood,'' as required by section 515(b)(2) of SMCRA.[709] In effect, the standards would have to reflect the premining land use capability and productivity information provided in the permit application in accordance with proposed 30 CFR 779.22(b). This approach is also consistent with the legislative history of section 508 of SMCRA,[710] in which Congress states: ''It is important that the potential utility which the land had for a variety of uses be the benchmark rather than any single, possibly low value, use which by circumstances may have existed at the time mining began.'' [711]

We propose to require that minesites be revegetated in a manner that will restore the native plant communities described in the permit application in accordance with proposed 30 CFR 779.19, regardless of the approved postmining land use. The proposed rule contains an exception for those portions of the permit area on which the approved postmining land use is implemented before the end of the revegetation responsibility period under proposed 30 CFR 816.115, but that exception would apply only if restoration of native plant communities would be inconsistent with that use, as may be the case with agricultural, commercial, industrial, and residential postmining land uses. This approach would improve implementation of section 515(b)(19) of SMCRA,[712] which provides that surface coal mining and reclamation operations must—

> establish on the regraded areas, and on all other lands affected, a diverse, effective, and permanent vegetation cover of the same seasonal variety native to the area of land to be affected and capable of self-regeneration and plant succession at least equal in extent of cover to the natural vegetation of the area; except, that introduced species may be used in the revegetation process where desirable and necessary to achieve the approved postmining land use plan[.]

Nothing in this provision of the Act suggests that revegetation success standards should be based solely or primarily on the postmining land use, with the exception of situations in which introduced species are desirable and necessary to achieve the postmining land use, as would be true of most cropland postmining land uses. Therefore, the approach most consistent with paragraphs (b)(2) and (b)(19) of section 515 of SMCRA [713] is the one that we are proposing; *i.e.,* success standards that are sufficiently rigorous to demonstrate that the disturbed area has been restored to a condition capable of supporting the uses that it was capable of supporting before any mining and that will ensure restoration of plant communities native to the area.

Proposed 30 CFR 816.116 would fill a gap in our existing rules by requiring the establishment of revegetation success standards for all reclaimed areas. Specifically, existing 30 CFR 816.116(b)(4) establishes revegetation success standards for lands with an approved commercial, industrial, or residential postmining land use only if that land use is to be implemented less than 2 years after completion of regrading. The existing rules are silent on revegetation success standards for lands with an approved commercial, industrial, or residential postmining land use to be implemented two or more years after completion of regrading.

Proposed Paragraph (a)

Proposed paragraph (a) is substantively identical to existing paragraph (a)(1).

Proposed Paragraph (b)

Proposed 30 CFR 816.116 would establish, or require the establishment of, revegetation success standards for all reclaimed areas. Proposed paragraph (b) would require that those standards be adequate to demonstrate restoration of premining land use capability, consistent with section 515(b)(2) of SMCRA.[714] Specifically, revegetation success standards would have to be based upon the plant community and vegetation information required under proposed 30 CFR 779.19, the soil type and productivity information required under proposed 30 CFR 779.21, and the land use capability and productivity information required under proposed 30 CFR 779.22. Revegetation success standards also must be based upon the postmining land use approved under proposed 30 CFR 780.24 if the postmining land use will be implemented before expiration of the revegetation responsibility period. Otherwise, proposed paragraph (a)(4) would require that the site be revegetated in a manner that will restore native plant communities and the revegetation success standards for the site must reflect that requirement, regardless of the postmining land use. Proposed paragraph (a)(4) would improve implementation of section 515(b)(19) of SMCRA,[715] which, with limited exceptions, requires revegetation with native species, and section 515(b)(24) of SMCRA,[716] which requires that surface coal mining and reclamation operations minimize

[708] 62 FR 55766 (Oct. 22, 1997).

[709] 30 U.S.C. 1265(b)(2).

[710] 30 U.S.C. 1258.

[711] S. Rept. 95–128, 95th Cong., 1st Sess. 76–77 (1977).

[712] 30 U.S.C. 1265(b)(19).

[713] 30 U.S.C. 1265(b)(2) and (19).

[714] 30 U.S.C. 1265(b)(2).

[715] 30 U.S.C. 1265(b)(19).

[716] 30 U.S.C. 1265(b)(24).

adverse impacts on fish, wildlife, and related environmental values to the extent possible using the best technology currently available and enhance those resources where practicable.

Together with our proposed changes to the soil salvage and redistribution requirements in proposed 30 CFR 780.12(e) and 816.22, the revegetation success standard requirements of proposed paragraph (b) would preserve the site's future land use capability in those situations in which the approved postmining land use is less intensive than other uses that the land was capable of supporting before mining. For example, if the approved postmining land use is pasture, but the land was used for cropland before mining, proposed 30 CFR 780.12(e) and 816.22 would require that the soil be reconstructed in a manner that would restore the site's capability to support cropland (not just pasture, which does not require as deep a root zone). Similarly, proposed 30 CFR 816.116(b) would require that the revegetation success standards for the site be based in part upon row crop production, not just production of pasture forage and ground cover.

Proposed Paragraph (c)

Proposed paragraph (c) would require that revegetation success standards include species diversity, areal distribution of species, ground cover (except for land actually used for cropland after the completion of regrading and redistribution of soil materials), production (for land used for cropland, pasture or grazing land either before permit issuance or after the completion of regrading and redistribution of soil materials), and stocking (for all areas revegetated with woody plants, regardless of the postmining land use). Proposed paragraph (c) is intended to provide greater specificity than the introductory language of existing paragraph (a), which requires that the success of revegetation ''be judged on the effectiveness of the vegetation for the approved postmining land use, the extent of cover compared to the cover occurring in natural vegetation of the area, and the general requirements of § 816.111.'' Proposed paragraph (c) would be consistent with section 515(b)(19) of SMCRA,[717] which requires establishment of ''a diverse, effective, and permanent vegetative cover of the same seasonal variety native to the area of land to be affected and capable of self-regeneration and plant succession at least equal in extent of cover to the natural vegetation of the area.'' It also would be consistent with section 515(b)(2) of SMCRA,[718] which requires restoration of the land ''to a condition capable of supporting the uses that it was capable of supporting prior to any mining, or to higher or better uses * * *.''

Proposed Paragraph (d)

Proposed paragraph (d) is substantively identical to the second sentence of existing paragraph (a)(2), which establishes statistical confidence requirements for revegetation sampling techniques and statistical adequacy standards for determining when revegetation success standards for ground cover, production, and stocking have been met. We invite comment on whether our statistical confidence interval requirements are appropriate in all situations.

Proposed Paragraph (e)

Proposed paragraph (e) is substantively identical to existing paragraph (b)(3)(i) in that it would require that the regulatory authority specify minimum stocking and planting arrangements on the basis of local and regional conditions and after coordination with and approval by the state agencies responsible for the administration of forestry and wildlife programs. However, unlike existing paragraph (b)(3)(i), which applies only to areas to be developed for fish and wildlife habitat, recreation, undeveloped land, or forest products, proposed paragraph (e) would apply to all areas that are revegetated with woody plants, consistent with proposed paragraph (c), as discussed in the preamble to proposed paragraph (b). We also propose to replace the term ''consultation'' with ''coordination'' to avoid any confusion with consultation requirements and procedures under section 7(a)(2) of the Endangered Species Act.

Proposed Paragraph (f)

Proposed paragraphs (f)(1) and (2) are substantively identical to existing paragraph (b)(3)(ii). However, proposed paragraph (f)(2)(iii)(A) would clarify that only those species of trees and shrubs approved in the permit as part of the revegetation plan under proposed 30 CFR 780.12(g) or volunteer trees and shrubs of species that meet the requirements of proposed 30 CFR 816.111(c) may be counted for purposes of determining whether stocking standards have been met. This proposed clarification is intended to ensure that only specimens of species consistent with section 515(b)(19) of SMCRA[719] are counted in determining revegetation success.

Existing paragraph (b)(3)(iii) requires that vegetative ground cover on areas planted with trees and shrubs not be less than that required to achieve the approved postmining land use. Proposed paragraph (f)(3) would replace that requirement with a provision that would require that vegetative ground cover on areas planted with trees and shrubs have characteristics that will allow for the natural establishment and succession of native plants, including trees and shrubs. The preamble to proposed 30 CFR 816.111(b) discusses the significance of the extent and type of ground cover to the successful establishment of trees and shrubs.

Proposed Paragraph (g)

Proposed paragraph (g) is based upon existing paragraph (b)(4), which provides that areas to be developed for commercial, industrial, or residential use less than 2 years after completion of regrading need only meet a ground cover standard; *i.e.,* the vegetative ground cover must not be less than that required to control erosion. Proposed paragraph (g) would revise this requirement to apply to all lands actually developed for commercial, industrial, or residential use during the revegetation responsibility period. This change would recognize the fact that vegetation and vegetative productivity are not major components of those land uses. However, because of the potential for abuse of this provision, the proposed rule would limit its applicability to only those lands actually developed for the specified uses, rather than all lands for which one of those uses has been approved as the postmining land use in the permit.

Proposed Paragraph (h)

Proposed paragraph (h) is substantively identical to existing paragraph (b)(5) in that it specifies that, at a minimum, the cover on revegetated previously mined areas must not be less than the ground cover existing before redisturbance and must be adequate to control erosion. We also propose to clarify that previously mined areas need only meet a ground cover standard unless the regulatory authority specifies otherwise. The added language is consistent with the intent of the existing rule.

[717] 30 U.S.C. 1265(b)(19).

[718] 30 U.S.C. 1265(b)(2).

[719] 30 U.S.C. 1265(b)(19).

Proposed Paragraph (i)

Proposed paragraph (i) would provide a reminder that, for prime farmland, the revegetation success standards in 30 CFR 823.15 apply in lieu of the provisions of proposed 30 CFR 816.116(b) through (h).

40. Section 816.133: What provisions concerning the postmining land use apply to my operation?

We propose to revise existing paragraph (a) for clarity, to include cross-references to pertinent permitting requirements, and to add the phrase ''of which there is a reasonable likelihood'' after ''higher or better uses'' to be consistent with the corresponding statutory provision in section 515(b)(2) of SMCRA.[720] Existing paragraphs (b) and (c) of this section are permitting requirements that we propose to move to the land use information requirements of 30 CFR 779.22 and the postmining land use requirements of 30 CFR 780.24. Similarly, existing paragraph (d) of this section consists of permitting requirements that we propose to consolidate with the approximate original contour variance provisions of 30 CFR 785.16.

41. Why are we proposing to remove the interpretive rule in existing 30 CFR 816.200?

This section contains only one interpretive rule, which pertains to the 1979 version of the topsoil substitute requirements in 30 CFR 816.22. However, we revised 30 CFR 816.22 on May 16, 1983 (48 FR 22100), in a manner that rendered the interpretive rule obsolete. Therefore, we intend to remove existing 30 CFR 816.200.

M. Part 817: Permanent Program Performance Standards—Underground Mining Activities.

Part 817 contains the permanent regulatory program performance standards for underground mining activities. It is the counterpart to part 816 for surface mining activities. In general, part 817 is substantively identical to part 816, except for the substitution of ''underground mining activities'' for ''surface mining activities,'' the replacement of references to surface mining regulations with references to the corresponding underground mining regulations, and changes of a similar nature. Our proposed revisions to part 817 are similarly substantively identical to the corresponding revisions that we propose in part 816. Therefore, this portion of the preamble discusses only those proposed revisions to part 817 that differ from the proposed revisions to the corresponding provisions of part 816. Otherwise, the rationale that we provide for the proposed revisions to part 816 applies with equal effect to our proposed revisions to part 817.

Section 516 of SMCRA [721] contains the performance standards for underground mining operations. Section 516(b)(10) [722] states that ''with respect to other surface impacts not specified in this subsection * * *, [underground coal mining operations must] operate in accordance with the [performance] standards established under section 515 of this title for such effects which result from surface coal mining operations.'' In other words, unless otherwise specified in section 516 or in the regulations implementing section 516, the performance standards for surface mining operations in section 515 of SMCRA [723] also apply to underground mining operations under section 516 of the Act. The following table identifies those provisions of section 515 for which section 516 contains a counterpart:

Section 515(b)	Section 516(b)
(10)	(9)
(11)	(4)
(13)	(5)
(14)	(8)
(19)	(6)
(21)	(7)
(24)	(11)

In general, the corresponding provisions of sections 515 and 516 listed in the table are similar. Therefore, when reading the preamble to part 816 for purposes of understanding a rule proposed in part 817, you may use this table to convert references to section 515 in the preamble to part 816 to references to section 516 for purposes of part 817.

1. Section 817.11: What signs and markers must I post?

The existing rules contain two requirements to mark buffer zones for perennial and intermittent streams—one in the stream buffer zone rules in sections 816.57(b) and 817.57(b) and one in the rules concerning signs and markers in sections 816.11(e) and 817.11(e). We propose to consolidate those requirements in sections 816.11(e) and 817.11(e). As revised, proposed section 817.11(e) provides that the boundaries of any buffer to be maintained between surface activities and perennial or intermittent streams in accordance with sections 784.28 and 817.57 must be clearly marked to avoid disturbance by surface operations and facilities resulting from or in connection with an underground mine.

2. Section 817.34: How must I protect the hydrologic balance?

This section is substantively identical to proposed 30 CFR 816.34 for surface mines, with one exception: The underground rules do not contain a counterpart to proposed 30 CFR 816.34(a)(9), which would require that the permittee handle earth materials and runoff in a manner that will restore the approximate premining recharge capacity of the reclaimed area as a whole. Our omission of this provision from the underground mining rules reflects the construction of sections 515 and 516 of SMCRA.[724] Section 515(b)(10)(D) of SMCRA [725] requires that surface coal mining operations restore the recharge capacity of the mined area to approximate premining conditions. However, that requirement does not appear in the corresponding provision for underground coal mining operations in section 516(b)(9) of SMCRA.[726]

3. Section 817.40: What responsibility do I have to replace water supplies?

This section is substantively identical to proposed 30 CFR 816.40 for surface mines, with one exception: Proposed paragraph (a)(1) reflects the water supply replacement requirements of section 720(a)(2) of SMCRA [727] for underground mining operations rather than the water supply replacement requirements of section 717(b) of SMCRA [728] for surface mines.

4. Section 817.44: What restrictions apply to gravity discharges from underground mines?

The counterpart to this proposed rule is existing 30 CFR 817.41(i). We propose to revise this rule by adding a requirement in proposed paragraph (a)(2)(ii) that the applicant for a gravity discharge design the discharge control structure to prevent a mine pool blowout. We also propose to add paragraph (a)(3), which would require that the permittee construct and maintain the discharge control structure in accordance with the design approved by the regulatory authority and any other conditions imposed by the regulatory authority. The proposed

[720] 30 U.S.C. 1265(b)(2).

[721] 30 U.S.C. 1266.

[722] 30 U.S.C. 1266(b)(10).

[723] 30 U.S.C. 1265.

[724] 30 U.S.C. 1265 and 1266.

[725] 30 U.S.C. 1265(b)(10)(D).

[726] 30 U.S.C. 1266(b)(9).

[727] 30 U.S.C. 1309a(a)(2).

[728] 30 U.S.C. 1307(b).

revisions are intended to provide for the safety of the public, protect property from damage by mine pool blowouts, and prevent material damage to the hydrologic balance outside the permit area in accordance with section 510(b)(3) of SMCRA.[729]

5. Section 817.57: What additional performance standards apply to surface activities conducted in, through, or adjacent to a perennial or intermittent stream?

This section is substantively identical to proposed 30 CFR 816.57 for surface mining activities except that, in accordance with our interpretation of the definition of ''surface coal mining operations'' in section 701(28) of SMCRA [730] and 30 CFR 700.5, the provisions of 30 CFR 817.57 would not apply to the surface impacts, including subsidence-related impacts, resulting from underground mining activities if there are no mining activities conducted on the surface of the land on which those impacts occur. However, as provided in the proposed definition of ''material damage to the hydrologic balance outside the permit area'' in 30 CFR 701.5, underground mine operators must conduct their operations in a manner that preserves sufficient flow to maintain existing and reasonably foreseeable uses of perennial and intermittent streams on land overlying the underground workings or within the angle of draw of those workings. In addition, as provided in the same definition, underground mine operators must conduct their operations in a manner that does not preclude attainment of the designated use or uses of perennial and intermittent streams on land overlying the underground workings or within the angle of draw of those workings.

6. Section 817.71: How must I dispose of excess spoil?

We propose to remove existing 30 CFR 817.71(k), which provides that spoil resulting from face-up operations for underground coal mine development may be placed at drift entries as part of a cut-and-fill structure if that structure is less than 400 feet in length and is designed in accordance with section 817.71. We propose to remove this paragraph because spoil excavated as part of face-up operations and used to construct a mine bench is not excess spoil. Under both the existing and proposed definitions of excess spoil in 30 CFR 701.5, excess spoil consists of spoil material disposed of in a location outside the mined-out area, but it does not include spoil needed to achieve restoration of the approximate original contour. In most cases, spoil used to construct the bench for an underground mine will later be used to reclaim the face-up area when coal extraction from the underground mine is finished. That is, the bench will be regraded to cover the mine entry and eliminate any highwall once mining is completed and the bench is no longer needed for mine offices, parking lots, equipment storage, conveyor belts, and other mining-related purposes. Consequently, this paragraph of the regulations does not belong in a section devoted to disposal of excess spoil.

We are not proposing to move the requirements of 30 CFR 817.71(k) to another part of our rules because we do not find it necessary to impose the design requirements for excess spoil fills (which are permanent structures) on temporary spoil storage structures and support facilities, such as the benches to which section 817.71(k) applies. Nor do we find it necessary or appropriate to limit those benches to 400 feet in length. Bench length and configuration are more appropriately determined by operational, topographic, geologic, and other site-specific considerations. However, the regulatory authority has the right to impose design and construction requirements on a case-by-case basis when it determines that those requirements are a necessary prerequisite to making the permit application approval findings specified in 30 CFR 773.15.

7. Section 817.102: How must I backfill surface excavations and grade and configure the land surface?

This section contains several differences from proposed 30 CFR 816.102 for surface mining activities. First, in paragraph (a), we propose to clarify that the backfilling requirement applies to surface excavations created by surface operations associated with underground mines.

Second, the underground mining regulations would not include the exceptions for mountaintop removal mining and thin and thick overburden found in proposed 30 CFR 816.102(a)(1)(i), (iii), and (iv). Those provisions do not apply to underground mining operations.

Third, we propose to move existing 30 CFR 817.102(l) to paragraph (a)(1)(vii) to consolidate it with the other exceptions to the requirement to restore the approximate original contour. We also propose to replace the word ''fills'' in the existing rule with ''spoil storage areas'' to comply more accurately with the decision in *In re: Permanent Surface Mining Regulation Litigation I, Round II* (*PSMRL I, Round II)* when read as a whole.[731] The opinion directs the Secretary to provide some flexibility for underground mining operations with respect to regrading spoil from face-up areas. The court's opinion addresses the requirement to restore the approximate original contour for spoil stored until the underground mining operation is completed:

> One distinct difference between surface and underground mines concerns the length of their duration. An underground mine may remain active up to 40 years. Surface disturbances thereby become settled and revegetated. In this situation, it is duplicitous to require the removal of previously settled and revegetated land only to achieve the purpose of a second revegetation. The court therefore remands these regulations. It directs the Secretary to provide some flexibility for settled fills that have become stabilized and revegetated.[732]

The opinion does use the word ''fills'' in one instance in the last sentence of the opinion. However, we do not believe that the court intended its opinion to address excess spoil because excess spoil by definition includes only spoil not needed to restore the approximate original contour, which means that excess spoil fills already are excluded from the requirement to restore the approximate original contour. Therefore, applying this exception only to excess spoil fills would render the court's decision meaningless.

The court's decision does not discuss the requirement in section 515(b)(3) of SMCRA [733] to eliminate all highwalls. We do not interpret the court's decision as requiring an exception from that requirement. The court's objection to the 1979 rule discusses situations in which the only purpose of removing and regrading spoil in a settled and revegetated storage area would be to restore the approximate original contour to achieve a second revegetation. However, removal of the stored spoil may be necessary for purposes other than revegetation. For example, the stored spoil may be needed to eliminate the highwall at the mine face-up. Therefore, we propose to add paragraph (a)(1)(vii)(G) to specify that settled and revegetated spoil storage areas may not be retained undisturbed if the spoil in those areas is needed to eliminate the

[729] 30 U.S.C. 1260(b)(3).

[730] 30 U.S.C. 1291(28).

[731] See *In re: Permanent Surface Mining Regulation Litigation I-Round II,* No. 79–1144, 1980 U.S. Dist. LEXIS 17660 at *17–18 (D.D.C. May 16, 1980).

[732] *Id.* at *18.

[733] 30 U.S.C. 1265(b)(3).

highwall or to meet other requirements of the regulatory program.

8. Section 817.121: What measures must I take to prevent, control, or correct damage resulting from subsidence?

We propose to revise paragraph (c)(4) of this section by removing those provisions that we suspended on December 22, 1999 (64 FR 71652–71653), in response to a court order vacating those provisions.[734] Specifically, we propose to remove all of existing 30 CFR 817.121(c)(4) except paragraph (c)(4)(v). We also propose to restructure this section for clarity and ease of reference and revise it in accordance with plain-language principles to make it more user-friendly. We do not propose any substantive revisions.

9. Why are we proposing to remove the interpretive rules in existing 30 CFR 817.200?

Existing 30 CFR 817.200 contains two interpretive rules. The first one, in paragraph (c), pertains to the 1979 version of the topsoil substitute requirements in 30 CFR 817.22. However, we subsequently revised 30 CFR 817.22 in a manner that rendered the interpretive rule obsolete.[735] Therefore, we intend to remove existing 30 CFR 817.200(c).

The second interpretive rule, in paragraph (d), addresses the use of the permit revision process for postmining land use changes for underground mines. We propose to include this interpretive rule into 30 CFR 784.24 in revised form to the extent that it contains unique provisions not already present in other regulations. Specifically, proposed 30 CFR 784.24(c) would require that any proposed change to a higher or better postmining land use be processed as a significant permit revision. We will remove 30 CFR 817.200(d) if we adopt proposed 30 CFR 784.24(c).

As discussed in the preamble to proposed 30 CFR 780.24(c), we propose to apply this requirement only to changes to higher or better uses rather than to all proposed land use changes because we also propose to revise our postmining land use regulations to clarify that the standards and procedures for approving alternative postmining land uses would apply only to changes to higher or better uses.

Changes from one land use that the land was capable of supporting prior to mining to another land use that the land was capable of supporting prior to mining would no longer require approval as an alternative postmining land use. Our proposed revisions would improve consistency with section 515(b)(2) of SMCRA,[736] which requires that surface coal mining and reclamation operations ''restore the land affected to a condition capable of supporting the uses which it was capable of supporting prior to any mining, or higher or better uses of which there is a reasonable likelihood.'' The statutory provision distinguishes only between uses that the land was capable of supporting before mining and higher or better uses; *i.e.,* it establishes criteria for approval of higher or better uses, but no special criteria for approval of any of the uses that the land was capable of supporting before mining.

N. Part 824: Special Permanent Program Performance Standards—Mountaintop Removal Mining Operations

We propose to revise 30 CFR 824.11(a) by removing paragraphs (a)(2) through (a)(4) because they duplicate our proposed definition of mountaintop removal mining in 30 CFR 701.5. In addition, we propose to streamline the introductory language by specifying that 30 CFR 824.11 applies to all operations for which the regulatory authority has approved a permit under 30 CFR 785.14.

Proposed paragraph (b)(1) would include existing 30 CFR 824.11(a)(5), which provides that mountaintop removal mining operations must meet all applicable requirements of the regulatory program except for approximate original contour restoration requirements. We propose to revise this paragraph by adding a citation to the approximate original contour restoration requirements in proposed 30 CFR 816.102(a)(1) and by adding an exception from the thick overburden requirements of 30 CFR 816.105. The latter requirements are inconsistent with the purpose of mountaintop removal mining operations, which is to create a level plateau or gently rolling contour, because the thick overburden rules require that as much spoil be returned to the mined-out area as possible.

Under proposed paragraph (b)(2)(i), as under existing 30 CFR 824.11(a)(6), the permittee would be required to retain an outcrop barrier, consisting of the toe of the lowest coal seam and its associated overburden, of sufficient width to prevent slides and erosion, except for certain specified exceptions. We propose to revise this provision to require that the permittee construct drains through the barrier to the extent necessary to prevent saturation of the backfill. This requirement is necessary because the outcrop barrier resembles a berm but consists of consolidated natural rock and coal that is much less permeable than the fractured, unconsolidated rock of which backfill is comprised. Without drains, the barrier could serve as a dike, impounding water in the void spaces within the backfill. Allowing the foundation zone of the backfill to become saturated could result in slope instability, which would be inconsistent with section 102(a) of SMCRA,[737] which states that one of the purposes of SMCRA is to ''establish a nationwide program to protect society and the environment from the adverse effects of surface coal mining operations.''

We also propose to add paragraph (b)(2)(iv) to allow the regulatory authority to approve removal of the outcrop barrier required by paragraph (b)(2)(i) if the regulatory program establishes standards for and requires construction of a barrier comprised of alternative materials that will provide equivalent stability. We have approved one such state program provision in West Virginia that has worked well, both in terms of stability and in terms of maximizing coal recovery consistent with section 515(b)(1) of SMCRA.[738]

In proposed paragraph (b)(3), which would include existing 30 CFR 824.11(a)(7), we propose to delete the phrase ''on the mined area'' from the language requiring final graded slopes to be no steeper than 20 percent. This revision would allow the plateau area to extend outside the mined area to include the decks (top surfaces) of excess spoil fills, which would be consistent with the concept of mountaintop removal mining and could facilitate the use of landforming principles if desired.

In proposed paragraph (b)(4), which would include existing 30 CFR 824.11(a)(8), we propose to delete the existing sentence that prohibits directing drainage through or over a valley or head-of-hollow fill. This proposed revision would enhance the ability of the permittee to use landforming principles and natural stream channel design techniques when it is possible to do so without adversely impacting the stability of the fill and without increasing discharges of parameters of concern. Its adoption would allow the reestablishment or replacement of impacted or buried streams and facilitate the use of drainage techniques that incorporate the

[734] *Nat'l Mining Ass'n* v. *Babbitt,* 173 F.3d 906 (D.C. Cir. 1999).

[735] See 48 FR 22100 (May 16, 1983).

[736] 30 U.S.C. 1265(b)(2).

[737] 30 U.S.C. 1202(a).

[738] 30 U.S.C. 1265(b)(1).

best technology currently available for the control of drainage. In particular, it would allow the construction of stable channels to convey discharges and runoff from the plateau areas over valley and head-of-hollow fills.

We propose to move existing 30 CFR 824.11(a)(9), which prohibits damage to natural watercourses below the lowest coal seam to be mined, to 30 CFR 785.14(b)(9) in revised form. We propose to do so because this requirement is really more of an operational design element (permitting requirement) than a performance standard, especially in view of our proposed interpretation of the meaning of the underlying statutory provision as discussed in the preamble to proposed 30 CFR 785.14(b)(9).

We propose to remove existing 30 CFR 824.11(a)(10), which requires that all waste and acid-forming and toxic-forming materials be covered with non-toxic spoil to prevent pollution and to achieve the postmining land use. As discussed above, this provision is unnecessary because it contains no requirements that are not already encompassed by proposed 30 CFR 824.11(b)(1), which is the counterpart to existing 30 CFR 824.11(a)(5).

O. Part 827: Special Permanent Program Performance Standards—Coal Preparation Plants Not Located Within the Permit Area of a Mine

We propose to revise 30 CFR 827.12 by streamlining it to list only the sections of part 816 that apply to coal preparation plants not located at a mine. Specifically, this proposed rule would specify that the construction, operation, maintenance, modification, reclamation, and removal activities at coal preparation plants must comply with the following provisions of part 816: Sections 816.11, 816.22, 816.34 through 816.57, 816.71, 816.74, 816.79, 816.81 through 816.97, 816.100, 816.102, 816.104, 816.106, 816.111 through 816.116, 816.131 through 816.133, 816.150, 816.151, and 816.181. This list of sections is substantively identical to the sections included in the existing rule, with the exception that we propose to add 30 CFR 816.57 to the list. Section 816.57 contains performance standards for mining in, through, or within 100 feet of perennial and intermittent streams.

In a previous rulemaking, we declined to include 30 CFR 816.57, which at that time was known as the stream buffer zone rule, in 30 CFR 827.12. However, we stated that we might add such a requirement ''in a separate rulemaking if experience under this rule indicates that such buffer zones are necessary to meet the Act's objectives.'' [739]

Our experience over the last three decades has led us to propose inclusion of 30 CFR 816.57. Specifically, we find that coal preparation plants can have substantial and long-lasting adverse environmental impacts on streams as a result of dust, surface runoff, and noncompliant discharges of process water. In addition, coal preparation plants normally are in existence longer than a surface mine and some underground mines, which means that any impacts would be relatively long-term. An undisturbed buffer between coal preparation plants and streams could mitigate some of those impacts.

X. What effect would this rule have in federal program states and on Indian lands?

If adopted in final form, the rule that we are proposing today would apply to all non-Indian lands in states with a federal regulatory program. States with federal regulatory programs include Arizona, California, Georgia, Idaho, Massachusetts, Michigan, North Carolina, Oregon, Rhode Island, South Dakota, Tennessee, and Washington. These programs are codified at 30 CFR parts 903, 905, 910, 912, 921, 922, 933, 937, 939, 941, 942, and 947, respectively. In general, there would be no need to amend the approved federal program before the rule would take effect because, with limited exceptions, each program cross-references 30 CFR parts 700, 701, 773, 774, 777, 779, 780, 783, 784, 785, 800, 816, 817, 824, and 827.

Tennessee is the only federal program state with active coal production and, thus, is the only state in which the rule would have immediate impact. Tennessee law already sharply restricts most significant mining activities in or near streams, which means that the provisions of proposed 30 CFR 780.28, 784.28, 816.57, and 817.57 pertaining to mining in, through, or near streams, are unlikely to have a significant effect on mining within that state. Section 69–3–108(f) of the Tennessee Code Annotated, as amended by the Responsible Mining Act of 2009, prohibits issuance of any permit for the removal of coal by surface mining methods or for surface access points to underground mining within 100 feet of the ordinary high-water mark of a stream. It also prohibits issuance of a permit that would allow placement of overburden or waste from a surface mine within that buffer zone. However, unlike the proposed federal rule, the state law does not apply to any type of stream crossing, to operations that improve the quality of stream segments previously disturbed by mining, or to coal mine waste from underground mines or coal preparation plants. Nor does the state law apply to coal transportation, storage, preparation and processing, loading, and shipping operations when necessary because of site-specific conditions, provided that those activities and operations do not cause the loss of stream function.

If adopted in final form, the following parts of the proposed rule that we are publishing today also would apply to Indian lands by virtue of cross-references in 30 CFR part 750:

- 30 CFR 750.12(c)(1) includes the permitting provisions of parts 773, 774, 777, 779, 780, 783, 784, and 785 by cross-reference. We are not proposing any substantive revisions to the exceptions listed in 30 CFR 750.12(c)(2).
- 30 CFR 750.17 includes the bond and insurance provisions of subchapter J (part 800) by cross-reference.
- 30 CFR 750.16 includes the performance standards of parts 816, 817, 824, and 827 by cross-reference.

The revisions to parts 700 and 701 also would apply to Indian lands by virtue of 30 CFR 700.1(a), which provides that subchapter A of 30 CFR chapter VII contains ''regulatory requirements and definitions generally applicable to the programs and persons covered by the Act.''

We invite the public to comment on whether there are unique conditions in any federal program states or on Indian lands that should be addressed in the national rule or as specific amendments to individual federal programs or to the Indian lands rules.

XI. How would this rule affect state regulatory programs?

Adoption of this proposed rule as a final rule would not have any immediate effect on approved state regulatory programs. States would need to propose and adopt counterpart revisions to their regulations and other state program provisions and submit them for review by OSMRE and the public as a program amendment under 30 CFR 732.17. Under 30 CFR 732.17(g)(9), no change to state law or regulations shall take effect for purposes of a state program until that change is approved by OSMRE as a program amendment.

If we adopt a final rule based on this proposed rule, we will evaluate each state regulatory program approved under 30 CFR part 732 and section 503

[739] 48 FR 20399 (May 5, 1983).

of the Act [740] to determine whether any changes in the state program are necessary to maintain consistency with federal requirements. If we determine that a state program provision needs to be amended as a result of revisions to the corresponding federal rule, we will notify the state in accordance with 30 CFR 732.17(d).

Section 505(a) of the Act [741] and 30 CFR 730.11(a) provide that SMCRA and federal regulations adopted under SMCRA do not supersede any state law or regulation unless that law or regulation is inconsistent with the Act or the federal regulations adopted under the Act. Section 505(b) of the Act [742] and 30 CFR 730.11(b) provide that we may not construe existing state laws and regulations, or state laws and regulations adopted in the future, as inconsistent with SMCRA or the federal regulations if these state laws and regulations either provide for more stringent land use and environmental controls and regulations or have no counterpart in the Act or the federal regulations.

Under 30 CFR 732.15(a), each state regulatory program must provide for the state to carry out the provisions and meet the purposes of the Act and its implementing regulations. In addition, that rule requires that state laws and regulations be in accordance with the provisions of the Act and consistent with the federal regulations. As defined in 30 CFR 730.5, ''consistent with'' and ''in accordance with'' mean that the state laws and regulations are no less stringent than, meet the minimum requirements of, and include all applicable provisions of the Act. The definition also provides that these terms mean that the state laws and regulations are no less effective than the federal regulations in meeting the requirements of the Act. Under 30 CFR 732.17(e)(1), we may require a state program amendment if, as a result of changes in SMCRA or the federal regulations, the approved state regulatory program no longer meets the requirements of SMCRA or the federal regulations.

XII. How do I submit comments on the proposed rule?

General Guidance

We will review and consider all comments submitted to *www.regulations.gov* or to the offices listed under **ADDRESSES** by the close of the comment period (see **DATES**). We cannot ensure that comments received after the close of the comment period will be included in the docket for this rulemaking or considered in the development of a final rule.

Please include the Docket ID ''OSM–2010–0018'' at the beginning of all comments on the proposed rule. The most helpful comments and the ones most likely to influence the final rule are those that include citations to and analyses of SMCRA, its legislative history, its implementing regulations, case law, other pertinent federal laws or regulations, technical literature, other relevant publications, or personal experience. Your comments should refer to a specific portion of the proposed rule or preamble, be confined to issues pertinent to the proposed rule, explain the reason for any recommended change or objection, and include supporting data when appropriate.

If you wish to comment on the information collection aspects of this proposed rule, please follow the instructions under the heading ''Paperwork Reduction Act'' in Part XIII of this preamble (''Procedural Matters and Required Determinations'').

Please include the Docket ID ''OSM–2010–0021'' at the beginning of all comments on the draft environmental impact statement.

Please include the Docket ID ''OSM–2015–0002'' at the beginning of all comments on the draft regulatory impact analysis.

You may review the proposed rule, the draft environmental impact statement, and the draft regulatory impact analysis online at the Web sites listed in **ADDRESSES** or in person at the headquarters office location listed in **ADDRESSES** and at the following OSMRE regional, field, and area office locations:

Appalachian Regional Office, Three Parkway Center, Pittsburgh, Pennsylvania 15220, Phone: (412) 937–2828

Mid-Continent Regional Office, William L. Beatty Federal Building, 501 Belle Street, Room 216, Alton, Illinois 62002, Phone: (618) 463–6460

Western Regional Office, 1999 Broadway, Suite 3320, Denver, Colorado 80201, Phone: (303) 844–1401

Charleston Field Office, 1027 Virginia Street, East Charleston, West Virginia 25301, Phone: (304) 347–7158

Knoxville Field Office, 710 Locust Street, 2nd floor, Knoxville, Tennessee 37902, Phone: (865) 545–4103

Lexington Field Office, 2675 Regency Road, Lexington, Kentucky 40503, Phone: (859) 260–3900

Beckley Area Office, 313 Harper Park Drive, Beckley, West Virginia 25801, Phone: (304) 255–5265

Harrisburg Area Office, 215 Limekiln Road, New Cumberland, Pennsylvania 17070, Phone: (717) 730–6985

Albuquerque Area Office, 100 Sun Avenue NE, Pan American Building, Suite 330, Albuquerque, New Mexico 87109, Phone: (505) 761–8989

Casper Area Office, Dick Cheney Federal Building, 150 East B Street, Casper, Wyoming 82601, Phone: (307) 261–6550

Birmingham Field Office, 135 Gemini Circle, Suite 215, Homewood, Alabama 35209, Phone: (205) 290–7282

Tulsa Field Office, 1645 South 101st East Avenue, Suite 145, Tulsa, Oklahoma 74128, Phone: (918) 581–6430

Public Availability of Comments

Before including your address, phone number, or other personally identifiable information in your comment, you should be aware that your entire comment—including your personally identifiable information—may be made publicly available at any time. While you can ask us in your comment to withhold your personally identifiable information from public review, we cannot guarantee that we will be able to do so.

Public Hearings

We will hold a public hearing on the proposed rule and the draft environmental impact statement in the following cities: Charleston, West Virginia; Denver, Colorado; Lexington, Kentucky; Pittsburgh, Pennsylvania; and St. Louis, Missouri. OSMRE representatives will provide information on the proposed rule at each hearing. A court reporter will be available at each hearing to record your comments if you wish to provide input in this fashion. The docket for this rulemaking will include a written summary of each hearing and the transcript provided by the court reporter.

We will announce arrangements, specific locations, dates, and times for each hearing in a **Federal Register** notice published at least 7 days before each hearing. If you are a disabled individual who needs reasonable accommodation to attend a public hearing, please contact the person listed under **FOR FURTHER INFORMATION CONTACT** after we publish notice of the specific hearing locations and dates.

XIII. Procedural Matters and Required Determinations

A. Regulatory Planning and Review (Executive Orders 12866 and 13563)

Executive Order 12866 provides that the Office of Information and Regulatory

[740] 30 U.S.C. 1253.

[741] 30 U.S.C. 1255(a).

[742] 30 U.S.C. 1255(b).

Affairs (OIRA) will review all significant rules. OIRA has determined that this proposed rule is significant because it may have an annual effect on the economy of $100 million or more, or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health, or safety, or State, local or tribal governments or communities.

Executive Order 13563 reaffirms the principles of E.O. 12866 while calling for improvements in the Nation's regulatory system to promote predictability, to reduce uncertainty, and to use the best, most innovative, and least burdensome tools for achieving regulatory ends. The executive order directs agencies to consider regulatory approaches that reduce burdens and maintain flexibility and freedom of choice for the public where these approaches are relevant, feasible, and consistent with regulatory objectives. E.O. 13563 emphasizes further that regulations must be based on the best available science and that the rulemaking process must allow for public participation and an open exchange of ideas. We have developed this proposed rule in a manner consistent with these requirements.

We have prepared a draft regulatory impact analysis (RIA) and submitted it to the Office of Management and Budget. We invite comments on that analysis, which you can view online at *www.osmre.gov* and *www.regulations.gov* or in person at the headquarters office location listed in **ADDRESSES** and at the OSMRE regional, field, and area office locations listed in Part XII of this preamble.

Based upon the draft RIA, we do not project that the proposed rule would prohibit mining of any particular coal reserves in excess of baseline conditions. Therefore, our estimates do not include the direct and indirect costs associated with stranded coal reserves. We invite comment on the occurrence of stranded coal reserves as a consequence of the proposed rule and any attendant costs that should be included in the RIA.

We also invite comment on the cost assumptions by model mine and alternative in Exhibit 4–3 in the draft RIA, including the assumed costs for habitat restoration.

Social Cost of Carbon (SCC)

The Interagency Working Group on the Social Cost of Carbon issued guidelines in 2010, and an update in 2013, to help agencies assess the climate change-related benefits of reducing carbon emissions and integrate these estimates into their assessments of regulatory impacts in cost-benefit analyses.[743] The Interagency Working Group guidance provides an SCC dollar value based on the average of three specific models. The SCC related to a specific proposed action is calculated by multiplying the change in emissions in that year by the SCC value appropriate for that year. The net present value of the benefits can be calculated by multiplying each of these future benefits by an appropriate discount factor and summing across all affected years.

This analysis does not monetize the methane emissions and increased carbon sequestration effects of the action alternatives in the draft EIS for multiple reasons. Most fundamentally, data limitations prevent a quantitative analysis of the net effect of each alternative on carbon emissions from coal mining. Available evidence suggests that the alternatives would have varying offsetting effects on greenhouse gas emissions. For instance, some alternatives would result in changes that would increase emissions, such as an increase in the amount of time hauling vehicles are operated. Conversely, some of the same alternatives would increase the number of acres of forest reestablished or undisturbed annually, which would increase the carbon storage potential when compared to the No Action Alternative.

Predicting the direction and magnitude of impacts on overall U.S. greenhouse gas emissions is highly complex. The impact depends on factors such as the change in coal prices, the technological flexibility that power producers have to switch to substitute fuels, the price trends for those substitutes, the emissions profile for those substitutes, changes in coal export markets, and a variety of other considerations.

This analysis anticipates that the net effect on climate resiliency is positive at the national level under each action alternative (excluding Alternative 9), *i.e.,* that each alternative would result in less carbon in the atmosphere because of increased carbon sequestration and reduced methane emissions. However, data gaps prevent quantifying, and therefore monetizing, the magnitude of this benefit.

[743] Technical Support Document—Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866, Interagency Working Group on Social Cost of Carbon, United States Government, May 2013. Accessed June 2015 from *https://www.whitehouse.gov/sites/default/files/omb/inforeg/social_cost_of_carbon_for_ria_2013_update.pdf.*

B. Regulatory Flexibility Act (RFA).

When a federal agency proposes regulations, the RFA, as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), requires the agency to prepare and make available for public comment an analysis that describes the effect of the rule on small businesses, small organizations, and small government jurisdictions.[744] For this rulemaking, the analysis takes the form of an Initial Regulatory Flexibility Analysis (IRFA), which appears in Appendix A of the draft regulatory impact analysis.

Estimate of the Number of Small Entities to Which the Rule Would Apply

The goal of this analysis is to identify the number of small entities with mining permits that fall within each coal region. However, due to the complexity in corporate structures in the coal mining industry, it is difficult to calculate the exact number of small entities (defined by the RFA as having 500 or fewer employees) that could be affected by this proposed rule. The coal mining industry is continually changing and it is common for large mining operators to merge with smaller operators, creating complicated business relationships between parent corporations and subsidiaries.

When determining how to estimate the number of small coal mining companies that could be affected by the proposed rule, we used a conservative approach to avoid underestimating the number of small entities. Specifically, we adhered to the method that the Mine Safety and Health Administration (MSHA) uses to calculate compliance costs to small business. MSHA examines the impact of a proposed rule on a mine with 500 or fewer employees, which is the Small Business Administration (SBA) threshold, and gives careful consideration to small mines with fewer than 20 employees. MSHA's rationale for applying these two thresholds is as follows:

> MSHA has also examined the impact of the proposed rule on mines with fewer than 20 employees, which MSHA and the mining community have traditionally referred to as ''small mines.'' These small mines differ from larger mines not only in the number of employees, but also in economies of scale in material produced, in the type and amount of production equipment, and in supply inventory. Therefore, their costs of complying with MSHA's rules and the impact of the Agency's rules on them would also tend to be different. This analysis complies with the requirements of the RFA for an analysis of the impact on ''small

[744] 5 U.S.C. 601 *et seq.*

entities'' while continuing MSHA's traditional definition of ''small mines.'' [745]

To estimate the number of small entities potentially affected by this rule, we used MSHA data from 2013 on mines, mine controllers, employees, and production to identify mines likely operated by small businesses. We assumed that each mine controller listed in that database represented a separate entity. We eliminated controllers with more than 500 employees. We also excluded all inactive mines, all operating companies reporting no employees, and all entities reporting less than 2,000 tons annual production because these mines are not representative of a typical small entity in the industry.

We sorted small entities into those with identified controllers having 500 or fewer employees (the SBA threshold), and, as a subset, those controllers having fewer than 20 employees (the MSHA threshold). We determined that there were 284 small entities under the SBA threshold and 134 small entities under MSHA's small mine definition, with 91 percent of the SBA small entities and 96 percent of the MSHA small mines located in the Appalachian Basin.

We estimate that compliance costs for SBA small entities would range between zero and 3.6 percent of gross annual revenues, depending on the mining region. In Appalachia, we estimate compliance costs would average 4.7 percent of gross annual revenues for surface mines and 2.5 percent of gross annual revenues for underground mines.

We estimate that compliance costs for MSHA small mines would range between 0 and 16 percent of gross annual revenues, depending on the mining region. In Appalachia, we estimate compliance costs would average 7.1 percent of gross annual revenues for surface mines and 4.3 percent of gross annual revenues for underground mines.

Description of Measures to Minimize Economic Impacts on Small Entities

Section 507(c) of SMCRA [746] establishes the small operator assistance program (SOAP). To the extent that funds are appropriated for that program, this provision of SMCRA authorizes us to provide small operators with training and financial assistance in preparing certain elements of permit applications. An operator is eligible to receive training and assistance if his or her probable total annual production at all locations will not exceed 300,000 tons.

Under section 507(c)(1) of SMCRA [747] and 30 CFR 795.9, the following permit application activities are eligible for financial assistance under SOAP:

- Preparation of the determination of the probable hydrologic consequences of mining, including collection and analysis of baseline data and any engineering analyses and designs needed for the determination.
- Collection and analysis of geological data.
- Development of cross-sections, maps, and plans.
- Collection of information on archaeological and historical resources and preparation of any related plans.
- Development of preblast surveys.
- Collection of site-specific information on fish and wildlife resources and preparation of fish and wildlife protection and enhancement plans.

These activities include many of the new permit application requirements in the proposed rule; *e.g.,* the expanded baseline data requirements concerning hydrology, geology, and the biological condition of streams and the expanded requirements for site-specific fish and wildlife protection and enhancement plans. In addition, section 507(c)(2) of SMCRA [748] provides that, as part of SOAP, we must either provide training or assume the cost of training eligible small operators on the preparation of permit applications and compliance with the regulatory program. Although SOAP funding is available for activities associated with new permit application requirements and training, SMCRA does not authorize SOAP funding for compliance costs associated with the expanded requirements for monitoring groundwater, surface water, and the biological condition of streams.

If this proposed rule is adopted as a final rule, we intend to interpret section 507(c)(1) of SMCRA [749] in a manner that will maximize SOAP funding eligibility for the cost of compliance with the new permit application requirements. We invite comment on whether 30 CFR 795.9 could or should be revised to include more of the new permit application requirements in this proposed rule.

SOAP funding is subject to annual appropriation from the federal expense portion of the Abandoned Mine Reclamation Fund established under section 401(a) of SMCRA.[750] Section 401(c)(9) of SMCRA [751] caps SOAP funding at $10 million per year. If this proposed rule is adopted, we intend to request $10 million in appropriations to provide financial assistance to small operators in developing permit applications. We also intend to provide training to assist small operators in meeting the additional requirements of the proposed rule. Thus, SOAP assistance should substantially reduce compliance costs for small operators by offsetting the cost of most of the new permit application requirements.

C. Small Business Regulatory Enforcement Fairness Act

This proposed rule is not a major rule under the Small Business Regulatory Enforcement Fairness Act, 5 U.S.C. 804(2). As discussed in the draft regulatory impact analysis, the proposed rule would not—

a. Have an annual effect on the economy of $100 million or more.

b. Cause a major increase in costs or prices for consumers; individual industries; federal, state, or local government agencies; or geographic regions.

c. Have significant adverse effects on competition, employment, investment, productivity, innovation, or the ability of U.S.-based enterprises to compete with foreign-based enterprises.

D. Unfunded Mandates

This proposed rule would not impose an unfunded mandate on state, local, or tribal governments or the private sector of $100 million or more per year. As discussed in the draft regulatory impact analysis, the total aggregate annual compliance and related costs associated with this proposed rule would not exceed $60 million. In addition, the proposed rule would not have a significant or unique effect on state, tribal, or local governments or the private sector. Therefore, a statement containing the information required by the Unfunded Mandates Reform Act, 2 U.S.C. 1534, is not required.

E. Executive Order 12630—Takings

Under the criteria in Executive Order 12630, we have made a preliminary determination that this proposed rule does not have specific, identifiable takings implications. First, based upon the draft regulatory impact analysis, we

[745] U.S. Department of Labor, Mine Safety and Health Administration Office of Standards, Regulations, and Variances. Preliminary Regulatory Economic Analysis for Lowering Miners' Exposure to Respirable Coal Mine Dust Including Continuous Personal Dust Monitors Proposed Rule. Washington, RIN 1219–AB64, September 2010. Page 159.

[746] 30 U.S.C. 1257(c).

[747] 30 U.S.C. 1257(c)(1).

[748] 30 U.S.C. 1257(c)(2).

[749] 30 U.S.C. 1257(c)(1).

[750] 30 U.S.C. 1231(a).

[751] 30 U.S.C. 1231(c)(9).

do not project that the proposed rule would prohibit mining of any particular coal reserves in excess of baseline conditions. Second, the question of whether the proposed rule might effect a compensable taking of a particular property interest necessarily involves ad hoc factual inquiries, including the economic impact of the proposed rule on a particular claimant; the extent to which the proposed rule might interfere with a claimant's reasonable, investment-backed expectations; and the character of the government action, none of which is possible for a national rule of this scope, which does not specifically bar the mining of any particular coal reserves. However, based upon the draft regulatory impact analysis, we have no basis to believe that implementation of the proposed rule would be likely to result in compensable takings of any specific property interests.

F. Executive Order 13132—Federalism

This proposed rule would not alter or affect the relationship between states and the federal government. Therefore, the proposed rule does not have significant federalism implications. Consequently, there is no need to prepare a federalism assessment.

G. Executive Order 12988—Civil Justice Reform

The Office of the Solicitor for the Department of the Interior has determined that this proposed rule would not unduly burden the judicial system and that it meets the requirements of sections 3(a) and 3(b)(2) of the Executive Order.

H. Executive Order 13175—Consultation and Coordination With Indian Tribal Governments

We have evaluated the potential effects of this proposed rule on federally-recognized Indian tribes and have determined that its provisions would not have substantial direct effects on the relationship between the federal government and Indian tribes or on the distribution of power and responsibilities between the federal government and Indian tribes. On May 12, 2010, the Director of OSMRE met with the Chairmen of the Hopi and Crow Tribes and the President of the Navajo Nation to initiate consultation on the stream protection rulemaking and development of the draft EIS. The tribes in attendance requested that they be kept informed of the rulemaking process and EIS development. The Director of OSMRE again met with tribal leaders in Washington, DC on December 1, 2011. At that time, OSMRE provided additional information on the elements under consideration for the alternatives in the draft EIS and discussed the expected impacts to the SMCRA regulatory program for Indian lands. OSMRE intends to consult with tribal leaders again after the proposed rule has been published.

I. Executive Order 13211—Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use

This proposed rule is not considered a significant energy action under Executive Order 13211. As discussed below and in the draft regulatory impact analysis, the revisions contained in this proposed rule would not have a significant effect on the supply, distribution, or use of energy.

The Office of Management and Budget has identified nine outcomes that may constitute ''a significant adverse effect.'' The three outcomes that are relevant to this proposed rule are: (1) A reduction in coal production in excess of five million tons per year, (2) a reduction in electricity production in excess of one billion kilowatt-hours per year or in excess of 500 megawatts (MW) of installed capacity,[752] and (3) an increase in the cost of energy production in excess of one percent. As explained below, the proposed rule would not meet any of these criteria.

The draft regulatory impact analysis estimates the impact of the proposed rule on coal production over a 21-year period, 2020 through 2040. On average, the rule would reduce coal production by 1.9 million short tons per year, with the greatest impact occurring in 2022, when the reduction would be 4.6 million short tons.

Because coal makes up a significant part of the domestic energy mix, an increase in the price of coal likely would result in an increase in domestic electricity prices, which in turn would reduce market demand for electricity. The draft regulatory impact analysis predicts that the proposed rule would increase electricity costs by 0.1 percent per year on average, which would result in an average decrease in electricity demand and production of 0.2 billion kilowatt-hours per year.

Compliance costs associated with the proposed rule would be less than one percent of total coal production costs in every year within the study period (2020–2040). On average, compliance costs would comprise 0.1 percent of total coal production costs over that period.

J. Paperwork Reduction Act

Under 5 CFR 1320, the rules implementing the information collection aspects of the Paperwork Reduction Act, a federal agency must estimate the burden imposed on the public by any proposed collection of information. This burden consists of ''the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency.''

We estimated the aggregate burden (in hours) for information collection under the proposed rule by calculating the number of hours that industry and state and local governments would need to comply with each element of the proposed rule.

In addition, we estimated the total annual non-hour cost burden to respondents. These non-wage costs include items such as equipment required for monitoring, sampling, drilling and testing, operation and maintenance, and purchase of services.

We calculated the total estimated burden for two respondent groups, mine operators and state regulatory authorities, on an annual basis averaged over a 3-year period.

Summary of Burden (Costs) Calculated for Major Elements of Stream Protection Rule

This proposed rule contains collections of information that we are submitting to the Office of Management and Budget (OMB) for review and approval in accordance with the Paperwork Reduction Act, 44 U.S.C. 3501, *et seq.* These collections are contained in 30 CFR parts 774, 779, 783, 780, 784, 785, 800, 816, and 817. We also estimated programmatic changes where burden is being moved between parts.

Title: 30 CFR part 774—Revision; Renewal; Transfer, Assignment, or Sale of Permit Rights; Post-Permit Issuance Requirements.

OMB Control Number: 1029–xxx1.

Summary: Sections 506, 507, 509, 510, and 511 of SMCRA provide that persons seeking permit revisions, permit renewals; or the transfer, assignment, or sale of their permit rights for coal mining activities submit relevant information to the regulatory authority to allow the regulatory authority to determine whether the applicant meets the requirements for the action requested.

[752] Installed capacity is the ''total manufacturer-rated capacity for equipment such as turbines, generators, condensers, transformers, and other system components'' and represents the maximum flow of energy from the plant or the maximum output of the plant.

Title: 30 CFR parts 779 and 783—Surface and Underground Mining Permit Applications—Minimum Requirements for Information on Environmental Resources and Conditions.

OMB Control Number: 1029–xxx2.

Summary: Applications for surface and underground coal mining permits are required to provide adequate descriptions of the environmental resources that may be affected by proposed surface mining activities. Without this information, OSMRE and state regulatory authorities could not approve permit applications for surface coal mines and related facilities.

Title: 30 CFR part 780—Surface Mining Permit Applications—Minimum Requirements for Operation and Reclamation Plans.

OMB Control Number: 1029–xxx3.

Summary: Sections 507 and 508 of the Act contain permit application requirements for surface coal mining activities, including a requirement that the application include an operation and reclamation plan. The regulatory authority uses this information to determine whether the proposed surface coal mining operation will achieve the environmental protection requirements of the Act and regulatory program. Without this information, OSMRE and state regulatory authorities could not approve permit applications for surface coal mines and related facilities.

Title: 30 CFR part 784—Underground Mining Permit Applications—Minimum Requirements for Operation and Reclamation Plans.

OMB Control Number: 1029–xxx4.

Summary: Sections 507(b), 508(a), and 516(b) and (d) of SMCRA require applicants for permits for underground coal mines to prepare and submit operation and reclamation plans for coal mining activities as part of the application. Regulatory authorities use this information to determine whether the plans will achieve the reclamation and environmental protection requirements of the Act and regulatory program. Without this information, OSMRE and state regulatory authorities could not approve permit applications for underground coal mines and related facilities.

Title: 30 CFR part 785—Requirements for Permits for Special Categories of Mining.

OMB Control Number: 1029–xxx5.

Summary: Sections 507, 508, 510, 515, 701, and 711 of SMCRA require applicants for special categories of mining activities to provide descriptions, maps, plans and data relating to the proposed activity. Without this information, OSMRE and state regulatory authorities could not approve permit applications for special categories of mining activities.

Title: 30 CFR part 800—Bond, Financial Assurance, and Insurance Requirements for Surface Coal Mining and Reclamation Operations Under Regulatory Programs.

OMB Control Number: 1029–xxx6.

Summary: OSMRE and state regulatory authorities use the information collected under 30 CFR part 800 to ensure that persons conducting or planning to conduct surface coal mining and reclamation operations post and maintain a performance bond or financial assurance in a form and amount adequate to guarantee fulfillment of all reclamation obligations.

Title: 30 CFR parts 816 and 817—Permanent Program Performance Standards—Surface and Underground Mining Activities.

OMB Control Number: 1029–xxx7.

Summary: Sections 515 and 516 of SMCRA provide that permittees conducting coal mining and reclamation operations must meet all applicable performance standards of the regulatory program approved under the Act. The regulatory authority uses the information collected to assist in evaluating compliance with this requirement.

The table below summarizes estimated information collection burdens associated with this proposed rule, should it become final. We calculated the total estimated burden for two respondent groups, mine operators and state regulatory authorities, on an annual basis averaged over a 3-year period. The table does not include operational or other costs that do not involve a collection of information.

30 CFR Part	Type of respondent	Estimated annual responses	Estimated burden hour changes due to SPR	Total estimated burden hours	Estimated operator non-wage cost changes due to SPR	Total estimated burden non-wage costs
774	Operators	3,510	6,000	167,362	$0	$902,920
	SRA	3,343	6,226	87,043	N/A	N/A
779 and 783	Operators	1,561	8,442	208,282	$113,730	$113,730
	SRA	1,540	1,100	10,010	N/A	N/A
780	Operators	2,475	7,680	43,018	$2,853,500	$3,956,125
	SRA	2,418	5,776	20,281	N/A	N/A
784	Operators	767	2,630	11,440	$963,900	$1,170,765
	SRA	748	1,540	5,262	N/A	N/A
785	Operators	189	400	12,500	$0	$0
	SRA	189	80	6,180	N/A	N/A
800	Operators	4,048	17,200	49,034	$6,000	$383,379
	SRA	7,425	400	42,992	N/A	$130,423
816 and 817	Operators	403,665	46,427	1,807,617	$8,369,340	$15,995,424
	SRA	1,220	26	46,746	N/A	$58,350
Subtotals	Operators	416,215	88,779	2,299,253	$12,306,470	$22,522,343
	SRA	16,883	15,148	218,514	N/A	$188,773
Grand Totals		433,098	103,927	2,517,767	$12,306,470	$22,711,116

We invite comments on:

(a) Whether the proposed collection of information is necessary for SMCRA regulatory authorities to implement their responsibilities, including whether the information will have practical utility.

(b) The accuracy of our estimate of the burden of the proposed collections of information.

(c) Ways to enhance the quality, utility, and clarity of the information to be collected.

(d) Ways to minimize the burden of collection on the respondents.

Under the Paperwork Reduction Act, we must obtain OMB approval of all information and recordkeeping requirements. No person is required to respond to an information collection request unless the forms and regulations requesting the information have currently valid OMB control numbers. These control numbers appear in §§ 774.9, 779.10, 780.10, 783.10, 784.10, 785.10, 800.10, 816.10, and 817.10. To obtain a copy of our information collection requests contact John A. Trelease at (202) 208–2783 or by email at *jtrelease@osmre.gov*. You may also review the information collection requests at *http://www.reginfo.gov/public/do/PRAMain*. Follow the Web site to the Department of the Interior's collections currently under review by OMB to locate the seven collections being revised for this proposed rulemaking.

By law, OMB must respond to us within 60 days of publication of this proposed rule, but it may respond as soon as 30 days after publication. Therefore, to ensure consideration by OMB, you must send comments regarding these burden estimates or any other aspect of these information collection requirements by August 26, 2015 to the Department of the Interior Desk Officer at OMB–OIRA, via email at *OIRA_Submission@omb.eop.gov*, or via facsimile at (202) 395–5806. Also, send a copy of your comments to John Trelease, Office of Surface Mining Reclamation and Enforcement, 1951 Constitution Ave. NW., Room 203 SIB, Washington, DC 20240, or electronically at *jtrelease@osmre.gov*. You may still send other comments on the proposed rulemaking to us by September 25, 2015.

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment, including your personal identifying information, may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

In accordance with 44 U.S.C. 3507(d), we have submitted the information collection and recordkeeping requirements of 30 CFR parts 774, 779, 780, 783, 784, 785, 800, 816, and 817 to OMB for review and approval.

K. National Environmental Policy Act

We have prepared a draft EIS for the proposed rule in accordance with the National Environmental Policy Act. The draft EIS is on file in the administrative record for this proposed rule at the location specified under **ADDRESSES**. You also may review the draft EIS at *www.osmre.gov* and *www.regulations.gov*. The Docket ID Number is OSM–2010–0021. We will complete a final environmental impact statement with responses to all substantive comments received on the draft statement before we publish a final rule.

L. Data Quality Act

In developing this proposed rule, we did not conduct or use a study, experiment, or survey requiring peer review under the Data Quality Act (Pub. L. 106–554).

M. 1 CFR Part 51—Incorporation by reference

Proposed 30 CFR 780.25(a)(2)(i)(B), 784.25(a)(2)(i)(B), 816.49(a)(1), and 817.49(a)(1) would incorporate by reference the Natural Resources Conservation Service publication ''Earth Dams and Reservoirs,'' Technical Release No. 60 (210–VI–TR60, July 2005) (''TR–60''). The proposed incorporation by reference would replace the incorporation by reference of the now-obsolete October 1985 edition of TR–60 in the existing rules. While the incorporation by reference would extend to the entire document, our regulations use only two elements of the publication: the hazard classification system for dams and the freeboard hydrograph criteria for impoundments in the table entitled ''Minimum Emergency Spillway Hydrologic Criteria.''

Under 1 CFR 51.5(a), we must make the materials that we propose to incorporate by reference reasonably available to interested parties. The July 2005 edition of TR–60 is available for review and download free of charge from the Web site of the Natural Resources Conservation Service at *http://www.info.usda.gov/scripts/lpsiis.dll/TR/TR_210_60.htm*. The publication also is available for review in person at the OSMRE headquarters office location listed in **ADDRESSES** and at the OSMRE regional, field, and area office locations listed in Part XII of this preamble.

List of Subjects

30 CFR Part 700

Administrative practice and procedure, Reporting and recordkeeping requirements, Surface mining, Underground mining.

30 CFR Part 701

Law enforcement, Surface mining, Underground mining.

30 CFR Part 773

Administrative practice and procedure, Reporting and recordkeeping requirements, Surface mining, Underground mining.

30 CFR Part 774

Reporting and recordkeeping requirements, Surface mining, Underground mining.

30 CFR Part 777

Reporting and recordkeeping requirements, Surface mining, Underground mining.

30 CFR Part 779

Environmental protection, Reporting and recordkeeping requirements, Surface mining.

30 CFR Part 780

Incorporation by reference, Reporting and recordkeeping requirements, Surface mining.

30 CFR Part 783

Environmental protection, Reporting and recordkeeping requirements, Surface mining.

30 CFR Part 784

Reporting and recordkeeping requirements, Underground mining.

30 CFR Part 785

Reporting and recordkeeping requirements, Surface mining, Underground mining.

30 CFR Part 800

Insurance, Reporting and recordkeeping requirements, Surety bonds, Surface mining, Underground mining.

30 CFR Part 816

Environmental protection, Incorporation by reference, Reporting and recordkeeping requirements, Surface mining.

30 CFR Part 817

Environmental protection, Incorporation by reference, Reporting and recordkeeping requirements, Underground mining.

30 CFR Part 824

Environmental protection, Surface mining.

30 CFR Part 827

Environmental protection, Surface mining, Underground mining.

Dated: July 7, 2015.

Janice M. Schneider,

Assistant Secretary—Land and Minerals Management.

For the reasons set forth in the preamble, the Department proposes to amend 30 CFR parts 700, 701, 773, 774, 777, 779, 780, 783, 784, 785, 800, 816, 817, 824, and 827 as set forth below.

PART 700—GENERAL

■ 1. The authority citation for part 700 continues to read as follows:

Authority: 30 U.S.C. 1201 *et seq.*

■ 2. In § 700.11, revise paragraph (d) to read as follows:

§ 700.11 What coal exploration and coal mining operations are subject to our rules?

* * * * *

(d) *Termination and reassertion of jurisdiction*—(1) *Termination of jurisdiction for initial regulatory program sites.* A regulatory authority may terminate its jurisdiction under the initial regulatory program over a completed surface coal mining and reclamation operation, or portion thereof, when the regulatory authority determines in writing that all requirements imposed under subchapter B of this chapter have been successfully completed.

(2) *Termination of jurisdiction for permanent regulatory program sites.* A regulatory authority may terminate its jurisdiction under the permanent regulatory program over a completed surface coal mining and reclamation operation, or portion thereof, when—

(i) The regulatory authority determines in writing that all requirements imposed under the applicable regulatory program have been successfully completed; or

(ii)(A) Where a performance bond or financial assurance was required, the regulatory authority has made a final decision in accordance with part 800 of this chapter to release the performance bond or financial assurance fully.

(B) When a financial assurance has been posted under § 800.18 of this chapter and all other performance bonds posted for the site under part 800 of this chapter have been released, the regulatory authority may terminate jurisdiction over all portions of the site and all aspects of the operation except for treatment-related facilities and obligations covered by the financial assurance.

(3) *Reassertion of jurisdiction.* Following a termination under paragraph (d)(1) or (2) of this section, the regulatory authority must reassert jurisdiction under the regulatory program over a site or operation if it is demonstrated that the written determination or bond release referred to in paragraph (d)(1) or (2) of this section was based upon fraud, collusion, or the intentional or unintentional misrepresentation of a material fact, which includes the discovery of a discharge requiring treatment of mining-related parameters of concern, as that term is defined in § 701.5 of this chapter, after termination of jurisdiction.

(4) *Exception for certain underground mining requirements.* The provisions of paragraphs (d)(1) and (2) of this section do not apply to the domestic water supply replacement requirements of § 817.40 of this chapter or to the structural damage repair or compensation requirements of § 817.121(c)(2) of this chapter.

PART 701—PERMANENT REGULATORY PROGRAM

■ 3. The authority citation for part 701 continues to read as follows:

Authority: 30 U.S.C. 1201 *et seq.*

■ 4. Amend § 701.5 as follows:
■ a. Revise the definitions for ''Acid drainage'', ''Adjacent area'', and ''Approximate original contour'';
■ b. Add in alphabetical order definitions for ''Backfill'', ''Bankfull'', and ''Biological condition'';
■ c. Revise the definition for ''Cumulative impact area'';
■ d. Add in alphabetical order a definition for ''Ecological function'';
■ e. Revise the definitions for ''Ephemeral stream'' and ''Excess spoil'';
■ f. Add in alphabetical order a definition for ''Fill'';
■ g. Remove the definition for ''Fugitive dust'' and ''Ground water'';
■ h. Add in alphabetical order a definition for ''Groundwater'';
■ i. Remove the definition for ''Highwall remnant'';
■ j. Revise the definitions for ''Hydrologic balance'', ''Intermittent stream'', the introductory text and paragraph (a) of the definition for ''Land use'', and the definition for ''Material damage'';
■ k. Add in alphabetical order a definition for ''Material damage to the hydrologic balance outside the permit area'';
■ l. Revise the definitions for ''Mountaintop removal mining'' and ''Occupied residential dwelling and structures related thereto'';
■ m. Add in alphabetical order a definition for ''Parameters of concern'';
■ n. Revise the definitions for ''Perennial stream'' and ''Reclamation'';
■ o. Add in alphabetical order a definition for ''Reclamation plan'';
■ p. Revise the definitions for ''Renewable resource lands'', ''Replacement of water supply'', and ''Temporary diversion''; and
■ q. Add in alphabetical order a definition for ''Waters of the United States''.

The revisions and additions read as follows:

§ 701.5 Definitions

Acid drainage or *acid mine drainage* means water with a pH of less than 6.0 and in which total acidity exceeds total alkalinity that is discharged from an active, inactive, or abandoned surface coal mining and reclamation operation or from an area affected by surface coal mining and reclamation operations.

* * * * *

Adjacent area means—

(a) *Basic definition for all operations and all resources.* The area outside the proposed or actual permit area within which there is a reasonable possibility of adverse impacts from surface coal mining operations or underground mining activities, as determined by the regulatory authority. The area covered by this term will vary with the context in which a regulation uses this term; *i.e.,* the nature of the resource or resources addressed by a regulation in which the term ''adjacent area'' appears will determine the size and other dimensions of the adjacent area for purposes of that regulation.

(b) *Underground mines.* For underground mines, the adjacent area includes, at a minimum, the area overlying the underground workings plus the area within a reasonable angle of draw from the perimeter of the underground workings.

(c) *Underground mine pools.* For all operations, the adjacent area also includes the area that might be affected physically or hydrologically by the dewatering of existing mine pools as part of surface or underground mining operations, plus the area that might be affected physically or hydrologically by mine pools that develop after cessation of mining activities.

* * * * *

Approximate original contour means that surface configuration achieved by backfilling and grading of the mined area so that the reclaimed area closely resembles the general surface configuration of the land within the permit area prior to any mining activities or related disturbances and blends into and complements the

drainage pattern of the surrounding terrain. All highwalls and spoil piles must be eliminated to meet the terms of the definition, but that requirement does not prohibit the approval of terracing under § 816.102 or § 817.102 of this chapter, the retention of access roads in accordance with § 816.150 or § 817.151 of this chapter, or the approval of permanent water impoundments that comply with §§ 816.49, 816.56, and 780.24(b) or §§ 817.49, 817.56, and 784.24(b) of this chapter. For purposes of this definition, the term ''mined area'' does not include excess spoil fills and coal refuse piles.

* * * * *

Backfill, when used as a noun, means the spoil and waste materials used to fill the void resulting from an excavation created for the purpose of extracting coal from the earth. When used as a verb, the term refers to the process of filling that void. The term also includes all spoil and waste materials used to restore the approximate original contour.

Bankfull means the water level, or stage, at which a stream, river, or lake is at the top of its banks and any further rise would result in water moving into the flood plain.

* * * * *

Biological condition is a measure of the ecological health of a stream or segment of a stream as determined by the type, diversity, distribution, abundance, and physiological state of aquatic organisms and communities found in the stream or stream segment.

* * * * *

Cumulative impact area means an area that includes the—

(a) Actual or proposed permit area.

(b) HUC–12 (U.S. Geological Survey 12-digit Watershed Boundary Dataset) watershed or watersheds in which the actual or proposed permit area is located.

(c) Any other area within which impacts resulting from an actual or proposed surface or underground coal mining operation may interact with the impacts of all existing and anticipated surface and underground coal mining on surface-water and groundwater systems, including the impacts that existing and anticipated mining will have during mining and reclamation and after final bond release. At a minimum, existing and anticipated mining must include:

(1) The proposed operation;

(2) All existing surface and underground coal mining operations;

(3) Any proposed surface or underground coal mining operation for which a permit application has been submitted to the regulatory authority;

(4) Any proposed surface or underground coal mining operation for which a request for an authorization, certification, or permit has been submitted under the Clean Water Act;

(5) All existing and proposed coal mining operations that are required to meet diligent development requirements for leased federal coal and for which a resource recovery and protection plan has been either approved or submitted to and reviewed by the authorized officer of the Bureau of Land Management under 43 CFR 3482.1(b); and

(6) For underground mines, all areas of contiguous coal reserves adjacent to an existing or proposed underground mine that are owned or controlled by the applicant.

* * * * *

Ecological function of a stream means the role that the stream plays in dissipating energy and transporting water, sediment, organic matter, and nutrients downstream. It also includes the ability of the stream ecosystem to retain and transform inorganic materials needed for biological processes into organic forms (forms containing carbon) and to oxidize those organic molecules back into elemental forms through respiration and decomposition. Finally, the term includes the role that the stream plays in the life cycles of plants, insects, amphibians (especially salamanders), reptiles, fish, birds, and mammals that either reside in the stream or depend upon it for habitat, reproduction, food, water, or protection from predators. The biological condition of a stream is one measure of its ecological function.

* * * * *

Ephemeral stream means a stream or part of a stream that has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral streambeds are located above the water table year-round. Groundwater is not a source of water for streamflow. Runoff from rainfall is the primary source of water for streamflow.

* * * * *

Excess spoil means spoil material disposed of in a location other than the mined-out area within the permit area and all spoil material placed above the approximate original contour within the mined-out area as part of the continued construction of an excess spoil fill with a toe located outside the mined-out area. This term does not include any spoil required and used to restore the approximate original contour of the mined-out area. Except as provided in the first sentence of this definition, this term does not include spoil material placed within the mined-out area in accordance with the thick overburden provisions of § 816.105(b)(1) of this chapter. Nor does it include spoil material used to blend the mined-out area with the surrounding terrain in non-steep slope areas in accordance with § 816.102(b)(3) or § 817.102(b)(3) of this chapter.

* * * * *

Fill means a permanent, non-impounding structure constructed under §§ 816.71 through 816.83 or §§ 817.71 through 817.83 of this chapter for the purpose of disposing of excess spoil or coal mine waste generated by surface coal mining operations or underground mining activities.

* * * * *

Groundwater means subsurface water located in those portions of soils and geologic formations that are fully saturated with water; *i.e.,* those zones where all the pore spaces and rock fractures are completely filled with water. This term includes subsurface water in both regional and perched aquifers, but it does not include water in soil horizons that are temporarily saturated by precipitation events.

* * * * *

Hydrologic balance means the relationship between the quality and quantity of water inflow to, water outflow from, and water storage in a hydrologic unit such as a drainage basin, aquifer, soil zone, lake, or reservoir. It encompasses the dynamic relationships among precipitation, runoff, evaporation, and changes in storage of groundwater and surface water, as well as interactions that result in changes in the chemical composition or physical characteristics of groundwater and surface water, which may in turn affect the biological condition of streams and other water bodies.

* * * * *

Intermittent stream means a stream or part of a stream that has flowing water during certain times of the year when groundwater provides water for streamflow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for streamflow.

* * * * *

Land use means specific uses or management-related activities, rather than the vegetation or cover of the land. The term includes support facilities that are an integral part of the use. Land uses may be identified in combination when joint or seasonal uses occur. For purposes of this chapter, the following land use categories apply:

(a) *Cropland.* Land used for the production of crops for harvest, either alone or in rotation with grasses and legumes. Crops include row crops, small grains, hay, commercial nursery plantings, vegetables, fruits, nuts, crops, and other plants typically cultivated for commercial purposes in fields, orchards, vineyards, and similar settings.

* * * * *

Material damage, in the context of §§ 784.30 and 817.121 of this chapter, means:

(a) Any functional impairment of surface lands, features, structures or facilities;

(b) Any physical change that has a significant adverse impact on the affected land's capability to support any current or reasonably foreseeable uses or causes significant loss in production or income; or

(c) Any significant change in the condition, appearance or utility of any structure or facility from its pre-subsidence condition.

Material damage to the hydrologic balance outside the permit area means any adverse impact from surface coal mining and reclamation operations or from underground mining activities, including any adverse impacts from subsidence that may occur as a result of underground mining activities, on the quality or quantity of surface water or groundwater, or on the biological condition of a perennial or intermittent stream, that would—

(a) Preclude any designated use under sections 101(a) or 303(c) of the Clean Water Act or any existing or reasonably foreseeable use of surface water or groundwater outside the permit area; or

(b) Impact threatened or endangered species, or have an adverse effect on designated critical habitat, outside the permit area in violation of the Endangered Species Act of 1973, 16 U.S.C. 1531 *et seq.*

* * * * *

Mountaintop removal mining means surface mining activities in which the mining operation extracts an entire coal seam or seams running through the upper fraction of a mountain, ridge, or hill, except for outcrop barriers retained under § 824.11(b)(2) of this chapter, by removing substantially all overburden above the coal seam and using that overburden to create a level plateau or a gently rolling contour, with no highwalls remaining, that is capable of supporting one or more of the postmining land uses identified in § 785.14 of this chapter.

* * * * *

Occupied residential dwelling and structures related thereto means, for purposes of §§ 784.30 and 817.121 of this chapter, any building or other structure that, at the time the subsidence occurs, is used either temporarily, occasionally, seasonally, or permanently for human habitation. This term also includes any building, structure, or facility installed on, above, or below the land surface if that building, structure, or facility is adjunct to or used in connection with an occupied residential dwelling. Examples of such structures include, but are not limited to, garages; storage sheds and barns; greenhouses and related buildings; utilities and cables; fences and other enclosures; retaining walls; paved or improved patios, walks and driveways; septic sewage treatment facilities; and lot drainage and lawn and garden irrigation systems. This term does not include any structure used only for commercial agricultural, industrial, retail or other commercial purposes.

* * * * *

Parameters of concern means those chemical or physical characteristics and properties of surface water or groundwater that could be altered by surface or underground mining activities, including discharges associated with those activities, in a manner that would adversely impact surface-water or groundwater quality or the biological condition of a stream.

Perennial stream means a stream or part of a stream that has flowing water year-round during a typical year. The water table is located above the streambed for most of the year. Groundwater is the primary source of water for streamflow. Runoff from rainfall is a supplemental source of water for streamflow.

* * * * *

Reclamation means those actions taken to restore mined land and associated disturbed areas to a condition in which the site is capable of supporting the uses it was capable of supporting prior to any mining or any higher or better uses approved by the regulatory authority. The site also must meet all other requirements of the permit and regulatory program that pertain to restoration of the site. For sites with discharges that require treatment, this term also includes those actions taken to eliminate, remediate, or treat those discharges, including both discharges from the mined area and all other discharges that are hydrologically connected to either the mined area or the operation, regardless of whether those discharges are located within the disturbed area.

Reclamation plan means the plan for reclamation of surface coal mining operations under parts 780, 784, and 785 of this chapter.

* * * * *

Renewable resource lands means aquifers, aquifer recharge areas, recharge areas for other subsurface and surface water, areas for agricultural or silvicultural production of food and fiber, and grazing lands.

Replacement of water supply means, with respect to protected water supplies contaminated, diminished, or interrupted by coal mining operations, provision of water supply on both a temporary and permanent basis equivalent to premining quantity and quality. Replacement includes provision of an equivalent water delivery system and payment of operation and maintenance costs in excess of customary and reasonable delivery costs for premining water supplies.

* * * * *

Temporary diversion means a channel constructed to convey streamflow or overland flow away from the site of actual or proposed coal exploration or surface coal mining and reclamation operations or to convey those flows to a siltation structure or other treatment facility. The term includes only those channels not approved by the regulatory authority to remain after reclamation as part of the approved postmining land use.

* * * * *

Waters of the United States has the same meaning as the definition of that term in 40 CFR 230.3(s).

* * * * *

PART 773—REQUIREMENTS FOR PERMITS AND PERMIT PROCESSING

■ 5. The authority citation for part 773 is revised to read as follows:

Authority: 30 U.S.C. 1201 *et seq.,* 54 U.S.C. 300101 *et seq.,* 16 U.S.C. 661 *et seq.,* 16 U.S.C. 703 *et seq.,* 16 U.S.C. 668a *et seq.,* 16 U.S.C. 469 *et seq.,* and 16 U.S.C. 1531 *et seq.*

■ 6. Revise § 773.5 to read as follows:

§ 773.5 How must the regulatory authority coordinate the permitting process with requirements under other laws?

(a) To avoid duplication, each regulatory program must provide for the coordination of review of permit applications and issuance of permits for surface coal mining operations with the federal and state agencies responsible for permitting and related actions under the following laws and their implementing regulations:

(1) The Clean Water Act (33 U.S.C. 1251 *et seq.*).

(2) The Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*).

(3) The Fish and Wildlife Coordination Act (16 U.S.C. 661 *et seq.*).

(4) The Migratory Bird Treaty Act of 1918 (16 U.S.C. 703 *et seq.*).

(5) The Bald and Golden Eagle Protection Act (16 U.S.C. 668–668d).

(b) In addition to the requirements of paragraph (a) of this section, each federal regulatory program must provide for coordination of the review of permit applications and issuance of permits for surface coal mining operations with applicable requirements of the following laws and their implementing regulations:

(1) The National Historic Preservation Act of 1966 (54 U.S.C. 300101 *et seq.*).

(2) The Archeological and Historic Preservation Act of 1974 (16 U.S.C. 469 *et seq.*).

(3) The Archaeological Resources Protection Act of 1979 (16 U.S.C. 470aa *et seq.*), where federal or Indian lands covered by that Act are involved.

(4) The National Environmental Policy Act of 1969 (42 U.S.C. 4371 *et seq.*).

■ 7. Revise § 773.7 to read as follows:

§ 773.7 How and when will the regulatory authority review and make a decision on an application for a permit, permit revision, or permit renewal?

(a) *General.* The regulatory authority will review an application for a permit, permit revision, or permit renewal; and issue a written decision granting, requiring modification of, or denying the application. Before making this decision, the regulatory authority must consider any written comments and objections submitted, as well as the records of any informal conference or hearing held on the application.

(b) *When will the regulatory authority make a decision on a permit application*? (1) If an informal conference is held under § 773.6(c) of this part, the regulatory authority will issue a decision on the application within 60 days of the close of the conference.

(2) If no informal conference is held under § 773.6(c) of this part, the regulatory authority must issue a decision on the application within a reasonable time established in the regulatory program. In determining what constitutes a reasonable time or times, the regulatory authority must consider the following five factors:

(i) The time needed for proper site investigations.

(ii) The complexity of the permit application.

(iii) Whether there are any written objections on file.

(iv) Whether the application previously has been approved or disapproved, in whole or in part.

(v) The time required for coordination of permitting activities with other agencies under § 773.5 of this part.

(c) *Who has the burden of proof*? You, the applicant for a permit, revision of a permit, or the transfer, assignment, or sale of permit rights, have the burden of establishing that your application is in compliance with all requirements of the regulatory program.

■ 8. Revise § 773.15 to read as follows:

§ 773.15 What findings must the regulatory authority make before approving a permit application?

The regulatory authority may not approve any application for a permit or a significant revision of a permit that you, the applicant, submit unless the application affirmatively demonstrates and the regulatory authority finds, in writing, on the basis of information set forth in the application or from information otherwise available that is documented in the approval, that—

(a) The application is accurate and complete and you have complied with all applicable requirements of the Act and the regulatory program.

(b) You have demonstrated that reclamation as required by the Act and the regulatory program can be accomplished under the reclamation plan contained in the permit application.

(c) The proposed permit area is not within an area—

(1) Under study or administrative proceedings under a petition filed pursuant to part 764 or part 769 of this chapter to have an area designated as unsuitable for surface coal mining operations, unless you demonstrate that you made substantial legal and financial commitments before January 4, 1977, in relation to the operation covered by the permit application;

(2) Designated under parts 762 and 764 or 769 of this chapter as unsuitable for the type of surface coal mining operations that you propose to conduct; or

(3) Subject to the prohibitions of § 761.11 of this chapter, unless one or more of the exceptions provided under that section apply.

(d) For mining operations where the private mineral estate to be mined has been severed from the private surface estate, you have submitted to the regulatory authority the documentation required under § 778.15(b) of this chapter.

(e) The regulatory authority has—

(1) Made an assessment of the probable cumulative impacts of all anticipated coal mining on the hydrologic balance in the cumulative impact area;

(2) Determined that the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area; and

(3) Inserted into the permit criteria defining material damage to the hydrologic balance outside the permit area on a site-specific basis, expressed in numerical terms for each parameter of concern, as required by § 780.21(b) or § 784.21(b) of this chapter.

(f) You have demonstrated that any existing structure will comply with § 701.11(d) of this chapter and the applicable performance standards of subchapter B or K of this chapter.

(g) You have paid all reclamation fees from previous and existing operations as required by subchapter R of this chapter.

(h) You have satisfied the applicable requirements of part 785 of this chapter.

(i) If applicable, you have satisfied the requirements for approval of a long-term, intensive agricultural postmining land use.

(j) The operation is not likely to jeopardize the continued existence of species listed or proposed for listing as threatened or endangered under the Endangered Species Act of 1973, 16 U.S.C. 1531 *et seq.,* or result in destruction or adverse modification of designated critical habitat under that law.

(k) The regulatory authority has taken into account the effect of the proposed permitting action on properties listed on and eligible for listing on the National Register of Historic Places. This finding may be supported in part by inclusion of appropriate permit conditions or changes in the operation plan protecting historic resources or a documented decision that the regulatory authority has determined that no additional protection measures are necessary.

(l) For a proposed remining operation where you intend to reclaim in accordance with the requirements of § 816.106 or § 817.106 of this chapter, the site of the operation is a previously mined area, as that term is defined in § 701.5 of this chapter.

(m) You are eligible to receive a permit, based on the reviews under §§ 773.7 through 773.14 of this part.

(n) You have demonstrated that—

(1) The operation has been designed to prevent the formation of discharges with levels of parameters of concern that would require long-term treatment after mining has been completed.

(2) There is no credible evidence that the design of the proposed operation will not work as intended to prevent the formation of discharges with levels of parameters of concern that would require long-term treatment after mining has been completed.

(o) To the extent possible using the best technology currently available, the proposed operation has been designed to minimize disturbances and adverse impacts on fish, wildlife, and related environmental values, as identified in § 779.20 or § 783.20 of this chapter, and to achieve enhancement of those resources where practicable, as required under § 780.16 or § 784.16 of this chapter.

■ 9. Revise § 773.17 to read as follows:

§ 773.17 What conditions must the regulatory authority place on each permit issued?

The regulatory authority must include the following conditions in each permit issued:

(a) You, the permittee, may conduct surface coal mining and reclamation operations only on those lands that are specifically designated as the permit area on the maps submitted with the application and authorized for the term of the permit and that are subject to the performance bond or other equivalent guarantee in effect pursuant to part 800 of this chapter.

(b) You must conduct all surface coal mining and reclamation operations only as described in the approved application, except to the extent that the regulatory authority otherwise directs in the permit.

(c) You must comply with the terms and conditions of the permit, all applicable requirements of the Act, and the requirements of the regulatory program.

(d) Without advance notice, delay, or a search warrant, upon presentation of appropriate credentials, you must allow authorized representatives of the Secretary and the regulatory authority to—

(1) Have the right of entry provided for in §§ 842.13 and 840.12 of this chapter; and

(2) Be accompanied by private persons for the purpose of conducting an inspection in accordance with parts 840 and 842 of this chapter, when the inspection is in response to an alleged violation reported to the regulatory authority by the private person.

(e) You must take all possible steps to minimize any adverse impact to the environment or public health and safety resulting from noncompliance with any term or condition or the permit, including, but not limited to—

(1) Any accelerated or additional monitoring necessary to determine the nature and extent of noncompliance and the results of the noncompliance.

(2) Immediate implementation of measures necessary to comply.

(3) Warning, as soon as possible after learning of such noncompliance, any person whose health and safety is in imminent danger due to the noncompliance.

(4) Notifying the regulatory authority and other appropriate state and federal regulatory agencies.

(f) As applicable, you must comply with § 701.11(d) and subchapter B or K of this chapter for compliance, modification, or abandonment of existing structures.

(g) You or the operator must pay all reclamation fees required by subchapter R of this chapter for coal produced under the permit for sale, transfer or use, in the manner required by that subchapter.

(h) You must obtain all necessary authorizations, certifications, and permits in accordance with requirements under the Clean Water Act, 33 U.S.C. 1251 *et seq.,* before conducting any activities that require authorization or certification under those provisions of the Clean Water Act.

PART 774—REVISION; RENEWAL; TRANSFER, ASSIGNMENT, OR SALE OF PERMIT RIGHTS; POST–PERMIT ISSUANCE REQUIREMENTS

■ 10. The authority citation for part 774 continues to read as follows:

Authority: 30 U.S.C. 1201 *et seq.*

■ 11. Revise the part heading for part 774 to read as set forth above.

■ 12. Revise § 774.9 to read as follows:

§ 774.9 Information collection.

In accordance with 44 U.S.C. 3501 *et seq.,* the Office of Management and Budget (OMB) has approved the information collection requirements of this part and assigned it control number 1029-xxxx. The regulatory authority uses this information to determine if you, the applicant, meet the requirements for permit revision; permit renewal; or the transfer, assignment, or sale of permit rights. The regulatory authority also uses this information to update the Applicant/Violator System. You must respond to obtain a benefit. A federal agency may not conduct or sponsor, and you are not required to respond to, a collection of information unless it displays a currently valid OMB control number.

■ 13. Revise § 774.10 to read as follows:

§ 774.10 When must the regulatory authority review a permit after issuance?

(a) The regulatory authority must review each permit issued and outstanding under an approved regulatory program during the term of the permit.

(1) This review must occur not later than the middle of each permit term except that permits with a term longer than 5 years must be reviewed no less frequently than the permit midterm or every 5 years, whichever is more frequent.

(2) Permits granted in accordance with § 785.14 of this chapter (mountaintop removal mining) and permits containing a variance from approximate original contour restoration requirements in accordance with § 785.16 of this chapter must be reviewed no later than 3 years from the date of issuance of the permit, unless the permittee affirmatively demonstrates that the proposed development is proceeding in accordance with the terms of the permit. This review may be combined with the first review conducted under paragraph (a)(1) of this section if the permit term does not exceed 5 years.

(3) Permits containing an experimental practice approved in accordance with § 785.13 of this chapter must be reviewed as set forth in the permit or at least every 2½ years from the date of issuance as required by the regulatory authority, in accordance with § 785.13(g) of this chapter.

(4) Permits granted in accordance with § 785.18 of this chapter (variance for delay in contemporaneous reclamation requirement in combined surface and underground mining operations) must be reviewed no later than 3 years from the date of issuance of the permit. This review may be combined with the first review conducted under paragraph (a)(1) of this section if the permit term does not exceed 5 years.

(b) After a review required by paragraph (a) of this section, or at any time, the regulatory authority may, by order, require reasonable revision of a permit in accordance with § 774.13 to ensure compliance with the Act and the regulatory program.

(c) Any order of the regulatory authority requiring revision of a permit must be based upon written findings and is subject to the provisions for administrative and judicial review in part 775 of this chapter. Copies of the order must be sent to the permittee.

(d) Permits may be suspended or revoked in accordance with subchapter L of this chapter.

■ 14. Revise § 774.15 to read as follows:

§ 774.15 How may I renew a permit?

(a) *Right of renewal.* A valid permit, issued pursuant to an approved regulatory program, carries with it the right of successive renewal, within the approved boundaries of the existing permit, upon expiration of the term of the permit.

(b) *Application requirements and procedures.* (1) You, the permittee, must file an application for renewal of a permit with the regulatory authority at least 120 days before expiration of the existing permit term.

(2) You must file the application for renewal in the form required by the regulatory authority. At a minimum, your application must include the following information—

(i) Your name and address

(ii) The term of the renewal requested.

(iii) The permit number or other identifier.

(iv) Evidence that a liability insurance policy for the operation will continue in full force and effect during the proposed renewal term or that you will have adequate self-insurance under § 800.60 of this chapter for the proposed term of renewal.

(v) Evidence that the performance bond for the permit will continue in full force and effect for the proposed term of renewal.

(vi) A copy of the newspaper notice and proof of publication, as required by § 778.21 of this chapter.

(vii) An analysis of the monitoring results under §§ 816.35 through 816.37 or §§ 817.35 through 817.37 of this chapter and an evaluation of the accuracy and adequacy of the determination of the probable hydrologic consequences of mining prepared under § 780.20 or § 784.20 of this chapter.

(viii) An update of the determination of the probable hydrologic consequences of mining prepared under § 780.20 or § 784.20 of this chapter, if needed, or documentation that the findings in the existing determination are still valid.

(ix) Additional revised or updated information required by the regulatory authority.

(3) Applications for renewal are subject to the public notification and public participation requirements in §§ 773.6 and 773.19(b) of this chapter.

(4) If an application for renewal includes any proposed revisions to the permit, those revisions must be identified and processed in accordance with § 774.13 of this part.

(c) *Approval process*—(1) *Criteria for approval.* The regulatory authority must approve a complete and accurate application for permit renewal, unless it finds, in writing that—

(i) The terms and conditions of the existing permit are not being satisfactorily met.

(ii) The present surface coal mining and reclamation operations are not in compliance with the environmental protection standards of the Act and the regulatory program. The permit eligibility standards in §§ 773.12 through 773.14 of this chapter apply to this determination.

(iii) The requested renewal substantially jeopardizes your continuing ability to comply with the Act and the regulatory program on existing permit areas.

(iv) You have not provided evidence of having continuing liability insurance or self-insurance coverage as required under § 800.60 of this chapter.

(v) You have not provided evidence that any performance bond required to be in effect for the operation will continue in full force and effect for the proposed term of renewal.

(vi) You have not posted any additional bond required by the regulatory authority under part 800 of this chapter.

(vii) You have not provided any additional revised or updated information required by the regulatory authority.

(viii) The finding that the regulatory authority made under § 773.15(e) of this chapter that the operation is designed to prevent material damage to the hydrologic balance outside the permit area is no longer accurate, as demonstrated by analysis of the monitoring results under §§ 816.35 through 816.37 or §§ 817.35 through 817.37 of this chapter or the updated determination of the probable hydrologic consequences of mining prepared under paragraph (b)(2)(viii) of this section.

(2) *Burden of proof.* In the determination of whether to approve or deny an application for renewal of a permit, the burden of proof is on the opponents of renewal.

(3) *Alluvial valley floor variance.* Areas previously identified in the reclamation plan for the original permit as exempt from the standards in paragraphs (A) and (B) of section 510(b)(5) of the Act and the requirements of paragraphs (c) through (e) of § 785.19 of this chapter will retain their exempt status for the term of the renewal.

(d) *Renewal term.* The term for any permit renewal must not exceed the original permit term under § 773.19(c) of this chapter.

(e) *Notice of decision.* The regulatory authority must send copies of its decision to the applicant, to each person who filed comments or objections on the renewal, to each party to any informal conference held on the permit renewal, and to OSMRE if OSMRE is not the regulatory authority.

(f) *Administrative and judicial review.* Any person having an interest which is or may be adversely affected by the decision of the regulatory authority has the right to administrative and judicial review under part 775 of this chapter.

PART 777—GENERAL CONTENT REQUIREMENTS FOR PERMIT APPLICATIONS

■ 15. Revise the authority citation for part 777 to read as follows:

Authority: 30 U.S.C. 1201 *et seq.*

■ 16. Revise § 777.1 to read as follows:

§ 777.1 What does this part cover?

This part provides minimum requirements concerning data collection and analysis and the format and general content of permit applications under a regulatory program.

■ 17. Revise § 777.11 to read as follows:

§ 777.11 What are the format and content requirements for permit applications?

(a) An application must—

(1) Contain current information, as required by this subchapter.

(2) Be clear and concise.

(3) Be filed in an electronic format prescribed by the regulatory authority, unless the regulatory authority grants an exception to this requirement for good cause.

(b) If used in the application, referenced materials must either be provided to the regulatory authority by the applicant or be readily available to the regulatory authority. If provided, relevant portions of referenced published materials must be presented briefly and concisely in the application by photocopying or abstracting and with explicit citations.

(c) Applications for permits; revisions; renewals; or transfers, sales or assignments of permit rights must be verified under oath, by a responsible official of the applicant, that the information contained in the application is true and correct to the best of the official's information and belief.

■ 18. Revise § 777.13 to read as follows:

§ 777.13 What requirements apply to the collection, analysis, and reporting of technical data and to the use of models?

(a) *Technical data and analyses.* (1) All technical data submitted in the

application must be accompanied by metadata, including, but not limited to, the names of persons or organizations that collected and analyzed the data, the dates that the data were collected and analyzed, descriptions of the methodology used to collect and analyze the data, the quality assurance and quality control procedures used by the laboratory and the results of those procedures, and the field sampling sheets for water samples collected from wells. For electronic data, metadata must include identification of any data transformations.

(2) Technical analyses must be planned by or under the direction of a professional qualified in the subject to be analyzed.

(b) *Sampling and analyses of groundwater and surface water.* All sampling and analyses of groundwater and surface water performed to meet the requirements of this subchapter must be conducted according to the methodology in 40 CFR parts 136 and 434.

(c) *Geological sampling and analysis.* All geological sampling and analyses performed to meet the requirements of this subchapter must be conducted using a scientifically-valid methodology.

(d) *Use of models.* (1) Unless the regulatory authority specifies otherwise, you may use modeling techniques, interpolation, or statistical techniques to prepare the permit application.

(2) All models must be calibrated using actual site-specific data and validated for the region and ecosystem in which they will be used.

(3) The regulatory authority may either disallow the use of models or require that you submit additional actual, site-specific data.

■ 19. Revise § 777.14 to read as follows:

§ 777.14 What general requirements apply to maps and plans?

(a)(1) Maps submitted with applications must be presented in a consolidated format, to the extent possible, and must include all the types of information that are set forth on topographic maps of the U.S. Geological Survey of the 1:24,000 scale series.

(2) Maps of the proposed permit area must be at a scale of 1:6,000 or larger.

(3) Maps of the adjacent area must clearly show the lands and waters within that area and must be at a scale determined by the regulatory authority, but in no event smaller than 1:24,000.

(b) All maps and plans submitted with the application must distinguish among each of the phases during which surface coal mining operations were or will be conducted at any place within the life of operations. At a minimum, distinctions must be clearly shown among those portions of the life of operations in which surface coal mining operations occurred—

(1) Prior to August 3, 1977;

(2) After August 3, 1977, and prior to either—

(i) May 3, 1978; or

(ii) In the case of an applicant or operator which obtained a small operator's exemption in accordance with § 710.12 of this chapter, January 1, 1979;

(3) After May 3, 1978 (or January 1, 1979, for persons who received a small operator's exemption) and prior to the approval of the applicable regulatory program;

(4) After the estimated date of issuance of a permit by the regulatory authority under the approved regulatory program.

■ 20. Revise § 777.15 to read as follows:

§ 777.15 What information must my application include to be administratively complete?

An administratively complete application for a permit to conduct surface coal mining operations and must include at a minimum—

(a) For surface mining activities, the information required under parts 778, 779, and 780 of this chapter, and, as applicable to the operation, part 785 of this chapter.

(b) For underground mining activities, the information required under parts 778, 783, and 784 of this chapter, and, as applicable to the operation, part 785 of this chapter.

■ 21. Lift the suspension of § 779.21 and revise part 779 to read as follows:

PART 779—SURFACE MINING PERMIT APPLICATIONS—MINIMUM REQUIREMENTS FOR INFORMATION ON ENVIRONMENTAL RESOURCES AND CONDITIONS

Sec.

Authority: 30 U.S.C. 1201 *et seq.* and 54 U.S.C. 300101 *et seq.*

§ 779.1 Scope: What does this part do?

This part establishes the minimum requirements for the descriptions of environmental resources and conditions that you must include in an application for a permit to conduct surface mining activities.

§ 779.2 What is the objective of this part?

The objective of this part is to ensure that you, the permit applicant, provide the regulatory authority with a complete and accurate description of the environmental resources that may be impacted or affected by proposed surface mining activities and the environmental conditions that exist within the proposed permit and adjacent areas.

§ 779.4 What responsibilities do I and government agencies have under this part?

(a) You, the permit applicant, must provide all information required by this part in your application, except when this part specifically exempts you from doing so.

(b) State and federal government agencies are responsible for providing information for permit applications to the extent that this part specifically requires that they do so.

§ 779.10 Information collection.

In accordance with 44 U.S.C. 3501 *et seq.,* the Office of Management and Budget (OMB) has approved the information collection requirements of this part and assigned it control number 1029–xxxx. The information is being collected to meet the requirements of sections 507 and 508 of SMCRA, which require that each permit application include a description of the premining environmental resources within and around the proposed permit area. The regulatory authority uses this information as a baseline for evaluating the impacts of mining. You, the permit applicant, must respond to obtain a benefit. A federal agency may not conduct or sponsor, and you are not required to respond to, a collection of information unless it displays a currently valid OMB control number.

§ 779.11 [Reserved]

§ 779.12 [Reserved]

§ 779.17 What information on cultural, historic, and archeological resources must I include in my permit application?

(a) Your permit application must describe the nature of cultural, historic, and archeological resources listed or eligible for listing on the National Register of Historic Places and known archeological sites within the proposed permit and adjacent areas. The description must be based on all available information, including, but not limited to, information from the State Historic Preservation Officer and from local archeological, historical, and cultural preservation agencies.

(b) The regulatory authority may require you, the applicant, to identify and evaluate important historic and archeological resources that may be eligible for listing on the National Register of Historic Places, by—

(1) Collecting additional information;

(2) Conducting field investigations, or

(3) Completing other appropriate analyses.

§ 779.18 What information on climate must I include in my permit application?

The regulatory authority may require that your permit application contain a statement of the climatic factors that are representative of the proposed permit area, including:

(a) The average seasonal precipitation.

(b) The average direction and velocity of prevailing winds.

(c) Seasonal temperature ranges.

(d) Additional data that the regulatory authority deems necessary to ensure compliance with the requirements of this subchapter.

§ 779.19 What information on vegetation must I include in my permit application?

(a) You must identify, describe, and map—

(1) Existing vegetation types and plant communities on the proposed permit and adjacent areas and within any proposed reference areas. The description and map must be adequate to evaluate whether the vegetation provides important habitat for fish and wildlife and whether the site contains native plant communities of local or regional significance.

(2) The plant communities that would exist on the proposed permit area under conditions of natural succession.

(b) When preparing the materials required by paragraph (a) of this section, you must adhere to the National Vegetation Classification Standard.

(c) With the approval of the regulatory authority, you may use other generally-accepted vegetation classification systems in lieu of the system specified in paragraph (b) of this section.

(d) Your application must include a discussion of the potential for reestablishing the plant communities identified in paragraph (a) of this section after the completion of mining.

§ 779.20 What information on fish and wildlife resources must I include in my permit application?

(a) *General requirements.* Your permit application must include information on fish and wildlife resources for the proposed permit and adjacent areas. The adjacent area must include all lands and waters likely to be affected by the proposed operation.

(b) *Scope and level of detail.* The regulatory authority will determine the scope and level of detail for this information in coordination with state and federal agencies with responsibilities for fish and wildlife. The scope and level of detail must be sufficient to design the protection and enhancement plan required under § 780.16 of this chapter.

(c) *Site-specific resource information requirements.* Your application must include site-specific resource information if the proposed permit area or the adjacent area contains or is likely to contain one or more of the following—

(1) Fish and wildlife or plants listed or proposed for listing as threatened or endangered under the Endangered Species Act of 1973, 16 U.S.C. 1531 *et seq.,* or critical habitat designated under that law. When these circumstances exist, the site-specific resource information must include a description of the effects of future state or private activities that are reasonably certain to occur within the proposed permit and adjacent areas.

(2) Species or habitat protected by state endangered species statutes and regulations.

(3) Habitat of unusually high value for fish and wildlife such as wetlands, riparian areas, cliffs supporting raptors, significant migration corridors, specialized reproduction or wintering areas, areas offering special shelter or protection, and areas that support populations of endemic species that are vulnerable because of restricted ranges, limited mobility, limited reproductive capacity, or specialized habitat requirements.

(4) Other species or habitat identified through interagency coordination as requiring special protection under state or federal law, including species identified as sensitive by a state or federal agency.

(5) Perennial or intermittent streams.

(6) Native plant communities of local or regional ecological significance.

(d) *Fish and Wildlife Service review.* (1)(i) The regulatory authority must provide the resource information obtained under paragraph (c) of this section to the applicable regional or field office of the U.S. Fish and Wildlife Service whenever that information includes species listed as threatened or endangered under the Endangered Species Act of 1973, 16 U.S.C. 1531 *et seq.,* critical habitat designated under that law, or species proposed for listing as threatened or endangered under that law. The regulatory authority must provide this information to the Service no later than the time that it provides written notice of the permit application to the Service under § 773.6(a)(3)(ii) of this chapter.

(ii) When the resource information obtained under paragraph (c) of this section does not include threatened or endangered species, designated critical habitat, or species proposed for listing as threatened or endangered, the regulatory authority must provide this information to the applicable regional or field office of the U.S. Fish and Wildlife Service only if the Service requests an opportunity to review and comment on that information. The regulatory authority must provide the requested information to the Service within 10 days of receipt of the request from the Service.

(2)(i) The regulatory authority must document its disposition of all comments from the Service that pertain to fish and wildlife or plants listed as threatened or endangered under the Endangered Species Act of 1973, 16 U.S.C. 1531 *et seq.,* or to critical habitat designated under that law.

(ii) If the regulatory authority does not agree with a Service recommendation that pertains to fish and wildlife or plants listed as threatened or endangered under the Endangered Species Act of 1973, 16 U.S.C. 1531 *et seq.,* or to critical habitat designated under that law, the regulatory authority must explain the rationale for that decision in the disposition document prepared under paragraph (d)(2)(i) of this section. The regulatory authority must provide a copy of that document to the pertinent Service field office and OSMRE field office and must refrain from approving the permit application.

(iii) If the Service field office does not concur with the regulatory authority's decision under paragraph (d)(2)(ii) of this section and the regulatory authority and the Service field office are unable to reach agreement at that level, either the Service or the regulatory authority

may request that the issue be elevated through the chain of command of the regulatory authority, the Service, and OSMRE for resolution.

(iv) The regulatory authority may not approve the permit application until all issues are resolved in accordance with paragraph (d)(2)(iii) of this section and the regulatory authority receives written documentation from the Service that all issues have been resolved.

(e) *Designation of areas in which adverse impacts are prohibited.* In coordination with state and federal fish and wildlife agencies and agencies responsible for implementation of the Clean Water Act, the regulatory authority may use the information provided under this section and information gathered from other agencies to determine whether, based on scientific principles and analyses, any stream segments, wildlife habitats, or watersheds in the proposed permit or adjacent areas are of such exceptional environmental value that any adverse mining-related impacts must be prohibited.

§ 779.21 What information on soils must I include in my permit application?

Your permit application must include—

(a) The results of a reconnaissance inspection to determine whether the proposed permit area may contain prime farmland, as required by § 785.17(b)(1) of this chapter.

(b)(1) A map showing the soil mapping units located within the proposed permit area, if the National Cooperative Soil Survey has completed and published a soil survey of the area.

(2) The applicable soil survey information that the Natural Resources Conservation Service maintains for the soil mapping units identified in paragraph (b)(1) of this section. You may provide this information either in paper form or via a link to the appropriate element of the Natural Resources Conservation Service's soil survey Web site.

(c) A description of soil depths within the proposed permit area.

(d) Detailed information on soil quality, if you seek approval for the use of soil substitutes or supplements under § 780.12(e) of this chapter.

(e) The soil survey information required by § 785.17(b)(3) of this chapter if the reconnaissance inspection conducted under paragraph (a) of this section indicates that prime farmland may be present.

(f) Any other information that the regulatory authority finds necessary to determine land use capability and to prepare the reclamation plan.

§ 779.22 What information on land use and productivity must I include in my permit application?

Your permit application must contain a statement of the condition, capability, and productivity of the land within the proposed permit area, including—

(a)(1) A map and narrative identifying and describing the land use or uses in existence at the time of the filing of the application.

(2) A description of the historical uses of the land.

(3) For any previously mined area within the proposed permit area, a description of the land uses in existence before any mining, to the extent that such information is available.

(b) A narrative analysis of—

(1) The capability of the land before any mining to support a variety of uses, giving consideration to soil and foundation characteristics, topography, vegetative cover, and the hydrology of the proposed permit area; and

(2) The productivity of the proposed permit area before mining, expressed as average yield of food, fiber, forage, or wood products obtained under high levels of management, as determined by—

(i) Actual yield data; or

(ii) Yield estimates for similar sites based on current data from the U.S. Department of Agriculture, state agricultural universities, or appropriate state natural resources or agricultural agencies.

(3) The productivity of the proposed permit area before mining for fish and wildlife.

(c) Any additional information that the regulatory authority deems necessary to determine the condition, capability, and productivity of the land within the proposed permit area.

§ 779.24 What maps, plans, and cross-sections must I submit with my permit application?

(a) In addition to the maps, plans, and information required by other sections of this part, your permit application must include maps and, when appropriate, plans and cross-sections showing—

(1) All boundaries of lands and names of present owners of record of those lands, both surface and subsurface included in or contiguous to the proposed permit area.

(2) The boundaries of land within the proposed permit area upon which you have the legal right to enter and begin underground mining activities.

(3) The boundaries of all areas that you anticipate affecting over the estimated total life of the surface mining activities, with a description of the size, sequence, and timing of the mining of subareas for which you anticipate seeking additional permits or expansion of an existing permit in the future.

(4) The location and current use of all buildings on the proposed permit area or within 1,000 feet of the proposed permit area.

(5) The location of surface and subsurface manmade features within, passing through, or passing over the proposed permit area, including, but not limited to, highways, electric transmission lines, pipelines, constructed drainageways, irrigation ditches, and agricultural drainage tile fields.

(6) The location and boundaries of any proposed reference areas for determining the success of revegetation.

(7) The location and ownership of existing wells, springs, and other groundwater resources within the proposed permit and adjacent areas. You may provide ownership information in a table cross-referenced to a map if approved by the regulatory authority.

(8) The location and depth, if available, of each water well within the proposed permit and adjacent areas. You may provide information concerning depth in a table cross-referenced to a map if approved by the regulatory authority.

(9) The name, location, ownership, and description of all surface-water bodies and features, such as perennial, intermittent, and ephemeral streams; ponds, lakes, and other impoundments; wetlands; and natural drainageways, within the proposed permit and adjacent areas. To the extent appropriate, you may provide this information in a table cross-referenced to a map if approved by the regulatory authority.

(10) The locations of water supply intakes for current users of surface water flowing into, from, and within a hydrologic area defined by the regulatory authority.

(11) The location of any public water supplies and the extent of any associated wellhead protection zones located within one-half mile, measured horizontally, of the proposed permit area.

(12) The location of all existing or proposed discharges to any surface-water body within the proposed permit and adjacent areas.

(13) The location of any discharge into or from an active, inactive, or abandoned surface or underground mine, including, but not limited to, a mine-water treatment or pumping facility, that is hydrologically connected to the proposed permit area or that is

located within one-half mile, measured horizontally, of the proposed permit area.

(14) Each public road located in or within 100 feet of the proposed permit area.

(15) The boundaries of any public park and locations of any cultural or historical resources listed or eligible for listing in the National Register of Historic Places and known archeological sites within the permit and adjacent areas.

(16) Each cemetery that is located in or within 100 feet of the proposed permit area.

(17) Any land within the proposed permit area which is within the boundaries of any units of the National System of Trails or the Wild and Scenic Rivers System, including study rivers designated under section 5(a) of the Wild and Scenic Rivers Act.

(18) The elevations, locations, and geographic coordinates of test borings and core samplings. You may provide this information in a table cross-referenced to a map if approved by the regulatory authority.

(19) The location and extent of subsurface water, if encountered, within the proposed permit and adjacent areas. This information must include, but is not limited to, the estimated elevation of the water table, the areal and vertical distribution of aquifers, and portrayal of seasonal variations in hydraulic head in different aquifers. You must display this information on appropriately scaled cross-sections.

(20) The elevations, locations, and geographic coordinates of monitoring stations used to gather data on water quality and quantity, fish and wildlife, and other biological surveys in preparation of the application. You may provide this information in a table cross-referenced to a map if approved by the regulatory authority.

(21) The nature, depth, thickness, and commonly used names of the coal seams to be mined and of any coal or rider seams above the seam to be mined.

(22) Any coal crop lines within the permit and adjacent areas and the strike and dip of the coal to be mined.

(23) The location and extent of known workings of active, inactive, or abandoned underground mines within or underlying the proposed permit and adjacent areas.

(24) Any underground mine openings to the surface within the proposed permit and adjacent areas.

(25) The location and extent of existing or previously surface-mined areas within the proposed permit area.

(26) The location and dimensions of existing areas of spoil, coal mine waste, noncoal mine waste disposal sites, dams, embankments, other impoundments, and water treatment facilities within the proposed permit area.

(27) The location and depth (if available) of all conventional gas and oil wells within the proposed permit and adjacent areas, as well as any directional or horizontal drilling for hydrocarbon extraction operations, including those using hydraulic fracturing methods, within or underlying those areas. You may provide information concerning depth in a table cross-referenced to a map if approved by the regulatory authority.

(28) Other relevant information required by the regulatory authority.

(b) Maps, plans, and cross-sections required by paragraph (a) of this section must be—

(1) Prepared by, or under the direction of, and certified by a qualified registered professional engineer, a professional geologist, or in any state that authorizes land surveyors to prepare and certify such maps, plans, and cross-sections, a qualified registered professional land surveyor, with assistance from experts in related fields such as landscape architecture.

(2) Updated when required by the regulatory authority.

(c) The regulatory authority may require that you submit the materials required by this section in a digital format that includes all necessary metadata.

§ 779.25 [Reserved]

■ 22. Revise part 780 to read as follows:

PART 780—SURFACE MINING PERMIT APPLICATIONS—MINIMUM REQUIREMENTS FOR OPERATION AND RECLAMATION PLANS

Sec.

Authority: 30 U.S.C. 1201 *et seq.* and 54 U.S.C. 300101 *et seq.*

§ 780.1 Scope: What does this part do?

This part establishes the minimum requirements for the operation and reclamation plan portions of applications for a permit to conduct surface mining activities, except to the extent that part 785 of this subchapter establishes different requirements.

§ 780.2 What is the objective of this part?

The objective of this part is to ensure that you, the permit applicant, provide the regulatory authority with comprehensive and reliable information on how you propose to conduct surface mining activities and reclaim the disturbed area in compliance with the Act, this chapter, and the regulatory program.

§ 780.4 What responsibilities do I and government agencies have under this part?

(a) You, the permit applicant, must provide to the regulatory authority all information required by this part, except where specifically exempted in this part.

(b) State and federal governmental agencies must provide information needed for permit applications to the extent that this part specifically requires that they do so.

§ 780.10 Information collection.

In accordance with 44 U.S.C. 3501 *et seq.,* the Office of Management and Budget (OMB) has approved the information collection requirements of this part and assigned it control number 1029–xxxx. Sections 507 and 508 of SMCRA contain permit application requirements for surface coal mining activities, including a requirement that the application include an operation and reclamation plan. The regulatory authority uses this information to determine whether the proposed surface coal mining operation will achieve the environmental protection requirements of the Act and regulatory program. You, the permit applicant, must respond to obtain a benefit. A federal agency may not conduct or sponsor, and you are not required to respond to, a collection of information unless it displays a currently valid OMB control number.

§ 780.11 What must I include in the description of my proposed operations?

Your application must contain a description of the mining operations that you propose to conduct during the life of the mine within the proposed permit area, including, at a minimum, the following:

(a) A narrative description of the—

(1) Type and method of coal mining procedures and proposed engineering techniques.

(2) Anticipated annual and total number of tons of coal to be produced.

(3) Major equipment to be used for all aspects of the proposed operations.

(b) A narrative explaining the construction, modification, use, maintenance, and removal (unless you can satisfactorily explain why retention is necessary or appropriate for the postmining land use specified in the application under § 780.24 of this part) of the following facilities:

(1) Dams, embankments, and other impoundments.

(2) Overburden and soil handling and storage areas and structures.

(3) Coal removal, handling, storage, cleaning, and transportation areas and structures.

(4) Spoil, coal processing waste, and noncoal mine waste removal, handling, storage, transportation, and disposal areas and structures.

(5) Mine facilities.

(6) Water pollution control facilities.

§ 780.12 What must the reclamation plan include?

(a) *General requirements.* Your application must contain a plan for the reclamation of the lands to be disturbed within the proposed permit area. The plan must show how you will comply with the operation and reclamation requirements of the applicable regulatory program. At a minimum, the plan must include all information required under this part and part 785 of this chapter.

(b) *Reclamation timetable.* The reclamation plan must contain a detailed timetable for the completion of each major step in the reclamation process including, but not limited to—

(1) Backfilling.

(2) Grading.

(3) Restoration of the form of all perennial and intermittent stream segments through which you mine, either in their original location or as permanent stream-channel diversions.

(4) Soil redistribution.

(5) Planting.

(6) Demonstration of revegetation success.

(7) Restoration of the ecological function of all reconstructed perennial and intermittent stream segments, either in their original location or as permanent stream-channel diversions.

(8) Application for each phase of bond release under § 800.42 of this chapter.

(c) *Reclamation cost estimate.* The reclamation plan must contain a detailed estimate of the cost of reclamation, including both direct and indirect costs, of those elements of the proposed operations that are required to be covered by a performance bond under part 800 of this chapter, with supporting calculations for the estimates. You must use current standardized construction cost estimation methods and equipment cost guides to prepare this estimate.

(d) *Backfilling and grading plan.* (1) The reclamation plan must contain a plan for backfilling the mined area, compacting the backfill, and grading the disturbed area, with contour maps, models, or cross-sections that show in detail the anticipated final surface configuration of the proposed permit area, including drainage patterns, in accordance with §§ 816.102 through 816.107 of this chapter, using the best technology currently available. You must limit compaction to the minimum necessary to achieve stability requirements unless additional compaction is necessary to reduce infiltration to minimize leaching and discharges of parameters of concern.

(2) The backfilling and grading plan must describe in detail how you will conduct backfilling and related reclamation activities, including how you will handle acid-forming and toxic-forming materials, if present, to prevent the formation of acid or toxic drainage from acid-forming and toxic-forming materials within the overburden. You must explain how the method that you select will protect groundwater and surface water in accordance with § 816.38 of this chapter.

(e) *Soil handling plan*—(1) *General requirements.* (i) The reclamation plan must include a plan and schedule for removal, storage, and redistribution of topsoil, subsoil, and other material to be used as a final growing medium in accordance with § 816.22 of this chapter. It also must include a plan and schedule for removal, storage, and redistribution or other use of organic matter in accordance with § 816.22(f) of this chapter.

(ii) The plan submitted under paragraph (e)(1)(i) of this section must require that the B horizon, C horizon, and other underlying strata, or portions thereof, be removed and segregated, stockpiled, and redistributed to achieve the optimal rooting depths required to restore premining land use capability or to comply with the revegetation requirements of §§ 816.111 and 816.116 of this chapter.

(iii) The plan submitted under paragraph (e)(1)(i) of this section must explain how you will handle and store soil materials to avoid contamination by acid-forming or toxic-forming materials and to minimize deterioration of desirable soil characteristics.

(2) *Substitutes and supplements.* (i) This paragraph (e)(2) applies to you if you propose to use appropriate overburden materials as a supplement to or substitute for the existing topsoil or subsoil on the proposed permit area.

(ii) You must demonstrate, and the regulatory authority must find in writing, that—

(A)(*1*) The quality of the existing topsoil and subsoil is inferior to that of the best overburden materials available within the proposed permit area; or

(*2*) The quantity of the existing topsoil and subsoil is insufficient to provide the optimal rooting depth or to meet other growth requirements of the native species to be planted. In this case, the plan must require that all available existing topsoil and favorable subsoil, regardless of the amount, be removed, stored, and redistributed as part of the final growing medium.

(B) The use of the overburden materials that you have selected, in combination with or in place of the topsoil or subsoil, will result in a soil medium that is more suitable than the

existing topsoil and subsoil to sustain vegetation consistent with the postmining land use and the revegetation plan under paragraph (g) of this section and that will provide a rooting depth that is superior to the existing topsoil and subsoil.

(C) The overburden materials that you select for use as a soil substitute or supplement are the best materials available in the proposed permit area to support the native vegetation to be established or the crops to be planted.

(iii) The regulatory authority will specify the—

(A) Suitability criteria for substitutes and supplements.

(B) Chemical and physical analyses, field trials, or greenhouse tests that you must conduct to make the demonstration required by paragraph (e)(2)(ii) of this section.

(C) Sampling objectives and techniques and the analytical techniques that you must use for purposes of paragraph (e)(2)(iii)(B) of this section.

(iv) At a minimum, the demonstrations required by paragraph (e)(2)(ii) of this section must include—

(A) The physical and chemical soil characteristics and root zones needed to support the type of vegetation to be established on the reclaimed area.

(B) A comparison and analysis of the thickness, total depth, texture, percent coarse fragments, pH, thermal toxicity, and areal extent of the different kinds of soil horizons and overburden materials available within the proposed permit area, based upon a statistically valid sampling procedure.

(v) You must include a plan for testing and evaluating overburden materials during both removal and redistribution to ensure that only materials approved for use as soil substitutes or supplements are removed and redistributed.

(f) *Surface stabilization plan.* The reclamation plan must contain a plan for stabilizing road surfaces, redistributed soil materials, and other exposed surface areas to effectively control erosion and air pollution attendant to erosion in accordance with §§ 816.95, 816.150, and 816.151 of this chapter.

(g) *Revegetation plan.* (1) The reclamation plan must contain a plan for revegetation consistent with §§ 816.111 through 816.116 of this chapter, including, but not limited to, descriptions of—

(i) The schedule for revegetation of the area to be disturbed.

(ii) The site preparation techniques that you plan to use, including the measures that you will take to avoid or, when avoidance is not possible, to minimize and alleviate compaction of the root zone during backfilling, grading, soil redistribution, and planting.

(iii) What soil tests you will perform, together with a statement as to whether you will apply lime, fertilizer, or other amendments in response to those tests before planting or seeding.

(iv) The species that you will plant to achieve temporary erosion control or a description of other soil stabilization measures that you will implement in lieu of planting a temporary cover.

(v) The species that you will plant and the seeding and stocking rates and planting arrangements that you will use to achieve or complement the postmining land use and to enhance fish and wildlife habitat.

(vi) The planting and seeding techniques that you will use.

(vii) Whether you will apply mulch and, if so, the type of mulch and the method of application.

(viii) Whether you plan to conduct irrigation or apply fertilizer after the first growing season and, if so, to what extent and for what length of time.

(ix) Any normal husbandry practices that you plan to use in accordance with § 816.115(b) of this chapter.

(x) The standards and evaluation techniques that you propose to use to determine the success of revegetation in accordance with § 816.116 of this chapter.

(xi) The measures that you will take to avoid the establishment of invasive species on reclaimed areas or to control those species if they do become established.

(2) Except as provided in paragraphs (g)(4) and (5) of this section, the species and planting rates and arrangements selected as part of the revegetation plan must be designed to create a diverse, effective, permanent vegetative cover that is consistent with the native vegetative communities described in your permit application, as required by § 779.19 of this chapter, and that will meet the other requirements of paragraphs (a) and (b) of § 816.116 of this chapter.

(3) The species selected as part of the revegetation plan must—

(i) Be native to the area. The regulatory authority may approve the use of introduced species as part of the permanent vegetative cover for the site only if those species are both non-invasive and necessary to achieve the postmining land use.

(ii) Be capable of stabilizing the soil surface from erosion to the extent that control of erosion with herbaceous ground cover is consistent with establishment of a permanent vegetative cover that resembles native plant communities in the area.

(iii) Be compatible with the approved postmining land use.

(iv) Have the same seasonal characteristics of growth as the vegetative communities described in your permit application, as required by § 779.19 of this chapter.

(v) Be capable of self-regeneration and natural succession.

(vi) Be compatible with the plant and animal species of the area.

(vii) Meet the requirements of applicable state and federal seed, poisonous and noxious plant, and introduced species laws and regulations.

(4) The regulatory authority may grant an exception to the requirements of paragraphs (g)(3)(i), (iv), and (v) of this section when necessary to achieve a quick-growing, temporary, stabilizing cover on disturbed and regraded areas, and the species selected to achieve this purpose are consistent with measures to establish permanent vegetation.

(5) The regulatory authority may grant an exception to the requirements of paragraphs (g)(2), (g)(3)(i), (g)(3)(iv), and (g)(3)(v) of this section for those areas with a long-term, intensive, agricultural postmining land use.

(6) A professional forester or ecologist must develop and certify all revegetation plans that include the establishment of trees and shrubs. These plans must include site-specific planting prescriptions for canopy trees, understory trees and shrubs, and herbaceous ground cover compatible with establishment of those trees and shrubs. Each plan must use native species exclusively unless those species are inconsistent with the approved postmining land use and that land use is implemented before the entire bond amount for the area has been fully released under § 800.42(d) of this chapter.

(h) *Stream restoration plan.* If you propose to mine through a perennial or intermittent stream, the reclamation plan must explain in detail how and when you will restore both the form and the ecological function of the stream segment, either in its original location or as a permanent stream-channel diversion, in accordance with §§ 780.28 and 816.57 of this chapter.

(i) *Coal resource conservation plan.* The reclamation plan must describe the measures that you will employ to maximize the use and conservation of the coal resource while using the best technology currently available to maintain environmental integrity, as required by § 816.59 of this chapter.

(j) *Plan for disposal of noncoal waste materials.* The reclamation plan must describe—

(1) The type and quantity of noncoal waste materials that you anticipate disposing of within the proposed permit area.

(2) How you intend to dispose of noncoal waste materials in accordance with § 816.89 of this chapter.

(3) The locations of any proposed noncoal waste material disposal sites within the proposed permit area.

(4) The contingency plans that you have developed to preclude sustained combustion of combustible noncoal materials.

(k) *Management of mine openings, boreholes, and wells.* The reclamation plan must contain a description, including appropriate cross-sections and maps, of the measures that you will use to seal or manage mine openings, and to plug, case or manage exploration holes, boreholes, wells and other openings within the proposed permit area, in accordance with § 816.13 of this chapter.

(l) *Compliance with Clean Air Act and Clean Water Act.* The reclamation plan must describe the steps that you have taken or will take to comply with the requirements of the Clean Air Act (42 U.S.C. 7401 *et seq.*), the Clean Water Act (33 U.S.C. 1251 *et seq.*), and other applicable air and water quality laws and regulations and health and safety standards.

(m) *Consistency with land use plans and surface owner plans.* The reclamation plan must describe how the proposed operation is consistent with—

(1) All applicable state and local land use plans and programs.

(2) The plans of the surface landowner, to the extent that those plans are practicable and consistent with this chapter and with other applicable laws and regulations.

§ 780.13 What additional maps and plans must I include in the reclamation plan?

(a) In addition to the maps and plans required under § 779.24 and other provisions of this subchapter, your application must include maps, plans, and cross-sections of the proposed permit area showing—

(1) The lands that you propose to affect throughout the life of the operation, including the sequence and timing of surface mining activities and the sequence and timing of backfilling, grading, and other reclamation activities to be conducted on areas where the operation will disturb the land surface.

(2) Each area of land for which a performance bond or other equivalent guarantee will be posted under part 800 of this chapter.

(3) Any change that the proposed operations will cause in a facility or feature identified under § 779.24 of this chapter.

(4) All buildings, utility corridors, and facilities to be used or constructed within the proposed permit area, with identification of those facilities that you propose to retain as part of the postmining land use.

(5) Each coal storage, cleaning, processing, and loading area and facility.

(6) Each temporary storage area for soil, spoil, coal mine waste, and noncoal mine waste.

(7) Each water diversion, collection, conveyance, treatment, storage and discharge facility to be used, including the location of each point at which water will be discharged from the proposed permit area to a surface-water body and the name of that water body.

(8) Each disposal facility for coal mine waste and noncoal mine waste materials.

(9) Each feature and facility to be constructed to protect or enhance fish, wildlife, and related environmental values.

(10) Each explosive storage and handling facility.

(11) Location of each siltation structure, sedimentation pond, permanent water impoundment, refuse pile, and coal mine waste impoundment for which plans are required by § 780.25 of this part, and the location of each excess spoil fill for which plans are required under § 780.35 of this part.

(12) Each segment of a perennial or intermittent stream that you propose to mine through, bury, or divert.

(13) Each location in which you propose to restore a segment of a perennial or intermittent stream or construct a temporary or permanent stream-channel diversion.

(14) Each segment of a perennial or intermittent stream that you propose to enhance under the plan submitted in accordance with § 780.16 of this part.

(15) Location and geographic coordinates of each monitoring point for groundwater and surface water, and each point at which you propose to monitor the biological condition of perennial and intermittent streams.

(b) Except as provided in §§ 780.25(a)(2), 780.25(a)(3), 780.35, 816.74(c), and 816.81(c) of this chapter, maps, plans, and cross-sections required under paragraphs (a)(5), (6), (7), (10), and (11) of this section must be prepared by, or under the direction of, and certified by a qualified registered professional engineer, a professional geologist, or, in any state that authorizes land surveyors to prepare and certify maps, plans, and cross-sections, a qualified registered professional land surveyor, with assistance from experts in related fields such as landscape architecture.

(c) The regulatory authority may require that you submit the materials required by this section in a digital format.

§ 780.14 What requirements apply to the use of existing structures?

(a) Each application must contain a description of each existing structure proposed to be used in connection with or to facilitate the surface coal mining and reclamation operation. The description must include—

(1) The location of the structure.

(2) Plans of the structure and a description of its current condition.

(3) The approximate starting and ending dates of construction of the existing structure.

(4) A showing, including relevant monitoring data or other evidence, of whether the structure meets the performance standards of subchapter K (Permanent Program Standards) of this chapter or, if the structure does not meet the performance standards of subchapter K of this chapter, a showing of whether the structure meets the performance standards of subchapter B (Initial Program Standards) of this chapter.

(b) Each application must contain a compliance plan for each existing structure proposed to be modified or reconstructed for use in connection with or to facilitate the surface coal mining and reclamation operation. The compliance plan must include—

(1) Design specifications for the modification or reconstruction of the structure to meet the design and performance standards of subchapter K of this chapter.

(2) A construction schedule that includes dates for beginning and completing interim steps and final reconstruction.

(3) Provisions for monitoring the structure during and after modification or reconstruction to ensure that the performance standards of subchapter K of this chapter are met.

(4) A demonstration that there is no significant risk of harm to the environment or to public health or safety during modification or reconstruction of the structure.

§ 780.15 What plans for the use of explosives must I include in my application?

(a) *Blasting plan.* Each application must contain a blasting plan for the proposed permit area, explaining how

the applicant will comply with the requirements of §§ 816.61 through 816.68 of this chapter. This plan must include, at a minimum, information setting forth the limitations the operator will meet with regard to ground vibration and airblast, the bases for those limitations, and the methods to be applied in controlling the adverse effects of blasting operations.

(b) *Monitoring system.* Each application must contain a description of any system to be used to monitor compliance with the standards of § 816.67 including the type, capability, and sensitivity of any blast-monitoring equipment and proposed procedures and locations of monitoring.

(c) *Blasting near underground mines.* Blasting operations within 500 feet of active underground mines require approval of the state and federal regulatory authorities concerned with the health and safety of underground miners.

§ 780.16 What must I include in the fish and wildlife protection and enhancement plan?

(a) *General requirements.* Your application must include a fish and wildlife protection and enhancement plan that—

(1) Is consistent with the requirements of § 816.97 of this chapter.

(2) Is specific to the resources identified under § 779.20 of this chapter.

(3) Complies with the requirements of paragraphs (b) through (e) of this section.

(b) *Protection of threatened and endangered species.* You must describe how you will comply with the Endangered Species Act, 16 U.S.C. 1531 *et seq.,* including any species-specific protection and enhancement plans developed in accordance with that law.

(c) *Protection of other species.* You must describe how, to the extent possible using the best technology currently available, you will minimize disturbances and adverse impacts on fish, wildlife, and related environmental values. At a minimum, you must explain how you will—

(1) Time operations to avoid or minimize disruption of critical life cycle events for fish and wildlife, including migration, nesting, breeding, calving, and spawning.

(2) Retain forest cover and other native vegetation as long as possible and time the removal of that vegetation to minimize adverse impacts on aquatic and terrestrial species.

(3) To the extent possible, maintain an intact forested buffer at least 100 feet wide between surface disturbances and perennial and intermittent streams that are located in forested areas. The buffer width must be measured horizontally on a line perpendicular to the stream beginning at the bankfull elevation or, if there are no discernible banks, the centerline of the active channel.

(4) Locate and design sedimentation ponds, utilities, support facilities, roads, rail spurs, and other transportation facilities to avoid or minimize adverse impacts on fish, wildlife, and related environmental values.

(5) Periodically evaluate the impacts of the operation on fish, wildlife, and related environmental values in the permit and adjacent areas and use that information to modify operations or take other action to avoid or minimize adverse impacts on those values.

(6) Select non-invasive native species for revegetation that either promote or do not inhibit the long-term development of wildlife habitat.

(7) Avoid mining through perennial or intermittent streams or disturbing riparian habitat adjacent to those streams. When avoidance is not possible, minimize—

(i) The time during which mining and reclamation operations disrupt those streams or associated riparian habitat;

(ii) The length of the stream segments mined through; and

(iii) The amount of riparian habitat disturbed by the operation.

(8) Implement other appropriate conservation practices such as, but not limited to, those identified in the technical guides published by the Natural Resources Conservation Service.

(d) *Enhancement measures*—(1) *General requirements.* You must describe how you will use the best technology currently available to enhance fish, wildlife, and related environmental values both within and outside the area to be disturbed by mining activities, where practicable. Your permit application must either identify and describe the enhancement measures that you will implement, where practicable, or explain why implementation of those measures is not practicable. Potential enhancement measures include, but are not limited to—

(i) Using the backfilling and grading process to create postmining surface features and configurations, such as functional wetlands, of high value to fish and wildlife.

(ii) Designing and constructing permanent impoundments in a manner that will maximize their value to fish and wildlife.

(iii) Creating rock piles and other permanent landscape features of value to raptors and other wildlife for nesting and shelter, to the extent that those features are consistent with premining features, the surrounding topography, and the approved postmining land use.

(iv) Reestablishing native forests or other native plant communities, both within and outside the permit area. This may include restoring the native plant communities that existed before any mining, establishing native plant communities consistent with the native plant communities that are a part of the natural succession process, or establishing native plant communities that will support wildlife species of local, state, or national concern, including, but not limited to, species listed or proposed for listing as threatened or endangered on a state or national level.

(v) Establishing a vegetative corridor at least 100 feet wide along the banks of streams that lacked a buffer of this nature before mining. The corridor width should be measured horizontally on a line perpendicular to the stream beginning at the bankfull elevation or, if there are no discernible banks, the centerline of the active channel. Species selected for planting within the corridor must be comprised of species native to the area, including native plants adapted to and suitable for planting in riparian zones within the corridor. Whenever possible, you should establish this corridor along both banks of the stream.

(vi) Implementing conservation practices identified in publications, such as the technical guides published by the Natural Resources Conservation Service.

(vii) Permanently fencing livestock away from streams.

(viii) Installing perches and nest boxes.

(ix) Establishing conservation easements or deed restrictions, with an emphasis on preserving riparian vegetation and forested corridors along perennial and intermittent streams.

(x) Providing funding to cover long-term operation and maintenance costs that watershed organizations incur in treating long-term postmining discharges from previous mining operations.

(xi) Reclaiming previously mined areas located outside the area that you propose to disturb.

(xii) Implementing measures to reduce or eliminate existing sources of surface-water or groundwater pollution.

(2) *Additional enhancement requirements for operations with anticipated long-term adverse impacts.* (i) Your permit application must identify and describe the enhancement measures under paragraph (d)(1) of this

section that you will implement if your surface mining activities would result in the long-term loss of native forest, other native plant communities, or a segment of a perennial or intermittent stream.

(ii) The scope of the enhancement measures that you propose under paragraph (d)(2)(i) of this section must be commensurate with the magnitude of the long-term adverse impacts of the proposed operation. Whenever possible, the measures must be permanent.

(iii)(A) Enhancement measures proposed under paragraph (d)(2) of this section must be implemented within the watershed in which the proposed operation is located, unless opportunities for enhancement are not available within that watershed. In that case, you must propose to implement enhancement measures in the closest adjacent watershed in which enhancement opportunities exist, as approved by the regulatory authority.

(B) Each regulatory program must prescribe the size of the watershed for purposes of paragraph (d)(2)(iii)(A) of this section, using a generally-accepted watershed classification system.

(iv) The permit approved by the regulatory authority must include a condition requiring completion of the enhancement measures proposed under paragraph (d)(2) of this section.

(3) *Inclusion within permit area.* If the enhancement measures to be implemented under paragraphs (d)(1) and (2) of this section would involve more than a de minimis disturbance of the surface of land outside the area to be mined, you must include the land to be disturbed by those measures within the proposed permit area.

(e) *Fish and Wildlife Service review.* (1)(i) The regulatory authority must provide the protection and enhancement plan developed under this section to the applicable regional or field office of the U.S. Fish and Wildlife Service whenever the resource information submitted under § 779.20 of this chapter includes species listed as threatened or endangered under the Endangered Species Act of 1973, 16 U.S.C. 1531 *et seq.,* critical habitat designated under that law, or species proposed for listing as threatened or endangered under that law. The regulatory authority must provide the protection and enhancement plan to the Service no later than the time that it provides written notice of the permit application to the Service under § 773.6(a)(3)(ii) of this chapter.

(ii) When the resource information obtained under § 779.20 of this chapter does not include threatened or endangered species, designated critical habitat, or species proposed for listing as threatened or endangered, the regulatory authority must provide the protection and enhancement plan to the applicable regional or field office of the U.S. Fish and Wildlife Service only if the Service requests an opportunity to review and comment on that plan. The regulatory authority must provide the requested plan to the Service within 10 days of receipt of the request from the Service.

(2)(i) The regulatory authority must document its disposition of all comments from the Service that pertain to fish and wildlife or plants listed as threatened or endangered under the Endangered Species Act of 1973, 16 U.S.C. 1531 *et seq.,* or to critical habitat designated under that law.

(ii) If the regulatory authority does not agree with a species-specific protection measure or any other recommendation from the Service that pertains to fish and wildlife or plants listed as threatened or endangered under the Endangered Species Act of 1973, 16 U.S.C. 1531 *et seq.,* or to critical habitat designated under that law, the regulatory authority must explain the rationale for that decision in the disposition document prepared under paragraph (e)(2)(i) of this section. The regulatory authority must provide a copy of that document to the pertinent Service field office and OSMRE field office and must refrain from approving the permit application.

(iii) If the Service field office does not concur with the regulatory authority's decision under paragraph (e)(2)(ii) of this section and the regulatory authority and the Service field office are unable to reach agreement at that level, either the regulatory authority or the Service may elevate the issue through the chain of command of the regulatory authority, the Service, and OSMRE for resolution.

(iv) The regulatory authority may not approve the permit application until all issues are resolved in accordance with paragraph (e)(2)(iii) of this section and the regulatory authority receives written documentation from the Service that all issues have been resolved.

§ 780.18 [Reserved]

§ 780.19 What baseline information on hydrology, geology, and aquatic biology must I provide?

(a) *General requirements.* Your permit application must include information on the hydrology, geology, and aquatic biology of the proposed permit and adjacent areas in sufficient detail to assist in—

(1) Determining the probable hydrologic consequences of the operation upon the quality and quantity of surface water and groundwater in the proposed permit and adjacent areas, as required under § 780.20 of this part.

(2) Determining the nature and extent of both the hydrologic reclamation plan required under § 780.22 of this part and the monitoring plans required under § 780.23 of this part.

(3) Determining whether reclamation as required by this chapter can be accomplished.

(4) Preparing the cumulative hydrologic impact assessment under § 780.21 of this part, including an evaluation of whether the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area.

(b) *Groundwater information*—(1) *General requirements.* Your permit application must include information sufficient to document seasonal variations in the quality, quantity, and usage of groundwater, including all surface discharges, within the proposed permit and adjacent areas.

(2) *Underground mine pools.* If an underground mine pool is present within the proposed permit or adjacent areas, you must prepare an assessment of the characteristics of the mine pool, including seasonal changes in quality, quantity, and flow patterns, unless you demonstrate, and the regulatory authority finds, that the mine pool is not hydrologically connected to the proposed permit area. The determination of the probable hydrologic consequences of mining required under § 780.20 of this part also must include a discussion of the effect of the proposed mining operation on any underground mine pools within the proposed permit and adjacent areas.

(3) *Monitoring wells.* The regulatory authority must require the installation of properly-screened monitoring wells when necessary to document seasonal variations in the quality, quantity, and usage of groundwater.

(4) *Groundwater quality descriptions.* At a minimum, groundwater quality descriptions must include baseline information on—

(i) Major anions, including, at a minimum, bicarbonate, sulfate, and chloride.

(ii) Major cations, including, at a minimum, calcium, magnesium, sodium, and potassium.

(iii) The cation-anion balance of the parameters sampled in paragraphs (b)(4)(i) and (ii) of this section, plus any cation or anion that constitutes a significant percentage of the total ionic charge balance.

(iv) Ammonia.

(v) Arsenic.

(vi) Cadmium.

(vii) Copper.
(viii) Hot acidity.
(ix) Nitrogen.
(x) pH.
(xi) Selenium.
(xii) Specific conductance corrected to 25 °C.
(xiii) Total alkalinity.
(xiv) Total dissolved solids.
(xv) Total iron.
(xvi) Total manganese.
(xvii) Zinc.

(5) *Groundwater quantity descriptions.* At a minimum, groundwater quantity descriptions must include seasonal variations in approximate rates of groundwater discharge or usage and the depth to the water table in—

(i) Each coal seam to be mined.

(ii) Each water-bearing stratum above each coal seam to be mined.

(iii) Each potentially impacted stratum below the lowest coal seam to be mined.

(6) *Sampling requirements.* (i) You must establish monitoring wells or equivalent monitoring points at a sufficient number of locations within the proposed permit and adjacent areas to determine groundwater quality, quantity, and movement in each aquifer above or immediately below the lowest coal seam to be mined. At a minimum, for each aquifer, you must locate monitoring points—

(A) Upgradient and downgradient of the proposed permit area; and

(B) Within the proposed permit area.

(ii) To document seasonal variations in groundwater quality, you must collect samples from the locations identified in paragraph (b)(6)(i) of this section at equally spaced monthly intervals for a minimum of 12 consecutive months. You must analyze those samples for the parameters listed in paragraph (b)(4) of this section at the same frequency.

(iii) To document seasonal variations in groundwater quantity, you must take the measurements listed in paragraph (b)(5) of this section at each location identified in paragraph (b)(6)(i) of this section at equally spaced monthly intervals for a minimum of 12 consecutive months.

(iv) The regulatory authority must extend the minimum data collection period specified in paragraphs (b)(6)(ii) and (iii) of this section whenever data available from the National Oceanic and Atmospheric Administration or similar databases indicate that the region in which the proposed operation is located experienced severe drought (-3.0 or lower on the Palmer Drought Severity Index) or abnormally high precipitation (3.0 or higher on the Palmer Drought Severity Index) during the initial baseline data collection period. Baseline data collection must continue until the dataset includes 12 consecutive months without severe drought or abnormally high precipitation.

(c) *Surface-water information*—(1) *General requirements.* Your permit application must include information sufficient to document seasonal variation in surface-water quality, quantity, and usage within the proposed permit and adjacent areas.

(2) *Surface-water quality descriptions.* At a minimum, surface-water quality descriptions must include baseline information on—

(i) Major anions, including, at a minimum, bicarbonate, sulfate, and chloride.

(ii) Major cations, including, at a minimum, calcium, magnesium, sodium, and potassium.

(iii) The cation-anion balance of the parameters sampled in paragraphs (c)(2)(i) and (ii) of this section, plus any cation or anion that constitutes a significant percentage of the total ionic charge balance.

(iv) Ammonia.
(v) Arsenic.
(vi) Cadmium.
(vii) Copper.
(viii) Hot acidity.
(ix) Nitrogen.
(x) pH.
(xi) Selenium.
(xii) Specific conductance corrected to 25 °C.
(xiii) Total alkalinity.
(xiv) Total dissolved solids.
(xv) Total iron.
(xvi) Total manganese.
(xvii) Total suspended solids.
(xviii) Zinc.
(xix) Any other parameter for which effluent limitations guidelines have been established under 40 CFR part 434.

(3) *Surface-water quantity descriptions.* (i) At a minimum, surface-water quantity descriptions for perennial, intermittent, and ephemeral streams and other discharges within the proposed permit and adjacent areas must include—

(A) Baseline information on peak-flow magnitude and frequency.

(B) Usage data for existing uses and anticipated usage for all reasonably foreseeable uses of each stream.

(C) Seasonal flow variations.

(ii) All flow measurements under paragraph (c)(3)(i) of this section must be made using generally-accepted professional techniques approved by the regulatory authority. All techniques must be repeatable and must produce consistent results on successive measurements. Visual observations are not acceptable.

(4) *Sampling requirements.* (i) You must establish monitoring points at a sufficient number of locations within the proposed permit and adjacent areas to determine the quality and quantity of water in streams within those areas. At a minimum, you must locate monitoring points—

(A) Upgradient and downgradient of the proposed permit area in each perennial and intermittent stream within the proposed permit and adjacent areas; and

(B) In a representative number of ephemeral streams within the proposed permit area.

(ii) To document seasonal variations in surface-water quality, you must collect samples from the locations identified in paragraph (c)(4)(i) of this section at equally spaced monthly intervals for a minimum of 12 consecutive months. You must analyze those samples for the parameters listed in paragraph (c)(2) of this section at the same frequency.

(iii) To document seasonal variations in surface-water quantity, you must take the measurements listed in paragraph (c)(3) of this section at each location identified in paragraph (c)(4)(i) of this section at equally spaced monthly intervals for a minimum of 12 consecutive months.

(iv) The regulatory authority must extend the minimum data collection period specified in paragraphs (c)(4)(ii) and (iii) of this section whenever data available from the National Oceanic and Atmospheric Administration or similar databases indicate that the region in which the proposed operation is located experienced severe drought (-3.0 or lower on the Palmer Drought Severity Index) or abnormally high precipitation (3.0 or higher on the Palmer Drought Severity Index) during the initial baseline data collection period. Baseline data collection must continue until the dataset includes 12 consecutive months without severe drought or abnormally high precipitation.

(5) *Precipitation measurements.* You must provide records of precipitation amounts for the proposed permit area, using on-site, self-recording devices. Precipitation records must be adequate to generate and calibrate a hydrologic model of the site. The regulatory authority will determine whether you must create such a model.

(6) *Stream assessments.* You must map and separately identify all perennial, intermittent, and ephemeral streams within the proposed permit and adjacent areas and include an assessment of those streams. At a minimum, the assessment must include—

(i) The baseline stream pattern, profile, and dimensions, with measurements of channel slope, sinuosity, water depth, alluvial groundwater depth, depth to bedrock, bankfull depth, bankfull width, width of the flood-prone area, and dominant in-stream substrate at a scale and frequency adequate to characterize all stream segments.

(ii) A description of riparian zone vegetation, including—

(A) Any hydrophytic vegetation within and adjacent to the stream channel.

(B) The percentage of the riparian zone that is forested.

(C) The percentage of channel canopy coverage.

(iii) The biological condition of each stream segment, to the extent required by paragraph (e) of this section.

(iv) The location of the channel head on terminal reaches of each stream segment.

(v) The location of transition points from ephemeral to intermittent and from intermittent to perennial, when applicable.

(vi) Identification of all stream segments within the proposed permit and adjacent areas that appear on the list of impaired surface waters prepared under section 303(d) of the Clean Water Act. You must identify the stressors and associated total maximum daily loads for those stream segments, if applicable.

(d) *Additional information for discharges from previous coal mining operations.* If the proposed permit and adjacent areas contain any discharges from previous surface or underground coal mining operations, you must sample those discharges during low-flow conditions of the receiving stream on a one-time basis and analyze the samples for the parameters listed in paragraph (c)(2) of this section and for both total and dissolved fractions of the following parameters—

(1) Aluminum.
(2) Arsenic.
(3) Barium.
(4) Beryllium.
(5) Cadmium.
(6) Copper.
(7) Lead.
(8) Mercury.
(9) Nickel.
(10) Selenium.
(11) Silver.
(12) Thallium.
(13) Zinc.

(e) *Biological condition information.* (1) Except as provided in paragraph (h) of this section, your permit application must include an assessment of the biological condition of—

(i) Each perennial and intermittent stream within the proposed permit area.

(ii) Each perennial and intermittent stream within the adjacent area that would receive discharges from the proposed operation.

(iii) A representative sample of ephemeral streams within both the proposed permit area and the adjacent area that would receive discharges from the proposed operation.

(2) In conducting this assessment, you must use a multimetric bioassessment protocol approved by the state or tribal agency responsible for preparing the water quality inventory required under section 305(b) of the Clean Water Act, or other scientifically-valid multimetric bioassessment protocol used by agencies responsible for implementing the Clean Water Act, modified as necessary to meet the following requirements. At a minimum, the protocol must—

(i) Be based upon the measurement of an appropriate array of aquatic organisms, including identification of benthic macroinvertebrates to the genus level.

(ii) Result in the calculation of index values for both habitat and macroinvertebrates.

(iii) Provide a correlation of index values to the capability of the stream to support designated uses under section 101(a) or 303(c) of the Clean Water Act, as well as any other existing or reasonably foreseeable uses.

(f) *Geologic information.* (1) Your application must include a description of the geology of the proposed permit and adjacent areas down to and including the deeper of either the stratum immediately below the lowest coal seam to be mined or any aquifer below the lowest coal seam to be mined that may be adversely impacted by mining. The description must include—

(i) The areal and structural geology of the proposed permit and adjacent areas.

(ii) Other parameters that may influence the required reclamation.

(iii) An explanation of how the areal and structural geology and other parameters affect the occurrence, availability, movement, quantity, and quality of potentially impacted surface water and groundwater.

(2) The description required by paragraph (f)(1) of this section must be based on all of the following—

(i) The cross-sections, maps, and plans required by § 779.24 of this chapter.

(ii) The information obtained under paragraphs (f)(3) and (f)(4) of this section.

(iii) Geologic literature and practices.

(3) For any portion of the proposed permit area in which the strata down to the coal seam or seams to be mined will be removed or are already exposed, you must collect and analyze samples collected from test borings; drill cores; or fresh, unweathered, uncontaminated samples from rock outcrops, down to and including the deeper of either the stratum immediately below the lowest coal seam to be mined or any aquifer below the lowest seam to be mined that may be adversely impacted by mining. Your application must include the following data and analyses:

(i) Logs showing the lithologic characteristics, including physical properties and thickness of each stratum, and the location of any groundwater encountered.

(ii) Chemical analyses identifying those strata that may contain acid-forming materials, toxic-forming materials, or alkalinity-producing materials and the extent to which each stratum contains those materials.

(iii) Chemical analyses of the coal seam for acid-forming or toxic-forming materials, including, but not limited to, total sulfur and pyritic sulfur.

(4) You must provide any additional geologic information and analyses that the regulatory authority determines to be necessary to protect the hydrologic balance or to meet the performance standards of this chapter.

(5) You may request the regulatory authority to waive the requirements of paragraph (f)(3) of this section, in whole or in part. The regulatory authority may grant the waiver request only after finding in writing that the collection and analysis of such data is unnecessary because other representative information is available to the regulatory authority in a satisfactory form.

(g) *Cumulative impact area information.* (1) The regulatory authority will obtain the hydrologic, geologic, and biological information necessary to assess the probable cumulative hydrologic impacts of the proposed operation and all anticipated mining on surface-water and groundwater systems in the cumulative impact area, as required by § 780.21 of this part, from the appropriate federal or state agencies, to the extent that the information is available from those agencies.

(2) If the information identified in paragraph (g)(1) of this section is not available from other federal or state agencies, you must gather and submit this information to the regulatory authority as part of the permit application before the regulatory authority may approve your application. As an alternative to collecting new information, you may submit data and analyses from nearby mining operations if the site of those operations is

representative of the proposed operations in terms of topography, hydrology, geology, geochemistry, and method of mining.

(3) The regulatory authority may not approve the permit application until the necessary hydrologic, geologic, and biological information for the cumulative impact area is available, either from other agencies or from you, the applicant.

(h) *Exception for operations that avoid streams.* Upon your request, the regulatory authority may waive the biological condition information requirements of paragraph (e) of this section if you demonstrate, and if the regulatory authority finds in writing, that your operation will not—

(1) Mine through or bury a perennial or intermittent stream;

(2) Create a point-source discharge to any perennial, intermittent, or ephemeral stream; or

(3) Modify the base flow of any perennial or intermittent stream.

(i) *Coordination with Clean Water Act agencies.* The regulatory authority will consult in a timely manner with the agencies responsible for issuing permits, authorizations, and certifications under the Clean Water Act and make best efforts to minimize differences in baseline data collection points and parameters and to share data to the extent practicable and consistent with each agency's mission, statutory requirements, and implementing regulations.

(j) *Corroboration of baseline data.* The regulatory authority must either corroborate a sample of the baseline information in your application or arrange for a third party to conduct the corroboration at your expense. Corroboration may include, but is not limited to, simultaneous sample collection and analysis, use of field measurements, or comparison of application data with application or monitoring data from adjacent operations.

(k) *Permit nullification for inaccurate information.* If the regulatory authority issues a permit on the basis of what it later determines to be substantially inaccurate baseline information, the permit will be void from the date of issuance and have no legal effect. You must cease mining-related activities and immediately begin to reclaim the disturbed area upon notification by the regulatory authority that the permit is void under this paragraph.

§ 780.20 How must I prepare the determination of the probable hydrologic consequences of my proposed operation (PHC determination)?

(a) *Content of PHC determination.* Your permit application must contain a determination of the probable hydrologic consequences of the proposed operation upon the quality and quantity of surface water and groundwater and upon the biological condition of perennial, intermittent, and ephemeral streams under seasonal flow conditions for the proposed permit and adjacent areas. You must base the PHC determination on an analysis of the baseline hydrologic, geologic, biological, and other information required under § 780.19 of this part. It must include findings on:

(1) Whether the operation may cause material damage to the hydrologic balance outside the permit area.

(2) Whether acid-forming or toxic-forming materials are present that could result in the contamination of surface water or groundwater.

(3) Whether the proposed operation may result in contamination, diminution, or interruption of an underground or surface source of water within the proposed permit or adjacent areas that is used for a domestic, agricultural, industrial, or other legitimate purpose.

(4) Whether the proposed operation will intercept aquifers in overburden strata or aquifers in underground mine voids (mine pools) or create aquifers in spoil placed in the backfilled area and, if so, what impacts the operation would have on those aquifers, both during mining and after reclamation, and the effect of those impacts on the hydrologic balance.

(5) What impact the proposed operation will have on:

(i) Sediment yield and transport from the area to be disturbed.

(ii) Water quality within the proposed permit and adjacent areas, including, at a minimum—

(A) Major anions including, at a minimum, bicarbonate, sulfate, and chloride.

(B) Major cations, including, at a minimum, calcium, magnesium, sodium, and potassium.

(C) Hot acidity.

(D) pH.

(E) Selenium.

(F) Specific conductance corrected to 25 °C.

(G) Total alkalinity.

(H) Total dissolved solids.

(I) Total iron.

(J) Total manganese.

(K) Total suspended solids.

(L) Other water quality parameters of local importance, as determined by a review of the baseline information required under § 780.19 of this part.

(iii) Flooding and precipitation runoff patterns and characteristics.

(iv) Peak-flow magnitude and frequency for perennial, intermittent, and ephemeral streams within the proposed permit and adjacent areas.

(v) Seasonal variations in streamflow.

(vi) The availability of groundwater and surface water, including the impact of any diversion of surface or subsurface flows to underground mine workings or any changes in watershed size as a result of the postmining surface configuration.

(vii) The biological condition of perennial, intermittent, and ephemeral streams within the proposed permit and adjacent areas.

(viii) Other characteristics as required by the regulatory authority.

(b) *Supplemental information.* (1) The regulatory authority must require that you, the applicant, submit supplemental information if the PHC determination required by paragraph (a) of this section indicates that one of the following conditions exists:

(i) The proposed operation may result in adverse impacts to the hydrologic balance either within or outside the proposed permit area.

(ii) The proposed operation may result in adverse impacts to the biological condition of a perennial or intermittent stream within the proposed permit or adjacent areas.

(iii) Acid-forming or toxic-forming material is present that may result in the contamination of either groundwater or surface water used as a water supply.

(2) The supplemental information required under paragraph (b)(1) of this section must be adequate to fully evaluate the probable hydrologic consequences of the proposed operation and to plan remedial and reclamation activities. It may include, but is not limited to, additional drilling, geochemical analyses of overburden materials, aquifer tests, hydrogeologic analyses of the water-bearing strata, analyses of flood flows, or analyses of other characteristics of water quality or quantity, including the stability of underground mine pools that might be affected by the proposed operation.

(c) *Subsequent reviews of PHC determinations.* (1) The regulatory authority must review each application for a permit revision to determine whether a new or updated PHC determination is needed.

(2) The regulatory authority must require that you prepare a new or updated PHC determination if the review under paragraph (c)(1) of this section finds that one is needed.

§ 780.21 What requirements apply to preparation and review of the cumulative hydrologic impact assessment (CHIA)?

(a) *General requirements.* (1) The regulatory authority must prepare a written assessment of the probable cumulative hydrologic impacts of the proposed operation and all anticipated mining upon surface-water and groundwater systems in the cumulative impact area. This assessment, which is known as the CHIA, must be sufficient to determine, for purposes of permit approval, whether the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area.

(2) In preparing the CHIA, the regulatory authority will consider relevant information on file for other mining operations located within the cumulative impact area or in similar watersheds.

(3) As provided in § 780.19(g) of this part, the regulatory authority may not approve your permit application until it receives the hydrologic, geologic, and biological information needed to prepare the CHIA, either from other federal and state agencies or from you.

(b) *Contents.* At a minimum, the CHIA must include—

(1) A map of the cumulative impact area. At a minimum, the map must identify and display—

(i) Any difference in the boundaries of the cumulative impact area for groundwater and surface water.

(ii) The locations of all previous, current, and anticipated surface and underground mining.

(iii) The locations of all baseline data collection sites within the proposed permit and adjacent areas under § 780.19 of this part.

(iv) Designated uses of surface water under section 101(a) or 303(c) of the Clean Water Act.

(2) A description of all previous, existing, and anticipated surface and underground coal mining within the cumulative impact area, including, at a minimum, the coal seam or seams mined, the extent of mining, and the reclamation status of each operation.

(3) A description of baseline hydrologic information for the proposed permit and adjacent areas under § 780.19 of this part, including—

(i) The quality and quantity of surface water and groundwater and seasonal variations therein.

(ii) Quantitative information about existing usage of surface water and groundwater, as well as information defining the quality of water required for each existing and reasonably foreseeable use of groundwater and surface water and each designated use of surface water under section 101(a) or 303(c) of the Clean Water Act.

(iii) A description and map of the local and regional groundwater systems.

(iv) The biological condition of perennial, intermittent, and ephemeral streams.

(4) A discussion of any potential concerns identified in the PHC determination required under § 780.20 of this part and how those concerns have been or will be resolved.

(5) A qualitative and quantitative assessment of how all anticipated surface and underground mining may impact the quality of surface water and groundwater in the cumulative impact area, expressed in terms of each baseline parameter identified under § 780.19 of this part.

(6) Criteria defining material damage to the hydrologic balance outside the permit area on a site-specific basis. These criteria must—

(i) Be expressed in numerical terms for each parameter of concern.

(ii) Take into consideration the biological requirements of any species listed as threatened or endangered under the Endangered Species Act when those species or designated critical habitat are present within the cumulative impact area.

(iii) Identify the portion of the cumulative impact area to which the criteria apply and locations at which impacts will be monitored. The regulatory authority may establish different criteria for subareas within the cumulative impact area when appropriate.

(iv) Be incorporated into the permit.

(7) An assessment of how all anticipated surface and underground mining may affect groundwater movement and availability within the cumulative impact area.

(8) An evaluation, with references to supporting data and analyses, of whether the CHIA will support a finding that the operation has been designed to prevent material damage to the hydrologic balance outside the permit area. To support this finding, the CHIA must include the following determinations, with appropriate documentation:

(i) During all phases of mining and reclamation and at all times of the year, variations in streamflow and groundwater availability resulting from the operation, as well as variations in the amount and concentration of parameters of concern in discharges from the operation to groundwater and surface water, will not—

(A) Result in conversion of a perennial or intermittent stream to an ephemeral stream or conversion of a perennial stream to an intermittent stream. Conversion of an intermittent stream to a perennial stream or conversion of an ephemeral stream to an intermittent or perennial stream may be acceptable, provided the conversion would not disrupt or preclude any existing, reasonably foreseeable, or designated use of the stream under section 101(a) or 303(c) of the Clean Water Act and would not adversely impact threatened or endangered species or designated critical habitat in violation of the Endangered Species Act.

(B) Result in an exceedance of applicable water quality standards in any stream located outside the permit area.

(C) Disrupt or preclude any existing or reasonably foreseeable use of surface water outside the permit area or any designated use of surface water under section 101(a) or 303(c) of the Clean Water Act outside the permit area, except as provided in §§ 780.22(b) and 816.40 of this chapter.

(D) Disrupt or preclude any existing or reasonably foreseeable use of groundwater outside the permit area, except as provided in §§ 780.22(b) and 816.40 of this chapter.

(ii) The operation has been designed to ensure that neither the mining operation nor the final configuration of the reclaimed area will result in changes in the size or frequency of peak flows from precipitation events or thaws that would cause an increase in damage from flooding, when compared with premining conditions.

(iii) Perennial and intermittent streams located outside the permit area but within the cumulative impact area will continue to have sufficient base flow and recharge capacity to maintain their premining flow regime; *i.e.,* perennial stream segments will retain perennial flows and intermittent stream segments will retain intermittent flows both during and after mining and reclamation. Conversion of an intermittent stream to a perennial stream or conversion of an ephemeral stream to an intermittent or perennial stream may be acceptable, provided the conversion would not disrupt or preclude any existing, reasonably foreseeable, or designated use of the stream under section 101(a) or 303(c) of the Clean Water Act and would not adversely impact threatened or endangered species or designated critical habitat in violation of the Endangered Species Act.

(iv) The operation has been designed to protect the quantity and quality of water in any aquifer that significantly ensures the prevailing hydrologic balance.

(c) *Subsequent reviews.* (1) The regulatory authority must review each application for a significant permit revision to determine whether a new or updated CHIA is needed. The regulatory authority must document the review, including the analysis and conclusions, together with the rationale for the conclusions, in writing.

(2)(i) The regulatory authority must reevaluate the CHIA during the permit renewal process to determine whether the CHIA remains accurate and whether the material damage criteria in the CHIA and the permit are adequate to ensure that material damage to the hydrologic balance outside the permit area will not occur. This evaluation must include a review of all water monitoring data from both this operation and all other coal mining operations within the cumulative impact area.

(ii) If the permit has a term longer than 5 years, the regulatory authority must conduct the review required by paragraph (c)(2)(i) of this section at intervals not to exceed 5 years.

(3) The regulatory authority must prepare a new or updated CHIA if the review conducted under paragraph (c)(1) or (2) of this section finds that one is needed.

§ 780.22 What information must I include in the hydrologic reclamation plan and what information must I provide on alternative water sources?

(a) *Hydrologic reclamation plan.* Your permit application must include a plan, with maps and descriptions, that demonstrates how the proposed operation will comply with the applicable provisions of subchapter K of this chapter that relate to protection of the hydrologic balance. The plan must—

(1) Be specific to local hydrologic conditions.

(2) Include preventive or remedial measures for any potential adverse hydrologic consequences identified in the PHC determination prepared under § 780.20 of this part. These measures must describe the steps that you will take during mining and reclamation through final bond release under § 800.42(d) of this chapter to—

(i) Minimize disturbances to the hydrologic balance within the proposed permit and adjacent areas.

(ii) Prevent material damage to the hydrologic balance outside the proposed permit area.

(iii) Meet applicable water quality laws and regulations.

(iv) Protect the rights of existing water users in accordance with paragraph (b) of this section and § 816.40 of this chapter.

(v) Avoid acid or toxic discharges to surface water and avoid or, if avoidance is not possible, minimize degradation of groundwater.

(vi) Prevent, to the extent possible using the best technology currently available, additional contributions of suspended solids to streamflow or to runoff outside the proposed permit area.

(vii) Provide water-treatment facilities when needed.

(viii) Control surface-water runoff in accordance with § 780.29 of this part.

(ix) Restore the approximate premining recharge capacity.

(3) Address the impacts of any transfers of water among active and abandoned mines within the proposed permit and adjacent areas.

(4) Describe the steps that you will take during mining and reclamation through final bond release under § 800.42(d) of this chapter to protect and enhance aquatic life and related environmental values to the extent possible using the best technology currently available.

(b) *Alternative water source information.* (1) If the PHC determination prepared under § 780.20 of this part indicates that the proposed mining operation may result in contamination, diminution, or interruption of an underground or surface source of water within the proposed permit or adjacent areas that is used for a domestic, agricultural, industrial, or other legitimate purpose, your application must demonstrate that alternative water sources are both available and feasible to develop. The alternative water sources must be of suitable quality and sufficient in quantity to support existing premining uses and approved postmining land uses.

(2) If you cannot identify an alternative water source that is both suitable and available, you must modify your application to prevent the proposed operation from contaminating, interrupting, or diminishing any water supply protected under § 816.40 of this chapter.

(3)(i) When a suitable alternative water source is available, your operation plan must require that the alternative water supply be developed and installed on a permanent basis before your operation may adversely affect an existing water supply protected under § 816.40 of this chapter.

(ii) Paragraph (b)(3)(i) of this section will not apply immediately if you demonstrate, and the regulatory authority finds, that the proposed operation also would adversely affect the replacement supply. In that case, your plan must require provision of a temporary replacement water supply until it is safe to install the permanent replacement water supply required under paragraph (b)(3)(i) of this section.

(4) Your application must describe how you will provide both temporary and permanent replacements for any unexpected losses of water supplies protected under § 816.40 of this chapter.

§ 780.23 What information must I include in plans for the monitoring of groundwater, surface water, and the biological condition of streams during and after mining?

(a) *Groundwater monitoring plan*—(1) *General requirements.* Your permit application must include a groundwater monitoring plan adequate to evaluate the impacts of the mining operation on groundwater in the proposed permit and adjacent areas and to determine in a timely manner whether corrective action is needed to prevent the operation from causing material damage to the hydrologic balance outside the permit area. The plan must—

(i) Identify the parameters to be monitored.

(ii) Specify the sampling frequency for each parameter.

(iii) Establish a sufficient number of appropriate monitoring locations to evaluate the accuracy of the findings in the PHC determination, to identify adverse trends, and to determine, in a timely fashion, whether corrective action is needed to prevent material damage to the hydrologic balance outside the permit area. At a minimum, the plan must include—

(A) For each aquifer above or immediately below the lowest coal seam to be mined, monitoring wells or equivalent monitoring points located upgradient and downgradient of the proposed operation.

(B) Monitoring wells placed in backfilled portions of the permit area after backfilling and grading of all or a portion of the permit area is completed, unless you demonstrate, and the regulatory authority finds in writing, that wells in the backfilled area are not necessary to determine or predict the future impact of the mining operation on groundwater quality.

(C) Monitoring wells in any existing underground mine workings that would have a direct hydrological connection to the proposed operation.

(iv) Describe how the monitoring data will be used to—

(A) Determine the impacts of the operation upon the hydrologic balance.

(B) Determine the impacts of the operation upon the biological condition of perennial and intermittent streams within the permit and adjacent areas.

(C) Prevent material damage to the hydrologic balance outside the permit area.

(v) Describe how the water samples will be collected, preserved, stored, transmitted for analysis, and analyzed in accordance with the sampling, analysis, and reporting requirements of paragraphs (a) and (b) of § 777.13 of this chapter.

(2) *Parameters*—(i) *General criteria for selection of parameters.* The plan must provide for the monitoring of parameters that could be affected by the proposed operation if those parameters relate to the—

(A) Findings and predictions in the PHC determination prepared under § 780.20 of this part.

(B) Biological condition of perennial and intermittent streams and other surface-water bodies that receive discharges from groundwater within the proposed permit and adjacent areas.

(C) Suitability of the groundwater for existing and reasonably foreseeable uses.

(D) Suitability of the groundwater to support the premining and postmining land uses.

(ii) *Minimum requirements.* At a minimum, the plan must require that the following parameters be measured at each location every three months, with data submitted to the regulatory authority at the same frequency:

(A) Major anions, including, at a minimum, bicarbonate, chloride, and sulfate.

(B) Major cations, including, at a minimum, calcium, magnesium, potassium, and sodium.

(C) The cation-anion balance of the parameters sampled in paragraphs (a)(2)(ii)(A) and (B) of this section, plus any cation or anion that constitutes a significant percentage of the total ionic charge balance.

(D) Ammonia.

(E) Arsenic.

(F) Cadmium.

(G) Copper.

(H) Hot acidity.

(I) Nitrogen.

(J) pH.

(K) Selenium.

(L) Specific conductance corrected to 25 °C.

(M) Total alkalinity.

(N) Total dissolved solids.

(O) Total iron.

(P) Total manganese.

(Q) Zinc.

(R) Water levels, discharge rates, or yield rates.

(S) Any parameter listed in § 780.19(d) of this part, if detected by the sampling conducted under that paragraph.

(T) Any other parameters of local significance, as determined by the regulatory authority, based upon the information and analyses required under §§ 780.19 through 780.21 of this part.

(3) *Regulatory authority review and action.* (i) Upon completing the technical review of the application, the regulatory authority may require that you revise the plan to increase the frequency of monitoring, to require monitoring of additional parameters, or to require monitoring at additional locations, if the additional requirements would contribute to protection of the hydrologic balance.

(ii) After completing preparation of the cumulative hydrologic impact assessment required under § 780.21 of this part, the regulatory authority must reconsider the adequacy of the monitoring plan and require that you make any necessary changes. At a minimum, the plan must require monitoring of all parameters for which the regulatory authority has established material damage criteria pursuant to the cumulative hydrologic impact assessment.

(4) *Exception.* If you can demonstrate, on the basis of the PHC determination prepared under § 780.20 of this part or other available information that a particular water-bearing stratum in the proposed permit and adjacent areas has no existing or foreseeable use for agricultural or other human purposes or for fish and wildlife purposes and does not serve as an aquifer that significantly ensures the hydrologic balance within the cumulative impact area, the regulatory authority may waive monitoring of that stratum.

(b) *Surface-water monitoring plan*—(1) *General requirements.* Your permit application must include a surface-water monitoring plan adequate to evaluate the impacts of the mining operation on surface water in the proposed permit and adjacent areas and to determine in a timely manner whether corrective action is needed to prevent the operation from causing material damage to the hydrologic balance outside the permit area. The plan must—

(i) Identify the surface-water quantity and quality parameters to be monitored.

(ii) Require on-site measurement of precipitation amounts at specified locations within the permit area, using self-recording devices. Measurement of precipitation amounts must continue through Phase II bond release under § 800.42(c) of this chapter or for any longer period specified by the regulatory authority.

(iii) Specify the sampling frequency for each parameter to be monitored.

(iv) Establish a sufficient number of appropriate monitoring locations to evaluate the accuracy of the findings in the PHC determination, to identify adverse trends, and to determine, in a timely fashion, whether corrective action is needed to prevent material damage to the hydrologic balance outside the permit area. At a minimum, the plan must include—

(A) Monitoring of point-source discharges from the proposed operation; and

(B) Monitoring locations upgradient and downgradient of the proposed permit area in each perennial and intermittent stream within the proposed permit and adjacent areas.

(v) Describe how the monitoring data will be used to—

(A) Determine the impacts of the operation upon the hydrologic balance.

(B) Determine the impacts of the operation upon the biological condition of perennial and intermittent streams and other surface-water bodies within the proposed permit and adjacent areas.

(C) Prevent material damage to the hydrologic balance outside the permit area.

(vi) Describe how the water samples will be collected, preserved, stored, transmitted for analysis, and analyzed in accordance with the sampling, analysis, and reporting requirements of paragraphs (a) and (b) of § 777.13 of this chapter.

(2) *Parameters*—(i) *General criteria for selection of parameters.* The plan must provide for the monitoring of parameters that could be affected by the proposed operation if those parameters relate to the—

(A) Applicable effluent limitation guidelines under 40 CFR part 434.

(B) Findings and predictions in the PHC determination prepared under § 780.20 of this part.

(C) Surface-water runoff control plan prepared under § 780.29 of this part.

(D) Biological condition of perennial or intermittent streams or other surface-water bodies within the proposed permit and adjacent areas.

(E) Suitability of the surface water for existing and reasonably foreseeable uses, as well as designated uses under section 101(a) or 303(c) of the Clean Water Act.

(F) Suitability of the surface water to support the premining and postmining land uses.

(ii) *Minimum requirements for monitoring locations other than point-source discharges.* For all monitoring locations other than point-source discharges, the plan must require that the following parameters be measured at each location at least every 3 months, with data submitted to the regulatory authority at the same frequency:

(A) Flow rates: The plan must require use of generally-accepted professional flow measurement techniques. Visual observations are not acceptable.

(B) Major anions, including, at a minimum, bicarbonate, chloride, and sulfate.

(C) Major cations, including, at a minimum, calcium, magnesium, potassium, and sodium.

(D) The cation-anion balance of the parameters sampled in paragraphs (b)(2)(ii)(B) and (C) of this section, plus any cation or anion that constitutes a significant percentage of the total ionic charge balance.

(E) Ammonia.

(F) Arsenic.

(G) Cadmium.

(H) Copper.

(I) Hot acidity.

(J) Nitrogen.

(K) pH.

(L) Selenium.

(M) Specific conductance corrected to 25 °C.

(N) Total alkalinity.

(O) Total dissolved solids.

(P) Total iron.

(Q) Total manganese.

(R) Total suspended solids.

(S) Zinc.

(T) Any parameter listed in § 780.19(d) of this part, if detected by the sampling conducted under that paragraph.

(U) Any other parameters of local significance, as determined by the regulatory authority, based upon the information and analyses required under §§ 780.19 through 780.21 of this part.

(iii) *Minimum requirements for point-source discharges.* For point-source discharges, the plan must—

(A) Provide for monitoring in accordance with 40 CFR parts 122, 123, and 434 and as required by the National Pollutant Discharge Elimination System permitting authority.

(B) Require measurement of flow rates, using generally-accepted professional flow measurement techniques.

(iv) *Requirements related to the Clean Water Act.* You must revise the plan to incorporate any site-specific monitoring requirements imposed by the National Pollutant Discharge Elimination System permitting authority or the agency responsible for administration of section 404 of the Clean Water Act.

(3) *Regulatory authority review and action.* (i) Upon completing the technical review of your application, the regulatory authority may require that you revise the plan to increase the frequency of monitoring, to require monitoring of additional parameters, or to require monitoring at additional locations, if the additional requirements would contribute to protection of the hydrologic balance.

(ii) After completing preparation of the cumulative hydrologic impact assessment required under § 780.21 of this part, the regulatory authority must reconsider the adequacy of the monitoring plan and require that you make any necessary changes. At a minimum, the plan must require monitoring of all parameters for which the regulatory authority has established material damage criteria pursuant to the cumulative hydrologic impact assessment.

(c) *Biological condition monitoring plan*—(1) *General requirements.* Except as provided in paragraph (d) of this section, your permit application must include a plan for monitoring the biological condition of perennial and intermittent streams within the proposed permit and adjacent areas. The plan must be adequate to evaluate the impacts of the mining operation on the biological condition of those streams and to determine in a timely manner whether corrective action is needed to prevent the operation from causing material damage to the hydrologic balance outside the permit area.

(2) *Monitoring techniques.* The plan must—

(i) Require use of a multimetric bioassessment protocol that meets the requirements of § 780.19(e)(2) of this part.

(ii) Identify monitoring locations in each perennial and intermittent stream within the proposed permit and adjacent areas.

(iii) Establish a sampling frequency that must be no less than annual, but not so frequent as to unnecessarily deplete the populations of the species being monitored.

(iv) Require submission of monitoring data to the regulatory authority on an annual basis.

(3) *Regulatory authority review and action.* (i) Upon completing review of your application, the regulatory authority may require that you revise the plan to adjust monitoring locations, the frequency of monitoring, and the species to be monitored.

(ii) After completing preparation of the cumulative hydrologic impact assessment required under § 780.21 of this part, the regulatory authority must reconsider the adequacy of the monitoring plan and require that you make any necessary changes.

(d) *Exceptions*—(1) *Lands eligible for remining.* (i) If the proposed permit area includes only lands eligible for remining, you may request that the regulatory authority modify the groundwater and surface water monitoring plan requirements of paragraphs (a) and (b) of this section and modify or waive the biological condition monitoring plan requirements of paragraph (c) of this section.

(ii) The regulatory authority may approve your request if it determines that a less extensive monitoring plan will be adequate to monitor the impacts of the proposed operation on groundwater and surface water, based upon an evaluation of the quality of groundwater and surface water and the biological condition of the receiving stream at the time of application.

(2) *Operations that avoid streams.* (i) Upon your request, the regulatory authority may waive the biological condition monitoring plan requirements of paragraph (c) of this section if you demonstrate, and if the regulatory authority finds in writing, that your operation will not—

(A) Mine through or bury any perennial or intermittent stream;

(B) Create a point-source discharge to any perennial, intermittent, or ephemeral stream; or

(C) Modify the base flow of any perennial or intermittent stream.

(ii) If you meet all the criteria of paragraph (d)(2)(i) of this section with the exception of paragraph (d)(2)(i)(B) of this section, you may request, and the regulatory authority may approve, limiting the biological condition monitoring plan requirements of paragraph (c) of this section to only the stream that will receive the point-source discharge.

(e) *Coordination with Clean Water Act agencies.* The regulatory authority will consult in a timely manner with the agencies responsible for issuing permits, authorizations, and certifications under the Clean Water Act and make best efforts to minimize differences in monitoring locations and reporting requirements and to share data to the extent practicable and consistent with each agency's mission, statutory requirements, and implementing regulations.

§ 780.24 What requirements apply to the postmining land use?

(a) *What postmining land use information must my application contain*? (1) You must describe and map the proposed use or uses of the land within the proposed permit area following reclamation, based on the categories of land uses listed in the definition of land use in § 701.5 of this chapter.

(2) You must discuss the utility and capability of the reclaimed land to

support a variety of other uses, including the uses that the land was capable of supporting before any mining, as identified under § 779.22 of this chapter, regardless of the proposed postmining land use.

(3) You must explain how the proposed postmining land use is consistent with existing state and local land use policies and plans.

(4) You must include a copy of the comments concerning the proposed postmining use that you receive from the—

(i) Legal or equitable owner of record of the surface of the proposed permit area; and

(ii) State and local government agencies that would have to initiate, implement, approve, or authorize the proposed use of the land following reclamation.

(5) You must explain how the proposed postmining land use will be achieved and identify any support activities or facilities needed to achieve that use.

(6) If you propose to restore the proposed permit area or a portion thereof to a condition capable of supporting a higher or better use or uses rather than to a condition capable of supporting the uses that the land could support before any mining, you must—

(i) Provide the demonstration required under paragraph (b)(1) of this section.

(ii) Disclose any monetary compensation, item of value, or other consideration that you or your agent provided or expect to provide to the landowner in exchange for the landowner's agreement to a postmining land use that differs from the premining use.

(b) *What requirements apply to the approval of alternative postmining land uses*?—(1) *Application requirements.* If you propose to restore the proposed permit area or a portion thereof to a condition capable of supporting a higher or better use or uses, rather than to a condition capable of supporting the use or uses that the land could support before any mining, you must demonstrate that the proposed higher or better use or uses meet the following criteria:

(i) There is a reasonable likelihood that the proposed use or uses will be achieved after mining and reclamation, as documented by, for example, real estate and construction contracts, plans for installation of any necessary infrastructure, procurement of any necessary zoning approvals, landowner commitments, economic forecasts, and studies by land use planning agencies.

(ii) The proposed use or uses do not present any actual or probable hazard to public health or safety or any threat of water diminution or pollution.

(iii) The proposed use or uses will not—

(A) Be impractical or unreasonable.

(B) Be inconsistent with applicable land use policies or plans.

(C) Involve unreasonable delay in implementation.

(D) Cause or contribute to a violation of federal, state, or local law.

(E) Result in changes in the size or frequency of peak flows from the reclaimed area that would cause an increase in damage from flooding when compared with the conditions that would exist if the land were restored to a condition capable of supporting the uses that it was capable of supporting before any mining.

(F) Cause the total volume of flow from the reclaimed area, during every season of the year, to vary in a way that would preclude any existing or reasonably foreseeable use of surface water or groundwater or any designated use of surface water under section 101(a) or 303(c) of the Clean Water Act.

(G) Cause a change in the temperature or chemical composition of the water that would preclude any existing or reasonably foreseeable use of surface water or any designated use of surface water under section 101(a) or 303(c) of the Clean Water Act.

(2) *Regulatory authority decision requirements.* The regulatory authority may approve your request if it—

(i) Consults with the landowner or the land management agency having jurisdiction over the lands to which the use would apply; and

(ii) Finds in writing that you have made the demonstration required under paragraph (b)(1) of this section.

(c) *What requirements apply to permit revision applications that propose to change the postmining land use*? (1) You may propose to change the postmining land use for all or a portion of the permit area at any time through the permit revision process under § 774.13 of this chapter.

(2) If you propose a higher or better postmining land use, the requirements of paragraphs (b)(1) and (2) of this section will apply and the application must be considered a significant permit revision for purposes of § 774.13(b)(2) of this chapter.

(d) *What restrictions apply to the retention of mining-related structures*? (1) If you propose to retain mining-related structures other than roads and impoundments for potential future use as part of the postmining land use, you must demonstrate, and the regulatory authority must find in writing, that the size and characteristics of the structures are consistent with and proportional to the needs of the postmining land use.

(2) The amount of bond required for the permit under part 800 of this chapter must include the cost of removing the structure and reclaiming the land upon which it was located to a condition capable of supporting the premining uses. The bond must include the cost of restoring the site to its approximate original contour in accordance with § 816.102 of this chapter and establishing native vegetation in accordance with § 816.111 of this chapter.

(3) The reclamation plan submitted under § 780.12 of this part must specify that if a structure is not in use as part of the approved postmining land use by the end of the revegetation responsibility period specified in § 816.115 of this chapter, you must remove the structure and reclaim the land upon which it was located by restoring the approximate original contour in accordance with § 816.102 of this chapter and establishing native vegetation in accordance with § 816.111 of this chapter.

(e) *What special provisions apply to previously mined areas*? If land that was previously mined cannot be reclaimed to the land use that existed before any mining because of the previously mined condition, you may propose, and the regulatory authority may approve, any appropriate postmining land use for that land that is both achievable and compatible with land uses in the surrounding area, provided that you comply with paragraphs (a) and (b)(1)(iv) of this section.

§ 780.25 What information must I provide for siltation structures, impoundments, and refuse piles?

(a) *General requirements.* Each application must include a general plan and a detailed design plan for each proposed siltation structure, impoundment, and refuse pile within the proposed permit area.

(1) *Requirements for general plan for all structures.* Each general plan must—

(i) Be prepared by, or under the direction of, and certified by a qualified registered professional engineer, a professional geologist, or, in any state that authorizes land surveyors to prepare and certify such plans, a qualified registered professional land surveyor, with assistance from experts in related fields such as landscape architecture.

(ii) Contain a description, map, and cross-sections of the structure and its location.

(iii) Contain the hydrologic and geologic information required to assess the hydrologic impact of the structure.

(iv) Contain a report describing the results of a geotechnical investigation of the potential effect on the structure if subsurface strata subside as a result of past, current, or future underground mining operations beneath or within the proposed permit and adjacent areas. When necessary, the investigation report also must identify design and construction measures that would prevent adverse subsidence-related impacts on the structure.

(v) Contain an analysis of the potential for each impoundment to drain into subjacent underground mine workings, together with an analysis of the impacts of such drainage.

(vi)(A) Contain a certification statement that includes a schedule setting forth the dates when any detailed design plans for structures that are not submitted with the general plan will be submitted to the regulatory authority.

(B) The regulatory authority must approve, in writing, the detailed design plan for a structure before construction of the structure begins.

(2) *Detailed design plan requirements for high hazard dams, significant hazard dams, and impounding structures that meet MSHA criteria*—(i) *Applicability.* The requirements of paragraph (a)(2)(ii) of this section apply to all impounding structures that meet—

(A) The MSHA criteria in § 77.216(a) of this title; or

(B) The criteria for Significant Hazard Class or High Hazard Class dams in ''Earth Dams and Reservoirs,'' Technical Release No. 60 (210–VI–TR60, July 2005), published by the U.S. Department of Agriculture, Natural Resources Conservation Service. Technical Release No. 60 (TR–60) is hereby incorporated by reference. The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. You may review and download the incorporated document from the Natural Resources Conservation Service's Web site at *http://www.info.usda.gov/scripts/lpsiis.dll/TR/TR_210_60.htm.* You may inspect and obtain a copy of this document, which is on file at the Administrative Record Room, Office of Surface Mining Reclamation and Enforcement, 1951 Constitution Avenue NW., Washington, DC 20240. For information on the availability of this document at OSMRE, call 202–208–2823. You also may inspect a copy of this document at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030 or go to *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.*

(ii) *Detailed design plan requirements.* Each detailed design plan for a structure that meets the applicability provisions of paragraph (a)(2)(i) of this section must—

(A) Be prepared by, or under the direction of, and certified by a qualified registered professional engineer with assistance from experts in related fields such as geology, land surveying, and landscape architecture.

(B) Incorporate any design and construction measures identified in the geotechnical investigation report prepared under paragraph (a)(1)(iv) of this section as necessary to protect against potential adverse impacts from subsidence resulting from underground mine workings underlying or adjacent to the structure.

(C) Describe the operation and maintenance requirements for each structure.

(D) Describe the timetable and plans to remove each structure, if appropriate.

(3) *Detailed design plan requirements for other structures.* Each detailed design plan for structures not included in paragraph (a)(2) of this section must—

(i) Be prepared by, or under the direction of, and certified by a qualified, registered, professional engineer, or, in any state that authorizes land surveyors to prepare and certify such plans, a qualified, registered, professional, land surveyor, except that all coal mine waste structures to which §§ 816.81 through 816.84 of this chapter apply must be certified by a qualified, registered, professional engineer.

(ii) Reflect any design and construction requirements for the structure, including any required geotechnical information.

(iii) Describe the operation and maintenance requirements for each structure.

(iv) Describe the timetable and plans to remove each structure, if appropriate.

(b) *Siltation structures.* Siltation structures must be designed in compliance with the requirements of § 816.46 of this chapter.

(c) *Permanent and temporary impoundments.* (1) Permanent and temporary impoundments must be designed to comply with the requirements of § 816.49 of this chapter.

(2) Each plan for an impoundment meeting the criteria in § 77.216(a) of this title must comply with the requirements of § 77.216–2 of this title. You must submit the plan required to be submitted to the District Manager of MSHA under § 77.216 of this title to the regulatory authority as part of the permit application to the extent that the plan, or a portion thereof, is available at the time of submittal of the permit application.

(3) For impoundments not included in paragraph (a)(2) of this section, the regulatory authority may establish, through the regulatory program approval process, engineering design standards that ensure stability comparable to a 1.3 minimum static safety factor in lieu of engineering tests to establish compliance with the minimum static safety factor of 1.3 specified in § 816.49(a)(4)(ii) of this chapter.

(4) If the structure meets the Significant Hazard Class or High Hazard Class criteria for dams in TR–60 or meets the criteria of § 77.216(a) of this chapter, each plan must include stability analyses of the structure. The stability analyses must address static, seismic, and post-earthquake (liquefaction) conditions. They must include, but are not limited to, strength parameters, pore pressures, and long-term seepage conditions. The plan also must contain a description of each engineering design assumption and calculation with a discussion of each alternative considered in selecting the specific design parameters and construction methods.

(d) *Coal mine waste impoundments, refuse piles, and impounding structures constructed of coal mine waste.* If you, the permit applicant, propose to place coal mine waste in a refuse pile or impoundment, or if you plan to use coal mine waste to construct an impounding structure, you must comply with the applicable design requirements in paragraphs (d)(1) and (2) of this section.

(1) *Design requirements for refuse piles.* You must design refuse piles to comply with the requirements of §§ 780.28, 816.81, and 816.83 of this chapter.

(2) *Design requirements for impounding structures that will impound coal mine waste or that will be constructed of coal mine waste.* (i) You must design impounding structures constructed of or intended to impound coal mine waste to comply with the coal mine waste disposal requirements of §§ 780.28, 816.81, and 816.84 of this chapter and with the impoundment requirements of paragraphs (a) and (c) of § 816.49 of this chapter.

(ii) The plan for each impounding structure that meets the criteria of § 77.216(a) of this title must comply with the requirements of § 77.216–2 of this title.

(iii) Each plan for an impounding structure that will impound coal mine waste or that will be constructed of coal mine waste must contain the results of a geotechnical investigation to determine the structural competence of the foundation that will support the proposed impounding structure and the impounded material. An engineer or engineering geologist must plan and supervise the geotechnical investigation. In planning the investigation, the engineer or geologist must—

(A) Determine the number, location, and depth of borings and test pits using current prudent engineering practice for the size of the impoundment and the impounding structure, the quantity of material to be impounded, and subsurface conditions.

(B) Consider the character of the overburden and bedrock, the proposed abutment sites for the impounding structure, and any adverse geotechnical conditions that may affect the impounding structure.

(C) Identify all springs, seepage, and groundwater flow observed or anticipated during wet periods in the area of the proposed impounding structure on each plan.

(D) Consider the possibility of mudflows, rock-debris falls, or other landslides into the impounding structure, impoundment, or impounded material.

(iv) The design must ensure that at least 90 percent of the water stored in the impoundment during the design precipitation event will be removed within a 10-day period.

§ 780.27 What special requirements apply to surface mining near underground mining?

Your application must describe the measures that you will use to comply with § 816.79 of this chapter if you intend to conduct surface mining activities within 500 feet of an underground mine.

§ 780.28 What additional requirements apply to proposed activities in, through, or adjacent to streams?

(a) *Clean Water Act requirements.* You may conduct surface mining activities in waters of the United States only if you first obtain all necessary authorizations, certifications, and permits under the Clean Water Act, 33 U.S.C. 1251 *et seq.*

(b) *When must I comply with this section*?—(1) *General applicability.* You, the permit applicant, must provide the information and demonstrations required by this section whenever you propose to conduct surface mining activities—

(i) In or through a perennial, intermittent, or ephemeral stream; or

(ii) On the surface of lands within 100 feet of a perennial, intermittent, or ephemeral stream. You must measure this distance horizontally on a line perpendicular to the stream beginning at the bankfull elevation of the stream or, if there are no discernible streambanks, the centerline of the active channel of the stream.

(2) *Activities in or near perennial and intermittent streams.* Except as provided in paragraph (d) of this section, if you propose to conduct an activity identified in paragraph (b)(1) of this section, and if the affected stream is a perennial or intermittent stream, you must demonstrate that the proposed activity would not—

(i) Preclude any premining use or any designated use under section 101(a) or 303(c) of the Clean Water Act of the affected stream segment following the completion of mining and reclamation.

(ii) Result in conversion of the stream segment from intermittent to ephemeral, from perennial to intermittent, or from perennial to ephemeral.

(iii) Cause or contribute to a violation of applicable water quality standards.

(iv) Cause material damage to the hydrologic balance outside the permit area.

(3) *Postmining riparian corridor requirements for perennial, intermittent, and ephemeral streams.* (i) If you propose to conduct an activity identified in paragraph (b)(1) of this section, you must propose to establish a riparian corridor at least 100 feet wide on each side of the stream as part of the reclamation process following the completion of mining activities within that corridor. The corridor width must be measured horizontally on a line perpendicular to the stream beginning at the bankfull elevation or, if there are no discernible banks, the centerline of the active channel.

(ii) You must use native species, including species adapted to and suitable for planting in riparian zones within that corridor, to revegetate disturbed areas within the corridor required under paragraph (b)(3)(i) of this section. For areas that are forested at the time of application or that would revert to forest under conditions of natural succession, you must use native trees and shrubs to meet this requirement.

(iii) Paragraph (b)(3)(i) of this section does not apply to—

(A) Prime farmland historically used for cropland;

(B) Situations in which revegetation would be incompatible with an approved postmining land use that is implemented during the revegetation responsibility period before final bond release under § 800.42(d) of this chapter; or

(C) Streams buried beneath an excess spoil fill or a coal mine waste disposal facility under paragraph (d) of this section.

(c) *What additional requirements apply to an application that proposes to mine through or divert a perennial, intermittent, or ephemeral stream*?—(1) *Postmining drainage pattern.* The postmining drainage pattern of perennial, intermittent, and ephemeral stream channels that you propose to restore after the completion of mining must be similar to the premining drainage pattern, unless the regulatory authority approves a different pattern to—

(i) Ensure stability;

(ii) Prevent or minimize downcutting of reconstructed stream channels; or

(iii) Promote enhancement of fish and wildlife habitat.

(2) *Mining through or diverting a perennial or intermittent stream.* If you propose to mine through or divert a perennial or intermittent stream, you must—

(i) Comply with the requirements of paragraphs (a) through (c)(1) of this section.

(ii) Demonstrate that there is no reasonable alternative that would avoid mining through or diverting the stream.

(iii) Design the operation to minimize the extent to which the stream will be mined through or diverted.

(iv) Demonstrate that you can restore the form and ecological function of the affected stream segment, as required by § 816.57(b) of this chapter, using the techniques in the proposed reclamation plan.

(A) Those techniques must include the selective placement of low-permeability materials in the backfill or fill and associated stream channels to create the aquitards necessary to support streamflow when the goal is to reestablish a perennial or intermittent stream, unless you can demonstrate an alternative method of restoring perennial or intermittent streamflow.

(B) You must include a separate bond calculation for the cost of restoring the ecological function of the affected stream segment. You must post a surety bond, a collateral bond, or a combination of surety and collateral bonds to cover that cost before the regulatory authority may issue the permit.

(v) Comply with the following stream-channel restoration and stream-channel diversion design requirements:

(A) Designs for permanent stream-channel diversions, temporary stream-

channel diversions that will remain in use for 2 or more years, and stream channels to be restored after the completion of mining must adhere to design techniques that will restore or approximate the premining characteristics of the original stream channel to promote the recovery and enhancement of the aquatic habitat and to minimize adverse alteration of stream channels on and off the site, including channel deepening or enlargement. The premining characteristics of the original stream channel include, but are not limited to, the baseline stream pattern, profile, dimensions, substrate, habitat, and natural vegetation growing in the riparian zone. For temporary stream-channel diversions that will remain in use for 2 or more years, the vegetation proposed for planting in the riparian zone need not include species that would not reach maturity until after the diversion is removed.

(B) The designed hydraulic capacity of all temporary and permanent stream-channel diversions must be at least equal to the hydraulic capacity of the unmodified stream channel immediately upstream of the diversion, but no greater than the hydraulic capacity of the unmodified stream channel immediately downstream from the diversion.

(C) All temporary and permanent stream-channel diversions must be designed so that the combination of channel, bank, and flood-plain configuration is adequate to pass safely the peak runoff of a 10-year, 6-hour precipitation event for a temporary diversion and a 100-year, 6-hour precipitation event for a permanent diversion.

(vi) Submit a certification from a qualified registered professional engineer that the designs for all stream-channel diversions and all stream channels to be restored after the completion of mining meet the design requirements of this section and any additional design criteria established by the regulatory authority. This certification may be limited to the location, dimensions, and physical characteristics of the stream channel; it need not include restoration of ecological function.

(d) *What requirements apply to an application to construct an excess spoil fill or a coal mine waste disposal facility in a perennial or intermittent stream*?—(1) *Applicability.* If you propose to construct an excess spoil fill under § 780.35 of this part or a coal mine waste disposal facility under § 780.25(d) of this part, you must comply with the requirements of paragraph (d)(2) of this section in place of the requirements of paragraph (b)(2) of this section whenever the fill or disposal facility would encroach upon any part of a perennial or intermittent stream.

(2) *Application requirements.* If you propose to construct an excess spoil fill or coal mine waste disposal facility of the nature described in paragraph (d)(1) of this section, your application must demonstrate that—

(i) The operation has been designed to minimize the amount of excess spoil or coal mine waste generated.

(ii) After evaluating all potential upland locations in the vicinity of the proposed operation, there is no practicable alternative that would avoid placement of excess spoil or coal mine waste in a perennial or intermittent stream.

(iii) To the extent possible using the best technology currently available, the proposed excess spoil fill or coal mine waste disposal facility has been designed to minimize—

(A) Placement of excess spoil or coal mine waste in a perennial or intermittent stream.

(B) Adverse impacts on fish, wildlife, and related environmental values.

(iv) The fish and wildlife enhancement plan submitted under § 780.16 of this part includes measures that would fully and permanently offset any long-term adverse impacts that the fill, refuse pile, or coal mine waste impoundment would have on fish, wildlife, and related environmental values within the footprint of the fill, refuse pile, or impoundment.

(v) The excess spoil fill or coal mine waste disposal facility has been designed in a manner that will not cause or contribute to a violation of water quality standards or result in the formation of toxic mine drainage.

(vi) The revegetation plan submitted under § 780.12(g) of this part requires reforestation of the completed excess spoil fill if the land is forested at the time of application or if it would revert to forest under conditions of natural succession.

(e) *What are the regulatory authority's responsibilities*?—(1) *Standards for restoration of the ecological function of a stream.* (i) The regulatory authority must establish objective standards for determining when the ecological function of a restored or permanently-diverted perennial or intermittent stream has been restored.

(ii) In establishing standards under paragraph (e)(1)(i) of this section, the regulatory authority must coordinate with the Clean Water Act permitting authority to ensure compliance with all Clean Water Act requirements.

(iii) The standards established under paragraph (e)(1)(i) of this section must comply with § 816.57(b)(2) of this chapter.

(2) *Finding.* The regulatory authority may not approve an application that includes any activity identified under paragraph (b)(1) of this section unless it first makes a specific written finding that you have fully satisfied all applicable requirements of this section. The finding must be accompanied by a detailed explanation of the rationale for the finding.

§ 780.29 What information must I include in the surface-water runoff control plan?

Your application must contain a surface-water runoff control plan that includes the following—

(a)(1) An explanation of how you will handle surface-water runoff in a manner that will prevent peak discharges from the proposed permit area, both during and after mining and reclamation, from exceeding the premining peak discharge from the same area for the same-size precipitation event. You must use the appropriate regional Natural Resources Conservation Service synthetic storm distribution to estimate peak discharges.

(2) The explanation in paragraph (a)(1) of this section must consider the findings in the determination of the probable hydrologic consequences of mining prepared under § 780.20 of this part.

(b) A surface-water runoff monitoring and inspection program that will provide sufficient precipitation and stormwater discharge data for the proposed permit area to evaluate the effectiveness of the surface-water runoff control practices under paragraph (a) of this section. The surface-water runoff monitoring and inspection program must specify criteria for monitoring, inspection, and reporting consistent with § 816.34(d) of this chapter. The program must contain a monitoring-point density that adequately represents the drainage pattern across the entire proposed permit area, with a minimum of one monitoring point per watershed discharge point.

(c) Descriptions, including maps and cross-sections, of runoff-control structures, including an explanation of how diversions and other channels to collect and convey surface-water runoff will be constructed in compliance with § 816.43 of this chapter.

§ 780.31 What information must I provide concerning the protection of publicly owned parks and historic places?

(a) For any publicly owned parks or any places listed on the National Register of Historic Places that may be

adversely affected by the proposed operation, you must describe the measures to be used—

(1) To prevent adverse impacts, or

(2) If a person has valid existing rights, as determined under § 761.16 of this chapter, or if joint agency approval is to be obtained under § 761.17(d) of this chapter, to minimize adverse impacts.

(b) The regulatory authority may require the applicant to protect historic or archeological properties listed on or eligible for listing on the National Register of Historic Places through appropriate mitigation and treatment measures. Appropriate mitigation and treatment measures may be required to be taken after permit issuance provided that the required measures are completed before the properties are affected by any mining operation.

§ 780.33 What information must I provide concerning the relocation or use of public roads?

Your application must describe, with appropriate maps and cross-sections, the measures to be used to ensure that the interests of the public and landowners affected are protected if, under § 761.14 of this chapter, you seek to have the regulatory authority approve—

(a) Conducting the proposed surface mining activities within 100 feet of the right-of-way line of any public road, except where mine access or haul roads join that right-of-way; or

(b) Relocating a public road.

§ 780.35 What information must I provide concerning the minimization and disposal of excess spoil?

(a) *Applicability.* This section applies to you, the permit applicant, if you propose to generate excess spoil as part of your operation.

(b) *Demonstration of minimization of excess spoil.* (1) You must submit a demonstration, with supporting calculations and other documentation, that the operation has been designed to minimize, to the extent possible, the volume of excess spoil that the operation will generate.

(2) The demonstration under paragraph (b)(1) of this section must explain, in quantitative terms, how the maximum amount of overburden will be returned to the mined-out area after considering—

(i) Applicable regulations concerning backfilling, compaction, grading, and restoration of the approximate original contour.

(ii) Safety and stability needs and requirements.

(iii) The need for drainage structures, access roads, and berms. You may construct drainage structures, access roads, and berms on the perimeter of the backfilled area, but you must limit the total width of those structures to 20 feet unless you demonstrate an absolutely essential need for a greater width.

(iv) Needs and requirements associated with revegetation and the proposed postmining land use.

(v) Any other relevant regulatory requirements, including those pertaining to protection of water quality and fish, wildlife, and related environmental values.

(3) When necessary to avoid or minimize construction of excess spoil fills on undisturbed land, paragraph (b)(2)(i) of this section does not prohibit the placement of what would otherwise be excess spoil on the mined-out area to heights in excess of the premining elevation, provided that the final surface configuration is compatible with the surrounding terrain and generally resembles landforms found in the surrounding area.

(4) You may not create a final-cut impoundment under § 816.49(b) of this chapter or place coal combustion residues or noncoal materials in the mine excavation if doing so would result in the creation of excess spoil.

(c) *Fill capacity demonstration.* You must submit a demonstration, with supporting calculations and other documentation, that the designed maximum cumulative volume of all proposed excess spoil fills within the permit area is no larger than the capacity needed to accommodate the anticipated cumulative volume of excess spoil that the operation will generate, as calculated under paragraph (b) of this section.

(d) *Requirements related to perennial and intermittent streams.* You must comply with the requirements of § 780.28 of this part concerning activities in or near perennial or intermittent streams if you propose to construct an excess spoil fill in or within 100 feet of a perennial or intermittent stream. The 100-foot distance must be measured horizontally on a line perpendicular to the stream beginning at the bankfull elevation or, if there are no discernible banks, the centerline of the active channel.

(e) *Location and profile.* (1) You must submit maps and cross-section drawings or models showing the location and profile of all proposed excess spoil fills.

(2) You must locate fills on the most moderately sloping and naturally stable areas available. The regulatory authority will determine which areas are available, based upon the requirements of the Act and this chapter.

(3) Whenever possible, you must place fills on or above a natural terrace, bench, or berm if that location would provide additional stability and prevent mass movement.

(f) *Design plans.* You must submit detailed design plans, including appropriate maps and cross-section drawings, for each proposed fill, prepared in accordance with the requirements of this section and §§ 816.71 through 816.74 of this chapter. You must design the fill and appurtenant structures using current prudent engineering practices and any additional design criteria established by the regulatory authority.

(g) *Geotechnical investigation.* You must submit the results of a geotechnical investigation, with supporting calculations and analyses, of the site of each proposed fill, with the exception of those sites at which excess spoil will be placed only on a preexisting bench under § 816.74 of this chapter. The information submitted must include—

(1) Sufficient foundation investigations, as well as any necessary laboratory testing of foundation material, to determine the design requirements for foundation stability for each site.

(2) A description of the character of the bedrock and any adverse geologic conditions in the area of the proposed fill.

(3) The geographic coordinates and a narrative description of all springs, seepage, mine discharges, and groundwater flow observed or anticipated during wet periods in the area of the proposed fill.

(4) An analysis of the potential effects of any underground mine workings within the proposed permit and adjacent areas, including the effects of any subsidence that may occur as a result of previous, existing, and future underground mining operations.

(5) A technical description of the rock materials to be used in the construction of fills underlain by a rock drainage blanket.

(6) Stability analyses that address static, seismic, and post-earthquake (liquefaction) conditions. The analyses must include, but are not limited to, strength parameters, pore pressures and long-term seepage conditions. The analyses must be accompanied by a description of all engineering design assumptions and calculations and the alternatives considered in selecting the specific design specifications and methods.

(h) *Operation and reclamation plans.* You must submit plans for the construction, operation, maintenance,

and reclamation of all excess spoil fills in accordance with the requirements of §§ 816.71 through 816.74 of this chapter.

(i) *Additional requirements for bench cuts or rock-toe buttresses.* If bench cuts or rock-toe buttresses are required under § 816.71(b)(2) of this chapter, you must provide the—

(1) Number, location, and depth of borings or test pits, which must be determined according to the size of the fill and subsurface conditions.

(2) Engineering specifications used to design the bench cuts or rock-toe buttresses. Those specifications must be based upon the stability analyses required under paragraph (g)(6) of this section.

(j) *Design certification.* A qualified registered professional engineer experienced in the design of earth and rock fills must certify that the design of each proposed fill and appurtenant structures meets the requirements of this section.

§ 780.37 What information must I provide concerning access and haul roads?

(a) *Design and other application requirements.* (1) You, the applicant, must submit a map showing the location of all roads that you intend to construct or use within the proposed permit area, together with plans and drawings for each road to be constructed, used, or maintained within the proposed permit area.

(2) You must include appropriate cross-sections, design drawings, and specifications for road widths, gradients, surfacing materials, cuts, fill embankments, culverts, bridges, drainage ditches, drainage structures, and fords and low-water crossings of perennial and intermittent streams.

(3) You must demonstrate how all proposed roads will comply with the applicable requirements of §§ 780.28, 816.150, and 816.151 of this chapter.

(4) You must identify—

(i) Each road that you propose to locate in or within 100 feet, measured horizontally on a line perpendicular to the stream beginning at the bankfull elevation or, if there are no discernible banks, the centerline of the active channel, of a perennial or intermittent stream.

(ii) Each proposed ford of a perennial or intermittent stream that you plan to use as a temporary route during road construction.

(iii) Any plans to alter or relocate a natural stream channel.

(iv) Each proposed low-water crossing of a perennial or intermittent stream channel.

(5) You must explain why the roads and stream crossings identified in paragraph (a)(4) of this section are necessary and how they comply with the applicable requirements of § 780.28 of this part and section 515(b)(18) of the Act.

(6) You must describe the plans to remove and reclaim each road that would not be retained as part of the postmining land use, and provide a schedule for removal and reclamation.

(b) *Primary road certification.* The plans and drawings for each primary road must be prepared by, or under the direction of, and certified by a qualified registered professional engineer, or in any state that authorizes land surveyors to certify the design of primary roads, a qualified registered professional land surveyor, with experience in the design and construction of roads, as meeting the requirements of this chapter; current, prudent engineering practices; and any design criteria established by the regulatory authority.

(c) *Standard design plans.* The regulatory authority may establish engineering design standards for primary roads through the regulatory program approval process, in lieu of engineering tests, to establish compliance with the minimum static safety factor of 1.3 for all embankments specified in § 816.151(b) of this chapter.

§ 780.38 What information must I provide concerning support facilities?

You must submit a description, plans, and drawings for each support facility to be constructed, used, or maintained within the proposed permit area. The plans and drawings must include a map, appropriate cross-sections, design drawings, and specifications sufficient to demonstrate compliance with § 816.181 of this chapter for each facility.

■ 23. Lift the suspensions of §§ 783.21, 783.25(a)(3), 783.25(a)(8), and 783.25(a)(9) and revise part 783 to read as follows:

PART 783—UNDERGROUND MINING PERMIT APPLICATIONS—MINIMUM REQUIREMENTS FOR INFORMATION ON ENVIRONMENTAL RESOURCES AND CONDITIONS

Sec.

Authority: 30 U.S.C. 1201 *et seq.* and 54 U.S.C. 300101 *et seq.*

§ 783.1 Scope: What does this part do?

This part establishes the minimum requirements for the descriptions of environmental resources and conditions that you must include in an application for a permit to conduct underground mining activities.

§ 783.2 What is the objective of this part?

The objective of this part is to ensure that you, the permit applicant, provide the regulatory authority with a complete and accurate description of the environmental resources that may be impacted or affected by proposed underground mining activities and the environmental conditions that exist within the proposed permit and adjacent areas.

§ 783.4 What responsibilities do I and government agencies have under this part?

(a) You, the permit applicant, must provide all information required by this part in your application, except when this part specifically exempts you from doing so.

(b) State and federal government agencies are responsible for providing information for permit applications to the extent that this part specifically requires that they do so.

§ 783.10 Information collection.

In accordance with 44 U.S.C. 3501 *et seq.,* the Office of Management and Budget (OMB) has approved the information collection requirements of this part and assigned it control number 1029-xxxx. The information is being collected to meet the requirements of sections 507 and 508 of SMCRA, which require that each permit application include a description of the premining environmental resources within and around the proposed permit area. The regulatory authority uses this information as a baseline for evaluating the impacts of mining. You, the permit applicant, must respond to obtain a benefit. A federal agency may not conduct or sponsor, and you are not required to respond to, a collection of

information unless it displays a currently valid OMB control number.

§ 783.11 [Reserved]

§ 783.12 [Reserved]

§ 783.17 What information on cultural, historic, and archeological resources must I include in my permit application?

(a) Your permit application must describe the nature of cultural, historic, and archeological resources listed or eligible for listing on the National Register of Historic Places and known archeological sites within the proposed permit and adjacent areas. The description must be based on all available information, including, but not limited to, information from the State Historic Preservation Officer and from local archeological, historical, and cultural preservation agencies.

(b) The regulatory authority may require you, the applicant, to identify and evaluate important historic and archeological resources that may be eligible for listing on the National Register of Historic Places, through—

(1) Collection of additional information,

(2) Conducting field investigations, or

(3) Other appropriate analyses.

§ 783.18 What information on climate must I include in my permit application?

The regulatory authority may require that your permit application contain a statement of the climatic factors that are representative of the proposed permit area, including—

(a) The average seasonal precipitation.

(b) The average direction and velocity of prevailing winds.

(c) Seasonal temperature ranges.

(d) Additional data that the regulatory authority deems necessary to ensure compliance with the requirements of this subchapter.

§ 783.19 What information on vegetation must I include in my permit application?

(a) You must identify, describe, and map—

(1) Existing vegetation types and plant communities on the proposed permit and adjacent areas and within any proposed reference areas. The description and map must be adequate to evaluate whether the vegetation provides important habitat for fish and wildlife and whether the site contains native plant communities of local or regional significance.

(2) The plant communities that would exist on the proposed permit area under conditions of natural succession.

(b) When preparing the materials required by paragraph (a) of this section, you must adhere to the National Vegetation Classification Standard.

(c) With the approval of the regulatory authority, you may use other generally-accepted vegetation classification systems in lieu of the system specified in paragraph (b) of this section.

(d) Your application must include a discussion of the potential for reestablishing the plant communities identified in paragraph (a) of this section after the completion of mining.

§ 783.20 What information on fish and wildlife resources must I include in my permit application?

(a) *General requirements.* Your permit application must include information on fish and wildlife resources for the proposed permit and adjacent areas. The adjacent area must include all lands and waters likely to be affected by the proposed operation.

(b) *Scope and level of detail.* The regulatory authority will determine the scope and level of detail for this information in coordination with state and federal agencies with responsibilities for fish and wildlife. The scope and level of detail must be sufficient to design the protection and enhancement plan required under § 784.16 of this chapter.

(c) *Site-specific resource information requirements.* Your application must include site-specific resource information if the proposed permit area or the adjacent area contains or is likely to contain one or more of the following—

(1) Fish and wildlife or plants listed or proposed for listing as threatened or endangered under the Endangered Species Act of 1973, 16 U.S.C. 1531 *et seq.,* or critical habitat designated under that law. When these circumstances exist, the site-specific resource information must include a description of the effects of future state or private activities that are reasonably certain to occur within the proposed permit and adjacent areas.

(2) Species or habitat protected by state endangered species statutes and regulations.

(3) Habitat of unusually high value for fish and wildlife such as wetlands, riparian areas, cliffs supporting raptors, significant migration corridors, specialized reproduction or wintering areas, areas offering special shelter or protection, and areas that support populations of endemic species that are vulnerable because of restricted ranges, limited mobility, limited reproductive capacity, or specialized habitat requirements.

(4) Other species or habitat identified through interagency coordination as requiring special protection under state or federal law, including species identified as sensitive by a state or federal agency.

(5) Perennial or intermittent streams.

(6) Native plant communities of local or regional ecological significance.

(d) *Fish and Wildlife Service review.* (1)(i) The regulatory authority must provide the resource information obtained under paragraph (c) of this section to the applicable regional or field office of the U.S. Fish and Wildlife Service whenever that information includes species listed as threatened or endangered under the Endangered Species Act of 1973, 16 U.S.C. 1531 *et seq.,* critical habitat designated under that law, or species proposed for listing as threatened or endangered under that law. The regulatory authority must provide this information to the Service no later than the time that it provides written notice of the permit application to the Service under § 773.6(a)(3)(ii) of this chapter.

(ii) When the resource information obtained under paragraph (c) of this section does not include threatened or endangered species, designated critical habitat, or species proposed for listing as threatened or endangered, the regulatory authority must provide this information to the applicable regional or field office of the U.S. Fish and Wildlife Service only if the Service requests an opportunity to review and comment on that information. The regulatory authority must provide the requested information to the Service within 10 days of receipt of the request from the Service.

(2)(i) The regulatory authority must document its disposition of all comments from the Service that pertain to fish and wildlife or plants listed as threatened or endangered under the Endangered Species Act of 1973, 16 U.S.C. 1531 *et seq.,* or to critical habitat designated under that law.

(ii) If the regulatory authority does not agree with a Service recommendation that pertains to fish and wildlife or plants listed as threatened or endangered under the Endangered Species Act of 1973, 16 U.S.C. 1531 *et seq.,* or to critical habitat designated under that law, the regulatory authority must explain the rationale for that decision in the disposition document prepared under paragraph (d)(2)(i) of this section. The regulatory authority must provide a copy of that document to the pertinent Service field office and OSMRE field office and must refrain from approving the permit application.

(iii) If the Service field office does not concur with the regulatory authority's decision under paragraph (d)(2)(ii) of this section and the regulatory authority and the Service field office are unable

to reach agreement at that level, either the Service or the regulatory authority may request that the issue be elevated through the chain of command of the regulatory authority, the Service, and OSMRE for resolution.

(iv) The regulatory authority may not approve the permit application until all issues are resolved in accordance with paragraph (d)(2)(iii) of this section and the regulatory authority receives written documentation from the Service that all issues have been resolved.

(e) *Designation of areas in which adverse impacts are prohibited.* In coordination with state and federal fish and wildlife agencies and agencies responsible for implementation of the Clean Water Act, the regulatory authority may use the information provided under this section and information gathered from other agencies to determine whether, based on scientific principles and analyses, any stream segments, wildlife habitats, or watersheds in the proposed permit or adjacent areas are of such exceptional environmental value that any adverse mining-related impacts must be prohibited.

§ 783.21 What information on soils must I include in my permit application?

Your permit application must include—

(a) The results of a reconnaissance inspection to determine whether the proposed permit area may contain prime farmland, as required by § 785.17(b)(1) of this chapter.

(b)(1) A map showing the soil mapping units located within the proposed permit area, if the National Cooperative Soil Survey has completed and published a soil survey of the area.

(2) The applicable soil survey information that the Natural Resources Conservation Service maintains for the soil mapping units identified in paragraph (b)(1) of this section. You may provide this information either in paper form or via a link to the appropriate element of the Natural Resources Conservation Service's soil survey Web site.

(c) A description of soil depths within the proposed permit area.

(d) Detailed information on soil quality, if you seek approval for the use of soil substitutes or supplements under § 784.12(e) of this chapter.

(e) The soil survey information required by § 785.17(b)(3) of this chapter if the reconnaissance inspection conducted under paragraph (a) of this section indicates that prime farmland may be present.

(f) Any other information that the regulatory authority finds necessary to determine land capability and to prepare the reclamation plan.

§ 783.22 What information on land use and productivity must I include in my permit application?

Your permit application must contain a statement of the condition, capability, and productivity of the land within the proposed permit area, including—

(a)(1) A map and narrative identifying and describing the land use or uses in existence at the time of the filing of the application.

(2) A description of the historical uses of the land.

(3) For any previously mined area within the proposed permit area, a description of the land uses in existence before any mining, to the extent that such information is available.

(b) A narrative analysis of—

(1) The capability of the land before any mining to support a variety of uses, giving consideration to soil and foundation characteristics, topography, vegetative cover, and the hydrology of the proposed permit area; and

(2) The productivity of the proposed permit area before mining, expressed as average yield of food, fiber, forage, or wood products obtained under high levels of management, as determined by—

(i) Actual yield data; or

(ii) Yield estimates for similar sites based on current data from the U.S. Department of Agriculture, state agricultural universities, or appropriate state natural resources or agricultural agencies.

(3) The productivity of the proposed permit area before mining for fish and wildlife.

(c) Any additional information that the regulatory authority deems necessary to determine the condition, capability, and productivity of the land within the proposed permit area.

§ 783.24 What maps, plans, and cross-sections must I submit with my permit application?

(a) In addition to the maps, plans, and information required by other sections of this part, your permit application must include maps and, when appropriate, plans and cross-sections showing—

(1) All boundaries of lands and names of present owners of record of those lands, both surface and subsurface included in or contiguous to the proposed permit area.

(2) The boundaries of land within the proposed permit area upon which you have the legal right to enter and begin underground mining activities.

(3) The boundaries of all areas that you anticipate affecting over the estimated total life of the underground mining activities, with a description of the size, sequence, and timing of the mining of subareas for which you anticipate seeking additional permits or expansion of an existing permit in the future.

(4) The location and current use of all buildings within the proposed permit area or within 1,000 feet of the proposed permit area.

(5) The location of surface and subsurface manmade features within, passing through, or passing over the proposed permit and adjacent areas, including, but not limited to, highways, major electric transmission lines, pipelines, constructed drainageways, irrigation ditches, and agricultural drainage tile fields.

(6) The location and boundaries of any proposed reference areas for determining the success of revegetation.

(7) The location and ownership of existing wells, springs, and other groundwater resources within the proposed permit and adjacent areas. You may provide ownership information in a table cross-referenced to a map if approved by the regulatory authority.

(8) The location and depth (if available) of each water well within the proposed permit and adjacent areas. You may provide information concerning depth in a table cross-referenced to a map if approved by the regulatory authority.

(9) The name, location, ownership, and description of all surface-water bodies and features, such as perennial, intermittent, and ephemeral streams; ponds, lakes, and other impoundments; wetlands; and natural drainageways, within the proposed permit and adjacent areas. To the extent appropriate, you may provide this information in a table cross-referenced to a map if approved by the regulatory authority.

(10) The locations of water supply intakes for current users of surface water flowing into, from, and within a hydrologic area defined by the regulatory authority.

(11) The location of any public water supplies and the extent of any associated wellhead protection zones located within one-half mile, measured horizontally, of the proposed permit area or the area overlying the proposed underground workings.

(12) The location of all existing and proposed discharges to any surface-water body within the proposed permit and adjacent areas.

(13) The location of any discharge into or from an active, inactive, or abandoned surface or underground

mine, including, but not limited to, a mine-water treatment or pumping facility, that is hydrologically connected to the area of the proposed operation or that is located within one-half mile, measured horizontally, of either the proposed permit area or the area overlying the proposed underground workings.

(14) Each public road located in or within 100 feet of the proposed permit area.

(15) The boundaries of any public park and locations of any cultural or historical resources listed or eligible for listing in the National Register of Historic Places and known archeological sites within the permit and adjacent areas.

(16) Each cemetery that is located in or within 100 feet of the proposed permit area.

(17) Any land within the proposed permit area which is within the boundaries of any units of the National System of Trails or the Wild and Scenic Rivers System, including study rivers designated under section 5(a) of the Wild and Scenic Rivers Act.

(18) The elevations, locations, and geographic coordinates of test borings and core samplings. You may provide this information in a table cross-referenced to a map if approved by the regulatory authority.

(19) The location and extent of subsurface water, if encountered, within the proposed permit or adjacent areas. This information must include, but is not limited to, the estimated elevation of the water table, the areal and vertical distribution of aquifers, and portrayal of seasonal variations in hydraulic head in different aquifers. You must display this information on appropriately scaled cross-sections.

(20) The elevations, locations, and geographic coordinates of monitoring stations used to gather data on water quality and quantity, fish and wildlife, and other biological surveys in preparation of the application. You may provide this information in a table cross-referenced to a map if approved by the regulatory authority.

(21) The nature, depth, thickness, and commonly used names of the coal seams to be mined.

(22) Any coal crop lines within the permit and adjacent areas and the strike and dip of the coal to be mined.

(23) The location and extent of known workings of active, inactive, or abandoned underground mines located either within the proposed permit area or within a 2,000-foot radius of the proposed underground workings in any direction.

(24) Any underground mine openings to the surface within the proposed permit and adjacent areas.

(25) The location and extent of existing or previously surface-mined areas within the proposed permit area.

(26) The location and dimensions of existing areas of spoil, coal mine waste, noncoal mine waste disposal sites, dams, embankments, other impoundments, and water treatment facilities within the proposed permit area.

(27) The location and depth (if available) of all conventional gas and oil wells within the proposed permit and adjacent areas, as well as the extent of any directional or horizontal drilling for hydrocarbon extraction operations, including those using hydraulic fracturing methods, within or underlying those areas. You may provide information concerning depth in a table cross-referenced to a map if approved by the regulatory authority.

(28) Other relevant information required by the regulatory authority.

(b) Maps, plans, and cross-sections required by paragraph (a) of this section must be—

(1) Prepared by, or under the direction of, and certified by a qualified registered professional engineer, a professional geologist, or in any state that authorizes land surveyors to prepare and certify such maps, plans, and cross-sections, a qualified registered professional land surveyor, with assistance from experts in related fields such as landscape architecture.

(2) Updated when required by the regulatory authority.

(c) The regulatory authority may require that you submit the materials required by this section in a digital format that includes all necessary metadata.

§ 783.25 [Reserved]

■ 24. Revise part 784 to read as follows:

PART 784—UNDERGROUND MINING PERMIT APPLICATIONS—MINIMUM REQUIREMENTS FOR OPERATION AND RECLAMATION PLANS

Sec.

Authority: 30 U.S.C. 1201 *et seq.* and 54 U.S.C. 300101 *et seq.*

§ 784.1 Scope: What does this part do?

This part establishes the minimum requirements for the operation and reclamation plan portions of applications for a permit to conduct underground mining activities, except to the extent that part 785 of this subchapter establishes different requirements.

§ 784.2 What is the objective of this part?

The objective of this part is to ensure that you, the permit applicant, provide the regulatory authority with comprehensive and reliable information

on how you propose to conduct underground mining activities and reclaim the disturbed area in compliance with the Act, this chapter, and the regulatory program.

§ 784.4 What responsibilities do I and government agencies have under this part?

(a) You, the permit applicant, must provide to the regulatory authority all information required by this part, except where specifically exempted in this part.

(b) State and federal governmental agencies must provide information needed for permit applications to the extent that this part specifically requires that they do so.

§ 784.10 Information collection.

In accordance with 44 U.S.C. 3501 *et seq.,* the Office of Management and Budget (OMB) has approved the information collection requirements of this part and assigned it control number 1029–xxxx. Collection of this information is required under section 516(d) of SMCRA, which in effect requires applicants for permits for underground coal mines to prepare and submit an operation and reclamation plan for coal mining activities as part of the application. The regulatory authority uses this information to determine whether the plan will achieve the reclamation and environmental protection requirements of the Act and regulatory program. You, the permit applicant, must respond to obtain a benefit. A federal agency may not conduct or sponsor, and you are not required to respond to, a collection of information unless it displays a currently valid OMB control number.

§ 784.11 What must I include in the general description of my proposed operations?

Your application must contain a description of the mining operations that you propose to conduct during the life of the mine, including, at a minimum, the following—

(a) A narrative description of the—

(1) Type and method of coal mining procedures and proposed engineering techniques.

(2) Anticipated annual and total number of tons of coal to be produced.

(3) Major equipment to be used for all aspects of the proposed operations.

(b) A narrative explaining the construction, modification, use, maintenance, and removal (unless you can satisfactorily explain why retention is necessary or appropriate for the postmining land use specified in the application under § 784.24 of this part) of the following facilities:

(1) Dams, embankments, and other impoundments.

(2) Overburden and soil handling and storage areas and structures.

(3) Coal removal, handling, storage, cleaning, and transportation areas and structures.

(4) Spoil, coal processing waste, underground development waste, and noncoal mine waste removal, handling, storage, transportation, and disposal areas and structures.

(5) Mine facilities, including ventilation boreholes, fans, and access roads.

(6) Water pollution control facilities.

§ 784.12 What must the reclamation plan include?

(a) *General requirements.* Your application must contain a plan for the reclamation of the lands to be disturbed within the proposed permit area. The plan must show how you will comply with the reclamation requirements of the applicable regulatory program. At a minimum, the plan must include all information required under this part and part 785 of this chapter.

(b) *Reclamation timetable.* The reclamation plan must contain a detailed timetable for the completion of each major step in the reclamation process including, but not limited to—

(1) Backfilling.

(2) Grading.

(3) Restoration of the form of all perennial and intermittent stream segments through which you mine, either in their original location or as permanent stream-channel diversions.

(4) Soil redistribution.

(5) Planting.

(6) Demonstration of revegetation success.

(7) Restoration of the ecological function of all reconstructed perennial and intermittent stream segments, either in their original location or as permanent stream-channel diversions.

(8) Application for each phase of bond release under § 800.42 of this chapter.

(c) *Reclamation cost estimate.* The reclamation plan must contain a detailed estimate of the cost of reclamation, including both direct and indirect costs, of those elements of the proposed operations that are required to be covered by a performance bond under part 800 of this chapter, with supporting calculations for the estimates. You must use current standardized construction cost estimation methods and equipment cost guides to prepare this estimate.

(d) *Backfilling and grading plan.* (1) The reclamation plan must contain a plan for backfilling surface excavations, compacting the backfill, and grading the disturbed area, with contour maps, models, or cross-sections that show the anticipated final surface configuration of the proposed permit area, including drainage patterns, in accordance with §§ 817.102 through 817.107 of this chapter, using the best technology currently available. You must limit compaction to the minimum necessary to achieve stability requirements unless additional compaction is necessary to reduce infiltration to minimize leaching and discharges of parameters of concern.

(2) The backfilling and grading plan must describe in detail how you will conduct backfilling and related reclamation activities, including how you will handle acid-forming and toxic-forming materials, if present, to prevent the formation of acid or toxic drainage from acid-forming and toxic-forming materials within the overburden. You must explain how the method that you select will protect groundwater and surface water in accordance with § 817.38 of this chapter.

(e) *Soil handling plan*—(1) *General requirements.* (i) The reclamation plan must include a plan and schedule for removal, storage, and redistribution of topsoil, subsoil, and other material to be used as a final growing medium in accordance with § 817.22 of this chapter. It also must include a plan and schedule for removal, storage, and redistribution or other use of organic matter in accordance with § 817.22(f) of this chapter.

(ii) The plan submitted under paragraph (e)(1)(i) of this section must require that the B horizon, C horizon, and other underlying strata, or portions thereof, be removed and segregated, stockpiled, and redistributed to achieve the optimal rooting depths required to restore premining land use capability or to comply with the revegetation requirements of §§ 817.111 and 817.116 of this chapter.

(iii) The plan submitted under paragraph (e)(1)(i) of this section must explain how you will handle and store soil materials to avoid contamination by acid-forming or toxic-forming materials and to minimize deterioration of desirable soil characteristics.

(2) *Substitutes and supplements.* (i) Paragraph (e)(2) of this section applies to you if you propose to use appropriate overburden materials as a supplement to or substitute for the existing topsoil or subsoil on the proposed permit area.

(ii) You must demonstrate, and the regulatory authority must find in writing, that—

(A)(*1*) The quality of the existing topsoil and subsoil is inferior to that of the best overburden materials available within the proposed permit area; or

(*2*) The quantity of the existing topsoil and subsoil on the proposed permit area is insufficient to provide the optimal rooting depth or to meet other growth requirements of the native species to be planted. In this case, the plan must require that all available existing topsoil and favorable subsoil, regardless of the amount, be removed, stored, and redistributed as part of the final growing medium.

(B) The use of the overburden materials that you have selected, in combination with or in place of the topsoil or subsoil, will result in a soil medium that is more suitable than the existing topsoil and subsoil to sustain vegetation consistent with the postmining land use and the revegetation plan under paragraph (g) of this section and that will provide a rooting depth that is superior to the existing topsoil and subsoil.

(C) The overburden materials that you select for use as a soil substitute or supplement are the best materials available in the proposed permit area to support the native vegetation to be established or the crops to be planted.

(iii) The regulatory authority will specify the—

(A) Suitability criteria for substitutes and supplements.

(B) Chemical and physical analyses, field trials, or greenhouse tests that you must conduct to make the demonstration required by paragraph (e)(2)(ii) of this section.

(C) Sampling objectives and techniques and the analytical techniques that you must use for purposes of paragraph (e)(2)(iii)(B) of this section.

(iv) At a minimum, the demonstrations required by paragraph (e)(2)(ii) of this section must include—

(A) The physical and chemical soil characteristics and root zones needed to support the type of vegetation to be established on the reclaimed area.

(B) A comparison and analysis of the thickness, total depth, texture, percent coarse fragments, pH, thermal toxicity, and areal extent of the different kinds of soil horizons and overburden materials available within the proposed permit area, based upon a statistically valid sampling procedure.

(v) You must include a plan for testing and evaluating overburden materials during both removal and redistribution to ensure that only materials approved for use as soil substitutes or supplements are removed and redistributed.

(f) *Surface stabilization plan.* The reclamation plan must contain a plan for stabilizing road surfaces, redistributed soil materials, and other exposed surface areas to effectively control erosion and air pollution attendant to erosion in accordance with §§ 817.95, 817.150, and 817.151 of this chapter.

(g) *Revegetation plan.* (1) The reclamation plan must contain a plan for revegetation consistent with §§ 817.111 through 817.116 of this chapter, including, but not limited to, descriptions of—

(i) The schedule for revegetation of the area to be disturbed.

(ii) The site preparation techniques that you plan to use, including the measures that you will take to avoid or, when avoidance is not possible, to minimize and alleviate compaction of the root zone during backfilling, grading, soil redistribution, and planting.

(iii) What soil tests you will perform, together with a statement as to whether you will apply lime, fertilizer, or other amendments in response to those tests before planting or seeding.

(iv) The species that you will plant to achieve temporary erosion control or a description of other soil stabilization measures that you will implement in lieu of planting a temporary cover.

(v) The species that you will plant and the seeding and stocking rates and planting arrangements that you will use to achieve or complement the postmining land use and to enhance fish and wildlife habitat.

(vi) The planting and seeding techniques that you will use.

(vii) Whether you will apply mulch and, if so, the type of mulch and the method of application.

(viii) Whether you plan to conduct irrigation or apply fertilizer after the first growing season and, if so, to what extent and for what length of time.

(ix) Any normal husbandry practices that you plan to use in accordance with § 817.115(b) of this chapter.

(x) The standards and evaluation techniques that you propose to use to determine the success of revegetation in accordance with § 817.116 of this chapter.

(xi) The measures that you will take to avoid the establishment of invasive species on reclaimed areas or to control those species if they do become established.

(2) Except as provided in paragraphs (g)(4) and (5) of this section, the species and planting rates and arrangements selected as part of the revegetation plan must be designed to create a diverse, effective, permanent vegetative cover that is consistent with the native vegetative communities described in the permit application, as required by § 783.19 of this chapter, and that will meet the other requirements of paragraphs (a) and (b) of § 817.116 of this chapter.

(3) The species selected as part of the revegetation plan must—

(i) Be native to the area. The regulatory authority may approve the use of introduced species as part of the permanent vegetative cover for the site only if those species are both non-invasive and necessary to achieve the postmining land use.

(ii) Be capable of stabilizing the soil surface from erosion to the extent that control of erosion with herbaceous ground cover is consistent with establishment of a permanent vegetative cover that resembles native plant communities in the area.

(iii) Be compatible with the approved postmining land use.

(iv) Have the same seasonal characteristics of growth as the vegetative communities described in the permit application, as required by § 783.19 of this chapter.

(v) Be capable of self-regeneration and natural succession.

(vi) Be compatible with the plant and animal species of the area.

(vii) Meet the requirements of applicable state and federal seed, poisonous and noxious plant, and introduced species laws and regulations.

(4) The regulatory authority may grant an exception to the requirements of paragraphs (g)(3)(i), (iv), and (v) of this section when necessary to achieve a quick-growing, temporary, stabilizing cover on disturbed and regraded areas, and the species selected to achieve this purpose are consistent with measures to establish permanent vegetation.

(5) The regulatory authority may grant an exception to the requirements of paragraphs (g)(2), (g)(3)(i), (g)(3)(iv), and (g)(3)(v) of this section for those areas with a long-term, intensive, agricultural postmining land use.

(6) A professional forester or ecologist must develop and certify all revegetation plans that include the establishment of trees and shrubs. These plans must include site-specific planting prescriptions for canopy trees, understory trees and shrubs, and herbaceous ground cover compatible with establishment of those trees and shrubs. Each plan must use native species exclusively unless those species are inconsistent with the approved postmining land use and that land use is implemented before the entire bond amount for the area has been fully released under § 800.42(d) of this chapter.

(h) *Stream restoration plan.* If you propose to mine through a perennial or

intermittent stream, the reclamation plan must explain in detail how and when you will restore both the form and the ecological function of the stream segment, either in its original location or as a permanent stream-channel diversion, in accordance with §§ 784.28 and 817.57 of this chapter.

(i) *Coal resource conservation plan.* The reclamation plan must describe the measures that you will employ to maximize the use and conservation of the coal resource while using the best technology currently available to maintain environmental integrity, as required by § 817.59 of this chapter.

(j) *Plan for disposal of noncoal waste materials.* The reclamation plan must describe—

(1) The type and quantity of noncoal waste materials that you anticipate disposing of within the proposed permit area.

(2) How you intend to dispose of noncoal waste materials in accordance with § 817.89 of this chapter.

(3) The locations of any proposed noncoal waste material disposal sites within the proposed permit area.

(4) The contingency plans that you have developed to preclude sustained combustion of combustible noncoal materials.

(k) *Management of mine openings, boreholes, and wells.* The reclamation plan must contain a description, including appropriate cross-sections and maps, of the measures that you will use to seal or manage mine openings, and to plug, case or manage exploration holes, boreholes, wells and other openings within the proposed permit area, in accordance with § 817.13 of this chapter.

(l) *Compliance with Clean Air Act and Clean Water Act.* The reclamation plan must describe the steps that you have taken or will take to comply with the requirements of the Clean Air Act (42 U.S.C. 7401 *et seq.*), the Clean Water Act (33 U.S.C. 1251 *et seq.*), and other applicable air and water quality laws and regulations and health and safety standards.

(m) *Consistency with land use plans and surface owner plans.* The reclamation plan must describe how the proposed operation is consistent with—

(1) All applicable state and local land use plans and programs.

(2) The plans of the surface landowner, to the extent that those plans are practicable and consistent with this chapter and with other applicable laws and regulations.

§ 784.13 What additional maps and plans must I include in the reclamation plan?

(a) In addition to the maps and plans required under § 783.24 and other provisions of this subchapter, your application must include maps, plans, and cross-sections of the proposed permit area showing—

(1) The lands that you propose to affect throughout the life of the operation, including the sequence and timing of underground mining activities and the sequence and timing of backfilling, grading, and other reclamation activities to be conducted on areas where the operation will disturb the land surface.

(2) Each area of land for which a performance bond or other equivalent guarantee will be posted under part 800 of this chapter.

(3) Any change that the proposed operations will cause in a facility or feature identified under § 783.24 of this chapter.

(4) All buildings, utility corridors, and facilities to be used or constructed within the proposed permit area, with identification of those facilities that you propose to retain as part of the postmining land use.

(5) Each coal storage, cleaning, processing, and loading area and facility.

(6) Each temporary storage area for soil, spoil, coal mine waste, and noncoal mine waste.

(7) Each water diversion, collection, conveyance, treatment, storage and discharge facility to be used, including the location of each point at which water will be discharged from the proposed permit area to a surface-water body and the name of that water body.

(8) Each disposal facility for coal mine waste and noncoal mine waste materials.

(9) Each feature and facility to be constructed to protect or enhance fish, wildlife, and related environmental values.

(10) Each explosive storage and handling facility.

(11) Location of each siltation structure, sedimentation pond, permanent water impoundment, refuse pile, and coal mine waste impoundment for which plans are required by § 784.25 of this part, and the location of each excess spoil fill for which plans are required under § 784.35 of this part.

(12) Each segment of a perennial or intermittent stream that you propose to mine through, bury, or divert.

(13) Each location in which you propose to restore a segment of a perennial or intermittent stream or construct a temporary or permanent stream-channel diversion.

(14) Each segment of a perennial or intermittent stream that you propose to enhance under the plan submitted in accordance with § 784.16 of this part.

(15) Location and geographic coordinates of each monitoring point for groundwater, surface water, and subsidence, and each point at which you propose to monitor the biological condition of perennial and intermittent streams.

(b) Except as provided in §§ 784.25(a)(2), 784.25(a)(3), 784.35, 817.74(c), and 817.81(c) of this chapter, maps, plans, and cross-sections required under paragraphs (a)(5), (6), (7), (10), and (11) of this section must be prepared by, or under the direction of, and certified by a qualified, registered, professional engineer, a professional geologist, or, in any state that authorizes land surveyors to prepare and certify such maps, plans, and cross-sections, a qualified, registered, professional, land surveyor, with assistance from experts in related fields such as landscape architecture.

(c) The regulatory authority may require that you submit the materials required by this section in a digital format.

§ 784.14 What requirements apply to the use of existing structures?

(a) Each application must contain a description of each existing structure proposed to be used in connection with or to facilitate the surface coal mining and reclamation operation. The description must include—

(1) The location of the structure.

(2) Plans of the structure and a description of its current condition.

(3) The approximate starting and ending dates of construction of the existing structure.

(4) A showing, including relevant monitoring data or other evidence, of whether the structure meets the performance standards of subchapter K (Permanent Program Standards) of this chapter or, if the structure does not meet the performance standards of subchapter K of this chapter, a showing of whether the structure meets the performance standards of subchapter B (Initial Program Standards) of this chapter.

(b) Each application must contain a compliance plan for each existing structure proposed to be modified or reconstructed for use in connection with or to facilitate the surface coal mining and reclamation operation. The compliance plan must include—

(1) Design specifications for the modification or reconstruction of the structure to meet the design and performance standards of subchapter K of this chapter.

(2) A construction schedule that includes dates for beginning and

completing interim steps and final reconstruction.

(3) Provisions for monitoring the structure during and after modification or reconstruction to ensure that the performance standards of subchapter K of this chapter are met.

(4) A demonstration that there is no significant risk of harm to the environment or to public health or safety during modification or reconstruction of the structure.

§ 784.15 [Reserved]

§ 784.16 What must I include in the fish and wildlife protection and enhancement plan?

(a) *General requirements.* Your application must include a fish and wildlife protection and enhancement plan that—

(1) Is consistent with the requirements of § 817.97 of this chapter.

(2) Is specific to the resources identified under § 783.20 of this chapter.

(3) Complies with the requirements of paragraphs (b) through (e) of this section.

(b) *Protection of threatened and endangered species.* You must describe how you will comply with the Endangered Species Act, 16 U.S.C. 1531 *et seq.,* including any species-specific protection and enhancement plans developed in accordance with that law.

(c) *Protection of other species.* You must describe how, to the extent possible using the best technology currently available, you will minimize disturbances and adverse impacts on fish, wildlife, and related environmental values. At a minimum, you must explain how you will—

(1) Time operations to avoid or minimize disruption of critical life cycle events for fish and wildlife, including migration, nesting, breeding, calving, and spawning.

(2) Retain forest cover and other native vegetation as long as possible and time the removal of that vegetation to minimize adverse impacts on aquatic and terrestrial species.

(3) To the extent possible, maintain an intact forested buffer at least 100 feet wide between surface disturbances and perennial and intermittent streams that are located in forested areas. The buffer width must be measured horizontally on a line perpendicular to the stream beginning at the bankfull elevation or, if there are no discernible banks, the centerline of the active channel.

(4) Locate and design sedimentation ponds, utilities, support facilities, roads, rail spurs, and other transportation facilities to avoid or minimize adverse impacts on fish, wildlife, and related environmental values.

(5) Periodically evaluate the impacts of the operation on fish, wildlife, and related environmental values in the permit and adjacent areas and use that information to modify operations or take other action to avoid or minimize adverse impacts on those values.

(6) Select non-invasive native species for revegetation that either promote or do not inhibit the long-term development of wildlife habitat.

(7) Avoid mining through perennial or intermittent streams or disturbing riparian habitat adjacent to those streams. When avoidance is not possible, minimize—

(i) The time during which mining and reclamation operations disrupt those streams or associated riparian habitat;

(ii) The length of the stream segments mined through; and

(iii) The amount of riparian habitat disturbed by the operation.

(8) Implement other appropriate conservation practices such as, but not limited to, those identified in the technical guides published by the Natural Resources Conservation Service.

(d) *Enhancement measures*—(1) *General requirements.* You must describe how you will use the best technology currently available to enhance fish, wildlife, and related environmental values both within and outside the area to be disturbed by mining activities, where practicable. Your permit application must either identify and describe the enhancement measures that you will implement, where practicable, or explain why implementation of those measures is not practicable. Potential enhancement measures include, but are not limited to—

(i) Using the backfilling and grading process to create postmining surface features and configurations, such as functional wetlands, of high value to fish and wildlife.

(ii) Designing and constructing permanent impoundments in a manner that will maximize their value to fish and wildlife.

(iii) Creating rock piles and other permanent landscape features of value to raptors and other wildlife for nesting and shelter, to the extent that those features are consistent with premining features, the surrounding topography, and the approved postmining land use.

(iv) Reestablishing native forests or other native plant communities, both within and outside the permit area. This may include restoring the native plant communities that existed before any mining, establishing native plant communities consistent with the native plant communities that are a part of the natural succession process, or establishing native plant communities that will support wildlife species of local, state, or national concern, including, but not limited to, species listed or proposed for listing as threatened or endangered on a state or national level.

(v) Establishing a vegetative corridor at least 100 feet wide along the banks of streams that lacked a buffer of this nature before mining. The corridor width should be measured horizontally on a line perpendicular to the stream beginning at the bankfull elevation or, if there are no discernible banks, the centerline of the active channel. Species selected for planting within the corridor must be native to the area, including native plants adapted to and suitable for planting in riparian zones within the corridor. Whenever possible, you should establish this corridor along both banks of the stream.

(vi) Implementing conservation practices identified in publications, such as the technical guides published by the Natural Resources Conservation Service.

(vii) Permanently fencing livestock away from streams.

(viii) Installing perches and nest boxes.

(ix) Establishing conservation easements or deed restrictions, with an emphasis on preserving riparian vegetation and forested corridors along perennial and intermittent streams.

(x) Providing funding to cover long-term operation and maintenance costs that watershed organizations incur in treating long-term postmining discharges from previous mining operations.

(xi) Reclaiming previously mined areas located outside the area that you propose to disturb.

(xii) Implementing measures to reduce or eliminate existing sources of surface-water or groundwater pollution.

(2) *Additional enhancement requirements for operations with anticipated long-term adverse impacts.* (i) Your permit application must identify and describe the enhancement measures under paragraph (d)(1) of this section that you will implement if your mining activities would result in the long-term loss of native forest, other native plant communities, or a segment of a perennial or intermittent stream.

(ii) The scope of the enhancement measures that you propose under paragraph (d)(2)(i) of this section must be commensurate with the magnitude of the long-term adverse impacts of the proposed operation. Whenever possible, the measures must be permanent.

(iii)(A) Enhancement measures proposed under paragraph (d)(2) of this section must be implemented within the watershed in which the proposed operation is located, unless opportunities for enhancement are not available within that watershed. In that case, you must propose to implement enhancement measures in the closest adjacent watershed in which enhancement opportunities exist, as approved by the regulatory authority.

(B) Each regulatory program must prescribe the size of the watershed for purposes of paragraph (d)(2)(iii)(A) of this section, using a generally-accepted watershed classification system.

(iv) The permit approved by the regulatory authority must include a condition requiring completion of the enhancement measures proposed under paragraph (d)(2) of this section.

(3) *Inclusion within permit area.* If the enhancement measures to be implemented under paragraphs (d)(1) and (2) of this section would involve more than a de minimis disturbance of the surface of land outside the area to be mined, you must include the land to be disturbed by those measures within the proposed permit area.

(e) *Fish and Wildlife Service review.* (1)(i) The regulatory authority must provide the protection and enhancement plan developed under this section to the applicable regional or field office of the U.S. Fish and Wildlife Service whenever the resource information submitted under § 783.20 of this chapter includes species listed as threatened or endangered under the Endangered Species Act of 1973, 16 U.S.C. 1531 *et seq.,* critical habitat designated under that law, or species proposed for listing as threatened or endangered under that law. The regulatory authority must provide the protection and enhancement plan to the Service no later than the time that it provides written notice of the permit application to the Service under § 773.6(a)(3)(ii) of this chapter.

(ii) When the resource information obtained under § 783.20 of this chapter does not include threatened or endangered species, designated critical habitat, or species proposed for listing as threatened or endangered, the regulatory authority must provide the protection and enhancement plan to the applicable regional or field office of the U.S. Fish and Wildlife Service only if the Service requests an opportunity to review and comment on that plan. The regulatory authority must provide the requested plan to the Service within 10 days of receipt of the request from the Service.

(2)(i) The regulatory authority must document its disposition of all comments from the Service that pertain to fish and wildlife or plants listed as threatened or endangered under the Endangered Species Act of 1973, 16 U.S.C. 1531 *et seq.,* or to critical habitat designated under that law.

(ii) If the regulatory authority does not agree with a species-specific protection measure or any other recommendation from the Service that pertains to fish and wildlife or plants listed as threatened or endangered under the Endangered Species Act of 1973, 16 U.S.C. 1531 *et seq.,* or to critical habitat designated under that law, the regulatory authority must explain the rationale for that decision in the disposition document prepared under paragraph (e)(2)(i) of this section. The regulatory authority must provide a copy of that document to the pertinent Service field office and OSMRE field office and must refrain from approving the permit application.

(iii) If the Service field office does not concur with the regulatory authority's decision under paragraph (e)(2)(ii) of this section and the regulatory authority and the Service field office are unable to reach agreement at that level, either the regulatory authority or the Service may elevate the issue through the chain of command of the regulatory authority, the Service, and OSMRE for resolution.

(iv) The regulatory authority may not approve the permit application until all issues are resolved in accordance with paragraph (e)(2)(iii) of this section and the regulatory authority receives written documentation from the Service that all issues have been resolved.

§ 784.17 [Reserved]

§ 784.18 [Reserved]

§ 784.19 What baseline information on hydrology, geology, and aquatic biology must I provide?

(a) *General requirements.* Your permit application must include information on the hydrology, geology, and aquatic biology of the proposed permit and adjacent areas in sufficient detail to assist in—

(1) Determining the probable hydrologic consequences of the proposed operation upon the quality and quantity of surface water and groundwater in the proposed permit and adjacent areas, as required under § 784.20 of this part.

(2) Determining the nature and extent of both the hydrologic reclamation plan required under § 784.22 of this part and the monitoring plans required under § 784.23 of this part.

(3) Determining whether reclamation as required by this chapter can be accomplished.

(4) Preparing the cumulative hydrologic impact assessment under § 784.21 of this part, including an evaluation of whether the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area.

(5) Preparing the subsidence control plan under § 784.30 of this part.

(b) *Groundwater information*—(1) *General requirements.* Your permit application must include information sufficient to document seasonal variations in the quality, quantity, and usage of groundwater, including all surface discharges, within the proposed permit and adjacent areas.

(2) *Underground mine pools.* If an underground mine pool is present within the proposed permit or adjacent areas, you must prepare an assessment of the characteristics of the mine pool, including seasonal changes in quality, quantity, and flow patterns, unless you demonstrate, and the regulatory authority finds, that the mine pool would not be hydrologically connected to the proposed operation. The determination of the probable hydrologic consequences of mining required under § 784.20 of this part also must include a discussion of the effect of the proposed mining operation on any underground mine pools within the proposed permit and adjacent areas.

(3) *Monitoring wells.* The regulatory authority must require the installation of properly-screened monitoring wells when necessary to document seasonal variations in the quality, quantity, and usage of groundwater.

(4) *Groundwater quality descriptions.* At a minimum, groundwater quality descriptions must include baseline information on—

(i) Major anions, including, at a minimum, bicarbonate, sulfate, and chloride.

(ii) Major cations, including, at a minimum, calcium, magnesium, sodium, and potassium.

(iii) The cation-anion balance of the parameters sampled in paragraphs (b)(4)(i) and (ii) of this section, plus any cation or anion that constitutes a significant percentage of the total ionic charge balance.

(iv) Ammonia.

(v) Arsenic.

(vi) Cadmium.

(vii) Copper.

(viii) Hot acidity.

(ix) Nitrogen.

(x) pH.

(xi) Selenium.

(xii) Specific conductance corrected to 25 °C.

(xiii) Total alkalinity.
(xiv) Total dissolved solids.
(xv) Total iron.
(xvi) Total manganese.
(xvii) Zinc.

(5) *Groundwater quantity descriptions.* At a minimum, groundwater quantity descriptions must include seasonal variations in approximate rates of groundwater discharge or usage and the depth to the water table in—

(i) Each coal seam to be mined.

(ii) Each water-bearing stratum above each coal seam to be mined.

(iii) Each potentially impacted stratum below the lowest coal seam to be mined.

(6) *Sampling requirements.* (i) You must establish monitoring wells or equivalent monitoring points at a sufficient number of locations within the proposed permit and adjacent areas to determine groundwater quality, quantity, and movement in each aquifer above or immediately below the lowest coal seam to be mined. At a minimum, for each aquifer, you must locate monitoring points—

(A) Upgradient and downgradient of the proposed permit area;

(B) Upgradient and downgradient of the area overlying the proposed underground mine workings; and

(C) In a representative number of ephemeral streams within the proposed permit and adjacent areas.

(ii) To document seasonal variations in groundwater quality, you must collect samples from the locations identified in paragraph (b)(6)(i) of this section at equally spaced monthly intervals for a minimum of 12 consecutive months. You must analyze those samples for the parameters listed in paragraph (b)(4) of this section at the same frequency.

(iii) To document seasonal variations in groundwater quantity, you must take the measurements listed in paragraph (b)(5) of this section at each location identified in paragraph (b)(6)(i) of this section at equally spaced monthly intervals for a minimum of 12 consecutive months.

(iv) The regulatory authority must extend the minimum data collection period specified in paragraphs (b)(6)(ii) and (iii) of this section whenever data available from the National Oceanic and Atmospheric Administration or similar databases indicate that the region in which the proposed operation is located experienced severe drought (− 3.0 or lower on the Palmer Drought Severity Index) or abnormally high precipitation (3.0 or higher on the Palmer Drought Severity Index) during the initial baseline data collection period. Baseline data collection must continue until the dataset includes 12 consecutive months without severe drought or abnormally high precipitation.

(c) *Surface-water information*—(1) *General requirements.* Your permit application must include information sufficient to document seasonal variation in surface-water quality, quantity, and usage within the proposed permit and adjacent areas.

(2) *Surface-water quality descriptions.* At a minimum, surface-water quality descriptions must include baseline information on—

(i) Major anions, including, at a minimum, bicarbonate, sulfate, and chloride.

(ii) Major cations, including, at a minimum, calcium, magnesium, sodium, and potassium.

(iii) The cation-anion balance of the parameters sampled in paragraphs (c)(2)(i) and (ii) of this section, plus any cation or anion that constitutes a significant percentage of the total ionic charge balance.

(iv) Ammonia.
(v) Arsenic.
(vi) Cadmium.
(vii) Copper.
(viii) Hot acidity.
(ix) Nitrogen.
(x) pH.
(xi) Selenium.
(xii) Specific conductance corrected to 25 °C.
(xiii) Total alkalinity.
(xiv) Total dissolved solids.
(xv) Total iron.
(xvi) Total manganese.
(xvii) Total suspended solids.
(xviii) Zinc.

(3) *Surface-water quantity descriptions.* (i) At a minimum, surface-water quantity descriptions for perennial, intermittent, and ephemeral streams and other discharges within the proposed permit and adjacent areas must include—

(A) Baseline information on peak flow magnitude and frequency.

(B) Usage data for existing uses and anticipated usage for all reasonably foreseeable uses of each stream.

(C) Seasonal flow variations.

(D) Seepage-run sampling determinations, if you propose to deploy a longwall panel beneath a perennial or intermittent stream or employ other types of full-extraction mining methods beneath a perennial or intermittent stream.

(ii) All flow measurements under paragraph (c)(3)(i) of this section must be made using generally-accepted professional techniques approved by the regulatory authority. All techniques must be repeatable and must produce consistent results on successive measurements. Visual observations are not acceptable.

(4) *Sampling requirements.* (i) You must establish monitoring points at a sufficient number of locations within the proposed permit and adjacent areas to determine the quality and quantity of water in streams within those areas. At a minimum, you must locate monitoring points—

(A) Upgradient and downgradient of the proposed permit area in each perennial and intermittent stream within the proposed permit and adjacent areas;

(B) Upgradient and downgradient of the area overlying the proposed underground mine workings in all potentially affected perennial and intermittent streams; and

(C) In a representative number of ephemeral streams within the proposed permit and adjacent areas.

(ii) To document seasonal variations in surface-water quality, you must collect samples from the locations identified in paragraph (c)(4)(i) of this section at equally-spaced monthly intervals for a minimum of 12 consecutive months. You must analyze those samples for the parameters listed in paragraph (c)(2) of this section at the same frequency.

(iii) To document seasonal variations in surface-water quantity, you must take the measurements listed in paragraph (c)(3) of this section at each location identified in paragraph (c)(4)(i) of this section at equally-spaced monthly intervals for a minimum of 12 consecutive months.

(iv) The regulatory authority must extend the minimum data collection period specified in paragraphs (c)(4)(ii) and (iii) of this section whenever data available from the National Oceanic and Atmospheric Administration or similar databases indicate that the region in which the proposed operation is located experienced severe drought (− 3.0 or lower on the Palmer Drought Severity Index) or abnormally high precipitation (3.0 or higher on the Palmer Drought Severity Index) during the initial baseline data collection period. Baseline data collection must continue until the dataset includes 12 consecutive months without severe drought or abnormally high precipitation.

(5) *Precipitation measurements.* You must provide records of precipitation amounts for the proposed permit area, using on-site, self-recording devices. Precipitation records must be adequate to generate and calibrate a hydrologic model of the site. The regulatory authority will determine whether you must create such a model.

(6) *Stream assessments.* You must map and separately identify all perennial, intermittent, and ephemeral streams within the proposed permit and adjacent areas and include an assessment of those streams. At a minimum, the assessment must include—

(i) The baseline stream pattern, profile, and dimensions, with measurements of channel slope, sinuosity, water depth, alluvial groundwater depth, depth to bedrock, bankfull depth, bankfull width, width of the flood-prone area, and dominant in-stream substrate at a scale and frequency adequate to characterize all stream segments.

(ii) A description of riparian zone vegetation, including—

(A) Any hydrophytic vegetation within and adjacent to the stream channel.

(B) The percentage of the riparian zone that is forested.

(C) The percentage of channel canopy coverage.

(iii) The biological condition of each stream segment, to the extent required by paragraph (e) of this section.

(iv) The location of the channel head on terminal reaches of each stream segment.

(v) The location of transition points from ephemeral to intermittent and from intermittent to perennial, when applicable.

(vi) Identification of all stream segments within the proposed permit and adjacent areas that appear on the list of impaired surface waters prepared under section 303(d) of the Clean Water Act. You must identify the stressors and associated total maximum daily loads for those stream segments, if applicable.

(d) *Additional information for discharges from previous coal mining operations.* If the proposed permit and adjacent areas contain any discharges from previous surface or underground coal mining operations, you must sample those discharges during low-flow conditions of the receiving stream on a one-time basis and analyze the samples for the parameters listed in paragraph (c)(2) of this section and for both total and dissolved fractions of the following parameters—

(1) Aluminum.
(2) Arsenic.
(3) Barium.
(4) Beryllium.
(5) Cadmium.
(6) Copper.
(7) Lead.
(8) Mercury.
(9) Nickel.
(10) Selenium.
(11) Silver.
(12) Thallium.
(13) Zinc.

(e) *Biological condition information.* (1) Except as provided in paragraph (h) of this section, your permit application must include an assessment of the biological condition of—

(i) Each perennial and intermittent stream within the proposed permit area.

(ii) Each perennial and intermittent stream within the adjacent area that would receive discharges from the proposed operation.

(iii) A representative sample of ephemeral streams within both the proposed permit area and the adjacent area that would receive discharges from the proposed operation.

(iv) Each perennial and intermittent stream within the adjacent area that might possibly be impacted by subsidence resulting from the proposed underground mining activities.

(2) In conducting this assessment, you must use a multimetric bioassessment protocol approved by the state or tribal agency responsible for preparing the water quality inventory required under section 305(b) of the Clean Water Act, or other scientifically-valid multimetric bioassessment protocols used by agencies responsible for implementing the Clean Water Act, modified as necessary to meet the following requirements. At a minimum, the protocol must—

(i) Be based upon the measurement of an appropriate array of aquatic organisms, including identification of benthic macroinvertebrates to the genus level.

(ii) Result in the calculation of index values for both habitat and macroinvertebrates.

(iii) Provide a correlation of index values to the capability of the stream to support designated uses under section 101(a) or 303(c) of the Clean Water Act, as well as any other existing or reasonably foreseeable uses.

(f) *Geologic information.* (1) Your application must include a description of the geology of the proposed permit and adjacent areas down to and including the deeper of either the stratum immediately below the lowest coal seam to be mined or any aquifer below the lowest coal seam to be mined that may be adversely impacted by mining. The description must include—

(i) The areal and structural geology of the proposed permit and adjacent areas.

(ii) Other parameters that influence the required reclamation.

(iii) An explanation of how the areal and structural geology may affect the occurrence, availability, movement, quantity, and quality of potentially impacted surface water and groundwater.

(iv) The composition of the base of each perennial and intermittent stream within the proposed permit and adjacent areas, together with a prediction of how that base would respond to subsidence of strata overlying the proposed underground mine workings and how subsidence would impact streamflow.

(2) The description required by paragraph (f)(1) of this section must be based on all of the following—

(i) The cross-sections, maps, and plans required by § 783.24 of this chapter.

(ii) The information obtained under paragraphs (f)(3) through (f)(5) of this section.

(iii) Geologic literature and practices.

(3) For any portion of the proposed permit area in which the strata down to the coal seam to be mined will be removed or are already exposed, you must collect and analyze samples from test borings; drill cores; or fresh, unweathered, uncontaminated samples from rock outcrops, down to and including the deeper of either the stratum immediately below the lowest coal seam to be mined or any aquifer below the lowest seam to be mined that may be adversely impacted by mining. Your application must include the following data and analyses:

(i) Logs showing the lithologic characteristics, including physical properties and thickness, of each stratum, and the location of any groundwater encountered.

(ii) Chemical analyses identifying those strata that may contain acid-forming materials, toxic-forming materials, or alkalinity-producing materials and the extent to which each stratum contains those materials.

(iii) Chemical analyses of the coal seam for acid-forming or toxic-forming materials, including, but not limited to, total sulfur and pyritic sulfur.

(4) For lands within the permit and adjacent areas where the strata above the coal seam to be mined will not be removed, you must collect and analyze samples from test borings or drill cores. Your application must include the following data and analyses:

(i) Logs showing the lithologic characteristics, including physical properties and thickness, of each stratum that may be impacted, and the location of any groundwater encountered.

(ii) Chemical analyses of those strata immediately above and below the coal seam to be mined to identify whether and to what extent each stratum contains acid-forming materials, toxic-

forming materials, or alkalinity-producing materials.

(iii) Chemical analyses of the coal seam for acid-forming or toxic-forming materials, including, but not limited to, total sulfur and pyritic sulfur.

(iv) For standard room-and-pillar mining operations, the thickness and engineering properties of clays or soft rock such as clay shale, if any, in the strata immediately above and below each coal seam to be mined.

(5) You must provide any additional geologic information and analyses that the regulatory authority determines to be necessary to protect the hydrologic balance, to minimize or prevent subsidence, or to meet the performance standards of this chapter.

(6) You may request the regulatory authority to waive the requirements of paragraphs (f)(3) and (4) of this section, in whole or in part. The regulatory authority may grant the waiver request only after finding in writing that the collection and analysis of that data is unnecessary because other representative information is available to the regulatory authority in a satisfactory form.

(g) *Cumulative impact area information.* (1) The regulatory authority will obtain the hydrologic, geologic, and biological information necessary to assess the probable cumulative hydrologic impacts of the proposed operation and all anticipated mining on surface-water and groundwater systems in the cumulative impact area, as required by § 784.21 of this part, from the appropriate federal or state agencies, to the extent that the information is available from those agencies.

(2) If the information identified in paragraph (g)(1) of this section is not available from other federal or state agencies, you must gather and submit this information to the regulatory authority as part of the permit application before the regulatory authority may approve your application. As an alternative to collecting new information, you may submit data and analyses from nearby mining operations if the site of those operations is representative of the proposed operations in terms of topography, hydrology, geology, geochemistry, and method of mining.

(3) The regulatory authority may not approve the permit application until the necessary hydrologic, geologic, and biological information for the cumulative impact area is available, either from other agencies or from you, the applicant.

(h) *Exception for operations that avoid streams.* Upon your request, the regulatory authority may waive the biological condition information requirements of paragraph (e) of this section if you demonstrate, and if the regulatory authority finds in writing, that your operation will not—

(1) Mine through or bury a perennial or intermittent stream;

(2) Create a point-source discharge to any perennial, intermittent, or ephemeral stream; or

(3) Modify the base flow of any perennial or intermittent stream or cause the stream to pool, either as a result of subsidence or as a result of any other mining-related activity.

(i) *Coordination with Clean Water Act agencies.* The regulatory authority will consult in a timely manner with the agencies responsible for issuing permits, authorizations, and certifications under the Clean Water Act and make best efforts to minimize differences in baseline data collection points and parameters and to share data to the extent practicable and consistent with each agency's mission, statutory requirements, and implementing regulations.

(j) *Corroboration of baseline data.* The regulatory authority must either corroborate a sample of the baseline information in your application or arrange for a third party to conduct the corroboration at your expense. Corroboration may include, but is not limited to, simultaneous sample collection and analysis, use of field measurements, or comparison of application data with application or monitoring data from adjacent operations.

(k) *Permit nullification for inaccurate information.* If the regulatory authority issues a permit on the basis of what it later determines to be substantially inaccurate baseline information, the permit will be void from the date of issuance and have no legal effect. You must cease mining-related activities and immediately begin to reclaim the disturbed area upon notification by the regulatory authority that the permit is void under this paragraph.

§ 784.20 How must I prepare the determination of the probable hydrologic consequences of my proposed operation (PHC determination)?

(a) *Content of PHC determination.* Your permit application must contain a determination of the probable hydrologic consequences of the proposed operation upon the quality and quantity of surface water and groundwater and upon the biological condition of perennial, intermittent, and ephemeral streams under seasonal flow conditions for the proposed permit and adjacent areas. You must base the PHC determination on an analysis of the baseline hydrologic, geologic, biological, and other information required under § 784.19 of this part. It must include findings on:

(1) Whether the operation may cause material damage to the hydrologic balance outside the permit area.

(2) Whether acid-forming or toxic-forming materials are present that could result in the contamination of surface water or groundwater.

(3) Whether underground mining activities conducted after October 24, 1992, may result in contamination, diminution or interruption of a well or spring within the permit or adjacent areas that was in existence when the permit application was submitted and that is used for domestic, drinking, or residential purposes.

(4) Whether the proposed operation will intercept aquifers in overburden strata or aquifers in underground mine voids (mine pools) or create aquifers in spoil placed in the backfilled area and, if so, what impacts the operation would have on those aquifers, both during mining and after reclamation, and the effect of those impacts on the hydrologic balance.

(5) What impact the proposed operation will have on:

(i) Sediment yield and transport from the area to be disturbed.

(ii) Water quality within the proposed permit and adjacent areas, including, at a minimum—

(A) Major anions including, at a minimum, bicarbonate, sulfate, and chloride.

(B) Major cations, including, at a minimum, calcium, magnesium, sodium, and potassium.

(C) Hot acidity.

(D) pH.

(E) Selenium.

(F) Specific conductance corrected to 25 °C.

(G) Total alkalinity.

(H) Total dissolved solids.

(I) Total iron.

(J) Total manganese.

(K) Total suspended solids.

(L) Other water quality parameters of local importance, as determined by a review of the baseline information required under § 784.19 of this part.

(iii) Flooding and precipitation runoff patterns and characteristics.

(iv) Peak-flow magnitude and frequency for perennial, intermittent, and ephemeral streams within the proposed permit and adjacent areas.

(v) Seasonal variations in streamflow.

(vi) The availability of groundwater and surface water, including the impact of any diversion of surface or subsurface

flows to underground mine workings or any changes in watershed size as a result of the postmining surface configuration.

(vii) The biological condition of perennial, intermittent, and ephemeral streams within the proposed permit and adjacent areas.

(viii) Other characteristics as required by the regulatory authority.

(6) What impact subsidence resulting from the proposed underground mining activities may have on perennial and intermittent streams.

(7) Whether the underground mine workings will flood after mine closure and, if so, a statement and explanation of—

(i) The highest potentiometric surface of the mine pool after closure.

(ii) Whether, where, and when the mine pool is likely to result in a surface discharge, either via gravity or as a result of hydrostatic pressure.

(iii) The predicted quality of any discharge from the mine pool.

(iv) The predicted impact of the mine pool on the hydrologic balance of the proposed permit and adjacent areas after the mine pool reaches equilibrium.

(v) The potential for a mine pool blowout or other hydrologic disturbances.

(vi) The potential for the mine pool to destabilize surface features.

(vii) The potential impact of roof collapses on mine pool behavior and equilibrium.

(b) *Supplemental information.* (1) The regulatory authority must require that you, the applicant, submit supplemental information if the PHC determination required by paragraph (a) of this section indicates that one of the following conditions exists:

(i) The proposed operation may result in adverse impacts to the hydrologic balance either within or outside the proposed permit area.

(ii) The proposed operation may result in adverse impacts to the biological condition of a perennial or intermittent stream within the proposed permit or adjacent areas.

(iii) Acid-forming or toxic-forming material is present that may result in the contamination of either groundwater or surface water used as a water supply.

(2) The supplemental information required under paragraph (b)(1) of this section must be adequate to fully evaluate the probable hydrologic consequences of the proposed operation and to plan remedial and reclamation activities. It may include, but is not limited to, additional drilling, geochemical analyses of overburden materials, aquifer tests, hydrogeologic analyses of the water-bearing strata, analyses of flood flows, or analyses of other characteristics of water quality or quantity, including the stability of underground mine pools that might be affected by the proposed operation and the stability of any mine pool created by the proposed operation.

(c) *Subsequent reviews of PHC determinations.* (1) The regulatory authority must review each application for a permit revision to determine whether a new or updated PHC determination is needed.

(2) The regulatory authority must require that you prepare a new or updated PHC determination if the review under paragraph (c)(1) of this section finds that one is needed.

§ 784.21 What requirements apply to preparation and review of the cumulative hydrologic impact assessment (CHIA)?

(a) *General requirements.* (1) The regulatory authority must prepare a written assessment of the probable cumulative hydrologic impacts of the proposed operation and all anticipated mining upon surface-water and groundwater systems in the cumulative impact area. This assessment, which is known as the CHIA, must be sufficient to determine, for purposes of permit approval, whether the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area.

(2) In preparing the CHIA, the regulatory authority will consider relevant information on file for other mining operations located within the cumulative impact area or in similar watersheds.

(3) As provided in § 784.19(g) of this part, the regulatory authority may not approve your permit application until it receives the hydrologic, geologic, and biological information needed to prepare the CHIA, either from other federal and state agencies or from you.

(b) *Contents.* At a minimum, the CHIA must include—

(1) A map of the cumulative impact area. At a minimum, the map must identify and display—

(i) Any difference in the boundaries of the cumulative impact area for groundwater and surface water.

(ii) The locations of all previous, current, and anticipated surface and underground mining.

(iii) The locations of all baseline data collection sites within the proposed permit and adjacent areas under § 784.19 of this part.

(iv) Designated uses of surface water under section 101(a) or 303(c) of the Clean Water Act.

(2) A description of all previous, existing, and anticipated surface and underground coal mining within the cumulative impact area, including, at a minimum, the coal seam or seams mined, the extent of mining, and the reclamation status of each operation.

(3) A description of baseline hydrologic information for the proposed permit and adjacent areas under § 784.19 of this part, including—

(i) The quality and quantity of surface water and groundwater and seasonal variations therein.

(ii) Quantitative information about existing usage of surface water and groundwater, as well as information defining the quality of water required for each existing and reasonably foreseeable use of groundwater and surface water and each designated use of surface water under section 101(a) or 303(c) of the Clean Water Act.

(iii) A description and map of the local and regional groundwater systems.

(iv) The biological condition of perennial, intermittent, and ephemeral streams.

(4) A discussion of any potential concerns identified in the PHC determination required under § 784.20 of this part and how those concerns have been or will be resolved.

(5) A quantitative assessment of how all anticipated surface and underground mining may impact the quality of surface water and groundwater in the cumulative impact area, expressed in terms of each baseline parameter identified under § 784.19 of this part.

(6) Criteria defining material damage to the hydrologic balance outside the permit area on a site-specific basis. These criteria must—

(i) Be expressed in numerical terms for each parameter of concern.

(ii) Take into consideration the biological requirements of any species listed as threatened or endangered under the Endangered Species Act when those species or designated critical habitat are present within the cumulative impact area.

(iii) Identify the portion of the cumulative impact area to which the criteria apply and the locations at which impacts will be monitored. The regulatory authority may establish different criteria for subareas within the cumulative impact area when appropriate.

(iv) Be incorporated into the permit.

(7) An assessment of how all anticipated surface and underground mining may affect groundwater movement and availability within the cumulative impact area.

(8) An evaluation, with references to supporting data and analyses, of whether the CHIA will support a finding that the proposed operation has been

designed to prevent material damage to the hydrologic balance outside the permit area. To support this finding, the CHIA must include the following determinations, with appropriate documentation—

(i) During all phases of mining and reclamation and at all times of the year, variations in streamflow and groundwater availability resulting from the operation, as well as variations in the amount and concentration of parameters of concern in discharges from the operation to groundwater and surface water, will not—

(A) Result in conversion of a perennial or intermittent stream to an ephemeral stream or conversion of a perennial stream to an intermittent stream. Conversion of an intermittent stream to a perennial stream or conversion of an ephemeral stream to an intermittent or perennial stream may be acceptable, provided the conversion would not disrupt or preclude any existing, reasonably foreseeable, or designated use of the stream under section 101(a) or 303(c) of the Clean Water Act and would not adversely impact threatened or endangered species or designated critical habitat in violation of the Endangered Species Act.

(B) Result in an exceedance of applicable water quality standards in any stream located outside the permit area.

(C) Disrupt or preclude any existing or reasonably foreseeable use of surface water outside the permit area or any designated use of surface water under section 101(a) or 303(c) of the Clean Water Act outside the permit area, except as provided in §§ 784.22(b) and 817.40 of this chapter.

(D) Disrupt or preclude any existing or reasonably foreseeable use of groundwater outside the permit area, except as provided in §§ 784.22(b) and 817.40 of this chapter.

(ii) The operation has been designed to ensure that neither the mining operation nor the final configuration of the reclaimed area will result in changes in the size or frequency of peak flows from precipitation events or thaws that would cause an increase in damage from flooding, when compared with premining conditions.

(iii) Perennial and intermittent streams located outside the permit area but within the cumulative impact area will continue to have sufficient base flow and recharge capacity to maintain their premining flow regime; *i.e.,* perennial stream segments will retain perennial flows and intermittent stream segments will retain intermittent flows both during and after mining and reclamation. Conversion of an intermittent stream to a perennial stream or conversion of an ephemeral stream to an intermittent or perennial stream may be acceptable, provided the conversion does not disrupt or preclude any existing, reasonably foreseeable, or designated use of the stream under section 101(a) or 303(c) of the Clean Water Act and would not adversely impact threatened or endangered species or designated critical habitat in violation of the Endangered Species Act.

(iv) The operation has been designed to protect the quantity and quality of water in any aquifer that significantly ensures the prevailing hydrologic balance.

(c) *Subsequent reviews.* (1) The regulatory authority must review each application for a significant permit revision to determine whether a new or updated CHIA is needed. The regulatory authority must document the review, including the analysis and conclusions, together with the rationale for the conclusions, in writing.

(2)(i) The regulatory authority must reevaluate the CHIA during the permit renewal process to determine whether the CHIA remains accurate and whether the material damage criteria in the CHIA and the permit are adequate to ensure that material damage to the hydrologic balance outside the permit area will not occur. This evaluation must include a review of all water monitoring data from both this operation and all other coal mining operations within the cumulative impact area.

(ii) If the permit has a term longer than 5 years, the regulatory authority must conduct the review required by paragraph (c)(2)(i) of this section at intervals not to exceed 5 years.

(3) The regulatory authority must prepare a new or updated CHIA if the review conducted under paragraph (c)(1) or (2) of this section finds that one is needed.

§ 784.22 What information must I include in the hydrologic reclamation plan and what information must I provide on alternative water sources?

(a) *Hydrologic reclamation plan.* Your permit application must include a plan, with maps and descriptions, that demonstrates how the proposed operation will comply with the applicable provisions of this subchapter and subchapter K of this chapter that relate to protection of the hydrologic balance. The plan must—

(1) Be specific to local hydrologic conditions.

(2) Include preventive or remedial measures for any potential adverse hydrologic consequences identified in the PHC determination prepared under § 784.20 of this part. These measures must describe the steps that you will take during mining and reclamation through final bond release under § 800.42(d) of this chapter to—

(i) Minimize disturbances to the hydrologic balance within the proposed permit and adjacent areas.

(ii) Prevent material damage to the hydrologic balance outside the proposed permit area.

(iii) Meet applicable water quality laws and regulations.

(iv) Protect existing water users in accordance with paragraph (b) of this section and § 817.40 of this chapter.

(v) Avoid acid or toxic discharges to surface water and avoid or, if avoidance is not possible, minimize degradation of groundwater.

(vi) Prevent, to the extent possible using the best technology currently available, additional contributions of suspended solids to streamflow or to runoff outside the proposed permit area.

(vii) Provide water-treatment facilities when needed.

(viii) Control surface-water runoff in accordance with § 784.29 of this part.

(3) Address the impacts of any transfers of water among active and abandoned mines within the proposed permit and adjacent areas.

(4) Describe the steps that you will take during mining and reclamation through final bond release under § 800.42(d) of this chapter to protect and enhance aquatic life and related environmental values to the extent possible using the best technology currently available.

(b) *Alternative water source information.* (1) If the PHC determination prepared under § 784.20 of this part indicates that underground mining activities conducted after October 24, 1992, may result in contamination, diminution, or interruption of a well or spring that is in existence at the time the permit application is submitted and that is used for domestic, drinking, or residential purposes, your application must demonstrate that alternative water sources are both available and feasible to develop. The alternative water sources must be of suitable quality and sufficient in quantity to support existing premining uses and approved postmining land uses.

(2) If you cannot identify an alternative water source that is both suitable and available, you must modify your application to prevent the proposed operation from contaminating, interrupting, or diminishing any water supply protected under § 817.40 of this chapter.

(3)(i) When a suitable alternative water source is available, your operation plan must require that the alternative water supply be developed and installed on a permanent basis before your operation may adversely affect an existing water supply protected under § 817.40 of this chapter.

(ii) Paragraph (b)(3)(i) of this section will not apply immediately if you demonstrate, and the regulatory authority finds, that the proposed operation also would adversely affect the replacement supply. In that case, your plan must require provision of a temporary replacement water supply until it is safe to install the permanent replacement water supply required under paragraph (b)(3)(i) of this section.

(4) Your application must describe how you will provide both temporary and permanent replacements for any unexpected losses of water supplies protected under § 817.40 of this chapter.

§ 784.23 What information must I include in plans for the monitoring of groundwater, surface water, and the biological condition of streams during and after mining?

(a) *Groundwater monitoring plan*—(1) *General requirements.* Your permit application must include a groundwater monitoring plan adequate to evaluate the impacts of the mining operation on groundwater in the proposed permit and adjacent areas and to determine in a timely manner whether corrective action is needed to prevent the operation from causing material damage to the hydrologic balance outside the permit area. The plan must—

(i) Identify the parameters to be monitored.

(ii) Specify the sampling frequency for each parameter.

(iii) Establish a sufficient number of appropriate monitoring locations to evaluate the accuracy of the findings in the PHC determination, to identify adverse trends, and to determine, in a timely fashion, whether corrective action is needed to prevent material damage to the hydrologic balance outside the permit area. At a minimum, the plan must include—

(A) For each aquifer above or immediately below the coal seam to be mined, monitoring sites located upgradient and downgradient of the proposed operation at a distance sufficiently close to the underground mine workings to detect changes as the mining operation progresses. The plan must include a schedule and map for moving these sites as the underground workings advance.

(B) Monitoring wells in any existing underground mine workings that would have a direct hydrological connection to the proposed operation.

(C) At least one monitoring well to be located in the mine pool after mine closure.

(iv) Describe how the monitoring data will be used to—

(A) Determine the impacts of the operation upon the hydrologic balance.

(B) Determine the impacts of the operation upon the biological condition of perennial and intermittent streams within the permit and adjacent areas.

(C) Prevent material damage to the hydrologic balance outside the permit area.

(v) Describe how the water samples will be collected, preserved, stored, transmitted for analysis, and analyzed in accordance with the sampling, analysis, and reporting requirements of paragraphs (a) and (b) of § 777.13 of this chapter.

(2) *Parameters*—(i) *General criteria for selection of parameters.* The plan must provide for the monitoring of parameters that could be affected by the proposed operation if those parameters relate to the—

(A) Findings and predictions in the PHC determination prepared under § 784.20 of this part.

(B) Biological condition of perennial and intermittent streams and other surface-water bodies that receive discharges from groundwater within the proposed permit and adjacent areas.

(C) Suitability of the groundwater for existing and reasonably foreseeable uses.

(D) Suitability of the groundwater to support the premining and postmining land uses.

(ii) Minimum requirements. At a minimum, the plan must require that the following parameters be measured at each location every three months, with data submitted to the regulatory authority at the same frequency:

(A) Major anions, including, at a minimum, bicarbonate, chloride, and sulfate.

(B) Major cations, including, at a minimum, calcium, magnesium, potassium, and sodium.

(C) The cation-anion balance of the parameters sampled in paragraphs (a)(2)(ii)(A) and (B) of this section, plus any cation or anion that constitutes a significant percentage of the total ionic charge balance.

(D) Ammonia.

(E) Arsenic.

(F) Cadmium.

(G) Copper.

(H) Hot acidity.

(I) Nitrogen.

(J) pH.

(K) Selenium.

(L) Specific conductance corrected to 25 °C.

(M) Total alkalinity.

(N) Total dissolved solids.

(O) Total iron.

(P) Total manganese.

(Q) Zinc.

(R) Water levels, discharge rates, or yield rates.

(S) Any parameter listed in § 784.19(d) of this part, if detected by the sampling conducted under that paragraph.

(T) Any other parameters of local significance, as determined by the regulatory authority, based upon the information and analyses required under §§ 784.19 through 784.21 of this part.

(3) *Regulatory authority review and action.* (i) Upon completing the technical review of the application, the regulatory authority may require that you revise the plan to increase the frequency of monitoring, to require monitoring of additional parameters, or to require monitoring at additional locations, if the additional requirements would contribute to protection of the hydrologic balance.

(ii) After completing preparation of the cumulative hydrologic impact assessment required under § 784.21 of this part, the regulatory authority must reconsider the adequacy of the monitoring plan and require that you make any necessary changes. At a minimum, the plan must require monitoring of all parameters for which the regulatory authority has established material damage criteria pursuant to the cumulative hydrologic impact assessment.

(4) *Exception.* If you can demonstrate, on the basis of the PHC determination prepared under § 784.20 of this part or other available information that a particular water-bearing stratum in the proposed permit and adjacent areas has no existing or foreseeable use for agricultural or other human purposes or for fish and wildlife purposes and does not serve as an aquifer that significantly ensures the hydrologic balance within the cumulative impact area, the regulatory authority may waive monitoring of that stratum.

(b) *Surface-water monitoring plan*—(1) *General requirements.* Your permit application must include a surface-water monitoring plan adequate to evaluate the impacts of the mining operation on surface water in the proposed permit and adjacent areas and to determine in a timely manner whether corrective action is needed to prevent the operation from causing material damage to the hydrologic

balance outside the permit area. The plan must—

(i) Identify the surface-water quantity and quality parameters to be monitored.

(ii) Require on-site measurement of precipitation amounts at specified locations within the permit area, using self-recording devices. Measurement of precipitation amounts must continue through Phase II bond release under § 800.42(c) of this chapter or for any longer period specified by the regulatory authority.

(iii) Specify the sampling frequency for each parameter to be monitored.

(iv) Establish a sufficient number of appropriate monitoring locations to evaluate the accuracy of the findings in the PHC determination, to identify adverse trends, and to determine, in a timely fashion, whether corrective action is needed to prevent material damage to the hydrologic balance outside the permit area. At a minimum, the plan must include—

(A) Monitoring of point-source discharges from the proposed operation.

(B) Monitoring locations upgradient and downgradient of the proposed permit area in each perennial and intermittent stream within the proposed permit and adjacent areas.

(C) Monitoring locations upgradient and downgradient of the proposed operation at a distance sufficiently close to the underground mine workings to detect changes as the mining operation progresses. The plan must include a schedule and map for moving these sites as the underground workings advance.

(v) Describe how the monitoring data will be used to—

(A) Determine the impacts of the operation upon the hydrologic balance.

(B) Determine the impacts of the operation upon the biological condition of perennial and intermittent streams and other surface-water bodies within the proposed permit and adjacent areas.

(C) Prevent material damage to the hydrologic balance outside the permit area.

(vi) Describe how water samples will be collected, preserved, stored, transmitted for analysis, and analyzed in accordance with the sampling, analysis, and reporting requirements of paragraphs (a) and (b) of § 777.13 of this chapter.

(2) *Parameters*—(i) *General criteria for selection of parameters.* The plan must provide for the monitoring of parameters could be affected by the proposed operation if those parameters that relate to the—

(A) Applicable effluent limitation guidelines under 40 CFR part 434.

(B) Findings and predictions in the PHC determination prepared under § 784.20 of this part.

(C) Surface-water runoff control plan prepared under § 784.29 of this part.

(D) Biological condition of perennial or intermittent streams or other surface-water bodies within the proposed permit and adjacent areas.

(E) Suitability of the surface water for existing and reasonably foreseeable uses, as well as designated uses under section 101(a) or 303(c) of the Clean Water Act.

(F) Suitability of the surface water to support the premining and postmining land uses.

(ii) *Minimum requirements for monitoring locations other than point-source discharges.* For all monitoring locations other than point-source discharges, the plan must require that the following parameters be measured at each location at least every 3 months, with data submitted to the regulatory authority at the same frequency:

(A) Flow rates: The plan must require use of generally-accepted professional flow measurement techniques. Visual observations are not acceptable.

(B) Major anions, including, at a minimum, bicarbonate, chloride, and sulfate.

(C) Major cations, including, at a minimum, calcium, magnesium, potassium, and sodium.

(D) The cation-anion balance of the parameters sampled in paragraphs (b)(2)(ii)(B) and (C) of this section, plus any cation or anion that constitutes a significant percentage of the total ionic charge balance.

(E) Ammonia.

(F) Arsenic.

(G) Cadmium.

(H) Copper.

(I) Hot acidity.

(J) Nitrogen.

(K) pH.

(L) Selenium.

(M) Specific conductance corrected to 25 °C.

(N) Total alkalinity.

(O) Total dissolved solids.

(P) Total iron.

(Q) Total manganese.

(R) Total suspended solids.

(S) Zinc.

(T) Any parameter listed in § 784.19(d) of this part, if detected by the sampling conducted under that paragraph.

(U) Any other parameters of local significance, as determined by the regulatory authority, based upon the information and analyses required under §§ 784.19 through 784.21 of this part.

(iii) *Minimum requirements for point-source discharges.* For point-source discharges, the plan must—

(A) Provide for monitoring in accordance with 40 CFR parts 122, 123, and 434 and as required by the National Pollutant Discharge Elimination System permitting authority.

(B) Require measurement of flow rates, using generally-accepted professional flow measurement techniques.

(iv) *Requirements related to the Clean Water Act.* You must revise the plan to incorporate any site-specific monitoring requirements imposed by the National Pollutant Discharge Elimination System permitting authority or the agency responsible for administration of section 404 of the Clean Water Act.

(3) *Regulatory authority review and action.* (i) Upon completing the technical review of your application, the regulatory authority may require that you revise the plan to increase the frequency of monitoring, to require monitoring of additional parameters, or to require monitoring at additional locations, if the additional requirements would contribute to protection of the hydrologic balance.

(ii) After completing preparation of the cumulative hydrologic impact assessment required under § 784.21 of this part, the regulatory authority must reconsider the adequacy of the monitoring plan and require that you make any necessary changes. At a minimum, the plan must require monitoring of all parameters for which the regulatory authority has established material damage criteria pursuant to the cumulative hydrologic impact assessment.

(c) *Biological condition monitoring plan*—(1) *General requirements.* Except as provided in paragraph (d) of this section, your permit application must include a plan for monitoring the biological condition of perennial and intermittent streams within the proposed permit and adjacent areas. The plan must be adequate to evaluate the impacts of the mining operation on the biological condition of those streams and to determine in a timely manner whether corrective action is needed to prevent the operation from causing material damage to the hydrologic balance outside the permit area.

(2) *Monitoring techniques.* The plan must—

(i) Require use of a multimetric bioassessment protocol that meets the requirements of § 784.19(e)(2) of this part.

(ii) Identify monitoring locations in each perennial and intermittent stream

within the proposed permit and adjacent areas.

(iii) Establish a sampling frequency that must be no less than annual, but not so frequent as to unnecessarily deplete the populations of the species being monitored.

(iv) Require submission of monitoring data to the regulatory authority on an annual basis.

(3) *Regulatory authority review and action.* (i) Upon completing review of your application, the regulatory authority may require that you revise the plan to adjust monitoring locations, the frequency of monitoring, and the species to be monitored.

(ii) After completing preparation of the cumulative hydrologic impact assessment required under § 784.21 of this part, the regulatory authority must reconsider the adequacy of the monitoring plan and require that you make any necessary changes.

(d) *Exception for operations that avoid streams.* (1) Upon your request, the regulatory authority may waive the biological condition monitoring plan requirements of paragraph (c) of this section if you demonstrate, and if the regulatory authority finds in writing, that your operation will not—

(i) Mine through or bury any perennial or intermittent stream;

(ii) Create a point-source discharge to any perennial, intermittent, or ephemeral stream; or

(iii) Modify the base flow of any perennial or intermittent stream or cause the stream to pool, either as a result of subsidence or as a result of any other mining-related activity.

(2) If you meet all the criteria of paragraph (d)(1) of this section with the exception of paragraph (d)(1)(ii) of this section, you may request, and the regulatory authority may approve, limiting the biological condition monitoring requirements of paragraph (c) of this section to only the stream that will receive the point-source discharge.

(e) *Coordination with Clean Water Act agencies.* The regulatory authority will consult in a timely manner with the agencies responsible for issuing permits, authorizations, and certifications under the Clean Water Act and make best efforts to minimize differences in monitoring locations and reporting requirements and to share data to the extent practicable and consistent with each agency's mission, statutory requirements, and implementing regulations.

§ 784.24 What requirements apply to the postmining land use?

(a) *What postmining land use information must my application contain*? (1) You must describe and map the proposed use or uses of the land within the proposed permit area following reclamation, based on the categories of land uses listed in the definition of land use in § 701.5 of this chapter.

(2) You must discuss the utility and capability of the reclaimed land to support a variety of other uses, including the uses that the land was capable of supporting before any mining, as identified under § 783.22 of this chapter, regardless of the proposed postmining land use.

(3) You must explain how the proposed postmining land use is consistent with existing state and local land use policies and plans.

(4) You must include a copy of the comments concerning the proposed postmining use that you receive from the—

(i) Legal or equitable owner of record of the surface of the proposed permit area; and

(ii) State and local government agencies that would have to initiate, implement, approve, or authorize the proposed use of the land following reclamation.

(5) You must explain how the proposed postmining land use will be achieved and identify any support activities or facilities needed to achieve that use.

(6) If you propose to restore the proposed permit area or a portion thereof to a condition capable of supporting a higher or better use or uses rather than to a condition capable of supporting the uses that the land could support before any mining, you must—

(i) Provide the demonstration required under paragraph (b)(1) of this section.

(ii) Disclose any monetary compensation, item of value, or other consideration that you or your agent provided or expect to provide to the landowner in exchange for the landowner's agreement to a postmining land use that differs from the premining use.

(b) *What requirements apply to the approval of alternative postmining land uses*?—(1) *Application requirements.* If you propose to restore the proposed permit area or a portion thereof to a condition capable of supporting a higher or better use or uses, rather than to a condition capable of supporting the use or uses that the land could support before any mining, you must demonstrate that the proposed higher or better use or uses meet the following criteria:

(i) There is a reasonable likelihood that the proposed use or uses will be achieved after mining and reclamation, as documented by, for example, real estate and construction contracts, plans for installation of any necessary infrastructure, procurement of any necessary zoning approvals, landowner commitments, economic forecasts, and studies by land use planning agencies.

(ii) The proposed use or uses do not present any actual or probable hazard to public health or safety or any threat of water diminution or pollution.

(iii) The proposed use or uses will not—

(A) Be impractical or unreasonable.

(B) Be inconsistent with applicable land use policies or plans.

(C) Involve unreasonable delay in implementation.

(D) Cause or contribute to a violation of federal, state, or local law.

(E) Result in changes in the size or frequency of peak flows from the reclaimed area that would cause an increase in damage from flooding when compared with the conditions that would exist if the land were restored to a condition capable of supporting the uses that it was capable of supporting before any mining.

(F) Cause the total volume of flow from the reclaimed area, during every season of the year, to vary in a way that would preclude any existing or reasonably foreseeable use of surface water or groundwater or any designated use of surface water under section 101(a) or 303(c) of the Clean Water Act.

(G) Cause a change in the temperature or chemical composition of the water that would preclude any existing or reasonably foreseeable use of surface water or any designated use of surface water under section 101(a) or 303(c) of the Clean Water Act.

(2) *Regulatory authority decision requirements.* The regulatory authority may approve your request if it—

(i) Consults with the landowner or the land management agency having jurisdiction over the lands to which the use would apply; and

(ii) Finds in writing that you have made the demonstration required under paragraph (b)(1) of this section.

(c) *What requirements apply to permit revision applications that propose to change the postmining land use*? (1) You may propose to change the postmining land use for all or a portion of the permit area at any time through the permit revision process under § 774.13 of this chapter.

(2) If you propose a higher or better postmining land use, the requirements of paragraphs (b)(1) and (2) of this section will apply and the application must be considered a significant permit revision for purposes of § 774.13(b)(2) of this chapter.

(d) *What restrictions apply to the retention of mining-related structures*? (1) If you propose to retain mining-related structures other than roads and impoundments for potential future use as part of the postmining land use, you must demonstrate, and the regulatory authority must find in writing, that the size and characteristics of the structures are consistent with and proportional to the needs of the postmining land use.

(2) The amount of bond required for the permit under part 800 of this chapter must include the cost of removing the structure and reclaiming the land upon which it was located to a condition capable of supporting the premining uses. The bond must include the cost of restoring the site to its approximate original contour in accordance with § 817.102 of this chapter and establishing native vegetation in accordance with § 817.111 of this chapter.

(3) The reclamation plan submitted under § 784.12 of this part must specify that if a structure is not in use as part of the approved postmining land use by the end of the revegetation responsibility period specified in § 817.115 of this chapter, you must remove the structure and reclaim the land upon which it was located by restoring the approximate original contour in accordance with § 817.102 of this chapter and establishing native vegetation in accordance with § 817.111 of this chapter.

(e) *What special provisions apply to previously mined areas*? If land that was previously mined cannot be reclaimed to the land use that existed before any mining because of the previously mined condition, you may propose, and the regulatory authority may approve, any appropriate postmining land use for that land that is both achievable and compatible with land uses in the surrounding area, provided that you comply with paragraphs (a) and (b)(1)(iv) of this section.

§ 784.25 What information must I provide for siltation structures, impoundments, and refuse piles?

(a) *General requirements.* Each application must include a general plan and a detailed design plan for each proposed siltation structure, impoundment, and refuse pile within the proposed permit area.

(1) *Requirements for general plan for all structures.* Each general plan must—

(i) Be prepared by, or under the direction of, and certified by a qualified registered professional engineer, a professional geologist, or, in any state that authorizes land surveyors to prepare and certify such plans, a qualified registered professional land surveyor, with assistance from experts in related fields such as landscape architecture.

(ii) Contain a description, map, and cross-sections of the structure and its location.

(iii) Contain the hydrologic and geologic information required to assess the hydrologic impact of the structure.

(iv) Contain a report describing the results of a geotechnical investigation of the potential effect on the structure if subsurface strata subside as a result of past, current, or future underground mining operations beneath or within the proposed permit and adjacent areas. When necessary, the investigation report also must identify design and construction measures that would prevent adverse subsidence-related impacts on the structure.

(v) Contain an analysis of the potential for each impoundment to drain into subjacent underground mine workings, together with an analysis of the impacts of such drainage.

(vi)(A) Contain a certification statement that includes a schedule setting forth the dates when any detailed design plans for structures that are not submitted with the general plan will be submitted to the regulatory authority.

(B) The regulatory authority must approve, in writing, the detailed design plan for a structure before construction of the structure begins.

(2) *Detailed design plan requirements for high hazard dams, significant hazard dams, and impounding structures that meet MSHA criteria*—(i) *Applicability.* The requirements of paragraph (a)(2)(ii) of this section apply to all impounding structures that meet—

(A) The MSHA criteria in § 77.216(a) of this title; or

(B) The criteria for Significant Hazard Class or High Hazard Class dams in ''Earth Dams and Reservoirs,'' Technical Release No. 60 (210–VI–TR60, July 2005), published by the U.S. Department of Agriculture, Natural Resources Conservation Service. Technical Release No. 60 (TR–60) is hereby incorporated by reference. The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. You may review and download the incorporated document from the Natural Resources Conservation Service's Web site at *http://www.info.usda.gov/scripts/lpsiis.dll/TR/TR_210_60.htm.* You may inspect and obtain a copy of this document, which is on file at the Administrative Record Room, Office of Surface Mining Reclamation and Enforcement, 1951 Constitution Avenue NW., Washington, DC 20240. For information on the availability of this document at OSMRE, call 202–208–2823. You also may inspect a copy of this document at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030 or go to *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.*

(ii) *Detailed design plan requirements.* Each detailed design plan for a structure that meets the applicability provisions of paragraph (a)(2)(i) of this section must—

(A) Be prepared by, or under the direction of, and certified by a qualified registered professional engineer with assistance from experts in related fields such as geology, land surveying, and landscape architecture.

(B) Incorporate any design and construction measures identified in the geotechnical investigation report prepared under paragraph (a)(1)(iv) of this section as necessary to protect against potential adverse impacts from subsidence resulting from underground mine workings underlying or adjacent to the structure.

(C) Describe the operation and maintenance requirements for each structure.

(D) Describe the timetable and plans to remove each structure, if appropriate.

(3) *Detailed design plan requirements for other structures.* Each detailed design plan for structures not included in paragraph (a)(2) of this section must—

(i) Be prepared by, or under the direction of, and certified by a qualified, registered, professional engineer, or, in any state that authorizes land surveyors to prepare and certify such plans, a qualified, registered, professional, land surveyor, except that all coal mine waste structures to which §§ 817.81 through 817.84 of this chapter apply must be certified by a qualified, registered, professional engineer.

(ii) Reflect any design and construction requirements for the structure, including any required geotechnical information.

(iii) Describe the operation and maintenance requirements for each structure.

(iv) Describe the timetable and plans to remove each structure, if appropriate.

(b) *Siltation structures.* Siltation structures must be designed in compliance with the requirements of § 817.46 of this chapter.

(c) *Permanent and temporary impoundments.* (1) Permanent and temporary impoundments must be

designed to comply with the requirements of § 817.49 of this chapter.

(2) Each plan for an impoundment meeting the criteria in § 77.216(a) of this title must comply with the requirements of § 77.216–2 of this title. You must submit the plan required to be submitted to the District Manager of MSHA under § 77.216 of this title to the regulatory authority as part of the permit application to the extent that the plan, or a portion thereof, is available at the time of submittal of the permit application.

(3) For impoundments not included in paragraph (a)(2) of this section, the regulatory authority may establish, through the regulatory program approval process, engineering design standards that ensure stability comparable to a 1.3 minimum static safety factor in lieu of engineering tests to establish compliance with the minimum static safety factor of 1.3 specified in § 817.49(a)(4)(ii) of this chapter.

(4) If the structure meets the Significant Hazard Class or High Hazard Class criteria for dams in TR–60 or meets the criteria of § 77.216(a) of this chapter, each plan must include stability analyses of the structure. The stability analyses must address static, seismic, and post-earthquake (liquefaction) conditions. They must include, but are not limited to, strength parameters, pore pressures, and long-term seepage conditions. The plan also must contain a description of each engineering design assumption and calculation with a discussion of each alternative considered in selecting the specific design parameters and construction methods.

(d) *Coal mine waste impoundments, refuse piles, and impounding structures constructed of coal mine waste.* If you, the permit applicant, propose to place coal mine waste in a refuse pile or impoundment, or if you plan to use coal mine waste to construct an impounding structure, you must comply with the applicable requirements in paragraphs (d)(1) and (2) of this section.

(1) *Design requirements for refuse piles.* You must design refuse piles to comply with the requirements of §§ 784.28, 817.81, and 817.83 of this chapter.

(2) *Design requirements for impounding structures that will impound coal mine waste or that will be constructed of coal mine waste.* (i) You must design impounding structures constructed of or intended to impound coal mine waste to comply with the coal mine waste disposal requirements of §§ 784.28, 817.81, and 817.84 of this chapter and with the impoundment requirements of paragraphs (a) and (c) of § 817.49 of this chapter.

(ii) The plan for each impounding structure that meets the criteria of § 77.216(a) of this title must comply with the requirements of § 77.216–2 of this title.

(iii) Each plan for an impounding structure that will impound coal mine waste or that will be constructed of coal mine waste must contain the results of a geotechnical investigation to determine the structural competence of the foundation that will support the proposed impounding structure and the impounded material. An engineer or engineering geologist must plan and supervise the geotechnical investigation. In planning the investigation, the engineer or geologist must—

(A) Determine the number, location, and depth of borings and test pits using current prudent engineering practice for the size of the impoundment and the impounding structure, the quantity of material to be impounded, and subsurface conditions.

(B) Consider the character of the overburden and bedrock, the proposed abutment sites for the impounding structure, and any adverse geotechnical conditions that may affect the impounding structure.

(C) Identify all springs, seepage, and groundwater flow observed or anticipated during wet periods in the area of the proposed impounding structure on each plan.

(D) Consider the possibility of mudflows, rock-debris falls, or other landslides into the impounding structure, impoundment, or impounded material.

(iv) The design must ensure that at least 90 percent of the water stored in the impoundment during the design precipitation event will be removed within a 10-day period.

§ 784.26 What information must I provide if I plan to return coal processing waste to abandoned underground workings?

(a) Each plan must describe the design, operation and maintenance of any proposed coal processing waste disposal facility, including flow diagrams and any other necessary drawings and maps, for the approval of the regulatory authority and the Mine Safety and Health Administration under § 817.81(f) of this chapter.

(b) Each plan must describe the—

(1) Source and quality of coal processing waste to be stowed in the abandoned underground workings.

(2) All chemicals used to process the coal, the quantity of those chemicals remaining in the coal processing waste, and the likely impact of those chemicals on groundwater and any persons, aquatic life, or wildlife using that groundwater.

(3) Area of the abandoned underground workings in which the waste is to be placed.

(4) Percent of the abandoned underground mine void to be filled.

(5) Method of constructing underground retaining walls.

(6) Influence of the backstowing operation on active underground mine operations.

(7) Surface area to be supported by the backstowed waste.

(8) Anticipated occurrence of surface effects following backstowing.

(c) The plan must describe the—

(1) Source of the hydraulic transport mediums.

(2) Method of dewatering the coal processing waste after placement.

(3) Extent to which water will be retained underground.

(4) Method of treatment of water if released to surface streams.

(5) Plans for monitoring for chemicals contained in the coal processing waste.

(6) Effect on the hydrologic regime and biological communities.

(7) Measures to be taken to comply with the underground mine discharge requirements of § 817.41 of this chapter, when applicable.

(d) The plan must describe the objective of each permanent monitoring well to be located in the area in which coal processing waste is placed, the stratum underlying the mined coal, and the gradient from the area in which the waste is placed. The monitoring plan must comply with § 784.23 of this part.

(e) Paragraphs (a) through (d) of this section also apply to pneumatic backstowing operations, except for those operations that the regulatory authority exempts from compliance with the hydrologic monitoring requirements after finding in writing that you have demonstrated that the proposed pneumatic backstowing operation will not adversely impact surface water, groundwater, or water supplies.

§ 784.28 What additional requirements apply to proposed surface activities in, through, or adjacent to streams?

(a) *Clean Water Act requirements.* You may conduct surface mining activities in waters of the United States only if you first obtain all necessary authorizations, certifications, and permits under the Clean Water Act, 33 U.S.C. 1251 *et seq.*

(b) *When must I comply with this section*?—(1) *General applicability.* You, the permit applicant, must provide the information and demonstrations required by this section whenever you

propose to conduct underground mining activities—

(i) In or through a perennial, intermittent, or ephemeral stream; or

(ii) On the surface of lands within 100 feet of a perennial, intermittent, or ephemeral stream. You must measure this distance horizontally on a line perpendicular to the stream beginning at the bankfull elevation of the stream or, if there are no discernible streambanks, the centerline of the active channel of the stream.

(2) *Activities in or near perennial and intermittent streams.* Except as provided in paragraph (d) of this section, if you propose to conduct an activity identified in paragraph (b)(1) of this section, and if the affected stream is a perennial or intermittent stream, you must demonstrate that the proposed activity would not—

(i) Preclude any premining use or any designated use under section 101(a) or 303(c) of the Clean Water Act of the affected stream segment following the completion of mining and reclamation.

(ii) Result in conversion of the stream segment from intermittent to ephemeral, from perennial to intermittent, or from perennial to ephemeral.

(iii) Cause or contribute to a violation of applicable water quality standards.

(iv) Cause material damage to the hydrologic balance outside the permit area.

(3) *Postmining riparian corridor requirements for perennial, intermittent, and ephemeral streams.* (i) If you propose to conduct an activity identified in paragraph (b)(1) of this section, you must propose to establish a riparian corridor at least 100 feet wide on each side of the stream as part of the reclamation process following the completion of mining activities within that corridor. The corridor width must be measured horizontally on a line perpendicular to the stream beginning at the bankfull elevation or, if there are no discernible banks, the centerline of the active channel.

(ii) You must use native species, including species adapted to and suitable for planting in riparian zones within that corridor, to revegetate disturbed areas within the corridor required under paragraph (b)(3)(i) of this section. For areas that are forested at the time of application or that would revert to forest under conditions of natural succession, you must use native trees and shrubs to meet this requirement.

(iii) Paragraph (b)(3)(i) of this section does not apply to—

(A) Prime farmland historically used for cropland;

(B) Situations in which revegetation would be incompatible with an approved postmining land use that is implemented during the revegetation responsibility period before final bond release under § 800.42(d) of this chapter; or

(C) Streams buried beneath an excess spoil fill or a coal mine waste disposal facility under paragraph (d) of this section.

(c) *What additional requirements apply to an application that proposes to mine through or divert a perennial, intermittent, or ephemeral stream*?—(1) *Postmining drainage pattern.* The postmining drainage pattern of perennial, intermittent, and ephemeral stream channels that you propose to restore after the completion of mining must be similar to the premining drainage pattern, unless the regulatory authority approves a different pattern to—

(i) Ensure stability;

(ii) Prevent or minimize downcutting of reconstructed stream channels; or

(iii) Promote enhancement of fish and wildlife habitat.

(2) *Mining through or diverting a perennial or intermittent stream.* If you propose to mine through or divert a perennial or intermittent stream, you must—

(i) Comply with the requirements of paragraphs (a) through (c)(1) of this section.

(ii) Demonstrate that there is no reasonable alternative that would avoid mining through or diverting the stream.

(iii) Design the operation to minimize the extent to which the stream will be mined through or diverted.

(iv) Demonstrate that you can restore the form and ecological function of the affected stream segment, as required by § 817.57(b) of this chapter, using the techniques in the proposed reclamation plan.

(A) Those techniques must include the selective placement of low-permeability materials in the backfill or fill and associated stream channels to create the aquitards necessary to support streamflow when the goal is to reestablish a perennial or intermittent stream, unless you can demonstrate an alternative method of restoring perennial or intermittent streamflow.

(B) You must include a separate bond calculation for the cost of restoring the ecological function of the affected stream segment. You must post a surety bond, a collateral bond, or a combination of surety and collateral bonds to cover that cost before the regulatory authority may issue the permit.

(v) Comply with the following stream-channel restoration and stream-channel diversion design requirements:

(A) Designs for permanent stream-channel diversions, temporary stream-channel diversions that will remain in use for 2 or more years, and stream channels to be restored after the completion of mining must adhere to design techniques that will restore or approximate the premining characteristics of the original stream channel to promote the recovery and enhancement of the aquatic habitat and to minimize adverse alteration of stream channels on and off the site, including channel deepening or enlargement. The premining characteristics of the original stream channel include, but are not limited to, the baseline stream pattern, profile, dimensions, substrate, habitat, and natural vegetation growing in the riparian zone. For temporary stream-channel diversions that will remain in use for 2 or more years, the vegetation proposed for planting in the riparian zone need not include species that would not reach maturity until after the diversion is removed.

(B) The designed hydraulic capacity of all temporary and permanent stream-channel diversions must be at least equal to the hydraulic capacity of the unmodified stream channel immediately upstream of the diversion, but no greater than the hydraulic capacity of the unmodified stream channel immediately downstream from the diversion.

(C) All temporary and permanent stream-channel diversions must be designed so that the combination of channel, bank, and flood-plain configuration is adequate to pass safely the peak runoff of a 10-year, 6-hour precipitation event for a temporary diversion and a 100-year, 6-hour precipitation event for a permanent diversion.

(vi) Submit a certification from a qualified registered professional engineer that the designs for all stream-channel diversions and all stream channels to be restored after the completion of mining meet the design requirements of this section and any additional design criteria established by the regulatory authority. This certification may be limited to the location, dimensions, and physical characteristics of the stream channel; it need not include restoration of ecological function.

(d) *What requirements apply to an application to construct an excess spoil fill or coal mine waste disposal facility in a perennial or intermittent stream*?—(1) *Applicability.* (i) If you propose to construct an excess spoil fill under § 784.35 of this part or a coal mine waste disposal facility under § 784.25(d) of this part, you must comply with the

requirements of paragraph (d)(2) of this section in place of the requirements of paragraph (b)(2) of this section whenever the fill or disposal facility would encroach upon any part of a perennial or intermittent stream.

(2) *Application requirements.* If you propose to construct an excess spoil fill or coal mine waste disposal facility of the nature described in paragraph (d)(1) of this section, your application must demonstrate that—

(i) The operation has been designed to minimize the amount of excess spoil or coal mine waste generated.

(ii) After evaluating all potential upland locations in the vicinity of the proposed operation, there is no practicable alternative that would avoid placement of excess spoil or coal mine waste in a perennial or intermittent stream.

(iii) To the extent possible using the best technology currently available, the proposed excess spoil fill or coal mine waste disposal facility has been designed to minimize—

(A) Placement of excess spoil or coal mine waste to be placed in a perennial or intermittent stream.

(B) Adverse impacts on fish, wildlife, and related environmental values.

(iv) The fish and wildlife enhancement plan submitted under § 784.16 of this part includes measures that would fully and permanently offset any long-term adverse impacts that the fill, refuse pile, or coal mine waste impoundment would have on fish, wildlife, and related environmental values within the footprint of the fill, refuse pile, or impoundment.

(v) The excess spoil fill or coal mine waste disposal facility has been designed in a manner that will not cause or contribute to a violation of water quality standards or result in the formation of toxic mine drainage.

(vi) The revegetation plan submitted under § 784.12(g) of this part requires reforestation of the completed excess spoil fill if the land is forested at the time of application or if it would revert to forest under conditions of natural succession.

(e) *What are the regulatory authority's responsibilities*?—(1) *Standards for restoration of the ecological function of a stream.* (i) The regulatory authority must establish objective standards for determining when the ecological function of a restored or permanently-diverted perennial or intermittent stream has been restored.

(ii) In establishing standards under paragraph (e)(1)(i) of this section, the regulatory authority must coordinate with the Clean Water Act permitting authority to ensure compliance with all Clean Water Act requirements.

(iii) The standards established under paragraph (e)(1)(i) of this section must comply with § 817.57(b)(2) of this chapter.

(2) *Finding.* The regulatory authority may not approve an application that includes any activity identified under paragraph (b)(1) of this section unless it first makes a specific written finding that you have fully satisfied all applicable requirements of this section. The finding must be accompanied by a detailed explanation of the rationale for the finding.

§ 784.29 What information must I include in the surface-water runoff control plan?

Your application must contain a surface-water runoff control plan that includes the following—

(a)(1) An explanation of how you will handle surface-water runoff in a manner that will prevent peak discharges from the proposed permit area, both during and after mining and reclamation, from exceeding the premining peak discharge from the same area for the same-size precipitation event. You must use the appropriate regional Natural Resources Conservation Service synthetic storm distribution to estimate peak discharges.

(2) The explanation in paragraph (a)(1) of this section must consider the findings in the determination of the probable hydrologic consequences of mining prepared under § 784.20 of this part.

(b) A surface-water runoff monitoring and inspection program that will provide sufficient precipitation and stormwater discharge data for the proposed permit area to evaluate the effectiveness of the surface-water runoff control practices under paragraph (a) of this section. The surface-water runoff monitoring and inspection program must specify criteria for monitoring, inspection, and reporting consistent with § 817.34(d) of this chapter. The program must contain a monitoring-point density that adequately represents the drainage pattern across the entire proposed permit area, with a minimum of one monitoring point per watershed discharge point.

(c) Descriptions, including maps and cross-sections, of runoff control structures, including an explanation of how diversions and other channels to collect and convey surface-water runoff will be constructed in compliance with § 817.43 of this chapter.

§ 784.30 When must I prepare a subsidence control plan and what information must that plan include?

(a) *Pre-subsidence survey.* Each application must include:

(1) A map of the permit and adjacent areas at a scale of 1:12,000, or larger if determined necessary by the regulatory authority, showing the location and type of structures and renewable resource lands that subsidence may materially damage or for which the value or reasonably foreseeable use may be diminished by subsidence, and showing the location and type of drinking, domestic, and residential water supplies that could be contaminated, diminished, or interrupted by subsidence.

(2) A narrative indicating whether subsidence, if it occurred, could cause material damage to or diminish the value or reasonably foreseeable use of such structures or renewable resource lands or could contaminate, diminish, or interrupt drinking, domestic, or residential water supplies.

(3) A survey of the quantity and quality of all drinking, domestic, and residential water supplies within the permit area and adjacent area that could be contaminated, diminished, or interrupted by subsidence. You, the applicant, must pay for any technical assessment or engineering evaluation used to determine the premining quantity and quality of drinking, domestic, or residential water supplies. You must provide copies of the survey and any technical assessment or engineering evaluation to the property owner and to the regulatory authority.

(b) *Subsidence control plan.* If the survey conducted under paragraph (a) of this section shows that no structures, or drinking, domestic, or residential water supplies, or renewable resource lands exist, or that no material damage or diminution in value or reasonably foreseeable use of such structures or lands, and no contamination, diminution, or interruption of such water supplies would occur as a result of mine subsidence, and if the regulatory authority agrees with this conclusion, no further information need be provided under this section. If the survey shows that structures, renewable resource lands, or water supplies exist and that subsidence could cause material damage or diminution in value or reasonably foreseeable use, or contamination, diminution, or interruption of protected water supplies, or if the regulatory authority determines that damage, diminution in value or foreseeable use, or contamination, diminution, or interruption could occur, the application must include a subsidence control plan that contains the following information:

(1) A description of the method of coal removal, such as longwall mining, room-and-pillar removal or hydraulic mining, including the size, sequence

and timing of the development of underground workings.

(2) A map of the underground workings that describes the location and extent of the areas in which planned-subsidence mining methods will be used and that identifies all areas where the measures described in paragraphs (b)(4), (b)(5), and (b)(7) of this section will be taken to prevent or minimize subsidence and subsidence-related damage; and, when applicable, to correct subsidence-related material damage.

(3) A description of the physical conditions, such as depth of cover, seam thickness and lithology of overlying strata, that affect the likelihood or extent of subsidence and subsidence-related damage.

(4) A description of the monitoring, if any, needed to determine the commencement and degree of subsidence so that, when appropriate, other measures can be taken to prevent, reduce or correct material damage in accordance with § 817.121(c) of this chapter.

(5) Except for those areas where planned subsidence is projected to be used, a detailed description of the subsidence control measures that will be taken to prevent or minimize subsidence and subsidence-related damage, such as, but not limited to:

(i) Backstowing of voids;

(ii) Leaving support pillars of coal;

(iii) Leaving areas in which no coal is removed, including a description of the overlying area to be protected by leaving coal in place; and

(iv) Taking measures on the surface to prevent or minimize material damage or diminution in value of the surface.

(6) A description of the anticipated effects of planned subsidence, if any.

(7) For those areas where planned subsidence is projected to be used, a description of methods to be employed to minimize damage from planned subsidence to non-commercial buildings and occupied residential dwellings and structures related thereto; or the written consent of the owner of the structure or facility that minimization measures not be taken; or, unless the anticipated damage would constitute a threat to health or safety, a demonstration that the costs of minimizing damage exceed the anticipated costs of repair.

(8) A description of the measures to be taken in accordance with §§ 817.40 and 817.121(c) of this chapter to replace adversely affected protected water supplies or to mitigate or remedy any subsidence-related material damage to the land and protected structures.

(9) Other information specified by the regulatory authority as necessary to demonstrate that the operation will be conducted in accordance with § 817.121 of this chapter.

§ 784.31 What information must I provide concerning the protection of publicly owned parks and historic places?

(a) For any publicly owned parks or any places listed on the National Register of Historic Places that may be adversely affected by the proposed operation, you must describe the measures to be used—

(1) To prevent adverse impacts, or

(2) If a person has valid existing rights, as determined under § 761.16 of this chapter, or if joint agency approval is to be obtained under § 761.17(d) of this chapter, to minimize adverse impacts.

(b) The regulatory authority may require the applicant to protect historic or archeological properties listed on or eligible for listing on the National Register of Historic Places through appropriate mitigation and treatment measures. Appropriate mitigation and treatment measures may be required to be taken after permit issuance provided that the required measures are completed before the properties are affected by any mining operation.

§ 784.33 What information must I provide concerning the relocation or use of public roads?

Your application must describe, with appropriate maps and cross-sections, the measures to be used to ensure that the interests of the public and landowners affected are protected if, under § 761.14 of this chapter, you seek to have the regulatory authority approve—

(a) Conducting the proposed surface mining activities within 100 feet of the right-of-way line of any public road, except where mine access or haul roads join that right-of-way; or

(b) Relocating a public road.

§ 784.35 What information must I provide concerning the minimization and disposal of excess spoil?

(a) *Applicability.* This section applies to you, the permit applicant, if you propose to generate excess spoil as part of your operation.

(b) *Demonstration of minimization of excess spoil.* (1) You must submit a demonstration, with supporting calculations and other documentation, that the operation has been designed to minimize, to the extent possible, the volume of excess spoil that the operation will generate.

(2) The demonstration under paragraph (b)(1) of this section must explain, in quantitative terms, how the maximum amount of overburden will be returned to the mined-out area after considering—

(i) Applicable regulations concerning backfilling, compaction, grading, and restoration of the approximate original contour.

(ii) Safety and stability needs and requirements.

(iii) The need for drainage structures, access roads, and berms. You may construct drainage structures, access roads, and berms on the perimeter of the backfilled area, but you must limit the total width of those structures to 20 feet unless you demonstrate an absolutely essential need for a greater width.

(iv) Needs and requirements associated with revegetation and the proposed postmining land use.

(v) Any other relevant regulatory requirements, including those pertaining to water quality and protection of fish, wildlife, and related environmental values.

(3) When necessary to avoid or minimize construction of excess spoil fills on undisturbed land, paragraph (b)(2)(i) of this section does not prohibit the placement of what would otherwise be excess spoil on the mined-out area to heights in excess of the premining elevation, provided that the final surface configuration is compatible with the surrounding terrain and generally resembles landforms found in the surrounding area.

(4) You may not create a final-cut impoundment under § 817.49(b) of this chapter or place coal combustion residues or noncoal materials in the surface excavation if doing so would result in the creation of excess spoil.

(c) *Fill capacity demonstration.* You must submit a demonstration, with supporting calculations and other documentation, that the designed maximum cumulative volume of all proposed excess spoil fills within the permit area is no larger than the capacity needed to accommodate the anticipated cumulative volume of excess spoil that the operation will generate, as calculated under paragraph (b) of this section.

(d) *Requirements related to perennial and intermittent streams.* You must comply with the requirements of § 784.28 of this part concerning activities in or near perennial or intermittent streams if you propose to construct an excess spoil fill in or within 100 feet of a perennial or intermittent stream. The 100-foot distance must be measured horizontally on a line perpendicular to the stream beginning at the bankfull elevation or, if there are no discernible banks, the centerline of the active channel.

(e) *Location and profile.* (1) You must submit maps and cross-section drawings or models showing the location and profile of all proposed excess spoil fills.

(2) You must locate fills on the most moderately sloping and naturally stable areas available. The regulatory authority will determine which areas are available, based upon the alternatives analysis under § 784.28 of this part and other requirements of the Act and this chapter.

(3) Whenever possible and consistent with the alternatives analysis and alternative selection requirements of § 784.28 of this part, you must place fills on or above a natural terrace, bench, or berm if that location would provide additional stability and prevent mass movement.

(f) *Design plans.* You must submit detailed design plans, including appropriate maps and cross-section drawings, for each proposed fill, prepared in accordance with the requirements of this section and §§ 817.71 through 817.74 of this chapter. You must design the fill and appurtenant structures using current prudent engineering practices and any additional design criteria established by the regulatory authority.

(g) *Geotechnical investigation.* You must submit the results of a geotechnical investigation, with supporting calculations and analyses, of the site of each proposed fill, with the exception of those sites at which excess spoil will be placed only on a preexisting bench under § 817.74 of this chapter. The information submitted must include—

(1) Sufficient foundation investigations, as well as any necessary laboratory testing of foundation material, to determine the design requirements for foundation stability for each site.

(2) A description of the character of the bedrock and any adverse geologic conditions in the area of the proposed fill.

(3) The geographic coordinates and a narrative description of all springs, seepage, mine discharges, and groundwater flow observed or anticipated during wet periods in the area of the proposed fill.

(4) An analysis of the potential effects of any underground mine workings within the proposed permit and adjacent areas, including the effects of any subsidence that may occur as a result of previous, existing, and future underground mining operations.

(5) A technical description of the rock materials to be used in the construction of fills underlain by a rock drainage blanket.

(6) Stability analyses that address static, seismic, and post-earthquake (liquefaction) conditions. The analyses must include, but are not limited to, strength parameters, pore pressures, and long-term seepage conditions. The analyses must be accompanied by a description of all engineering design assumptions and calculations and the alternatives considered in selecting the design specifications and methods.

(h) *Operation and reclamation plans.* You must submit plans for the construction, operation, maintenance, and reclamation of all excess spoil fills in accordance with the requirements of §§ 817.71 through 817.74 of this chapter.

(i) *Additional requirements for bench cuts or rock-toe buttresses.* If bench cuts or rock-toe buttresses are required under § 817.71(b)(2) of this chapter, you must provide the—

(1) Number, location, and depth of borings or test pits, which must be determined according to the size of the fill and subsurface conditions.

(2) Engineering specifications used to design the bench cuts or rock-toe buttresses. Those specifications must be based upon the stability analyses required under paragraph (g)(6) of this section.

(j) *Design certification.* A qualified registered professional engineer experienced in the design of earth and rock fills must certify that the design of each proposed fill and appurtenant structures meets the requirements of this section.

§ 784.37 What information must I provide concerning access and haul roads?

(a) *Design and other application requirements.* (1) You, the applicant, must submit a map showing the location of all roads that you intend to construct or use within the proposed permit area, together with plans and drawings for each road to be constructed, used, or maintained within the proposed permit area.

(2) You must include appropriate cross-sections, design drawings, and specifications for road widths, gradients, surfacing materials, cuts, fill embankments, culverts, bridges, drainage ditches, drainage structures, and fords and low-water crossings of perennial and intermittent streams.

(3) You must demonstrate how all proposed roads will comply with the applicable requirements of §§ 784.28, 817.150, and 817.151 of this chapter.

(4) You must identify—

(i) Each road that you propose to locate in or within 100 feet, measured horizontally on a line perpendicular to the stream beginning at the bankfull elevation or, if there are no discernible banks, the centerline of the active channel, of a perennial or intermittent stream.

(ii) Each proposed ford of a perennial or intermittent stream that you plan to use as a temporary route during road construction.

(iii) Any plans to alter or relocate a natural stream channel.

(iv) Each proposed low-water crossing of a perennial or intermittent stream channel.

(5) You must explain why the roads and stream crossings identified in paragraph (a)(4) of this section are necessary and how they comply with the applicable requirements of § 784.28 of this part and section 515(b)(18) of the Act.

(6) You must describe the plans to remove and reclaim each road that would not be retained as part of the postmining land use, and provide a schedule for removal and reclamation.

(b) *Primary road certification.* The plans and drawings for each primary road must be prepared by, or under the direction of, and certified by a qualified registered professional engineer, or in any state that authorizes land surveyors to certify the design of primary roads, a qualified registered professional land surveyor, with experience in the design and construction of roads, as meeting the requirements of this chapter; current, prudent engineering practices; and any design criteria established by the regulatory authority.

(c) *Standard design plans.* The regulatory authority may establish engineering design standards for primary roads through the regulatory program approval process, in lieu of engineering tests, to establish compliance with the minimum static safety factor of 1.3 for all embankments specified in § 817.151(b) of this chapter.

§ 784.38 What information must I provide concerning support facilities?

You must submit a description, plans, and drawings for each support facility to be constructed, used, or maintained within the proposed permit area. The plans and drawings must include a map, appropriate cross-sections, design drawings, and specifications sufficient to demonstrate compliance with § 817.181 of this chapter for each facility.

§ 784.200 [Reserved]

PART 785—REQUIREMENTS FOR PERMITS FOR SPECIAL CATEGORIES OF MINING

■ 25. The authority citation for part 785 continues to read as follows:

Authority: 30 U.S.C. 1201 *et seq.*

■ 26. Revise § 785.10 to read as follows:

§ 785.10 Information collection.

In accordance with 44 U.S.C. 3501 *et seq.,* the Office of Management and Budget (OMB) has approved the information collection requirements of part 785 and assigned it control number 1029-xxxx. Collection of this information is required by sections 510, 515, 701 and 711 of SMCRA, which requires applicants for special types of mining activities to provide pertinent descriptions, maps, plans, and data. The regulatory authority will use this information to determine whether you, the applicant, can meet the applicable performance standards for the special type of mining activity. You must respond to obtain a benefit. A federal agency may not conduct or sponsor, and you are not required to respond to, a collection of information unless it displays a currently valid OMB control number.

■ 27. Revise § 785.14 to read as follows:

§ 785.14 What special provisions apply to mountaintop removal mining operations?

(a) *Applicability.* This section applies to you if you conduct or intend to conduct mountaintop removal mining, as that term is defined in § 701.5 of this chapter.

(b) *Application and approval requirements.* The regulatory authority may issue a permit for mountaintop removal mining operations, without regard to the approximate original contour restoration requirements of §§ 816.102 and 816.105 of this chapter, if it first finds, in writing, on the basis of a complete application, that the following requirements are met:

(1) The proposed postmining land use of the lands to be disturbed is an industrial, commercial, agricultural, residential, or public facility (including recreational facilities) use.

(2) After consultation with the appropriate land-use planning agencies, if any, the regulatory authority deems that the proposed postmining land use constitutes an equal or better economic or public use of the land compared with the premining use.

(3) You have demonstrated compliance with the requirements for alternative postmining land uses in § 780.24(b) of this chapter.

(4) You have presented specific plans for the proposed postmining land use and appropriate assurances that the use will be—

(i) Compatible with adjacent land uses.

(ii) Obtainable according to data regarding expected need and market.

(iii) Assured of investment in necessary public facilities.

(iv) Supported by commitments from public agencies where appropriate.

(v) Practicable with respect to private financial capability for completion of the proposed use.

(vi) Planned pursuant to a schedule attached to the reclamation plan so as to integrate the mining operation and reclamation with the postmining land use.

(5) The proposed operation has been designed by a registered engineer in conformance with professional standards established to assure the stability, drainage, and configuration necessary for the intended use of the site.

(6) The proposed use is consistent with adjacent land uses and with existing state and local land use plans and programs.

(7) The regulatory authority has provided, in writing, an opportunity of not more than 60 days to review and comment on the proposed use to—

(i) The governing body of the unit of general-purpose government in whose jurisdiction the land is located; and

(ii) Any state or federal agency that the regulatory authority, in its discretion, determines to have an interest in the proposed use.

(8) You have demonstrated that the proposed operation has been designed to comply with the requirements of part 824 of this chapter.

(9) You have demonstrated that the operation will not damage natural watercourses within the proposed permit and adjacent areas. You may meet this requirement by demonstrating that the proposed operation will comply with all of the following requirements:

(i) The proposed operation will not increase the amount or concentration of parameters of concern in discharges to groundwater and surface water from the proposed permit area, when compared to the discharges that would occur if the operation were designed to adhere to approximate original contour restoration requirements.

(ii) The proposed operation will not result in changes in the size or frequency of peak flows from the proposed permit area that would cause an increase in damage from flooding, when compared to the impacts that would occur if the operation were designed to adhere to approximate original contour restoration requirements.

(iii) The total volume of flow from the proposed permit area, during every season of the year, will not vary in a way that would adversely affect any existing or reasonably foreseeable use of surface water or groundwater or any designated use of surface water under section 101(a) or 303(c) of the Clean Water Act.

(10) The revegetation plan proposed under § 780.12(g) of this chapter requires that those portions of the proposed permit area that are forested at the time of application or that would revert to forest under conditions of natural succession be revegetated using native tree and understory species to the extent that this requirement is not inconsistent with attainment of the proposed postmining land use.

(11) The bond posted for the permit under part 800 of this chapter includes an amount equal to the cost of regrading the site to its approximate original contour and revegetating the regraded land in the event that the approved postmining land use is not implemented before expiration of the revegetation responsibility period under § 816.115 of this chapter.

(12) The proposed operation complies with all other requirements of the regulatory program.

(c) *Permit marking.* The regulatory authority must clearly mark the permit as including mountaintop removal mining operations. The permit must specifically identify the acreage and location of the lands on which mountaintop removal mining operations will occur within the permit area.

(d) *Subsequent permit reviews.* (1) The regulatory authority must review each permit issued under this section in accordance with § 774.10(a)(2) of this chapter.

(2) The regulatory authority may modify the terms and conditions of a permit for mountaintop removal mining at any time if it determines that more stringent measures are necessary to insure that the operation is conducted in compliance with the requirements of the regulatory program.

■ 28. Revise § 785.16 to read as follows:

§ 785.16 What special provisions apply to proposed variances from approximate original contour restoration requirements for steep-slope mining?

(a) *Application and approval requirements.* The regulatory authority may issue a permit for non-mountaintop removal steep-slope surface coal mining operations that includes a variance from the approximate original contour restoration requirements in §§ 816.102 and 816.105 of this chapter, as referenced in § 816.107 of this chapter, or § 817.102 of this chapter, as referenced in § 817.107 of this chapter, for all or a portion of the permit area. The permit may contain this variance only if the regulatory authority finds, in

writing, that you, the applicant, have demonstrated compliance with the following requirements on the basis of a complete application:

(1) After reclamation, the lands within the proposed permit area to which the variance would apply will be suitable for an industrial, commercial, residential, or public (including recreational facilities) postmining land use.

(2) The alternative postmining land use requirements of § 780.24(b) or § 784.24(b) of this chapter have been met.

(3) After consultation with the appropriate land use planning agencies, if any, the proposed use is shown to constitute an equal or better economic or public use.

(4) Federal, state, and local government agencies with an interest in the proposed land use have an adequate period in which to review and comment on the proposed use.

(5) A qualified registered professional engineer has certified that the operation has been designed in conformance with professional standards established to assure the stability, drainage, and configuration necessary for the intended use of the site.

(6) The highwall will be completely backfilled with spoil material in a manner that results in a static factor of safety of at least 1.3, using standard geotechnical analysis methods.

(7) Only the amount of spoil that is necessary to achieve the postmining land use, ensure the stability of spoil retained on the bench, and meet all other requirements of this chapter will be placed off the mine bench. All spoil not retained on the bench will be placed in accordance with §§ 816.71 and 816.74 or §§ 817.71 and 817.74 of this chapter.

(8) The variance will not result in the construction of a fill in a perennial or intermittent stream.

(9) The proposed operation will improve the condition of the watershed of lands within the proposed permit and adjacent areas when compared either with the condition of the watershed before the proposed operation or with the condition that would exist if the site were mined and restored to the approximate original contour. The condition of the watershed will be deemed improved only if you demonstrate that the following criteria will be met, relative to one of the situations described in the preceding sentence:

(i) The amount or concentration of total suspended solids or other parameters of concern in discharges to groundwater or surface water from the proposed permit area will be reduced.

(ii) Flood hazards within the watershed containing the proposed permit area will be diminished by reduction of the size or frequency of peak-flow discharges from precipitation events or thaws.

(iii) The total volume of flow from the proposed permit area, during every season of the year, will not vary in a way that would adversely affect any existing or reasonably foreseeable use of surface water or groundwater or any designated use of surface water under section 101(a) or 303(c) of the Clean Water Act.

(iv) The proposed operation will result in a lesser adverse impact on the aquatic ecology of the cumulative impact area than would occur if the area to be mined was restored to its approximate original contour.

(v) The impact on perennial and intermittent streams within the proposed permit and adjacent areas will be less than the impact that would occur if the area to be mined was restored to its approximate original contour. The fish and wildlife enhancement measures proposed and approved under § 780.16 or § 784.16 of this chapter may be considered in making this determination.

(vi) The appropriate state environmental agency has approved the plan.

(10)(i) The owner of the surface of the lands within the proposed permit area has knowingly requested, in writing, as part of the application, that a variance be granted.

(ii) The request must be made separately from any surface owner consent given for the operations under § 778.15 of this chapter and it must show an understanding that the variance could not be granted without the surface owner's request.

(iii) The surface owner has not and will not receive any monetary compensation, item of value, or other consideration in exchange for requesting the variance.

(11) The proposed deviations from the premining surface configuration are necessary and appropriate to achieve the approved postmining land use.

(12) The revegetation plan proposed under §§ 780.12(g) or 784.12(g) of this chapter requires the use of native tree and understory species to revegetate all portions of the permit area that are forested at the time of application or that would revert to forest under conditions of natural succession. This requirement does not apply to—

(i) Permanent impoundments, roads, and other impervious surfaces to be retained following the completion of mining and reclamation.

(ii) Those portions of the permit area covered by the variance, but only to the extent that compliance with this requirement would be inconsistent with attainment of the postmining land use.

(13) The bond posted for the permit under part 800 of this chapter includes an amount equal to the cost of regrading the site to its approximate original contour and revegetating the regraded land in the event that the approved postmining land use is not implemented before expiration of the revegetation responsibility period under § 816.115 or § 817.115 of this chapter.

(b) *Regulatory authority responsibilities.* (1) The regulatory authority must specifically mark any permit that contains an approved variance from approximate original contour restoration requirements.

(2) The regulatory authority must review each permit incorporating a variance under this section in accordance with § 774.10(a)(2) of this chapter.

(3) The regulatory authority may modify the terms and conditions of a permit incorporating a variance under this section at any time if it determines that more stringent measures are necessary to ensure that the operations are conducted in compliance with the requirements of the regulatory program.

(4) The regulatory authority may grant variances in accordance with this section only if it has promulgated specific rules to govern the granting of variances in accordance with the provisions of this section and any necessary, more stringent requirements.

(5) Before approving a variance in accordance with this section, the regulatory authority must find and document in writing that the requirements of paragraph (a)(10) of this section have been met.

■ 29. Revise § 785.25 to read as follows:

§ 785.25 What special provisions apply to proposed operations on lands eligible for remining?

(a) This section applies to you if you intend to apply for a permit to conduct surface coal mining operations on lands eligible for remining, as that term is defined in § 701.5 of this chapter.

(b)(1) Your application must comply with all applicable requirements of this subchapter.

(2) In addition, to be eligible under the provisions of § 773.13 of this chapter concerning unanticipated events or conditions at remining sites, the application must—

(i) To the extent possible, if not otherwise addressed in the permit

application, identify potential environmental and safety problems that could reasonably be anticipated to occur as a result of prior mining activities within the proposed permit area. This identification must be based on a due diligence investigation that includes visual observations, a record review of past mining operations at or near the site, environmental sampling, and any other relevant available information, including data from prior mining activities and remining operations on similar sites.

(ii) With regard to potential environmental and safety problems referred to in paragraph (b)(1)(i) of this section, describe the measures that will be taken to ensure that the applicable reclamation requirements of the regulatory program can and will be met.

SUBCHAPTER J—PERFORMANCE BOND, FINANCIAL ASSURANCE, AND INSURANCE REQUIREMENTS FOR SURFACE COAL MINING AND RECLAMATION OPERATIONS

■ 30. Under the authority of 30 U.S.C. 1211(c)(2) and 1251(b), revise the heading for subchapter J to read as set forth above.

■ 31. Revise part 800 to read as follows:

PART 800—PERFORMANCE BOND, FINANCIAL ASSURANCE, AND INSURANCE REQUIREMENTS FOR SURFACE COAL MINING AND RECLAMATION OPERATIONS

Sec.

Authority: 30 U.S.C. 1201 *et seq.*

§ 800.1 Scope and purpose.

This part sets forth the minimum requirements for filing and maintaining bonds, financial assurances, and liability insurance policies for surface coal mining and reclamation operations under regulatory programs in accordance with the Act.

§ 800.4 Regulatory authority responsibilities.

(a) The regulatory authority must prescribe and furnish forms for filing performance bonds and financial assurances.

(b) The regulatory authority must prescribe by regulation terms and conditions for performance bonds, financial assurances, and liability insurance policies.

(c) The regulatory authority must determine the amount of the bond for each area to be bonded, in accordance with § 800.14 of this part. The regulatory authority also must adjust the bond amount as acreage in the permit area is revised or when other relevant conditions change, in accordance with § 800.15 of this part. In addition, the regulatory authority must determine the amount of financial assurance required under § 800.18 of this part and adjust it as provided in that section.

(d) The regulatory authority may accept a self-bond if the permittee meets the requirements of § 800.23 of this part and any additional requirements in the regulatory program.

(e) The regulatory authority must release liability under a bond or financial assurance instrument in accordance with §§ 800.40 through 800.44 of this part.

(f) If the conditions specified in § 800.50 of this part occur, the regulatory authority must take appropriate action to cause all or part of a bond or financial assurance to be forfeited in accordance with procedures of that section.

(g) The regulatory authority must require in the permit that adequate bond and financial assurance coverage be in effect at all times. Except as provided in § 800.30(b), operating without adequate bond or financial assurance is a violation of a condition of these rules and the permit.

§ 800.5 Definitions.

Collateral bond means an indemnity agreement in a sum certain executed by the permittee as principal which is supported by the deposit with the regulatory authority of one or more of the following:

(1) A cash account, which shall be the deposit of cash in one or more federally-insured or equivalently protected accounts, payable only to the regulatory authority upon demand, or the deposit of cash directly with the regulatory authority.

(2) Negotiable bonds of the United States, a state, or a municipality, endorsed to the order of, and placed in the possession of, the regulatory authority.

(3) Negotiable certificates of deposit, made payable or assigned to the regulatory authority and placed in its possession or held by a federally-insured bank.

(4) An irrevocable letter of credit of any bank organized or authorized to transact business in the United States, payable only to the regulatory authority upon presentation.

(5) A perfected, first-lien security interest in real property in favor of the regulatory authority.

(6) Other securities with a rating of ''A'' or higher from either Moody's Investors Service or Standard and Poor's or an equivalent rating issued by any other nationally recognized statistical rating organization registered with the Securities and Exchange Commission, endorsed to the order of, and placed in the possession of, the regulatory authority.

Financial assurance means a trust fund, an annuity, or a combination thereof.

Self-bond means an indemnity agreement in a sum certain executed by the applicant or by the applicant and any corporate guarantor and made payable to the regulatory authority, with or without separate surety.

Surety bond means an indemnity agreement in a sum certain payable to the regulatory authority, executed by the permittee as principal and which is supported by the performance guarantee of a corporation licensed to do business as a surety in the state where the operation is located.

§ 800.9 What requirements apply to alternative bonding systems?

(a) OSMRE may approve an alternative bonding system as part of a state or federal regulatory program if the system will achieve the following objectives and purposes of the bonding program:

(1) The alternative must assure that the regulatory authority will have available sufficient money to complete the reclamation plan for any areas which may be in default at any time, except as provided in paragraphs (c) and (d) of this section.

(2) The alternative must provide a substantial economic incentive for the permittee to comply with all reclamation provisions.

(b) The alternative bonding system will apply in lieu of the requirements of §§ 800.12 through 800.23 of this part, with appropriate conforming modifications to the bond release provisions of §§ 800.40 through 800.44 of this part and the bond forfeiture provisions of § 800.50 of this part, to the extent specified in the regulatory program and the terms of approval under part 732 of this chapter.

(c) An alternative bonding system may be structured to include only certain phases of mining and reclamation under § 800.42 of this part, provided that the other phases of mining and reclamation are covered by one of the forms of bond listed in § 800.12 of this part.

(d) The following obligations of the permittee are not eligible for coverage by an alternative bonding system:

(1) Restoration of the ecological function of a stream under §§ 780.28 and 816.57 or §§ 784.28 and 817.57 of this chapter.

(2)(i) Treatment of long-term discharges that come into existence after the effective date of paragraph (d) of this section, unless, upon discovery of the discharge, the permittee contributes an amount sufficient to cover all costs that the regulatory authority estimates that the alternative bonding system will incur to treat the discharge for as long as the discharge requires active or passive treatment to meet Clean Water Act standards or the water quality requirements of this chapter. The alternative bonding system must place that amount in a separate account available only for treatment of the discharge for which the contribution is made. Otherwise, consistent with § 800.18 of this part, the permittee must post a financial assurance, a collateral bond, or a combination thereof to cover this obligation.

(ii) Long-term discharges that came into existence before the effective date of paragraph (d) of this section will continue to be covered by any applicable state alternative bonding system unless the regulatory authority amends its program to specifically establish an earlier effective date. The permittee of a site with a discharge subject to paragraph (d)(2)(ii) of this section must contribute to the alternative bonding system an amount sufficient to cover all costs that the alternative bonding system will incur to treat the discharge in perpetuity.

§ 800.10 Information collection.

In accordance with 44 U.S.C. 3501 *et seq.,* the Office of Management and Budget (OMB) has approved the information collection requirements of this part and assigned it control number 1029–xxxx. The regulatory authority uses information collected under this part to ensure that bond, insurance, and financial assurance instruments are valid and meet all requirements of section 509 of SMCRA, which requires that persons planning to conduct surface coal mining operations first post a performance bond to guarantee fulfillment of all reclamation obligations under the approved permit. The regulatory authority also uses information collected under this part to ensure compliance with the bond release requirements and procedures of section 519 of SMCRA, the liability insurance requirements of section 507(f) of SMCRA, and bond forfeiture requirements and procedures. Persons planning to conduct surface coal mining operations must respond to obtain a benefit. A federal agency may not conduct or sponsor, and you are not required to respond to, a collection of information unless it displays a currently valid OMB control number.

§ 800.11 When and how must I file a bond?

(a) After approving a permit application submitted under subchapter G of this chapter, the regulatory authority may not issue the permit until you, the permit applicant, file one of the following:

(1) A performance bond or bonds for the entire permit area;

(2) A cumulative bond schedule and the performance bond required for full reclamation of the initial area to be disturbed; or

(3) An incremental bond schedule and the performance bond required for the first increment in the schedule.

(b) The bond or bonds that you file under paragraph (a) of this section must be—

(1) In an amount determined under § 800.14 of this part.

(2) On a form prescribed and furnished by the regulatory authority.

(3) Made payable to the regulatory authority.

(4) Conditioned upon the faithful performance of all the requirements of the regulatory program and the permit, including the reclamation plan.

(c) If the bond or bonds filed under paragraph (a) of this section cover only an identified increment of land within the permit area upon which you will initiate and conduct surface coal mining operations during the initial term of the permit, you must—

(1) Identify the initial and successive areas or increments for bonding on the permit application map submitted under part 780 or part 784 of this chapter and specify the bond amount to be provided for each area or increment.

(2) Ensure that independent increments are of sufficient size and configuration to provide for efficient reclamation operations should reclamation by the regulatory authority become necessary pursuant to § 800.50 of this part.

(3) File additional bond or bonds with the regulatory authority to cover each succeeding increment before you initiate and conduct surface coal mining operations on that increment.

(d) You may not disturb any surface area or extend any vertical underground mine shaft or other vertical underground mine opening for which a performance bond is required before the regulatory authority accepts the performance bond required for that area or extension.

§ 800.12 What form of bond is acceptable?

(a) The regulatory authority must prescribe the form of the performance bond.

(b) Except as provided in paragraphs (c) through (e) of this section, the regulatory authority may allow the permittee to post any of the following forms of bond:

(1) A surety bond;

(2) A collateral bond;

(3) A self-bond; or

(4) A combination of any of these forms of performance bond.

(c) An alternative bonding system approved under § 800.9 of this part may allow the permittee to post either more or fewer forms of bond than those listed in paragraph (b) of this section.

(d) The regulatory authority may accept only a financial assurance or a collateral bond to guarantee treatment of a long-term discharge under § 800.18 of this part.

(e) The regulatory authority may accept only a surety bond, a collateral bond, or a combination thereof to

guarantee restoration of the ecological function of a stream under §§ 780.28(c), 784.28(c), 816.57(b), and 817.57(b) of this chapter.

§ 800.13 What is the liability period for a bond?

(a)(1) Liability under the performance bond will be for the duration of the surface coal mining and reclamation operation and for a period coincident with the period of extended responsibility for successful revegetation under § 816.115 or § 817.115 of this chapter or until achievement of the reclamation requirements of the regulatory program and the permit, whichever is later.

(2) With the approval of regulatory authority, a bond may be posted and approved to guarantee specific phases of reclamation within the permit area, provided that the sum of phase bonds posted equals or exceeds the total amount required under §§ 800.14 and 800.15 of this part. The scope of work to be guaranteed and the liability assumed under each phase bond must be specified in detail.

(b) Isolated and clearly defined portions of the permit area requiring extended liability may be separated from the original area and bonded separately with the approval of the regulatory authority.

(1) These areas must be limited in extent and not constitute a scattered, intermittent, or checkerboard pattern of failure.

(2) With the approval of the regulatory authority, the permittee may apply the provisions of paragraph (b) of this section to the amount of bond posted to guarantee restoration of a stream's ecological function under §§ 780.28 and 816.57 or §§ 784.28 and 817.57 of this chapter.

(3) The regulatory authority must include any necessary access roads or routes in the area under extended liability.

(c) If the regulatory authority approves a long-term, intensive agricultural postmining land use, the revegetation responsibility period specified under § 816.115 or § 817.115 of this chapter will start on the date of initial planting for the long-term agricultural use.

(d)(1) The bond liability of the permittee includes only those actions that the permittee is required to perform under the permit and regulatory program to complete the reclamation plan for the area covered by the bond.

(2) The bond does not cover implementation of an alternative postmining land use approved under § 780.24(b) or § 784.24(b) of this chapter, but which is beyond the control of the permittee. Except as provided in § 785.16(a)(13) of this chapter, the permittee is responsible only for restoring the site to conditions capable of supporting the approved postmining land use.

(3) Bond liability for prime farmland includes meeting the productivity requirement specified in § 800.42(c) of this part.

(4) Bond liability for treatment or abatement of long-term discharges is specified in § 800.18 of this part.

§ 800.14 How will the regulatory authority determine the amount of bond required?

(a) The regulatory authority must determine the amount of the bond required for each area to be bonded, based upon, but not limited to—

(1) The requirements of the permit, including the reclamation plan.

(2) The probable difficulty of reclamation, giving consideration to the topography, geology, hydrology, and revegetation potential of the permit area and the biological condition of perennial and intermittent streams within the permit and adjacent areas.

(3) The estimated reclamation costs submitted by the permit applicant.

(b)(1) The amount of the bond must be sufficient to assure the completion of the reclamation plan if the work has to be performed by a third party under contract with the regulatory authority in the event of forfeiture.

(2) The calculations used to determine the amount of bond required under paragraph (b)(1) of this section must specifically identify the amount of bond needed to guarantee restoration of a stream's ecological function under §§ 780.28 and 816.57 or §§ 784.28 and 817.57 of this chapter. The permittee may elect to either post a separate bond for this amount or incorporate that amount into the bond posted for the entire permit or increment.

(c) When the permit includes a variance from approximate original contour restoration requirements under § 785.16 of this chapter, the amount of the bond must be sufficient to restore the disturbed area to the approximate original contour if the approved postmining land use is not implemented by the end of the applicable revegetation responsibility period under § 816.115 or § 817.115 of this chapter.

(d) The amount of financial assurance required for treatment of long-term discharges must be determined in accordance with § 800.18 of this part.

(e) The total bond initially posted for the entire area under one permit may not be less than $10,000.

(f) The permittee's financial responsibility under § 817.121(c) of this chapter for repairing or compensating for material damage resulting from subsidence may be satisfied by the liability insurance policy required under § 800.60 of this part.

§ 800.15 When must the regulatory authority adjust the bond amount and when may I request adjustment of the bond amount?

(a) The regulatory authority must adjust the amount of the bond required and, if needed, the terms of the acceptance when—

(1) The area requiring bond coverage increases or decreases.

(2) The unit cost or scope of future reclamation changes as a result of technological advances, revisions to the operation or reclamation plans in the permit, or external factors.

(i) The regulatory authority may specify periodic times or set a schedule for reevaluating and adjusting the bond amount to fulfill this requirement.

(ii) The permittee may request at any time that the regulatory authority reduce the amount of the performance bond based upon submission of evidence that the permittee's method of operation or other circumstances will reduce the estimated unit costs for the regulatory authority to reclaim the bonded area.

(iii) The regulatory authority may not use the provisions of this section to reduce the amount of the performance bond to reflect changes in the cost of reclamation resulting from completion of activities required under the reclamation plan. Bond reduction for completed reclamation activities must comply with the bond release requirements and procedures of §§ 800.40 through 800.44 of this part.

(b) The regulatory authority must—

(1) Notify the permittee, the surety, and any person with a property interest in collateral who has requested notification under § 800.21(f) of this part of any proposed adjustment to the bond amount; and

(2) Provide the permittee an opportunity for an informal conference on the adjustment.

(c) Bond reductions under paragraph (a) of this section are not subject to the bond release requirements and procedures of §§ 800.40 through 800.44 of this part.

(d) In the event that an approved permit is revised in accordance with subchapter G of this chapter, the regulatory authority must review the bond amount for adequacy and, if necessary, require adjustment of the bond amount to conform to the permit as revised. This provision may not be used to reduce bond amounts under the circumstances described in paragraph (a)(2)(iii) of this section.

(e) The regulatory authority must require that appropriate bond or financial assurance be posted in accordance with § 800.18 of this part whenever a discharge that will require long-term treatment is identified.

(f) The regulatory authority may not reduce the bond amount when the permittee does not restore the approximate original contour as required or when the reclamation plan was improperly modified to reflect the level of reclamation completed rather than the level of reclamation required under the regulatory program.

§ 800.16 What are the general terms and conditions of the bond?

(a) The performance bond must be in an amount determined by the regulatory authority as provided in § 800.14 of this part.

(b) The performance bond must be payable to the regulatory authority.

(c) The performance bond must be conditioned upon faithful performance of all the requirements of the regulatory program and the approved permit, including completion of the reclamation plan.

(d) The duration of the bond must be for the time provided in § 800.13 of this part.

(e) The bond must provide a mechanism for a bank, surety, or other responsible financial entity to give prompt notice to the regulatory authority and the permittee of any action filed alleging the insolvency or bankruptcy of the surety, the bank, or other responsible financial entity, or alleging any violations that would result in suspension or revocation of the firm's charter or license to do business.

§ 800.17 [Reserved]

§ 800.18 What special provisions apply to financial guarantees for treatment of long-term discharges?

(a) *Applicability.* (1) This section applies whenever surface coal mining operations, underground mining activities, or other activities or facilities regulated under this title result in a discharge to surface water or groundwater that—

(i) Requires treatment; and

(ii) Continues or may reasonably be expected to continue after the completion of mining, backfilling, grading, and the establishment of revegetation.

(2) This section also applies whenever information available to the regulatory authority documents that a discharge of the nature described in paragraph (a)(1) of this section will develop in the future, provided that the quantity and quality of the future discharge can be determined with reasonable probability.

(b) *Type of financial instruments allowed.* (1) Except as provided in § 800.9(d)(2) of this part, the permittee must post either a financial assurance instrument or a collateral bond to guarantee treatment or abatement of postmining discharges.

(2) If the permittee elects to post a collateral bond under paragraph (b)(1) of this section, the amount of the bond must include the cost of treating the discharge during the time required to collect and liquidate the bond and convert the proceeds to a financial instrument that will generate funds in an amount sufficient to cover future treatment costs and associated administrative expenses.

(3) Operations with discharges in states with an approved alternative bonding system must comply with the requirements of § 800.9(d)(2) of this part.

(c) *Discharge treatment standards for cost calculation purposes.* Calculation of the amount of financial assurance or collateral bond required under this section must include the cost of treating the discharge to meet any applicable numerical standards or limits that are in effect at the time that the regulatory authority issues an order requiring posting of a financial assurance or bond, provided that the numerical standards or limits are established in—

(1) The permit issued under subchapter G of this chapter;

(2) A permit or authorization issued under the Clean Water Act; or

(3) Regulations implementing the Clean Water Act.

(d) *Requirements for financial assurances.* (1) The trust fund or annuity must be established in a manner that guarantees that sufficient moneys will be available when needed to pay for—

(i) Treatment of discharges in perpetuity, unless the permittee demonstrates, and the regulatory authority finds, based upon available evidence, that treatment will be needed for a lesser time, either because the discharge will attenuate or because its quality will improve. The regulatory authority may accept arrangements that allow the permittee to build the amount of the trust fund or annuity over time, provided—

(A) The permittee continues to treat the discharge during that time; and

(B) The regulatory authority retains all performance bonds posted for the permit until the trust fund or annuity reaches a self-sustaining level as determined by the regulatory authority.

(ii) Maintenance, renovation, and replacement of treatment and support facilities as needed.

(iii) Final reclamation of the sites upon which treatment facilities are located and areas used in support of those facilities.

(iv) Administrative costs borne by the regulatory authority or trustee to implement paragraphs (d)(1)(i) through (iii) of this section.

(2) The regulatory authority must specify the investment objectives of the trust fund or annuity.

(3) In structuring the trust fund or annuity, the regulatory authority and the permittee must base calculations on a conservative anticipated rate of return on the proposed investments that is consistent with long-term historical rates of return for similar investments.

(4) The trust fund or annuity must be in a form approved by the regulatory authority and contain all terms and conditions required by the regulatory authority.

(5) The trust fund or annuity must irrevocably establish the regulatory authority as the beneficiary of the trust fund or of the proceeds from the annuity for the purpose of treating mine drainage or other mining-related discharges to protect the environment and users of surface water.

(6) The trust fund or annuity must provide that disbursement of money from the trust fund or annuity may be made only upon written authorization of the regulatory authority or according to a schedule established in the agreement accompanying the trust fund or annuity.

(7) A financial institution or company serving as a trustee or issuing an annuity must be one of the following:

(i) A national bank chartered by the Office of the Comptroller of the Currency.

(ii) An operating subsidiary of a national bank chartered by the Office of the Comptroller of the Currency.

(iii) A bank or trust company chartered by the state in which the operation is located.

(iv) An insurance company licensed or authorized to do business in the state in which the operation is located or designated by the pertinent regulatory body of that state as an eligible surplus lines insurer.

(v) Any other financial institution or company with trust powers and with offices located in the state in which the operation is located, provided that the institution's or company's activities are examined or regulated by a state or federal agency.

(e) *Termination of a financial assurance instrument.* Termination of a

trust fund or annuity may occur only upon the demise of the trustee or the company issuing the annuity or as specified by the regulatory authority upon a determination that one of the following situations exists—

(1) No further treatment or other reclamation measures are necessary, in which case paragraph (h) of this section will apply.

(2) A satisfactory replacement bond or financial assurance has been posted in accordance with paragraph (g) of this section.

(3) The terms of the trust fund or annuity establish conditions for termination and those conditions have been met.

(4) The trustee's administration of the trust fund or annuity is unsatisfactory to the regulatory authority, in which case the permittee or the regulatory authority must procure a new trustee.

(f) *Regulatory authority review and adjustment of amount of financial assurance.* (1) The regulatory authority must establish a schedule for reviewing the performance of the trustee, the adequacy of the trust fund or annuity, and the accuracy of the assumptions upon which the trust fund or annuity is based. This review must occur on at least an annual basis.

(2) The regulatory authority must require that the permittee provide additional resources to the trust fund or annuity whenever the review conducted under paragraph (f)(1) of this section or any other information available to the regulatory authority at any time demonstrates that the financial assurance is no longer adequate to meet the purpose for which it was established.

(g) *Replacement of financial assurance.* With the approval of the regulatory authority, a financial assurance may be replaced in accordance with the provisions of § 800.30(a) of this part.

(h) *Release of liability.* Release of reclamation liabilities and obligations under financial assurances is subject to the applicable bond release provisions of §§ 800.40 through 800.44 of this part.

(i) *Effect of financial assurance on release of bond.* The permittee may apply for, and the regulatory authority may approve, release of any bonds posted for the permit or permit increment for which the regulatory authority has approved a financial assurance under this section, provided that the permittee and the regulatory authority comply with the bond release requirements and procedures in §§ 800.40 through 800.44 of this part. This provision applies only if the following conditions exist—

(1) The financial assurance is both in place and fully funded.

(2) The permit or permit increment fully meets all applicable reclamation requirements, with the exception of the discharge and the presence of associated treatment and support facilities.

(3) The financial assurance will serve as the bond for reclamation of the portion of the permit area required for postmining water treatment facilities and access to those facilities.

§ 800.20 What additional requirements apply to surety bonds?

(a) A surety bond must be executed by the permittee and a corporate surety licensed to do business in the state where the operation is located.

(b) Surety bonds must be noncancellable during their terms, except that surety bond coverage for undisturbed lands may be cancelled with the prior consent of the regulatory authority. The regulatory authority will advise the surety, within 30 days after receipt of a notice to cancel bond, whether the bond may be cancelled on an undisturbed area.

§ 800.21 What additional requirements apply to collateral bonds?

(a) Collateral bonds, except for letters of credit, cash accounts, and real property, are subject to the following conditions:

(1) The regulatory authority must keep custody of collateral deposited by the applicant or permittee until authorized for release or replacement as provided in this part.

(2) The regulatory authority must value collateral at its current market value, not at face value.

(3) The regulatory authority must require that certificates of deposit be made payable to or assigned to the regulatory authority, both in writing and upon the records of the bank or other financial institution issuing the certificates. If assigned, the regulatory authority must require the bank or other financial institution issuing the certificate to waive all rights of setoff or liens against the certificate.

(4) The regulatory authority may not accept an individual certificate of deposit in an amount in excess of the maximum amount insured by the Federal Deposit Insurance Corporation.

(b) Letters of credit are subject to the following conditions:

(1) The letter may be issued only by a bank organized or authorized to do business in the United States;

(2) Letters of credit must be irrevocable during their terms. The regulatory authority must forfeit and collect on a letter of credit used as security in areas requiring continuous bond coverage if the permittee has not replaced the letter with another letter of credit or other suitable form of bond at least 30 days before the letter's expiration date.

(3) The letter of credit must be payable to the regulatory authority upon demand, in part or in full, upon receipt from the regulatory authority of a notice of forfeiture issued in accordance with § 800.50 of this part.

(c) Real property posted as a collateral bond must meet the following conditions:

(1) The applicant or permittee must grant the regulatory authority a first mortgage, first deed of trust, or perfected first-lien security interest in real property with a right to sell or otherwise dispose of the property in the event of forfeiture under § 800.50 of this part.

(2) In order for the regulatory authority to evaluate the adequacy of the real property offered to satisfy collateral requirements, the applicant or permittee must submit a schedule of the real property to be mortgaged or pledged to secure the obligations under the indemnity agreement. The list must include—

(i) A description of the property;

(ii) The fair market value as determined by an independent appraisal conducted by a certified appraiser; and

(iii) Proof of possession and title to the real property.

(3) The property may include land that is part of the permit area. However, land pledged as collateral for a bond under this section may not be disturbed under any permit while it is serving as security under this section.

(d) Cash accounts are subject to the following conditions:

(1) The regulatory authority may authorize the permittee to supplement the bond through the establishment of a cash account in one or more federally-insured or equivalently protected accounts made payable upon demand to, or deposited directly with, the regulatory authority. The total bond, including the cash account, may not be less than the amount determined under § 800.14 of this part, as modified by any adjustments under § 800.15 of this part, less any amounts released under §§ 800.40 through 800.44 of this part.

(2) Any interest paid on a cash account will be retained in the account and applied to the bond value of the account unless the regulatory authority has approved the payment of interest to the permittee.

(3) Certificates of deposit may be substituted for a cash account with the approval of the regulatory authority.

(4) The regulatory authority may not accept an individual cash account in an amount in excess of the maximum amount insured by the Federal Deposit Insurance Corporation.

(e)(1) The estimated bond value of all collateral posted as assurance under this section is subject to a margin, which is the ratio of bond value to market value, as determined by the regulatory authority. The margin must reflect legal and liquidation fees, as well as value depreciation, marketability, and fluctuations that might affect the net cash available to the regulatory authority to complete reclamation.

(2)(i) The regulatory authority may evaluate the bond value of collateral at any time.

(ii) The regulatory authority must evaluate the bond value of collateral as part of the permit renewal process.

(iii) The regulatory authority must increase or decrease the performance bond amount required if an evaluation conducted under paragraph (e)(2)(i) or (ii) of this section determines that the bond value of collateral has increased or decreased.

(iv) In no case may the bond value of collateral exceed the market value of the collateral.

(f) Persons who have an interest in collateral posted as a bond, and who desire notification of actions pursuant to the bond, must request such notification in writing to the regulatory authority at the time that the collateral is offered.

§ 800.23 What additional requirements apply to self-bonds?

(a) *Definitions.* For the purposes of this section only:

Current assets means cash or other assets or resources that are reasonably expected to be converted to cash or sold or consumed within one year or within the normal operating cycle of the business.

Current liabilities means obligations that are reasonably expected to be paid or liquidated within one year or within the normal operating cycle of the business.

Fixed assets means plants and equipment, but does not include land or coal in place.

Liabilities means obligations to transfer assets or provide services to other entities in the future as a result of past transactions.

Net worth means total assets minus total liabilities and is equivalent to owners' equity.

Parent corporation means a corporation which owns or controls the applicant.

Tangible net worth means net worth minus intangibles such as goodwill and rights to patents or royalties.

(b) The regulatory authority may accept a self-bond from an applicant for a permit if all of the following conditions are met by the applicant or its parent corporation guarantor:

(1) The applicant designates a suitable agent to receive service of process in the state where the proposed surface coal mining operation is to be conducted.

(2) The applicant has been in continuous operation as a business entity for a period of not less than 5 years. Continuous operation means that business was conducted over the 5 years immediately preceding the date of application.

(i) The regulatory authority may allow a joint venture or syndicate with less than 5 years of continuous operation to qualify under this requirement, if each member of the joint venture or syndicate has been in continuous operation for at least 5 years immediately preceding the date of application.

(ii) When calculating the period of continuous operation, the regulatory authority may exclude past periods of interruption to the operation of the business entity that were beyond the applicant's control and that do not affect the applicant's likelihood of remaining in business during the proposed surface coal mining and reclamation operations.

(3) The applicant submits financial information in sufficient detail to show that the applicant meets one of the following criteria:

(i) The applicant has a current rating for its most recent bond issuance of ''A'' or higher as issued by either Moody's Investors Service or Standard and Poor's or an equivalent rating from any other nationally recognized statistical rating organization registered with the Securities and Exchange Commission.

(ii) The applicant has a tangible net worth of at least $10 million, a ratio of total liabilities to net worth of 2.5 times or less, and a ratio of current assets to current liabilities of 1.2 times or greater.

(iii) The applicant's fixed assets in the United States total at least $20 million, and the applicant has a ratio of total liabilities to net worth of 2.5 times or less, and a ratio of current assets to current liabilities of 1.2 times or greater.

(4) The applicant submits—

(i) Financial statements for the most recently completed fiscal year accompanied by a report prepared by an independent certified public accountant in conformity with generally accepted accounting principles and containing the accountant's audit opinion or review opinion of the financial statements with no adverse opinion;

(ii) Unaudited financial statements for completed quarters in the current fiscal year; and

(iii) Additional unaudited information as requested by the regulatory authority.

(c)(1) The regulatory authority may accept a written guarantee for an applicant's self-bond from a parent corporation guarantor, if the guarantor meets the conditions of paragraphs (b)(1) through (4) of this section as if it were the applicant. This written guarantee will be referred to as a ''corporate guarantee.'' The terms of the corporate guarantee must provide for the following:

(i) If the applicant fails to complete the reclamation plan, the guarantor must do so or the guarantor will be liable under the indemnity agreement to provide funds to the regulatory authority sufficient to complete the reclamation plan, but not to exceed the bond amount.

(ii) The corporate guarantee will remain in force unless the guarantor sends notice of cancellation by certified mail to the applicant and to the regulatory authority at least 90 days in advance of the cancellation date, and the regulatory authority accepts the cancellation.

(iii) The cancellation may be accepted by the regulatory authority if the applicant obtains suitable replacement bond before the cancellation date or if the lands for which the self-bond, or portion thereof, was accepted have not been disturbed.

(2) The regulatory authority may accept a written guarantee for an applicant's self-bond from any corporate guarantor, whenever the applicant meets the conditions of paragraphs (b)(1), (2), and (4) of this section, and the guarantor meets the conditions of paragraphs (b)(1) through (4) of this section. This written guarantee will be referred to as a ''non-parent corporate guarantee.'' The terms of this guarantee must provide for compliance with the conditions of paragraphs (c)(1)(i) through (iii) of this section. The regulatory authority may require the applicant to submit any information specified in paragraph (b)(3) of this section in order to determine the financial capabilities of the applicant.

(d)(1) For the regulatory authority to accept an applicant's self-bond, the total amount of the outstanding and proposed self-bonds of the applicant for surface coal mining and reclamation operations may not exceed 25 percent of the applicant's tangible net worth in the United States.

(2) For the regulatory authority to accept a corporate guarantee, the total amount of the parent corporation guarantor's present and proposed self-bonds and guaranteed self-bonds for surface coal mining and reclamation

operations may not exceed 25 percent of the guarantor's tangible net worth in the United States.

(3) For the regulatory authority to accept a non-parent corporate guarantee, the total amount of the non-parent corporate guarantor's present and proposed self-bonds and guaranteed self-bonds may not exceed 25 percent of the guarantor's tangible net worth in the United States.

(e) If the regulatory authority accepts an applicant's self-bond, the applicant must submit an indemnity agreement subject to the following requirements:

(1) The indemnity agreement must be executed by all persons and parties who are to be bound by it, including the parent corporation guarantor. It must bind each party jointly and severally.

(2) Corporations applying for a self-bond, and parent and non-parent corporations guaranteeing an applicant's self-bond, must submit an indemnity agreement signed by two corporate officers who are authorized to bind their corporations. A copy of the authorization must be provided to the regulatory authority along with an affidavit certifying that the agreement is valid under all applicable federal and state laws. In addition, the guarantor must provide a copy of the corporate authorization demonstrating that the corporation may guarantee the self-bond and execute the indemnity agreement.

(3) If the applicant is a partnership, joint venture or syndicate, the agreement must bind each partner or party who has a beneficial interest, directly or indirectly, in the applicant.

(4) Pursuant to § 800.50, the applicant and the parent or non-parent corporate guarantor will be required to complete the approved reclamation plan for the lands in default or to pay to the regulatory authority an amount necessary to complete the approved reclamation plan, not to exceed the bond amount. If permitted under State law, the indemnity agreement, when under forfeiture, will operate as a judgment against those parties liable under the indemnity agreement.

(f) A regulatory authority may require self-bonded applicants and parent and non-parent corporate guarantors to submit an update of the information required under paragraphs (b)(3) and (4) of this section within 90 days after the close of each fiscal year following the issuance of the self-bond or corporate guarantee.

(g) If at any time during the period when a self-bond is posted, the financial conditions of the applicant or the parent or non-parent corporate guarantor change so that the criteria of paragraphs (b)(3) and (d) of this section are not satisfied, the permittee must notify the regulatory authority immediately and post an alternate form of bond in the same amount as the self-bond within 90 days. Should the permittee fail to post an adequate substitute bond, the provisions of § 800.30(b) of this part will apply.

§ 800.30 When may I replace a bond or financial assurance instrument and when must I do so?

(a) *Replacement upon request of permittee.* (1) The regulatory authority may allow you, the permittee, to replace existing bonds and financial assurance instruments with other bonds and financial assurance instruments that provide equivalent coverage.

(2) If the proposed replacement bond under paragraph (a) of this section is a surety bond, the regulatory authority may decline to accept the replacement bond if, in the judgment of the regulatory authority, the new surety does not have adequate reinsurance or other resources sufficient to cover the default of one or more mining companies for which the surety has provided bond coverage.

(3) The regulatory authority may not release any existing performance bond or financial assurance instrument until you have submitted, and the regulatory authority has approved, an acceptable replacement.

(b) *Replacement by order of the regulatory authority.* (1) Upon the incapacity of a bank, surety, or other responsible financial entity by reason of bankruptcy, insolvency, or suspension or revocation of a charter or license, you will be deemed to be without bond coverage and you must promptly notify the regulatory authority.

(2) Upon receipt of notification under § 800.16(e) of this part or from you under paragraph (b)(1) of this section, the regulatory authority must issue an order requiring that you submit replacement bond or financial assurance coverage within a reasonable time, not to exceed 90 days.

(3) If you do not post adequate bond or financial assurance by the end of the time allowed, the regulatory authority must issue a notice of violation requiring that you post adequate bond or financial assurance coverage. If you are actively conducting surface coal mining operations, the notice of violation also must require that you cease coal extraction and reclaim the site in accordance with the provisions of § 816.132 or § 817.132 of this chapter.

§ 800.40 How do I apply for release of all or part of a bond?

(a) *When may I file an application for bond release?* You, the permittee, may file an application with the regulatory authority for the release of all or part of a performance bond only at times or during seasons authorized by the regulatory authority. The times or seasons appropriate for the evaluation of certain types of reclamation will be established in either the regulatory program or your permit.

(b) *What must I include in my application for bond release?* You must include—

(1) The application form and information required by the regulatory authority.

(2) A certified copy of an advertisement that you have placed at least once a week for four successive weeks in a newspaper of general circulation in the locality of the surface coal mining operation. You must submit the copy within 30 days after you file the application under paragraph (b)(1) of this section. The advertisement must contain—

(i) Your name.

(ii) The permit number and approval date.

(iii) The number of acres and the precise location of the land for which you are requesting bond release.

(iv) The type and amount of the bond filed and the portion for which you seek release.

(v) The type and dates of reclamation work performed.

(vi) A description of the results that you have achieved under the approved reclamation plan, including an analysis of the results of the monitoring conducted under §§ 816.35 through 816.37 or §§ 817.35 through 817.37 of this chapter.

(vii) The name and address of the regulatory authority to which written comments, objections, or requests for public hearings and informal conferences on the bond release application may be submitted pursuant to § 800.44 of this section.

(3) Copies of letters that you have sent to adjoining property owners, local governmental bodies, planning agencies, sewage and water treatment authorities, and water companies in the locality of the surface coal mining and reclamation operation, notifying them of your intention to seek release of the bond.

(4) A notarized statement certifying that all applicable reclamation activities have been accomplished in accordance with the requirements of the regulatory program and the approved reclamation plan. You must submit a separate certification for each application and each phase of bond release.

§ 800.41 How will the regulatory authority process my application for bond release?

(a)(1) Upon receipt of a complete application for bond release, the regulatory authority will, within 30 days, or as soon thereafter as weather conditions permit, conduct an inspection of the site and an evaluation of the reclamation work performed and the reclamation work remaining.

(2) A complete application is one that includes all items required under § 800.40 of this part.

(3) The evaluation will consider, among other factors, the degree of difficulty to complete any remaining reclamation, whether pollution of surface and subsurface water is occurring, the probability of future occurrence of such pollution, and the estimated cost of abating such pollution.

(b)(1) The regulatory authority will notify the surface owner, agent, or lessee before conducting the inspection and will offer that person an opportunity to participate with the regulatory authority in making the inspection.

(2) The regulatory authority may arrange with you to allow access to the permit area, upon request by any person with an interest in bond release, for the purpose of gathering information relevant to the proceeding.

§ 800.42 What are the criteria for bond release?

(a) *General requirements.* (1) Except as provided in paragraphs (a)(2) through (5) of this section, the regulatory authority may release all or part of the bond for the permit area or an increment thereof if the regulatory authority is satisfied that you have accomplished the required reclamation for the permit area or increment in accordance with paragraphs (b) through (d) of this section.

(2) The regulatory authority may not release any bond under this section if, after an evaluation of the monitoring data submitted under §§ 816.35 through 816.37 or §§ 817.35 through 817.37 of this chapter, it determines that adverse trends exist that may result in material damage to the hydrologic balance outside the permit area.

(3) If a discharge requiring long-term treatment exists either on the permit area or at a point that is hydrologically connected to the permit area, you must post a separate bond or financial assurance under § 800.18 of this part before any portion of the existing bond for the permit area may be released.

(4) If the permit area or increment includes a variance from restoration of the approximate original contour under § 785.16 of this chapter, the portion of the bond described in § 785.16(a)(13) of this chapter may not be released in whole or in part until the approved postmining land use is implemented or until the site is restored to the approximate original contour and revegetated in accordance with §§ 816.111 and 816.116 or §§ 817.111 and 817.116 of this chapter.

(5) The bond amount described in § 780.24(d)(2) or § 784.24(d)(2) of this chapter may not be released either until the structure is in use as part of the postmining land use or until the structure is removed and the site upon which it was located is reclaimed in accordance with part 816 or part 817 of this chapter.

(6) The regulatory authority must consider the results of the evaluation conducted under § 800.41(a)(3) of this part when determining the amount of bond to release.

(b) *Phase I reclamation.* (1) The regulatory authority may release a maximum of 60 percent of the bond for a bonded area after you complete Phase I reclamation for that area in accordance with the approved reclamation plan. Phase I reclamation consists of backfilling, grading, and drainage control. It includes restoration of the form of perennial and intermittent stream segments under § 816.57 or § 817.57 of this chapter. Soil replacement is optional for this phase.

(2) The amount of bond that the regulatory authority retains after Phase I release must be adequate to ensure that the regulatory authority will have sufficient funds for a third party to complete the remaining portion of the reclamation plan, including restoration of the ecological function of perennial and intermittent streams under § 816.57 or § 817.57 of this chapter and completion of any fish and wildlife enhancement measures required in the permit in accordance with § 780.16 or § 784.16 of this chapter, in the event of forfeiture.

(c) *Phase II reclamation.* (1) The regulatory authority may release an additional amount of bond after you complete Phase II reclamation, which consists of soil replacement (if not accomplished as part of Phase I reclamation) and successfully establishing revegetation on the area in accordance with the approved reclamation plan. The regulatory authority must establish standards defining successful establishment of vegetation for purposes of this paragraph.

(2) The amount of bond that the regulatory authority retains after Phase II release must be sufficient to cover the cost of having a third party reestablish revegetation for the revegetation responsibility period under § 816.115 or § 817.115 of this chapter. In addition, it must be adequate to ensure that the regulatory authority will have sufficient funds for a third party to complete the remaining portion of the reclamation plan, including restoration of the ecological function of perennial and intermittent streams under § 816.57 or § 817.57 of this chapter and completion of any fish and wildlife enhancement measures required in the permit in accordance with § 780.16 or § 784.16 of this chapter, in the event of forfeiture.

(3) The regulatory authority may not release any part of the bond under paragraph (c)(1) of this section if the lands to which the release would apply are contributing suspended solids to streamflow or runoff outside the permit area in excess of the requirements set by subchapter K of this chapter.

(4) The regulatory authority may not release any part of the bond under paragraph (c)(1) of this section until soil productivity for any prime farmland on the area to which the release would apply has returned to levels of yield equivalent to those of nonmined land of the same soil type in the surrounding area under equivalent management practices as determined from the soil survey performed under part 823 of this chapter.

(5) When the regulatory authority has approved retention of a silt dam as a permanent impoundment under § 816.49(b) or § 817.49(b) of this chapter, the regulatory authority may approve Phase II bond release for the area of the impoundment if the requirements of § 816.56 or § 817.56 of this chapter have been met and provisions for sound future maintenance by the operator or the landowner have been made with the regulatory authority.

(d) *Phase III reclamation.* (1) The regulatory authority must release the remaining portion of the bond upon the completion of Phase III reclamation, which consists of successful completion of all surface coal mining and reclamation activities and expiration of the revegetation responsibility period under § 816.115 or § 817.115 of this chapter.

(2) The regulatory authority may not fully release any bond under provisions of this section until all applicable reclamation requirements of the regulatory program and the permit are fully met. Among other things, those requirements include restoration of the ecological function of perennial and intermittent streams under § 816.57 or § 817.57 of this chapter and completion of any fish and wildlife enhancement measures required in the permit in

accordance with § 780.16 or § 784.16 of this chapter.

§ 800.43 When and how must the regulatory authority provide notification of its decision on a bond release application?

(a) The regulatory authority will provide written notification of its decision on your bond release application to you, the surety (if applicable), any other persons with an interest in bond collateral who have requested notification under § 800.21(f) of this part, persons who filed objections in writing, and objectors who were a party to the hearing proceedings, if any. The regulatory authority will provide this notification—

(1) Within 60 days after you file the application, if there is no public hearing under § 800.44 of this part, or

(2) Within 30 days after a public hearing has been held under § 800.44 of this part.

(b) If the regulatory authority disapproves your application for release of the bond or portion thereof, the regulatory authority must notify you, the surety, and any person with an interest in collateral as provided in § 800.21(f) of this part, in writing, stating the reasons for disapproval and recommending corrective actions necessary to secure the release and allowing an opportunity for a public hearing.

(c) When any application for total or partial bond release is filed with the regulatory authority, the regulatory authority must notify the municipality in which the surface coal mining operation is located by certified mail at least 30 days prior to the release of all or a portion of the bond.

§ 800.44 Who may file an objection to a bond release application and how must the regulatory authority respond to an objection?

(a)(1) Any person with a valid legal interest that might be adversely affected by release of the bond, or the responsible officer or head of any federal, state, or local governmental agency with jurisdiction by law or special expertise with respect to any environmental, social, or economic impact involved in the operation or which is authorized to develop and enforce environmental standards with respect to those operations, has the right to file written objections to the proposed bond release with the regulatory authority within 30 days after the last publication of the notice required by § 800.40(b)(2) of this part.

(2) If written objections are filed and a hearing is requested, the regulatory authority must inform all interested parties of the time and place of the hearing, and hold a public hearing within 30 days after receipt of the request for the hearing. The regulatory authority must advertise the date, time, and location of the public hearing in a newspaper of general circulation in the locality for two consecutive weeks.

(3) The public hearing must be held in the locality of the surface coal mining operation for which bond release is sought, at the location of the regulatory authority office, or at the state capital, at the option of the objector.

(b)(1) For the purpose of the hearing under paragraph (a) of this section, the regulatory authority has the authority to administer oaths, subpoena witnesses or written or printed material, compel the attendance of witnesses or the production of materials, and take evidence including, but not limited to, inspection of the land affected and other surface coal mining operations carried on by the applicant in the general vicinity.

(2) A verbatim record of each public hearing must be made, and a transcript must be made available on the motion of any party or by order of the regulatory authority.

(c) Without prejudice to the right of an objector or the applicant for bond release, the regulatory authority may hold an informal conference as provided in section 513(b) of the Act to resolve written objections. The regulatory authority must make a record of the informal conference unless waived by all parties, which must be accessible to all parties. The regulatory authority also must furnish all parties to the informal conference with a written finding based on the informal conference, and the reasons for the finding.

§ 800.50 When and how will a bond be forfeited?

(a) If a permittee or operator refuses or is unable to conduct reclamation of an unabated violation, if the terms of the permit are not met, or if the permittee or operator defaults on the conditions under which the bond was accepted, the regulatory authority must take the following action to forfeit all or part of a bond or bonds for any permit area or an increment of a permit area:

(1) Send written notification by certified mail, return receipt requested, to the permittee and the surety on the bond, if any, informing them of the determination to forfeit all or part of the bond, including the reasons for the forfeiture and the amount to be forfeited. The amount must be based on the estimated total cost of achieving the reclamation plan requirements.

(2) Advise the permittee and surety, if applicable, of the conditions under which forfeiture may be avoided. Those conditions may include, but are not limited to—

(i) Agreement by the permittee or another party to perform reclamation operations in accordance with a compliance schedule that meets the conditions of the permit, the reclamation plan, and the regulatory program and a demonstration that the party has the ability to satisfy the conditions; or

(ii) The regulatory authority may allow a surety to complete the reclamation plan, or the portion of the reclamation plan applicable to the bonded phase or increment if the surety can demonstrate an ability to complete the reclamation in accordance with the approved reclamation plan. Except where the reclamation work performed meets the criteria for partial bond release under § 800.42 of this part, no surety liability may be released until successful completion of all reclamation under the terms of the permit, including applicable liability periods of § 800.13 of this part.

(b) In the event forfeiture of the bond is required by this section, the regulatory authority shall—

(1) Proceed to collect the forfeited amount as provided by applicable laws for the collection of defaulted bonds or other debts if actions to avoid forfeiture have not been taken, or if rights of appeal, if any, have not been exercised within a time established by the regulatory authority, or if such appeal, if taken, is unsuccessful.

(2) Use funds collected from bond forfeiture to complete the reclamation plan, or portion thereof, on the permit area or increment, to which bond coverage applies.

(c) Upon default, the regulatory authority may cause the forfeiture of any and all bonds deposited to complete reclamation for which the bonds were posted. Unless specifically limited, as provided in § 800.11(c) of this part, bond liability will extend to the entire permit area under conditions of forfeiture.

(d)(1) In the event the estimated amount forfeited is insufficient to pay for the full cost of reclamation, the permittee or operator is liable for remaining costs. The regulatory authority may complete, or authorize completion of, reclamation of the bonded area and may recover from the permittee or operator all costs of reclamation in excess of the amount forfeited.

(2) In the event the amount of performance bond forfeited is more than the amount necessary to complete reclamation, the regulatory authority

must return the unused funds to the party from whom they were collected.

§ 800.60 What liability insurance must I carry?

(a) The regulatory authority must require the applicant to submit as part of its permit application a certificate issued by an insurance company authorized to do business in the United States certifying that the applicant has a public liability insurance policy in force for the surface coal mining and reclamation operations for which the permit is sought. The policy must provide for personal-injury and property-damage protection in an amount adequate to compensate any persons injured or property damaged as a result of the surface coal mining and reclamation operations, including the use of explosives, and who are entitled to compensation under the applicable provisions of state law. Minimum insurance coverage for bodily injury and property damage is $300,000 for each occurrence and $500,000 aggregate.

(b) The policy must be maintained in full force during the life of the permit or any renewal thereof and the liability period necessary to complete all reclamation operations under this chapter.

(c) The policy must include a rider requiring that the insurer notify the regulatory authority whenever substantive changes are made in the policy, including any termination or failure to renew.

(d) The regulatory authority may accept from the applicant, in lieu of a certificate for a public liability insurance policy, satisfactory evidence from the applicant that it satisfies applicable state self-insurance requirements approved as part of the regulatory program and the requirements of this section.

§ 800.70 What special bonding provisions apply to anthracite operations in Pennsylvania?

(a) All provisions of this subchapter apply to bonding and insuring anthracite surface coal mining and reclamation operations in Pennsylvania except that—

(1) The regulatory authority must determine specified bond limits in accordance with applicable provisions of Pennsylvania statutes, rules and regulations adopted thereunder, and implementing policies of the Pennsylvania regulatory authority.

(2) The period of liability for responsibility under each bond must be established for those operations in accordance with applicable laws of the Commonwealth of Pennsylvania, rules and regulations adopted thereunder, and implementing policies of the Pennsylvania regulatory authority.

(b) Upon amendment of the Pennsylvania permanent regulatory program with respect to specified bond limits and the period of revegetation responsibility for anthracite surface coal mining and reclamation operations, any person engaging in or seeking to engage in those operations must comply with additional regulations the Secretary may issue as are necessary to meet the purposes of the Act.

■ 32. Lift the suspensions of §§ 816.46(b)(2) and 816.101, and revise part 816 to read as follows:

PART 816—PERMANENT PROGRAM PERFORMANCE STANDARDS—SURFACE MINING ACTIVITIES

Sec.

Authority: 30 U.S.C. 1201 *et seq.*

§ 816.1 Scope: What does this part do?

This part sets forth the minimum environmental protection performance standards for surface mining activities under the Act.

§ 816.2 What is the objective of this part?

This part is intended to ensure that all surface mining activities are conducted in an environmentally sound manner in accordance with the Act.

§ 816.10 Information collection.

In accordance with 44 U.S.C. 3501 *et seq.*, the Office of Management and Budget (OMB) has approved the information collection requirements of this part and assigned it control number 1029–xxxx. Collection of this information is required under section 515 of SMCRA, which provides that permittees conducting surface coal mining and reclamation operations must meet all applicable performance standards of the regulatory program approved under the Act. The regulatory authority uses the information collected to ensure that surface mining activities are conducted in compliance with the requirements of the applicable regulatory program. Persons intending to conduct such operations must respond to obtain a benefit. A federal agency may not conduct or sponsor, and you are not required to respond to, a collection of information unless it displays a currently valid OMB control number.

§ 816.11 What signs and markers must I post?

(a) *General specifications.* Signs and markers required under this part must—

(1) Be posted and maintained by the person who conducts the surface mining activities;

(2) Be of a uniform design throughout the operation;

(3) Be easily seen and read;

(4) Be made of durable material; and

(5) Conform to local ordinances and codes.

(b) *Duration of maintenance.* You must maintain signs and markers during the conduct of all activities to which they pertain.

(c) *Mine and permit identification signs.* (1) You must display identification signs at each point of access to the permit area from public roads.

(2) The signs must show the name, business address, and telephone number of the person who conducts the surface mining activities and the identification number of the current permit authorizing surface mining activities.

(3) You must retain and maintain the signs until the release of all bonds for the permit area.

(d) *Perimeter markers.* You must clearly mark the perimeter of the permit area before beginning surface mining activities.

(e) *Stream buffer zone markers.* You must clearly mark the boundaries of any buffer to be maintained between surface mining activities and a perennial or intermittent stream in accordance with §§ 780.28 and 816.57 of this chapter to avoid disturbance by surface mining activities.

(f) *Topsoil markers.* You must clearly mark stockpiles of topsoil, subsoil, or other plant growth media segregated and stored as required in the permit in accordance with § 816.22 of this part.

§ 816.13 What special requirements apply to drilled holes, wells, and exposed underground openings?

(a) Except as provided in paragraph (f) of this section, you must case, line, otherwise manage each exploration hole, drilled hole, borehole, shaft, well, or other exposed underground opening in a manner approved by the regulatory authority to—

(1) Prevent acid or other toxic drainage from entering groundwater and surface water.

(2) Minimize disturbance to the prevailing hydrologic balance.

(3) Ensure the safety of people, livestock, fish and wildlife, and machinery in the permit area and the adjacent area.

(b) If the approved permit identifies an exploration hole, drilled hole, borehole, well, or other exposed underground opening for use to monitor groundwater or to return coal processing waste or water to underground workings, you must temporarily seal the hole or opening before use and protect it during use by installing barricades, fences, or other protective devices approved by the regulatory authority. You must periodically inspect these devices and maintain them in good operating condition.

(c) You may retain and transfer a drilled hole or groundwater monitoring well for use as a water well under the conditions established in § 816.39 of this part.

(d) Except as provided in paragraph (c) of this section, you must permanently close each exploration hole, drilled hole, borehole, well, or underground opening that mining activities uncover or expose within the permit area, unless the regulatory authority—

(1) Approves use of the hole, well, or opening for water monitoring purposes; or

(2) Authorizes other management of the hole or well.

(e)(1) Except as provided in paragraph (c) of this section, you must cap, seal, backfill, or otherwise properly manage each shaft, drift, adit, tunnel, exploratory hole, entryway or other opening to the surface from underground when no longer needed for monitoring or any other use that the regulatory authority approves after finding that the use will not adversely affect the environment or public health and safety.

(2) Permanent closure measures taken under paragraph (e)(1) of this section must be—

(i) Consistent with § 75.1771 of this title;

(ii) Designed to prevent access to the mine workings by people, livestock, fish and wildlife, and machinery; and

(iii) Designed to keep acid or toxic mine drainage from entering groundwater or surface water.

(f) The requirements of this section do not apply to holes drilled and used for blasting for surface mining purposes.

§ 816.14 [Reserved]

§ 816.15 [Reserved]

§ 816.22 How must I handle topsoil, subsoil, and other plant growth media?

(a) *Removal and salvage.* (1) You, the permittee, must separately remove and salvage all topsoil and other soil materials identified for salvage and use as postmining plant growth media in the soil handling plan approved in the permit under § 780.12(e) of this chapter. You must complete removal and salvage of these materials from the area to be disturbed before any drilling, blasting, mining, or other surface disturbance takes place on that area.

(2) The regulatory authority may choose not to require the removal of topsoil and other soil materials for minor disturbances that—

(i) Occur at the site of small structures, such as power poles, signs, or fence lines; or

(ii) Will not destroy the existing vegetation and will not cause erosion.

(b) *Storage.* (1) You must segregate and, except as provided in paragraph (b)(3) of this section, stockpile the materials removed under paragraph (a) of this section when it is impractical to

redistribute those materials promptly on regraded areas.

(2) Stockpiled materials must—

(i) Be selectively placed on a stable site within the permit area;

(ii) Be protected from contaminants and unnecessary compaction that would interfere with revegetation;

(iii) Be protected from wind and water erosion through prompt establishment and maintenance of an effective, quick-growing, non-invasive vegetative cover or through other measures approved by the regulatory authority; and

(iv) Not be moved until required for redistribution unless approved by the regulatory authority.

(3) When stockpiling of organic matter and soil materials removed under paragraphs (a) and (f) of this section would be detrimental to the quality or quantity of those materials, you may temporarily redistribute those soil materials on an approved site within the permit area to enhance the current use of that site until the materials are needed for later reclamation, provided that—

(i) Temporary redistribution will not permanently diminish the capability of the topsoil of the host site; and

(ii) The redistributed material will be preserved in a condition more suitable for redistribution than if it were stockpiled.

(c) *Soil substitutes and supplements.* When the soil handling plan approved in the permit in accordance with § 780.12(e) of this chapter provides for the use of substitutes for or supplements to the existing topsoil or subsoil, you must salvage, store, and redistribute the overburden materials selected and approved for that purpose in a manner consistent with paragraphs (a), (b), and (e) of this section.

(d) *Site preparation.* (1) You must minimize grading of backfilled areas to avoid compaction of the reconstructed root zone, as specified in the soil handling plan approved in the permit in accordance with § 780.12(e) of this chapter. Compaction is allowed only to the extent necessary to ensure stability and to comply with water-quality standards.

(2) If necessary, you must rip, chisel-plow, or otherwise mechanically treat backfilled and graded areas before topsoil redistribution to reduce potential slippage of the redistributed material and to promote root penetration. You may conduct this treatment after soil redistribution if doing so will not harm the redistributed material.

(e) *Redistribution.* (1) You must redistribute the materials removed, salvaged, and, if necessary, stored under paragraphs (a) through (c) of this section in a manner that—

(i) Complies with the soil handling plan developed under § 780.12(e) of this chapter and approved as part of the permit.

(ii) Is consistent with the approved postmining land use, contours, and surface-water drainage systems.

(iii) Minimizes compaction of the materials to the extent possible and alleviates any excess compaction that may occur.

(iv) Protects the materials from wind and water erosion before and after seeding and planting to the extent necessary to ensure establishment of a successful vegetative cover and to avoid causing or contributing to a violation of applicable water quality standards.

(v) Achieves an approximately uniform, stable thickness across the regraded area, except that the thickness may vary when consistent with the postmining land use and when variations are necessary or desirable to achieve specific revegetation goals and ecological diversity, as set forth in the revegetation plan developed under § 780.12(g) of this chapter and approved as part of the permit.

(2) You must use a statistically valid sampling technique to document that soil materials have been redistributed in the locations and depths required by the soil handling plan developed under § 780.12(e) of this chapter and approved as part of the permit.

(3) The regulatory authority may choose not to require the redistribution of topsoil on the embankments of permanent impoundments or on the embankments of roads to be retained as part of the postmining land use if it determines that—

(i) Placement of topsoil on those embankments is inconsistent with the requirement to use the best technology currently available to prevent sedimentation, and

(ii) The embankments will be otherwise stabilized.

(f) *Organic matter.* (1) You must salvage duff, other organic litter, and vegetative materials such as tree tops, small logs, and root balls. You may not burn organic matter or bury it in the backfill.

(2) Except as otherwise provided in paragraph (f)(3) of this section, you must redistribute the materials salvaged under paragraph (f)(1) of this section across the regraded surface or incorporate them into the soil to control erosion, promote growth of vegetation, serve as a source of native plant seeds and soil inoculants to speed restoration of the soil's ecological community, and increase the moisture retention capability of the soil.

(3) Vegetative debris must be redistributed in accordance with paragraph (f)(2) of this section, used for stream restoration purposes, or used to construct fish and wildlife habitat enhancement features.

§ 816.34 How must I protect the hydrologic balance?

(a) You, the permittee, must conduct all surface mining and reclamation activities to—

(1) Minimize disturbance of the hydrologic balance within the permit and adjacent areas.

(2) Prevent material damage to the hydrologic balance outside the permit area.

(3) Protect streams in accordance with §§ 780.28 and 816.57 of this chapter.

(4) Assure the protection or replacement of water supplies to the extent required by § 816.40 of this part.

(5) Protect existing water rights under state law.

(6) Support approved postmining land uses in accordance with the terms and conditions of the approved permit and the performance standards of this part.

(7) Comply with the hydrologic reclamation plan as submitted under § 780.22 of this chapter and approved in the permit.

(8) Protect groundwater quality by using the best technology currently available to handle earth materials and runoff in a manner that avoids the formation of acid or toxic mine drainage and by managing excavations and other disturbances to prevent or control groundwater degradation.

(9) Protect groundwater quantity by handling earth materials and runoff in a manner that will restore the approximate premining recharge capacity of the reclaimed area as a whole, excluding coal mine waste disposal areas and excess spoil fills, so as to allow the movement of water into the groundwater system.

(10) Protect surface-water quality by using the best technology currently available to handle earth materials, groundwater discharges, and runoff in a manner that—

(i) Avoids the formation of acid or toxic mine drainage.

(ii) Prevents additional contribution of suspended solids to streamflow or runoff outside the permit area to the extent possible.

(iii) Otherwise prevents water pollution.

(11) Protect surface-water quality and flow rates by handling earth materials and runoff in accordance with the steps outlined in the hydrologic reclamation

plan and the surface-water runoff control plan approved in the permit in accordance with §§ 780.22 and 780.29 of this chapter, respectively.

(b)(1) To the maximum extent practicable, you must use mining and reclamation practices that minimize water pollution, changes in flow, and adverse impacts on stream biota rather than relying upon water treatment to minimize those impacts.

(2) You must install, use, and maintain any necessary water-treatment facilities or water-quality controls if drainage control, materials handling, stabilization and revegetation of disturbed areas, diversion of runoff, mulching, and other reclamation and remedial practices are not adequate to meet the requirements of this section and § 816.42 of this part.

(c) The regulatory authority may require that you take preventive, remedial, or monitoring measures in addition to those set forth in this part to prevent material damage to the hydrologic balance outside the permit area.

(d)(1) You must examine the hydraulic structures identified under § 780.29 of this chapter after each occurrence of the following precipitation events:

(i) In areas with an average annual precipitation of more than 26.0 inches, an event of a size equal to or greater than that of a storm with a 2-year recurrence interval. You must use the appropriate regional Natural Resources Conservation Service synthetic storm distribution to determine peak flow for a storm with that recurrence interval.

(ii) In areas with an average annual precipitation of 26.0 inches or less, a significant event of a size specified by the regulatory authority.

(2) You must prepare a report, which must be certified by a registered professional engineer, and submit the report to the regulatory authority within 48 hours of cessation of the applicable precipitation event under paragraph (d)(1) of this section. The report must address the performance of the hydraulic structures, identify and describe any material damage to the hydrologic balance outside the permit area that occurred, and identify and describe the remedial measures taken in response to that damage.

§ 816.35 How must I monitor groundwater?

(a)(1)(i) You, the permittee, must monitor groundwater in the manner specified in the groundwater monitoring plan approved in the permit in accordance with § 780.23(a) of this chapter.

(ii) You must adhere to the data collection, analysis, and reporting requirements of paragraphs (a) and (b) of § 777.13 of this chapter when conducting monitoring under this section.

(2) Monitoring must continue through mining and during reclamation until the entire bond amount for the monitored area has been fully released under § 800.42(d) of this chapter.

(b)(1) You must submit groundwater monitoring data to the regulatory authority every 3 months, or more frequently if prescribed by the regulatory authority.

(2) Monitoring reports must include analytical results from each sample taken during the reporting period.

(c) When the analysis of any sample indicates noncompliance with the terms and conditions of the permit, you must promptly notify the regulatory authority, take the actions required under § 773.17(e) of this chapter, if any, and implement any applicable remedial measures required by the hydrologic reclamation plan approved in the permit in accordance with § 780.22 of this chapter.

(d) You may use the permit revision procedures of § 774.13 of this chapter to request that the regulatory authority modify the groundwater monitoring requirements, including the parameters covered and the sampling frequency. The regulatory authority may approve your request if you demonstrate, using the monitoring data obtained under this section, that—

(1) Future changes in groundwater quantity or quality are unlikely to occur.

(2) The operation has—

(i) Minimized disturbance to the hydrologic balance in the permit and adjacent areas.

(ii) Prevented material damage to the hydrologic balance outside the permit area.

(iii) Preserved or restored the biological condition of perennial and intermittent streams within the permit and adjacent areas when groundwater from the permit area provides all or part of the base flow of those streams.

(iv) Maintained the availability and quality of groundwater in a manner that can support existing and reasonably foreseeable uses.

(v) Protected or replaced the water rights of other users.

(e) Whenever information available to the regulatory authority indicates that additional monitoring is necessary to protect the hydrologic balance, to detect hydrologic changes, or to meet other requirements of the regulatory program, the regulatory authority must issue an order under § 774.10(b) of this chapter requiring that you revise your permit to include the necessary additional monitoring.

(f) You must install, maintain, operate, and, when no longer needed, remove all equipment, structures, and other devices used in conjunction with monitoring groundwater, consistent with §§ 816.13 and 816.39 of this part.

§ 816.36 How must I monitor surface water?

(a)(1)(i) You, the permittee, must monitor surface water in the manner specified in the surface-water monitoring plan approved in the permit in accordance with § 780.23(b) of this chapter.

(ii) You must adhere to the data collection, analysis, and reporting requirements of paragraphs (a) and (b) of § 777.13 of this chapter when conducting monitoring under this section.

(2) Monitoring must continue through mining and during reclamation until the entire bond amount for the monitored area is fully released under § 800.42(d) of this chapter.

(b)(1) You must submit surface-water monitoring data to the regulatory authority every 3 months, or more frequently when prescribed by the regulatory authority.

(2) Monitoring reports must include analytical results from each sample taken during the reporting period.

(3) The reporting requirements of paragraph (b) of this section do not exempt you from meeting any National Pollutant Discharge Elimination System (NPDES) reporting requirements.

(c) When the analysis of any sample indicates noncompliance with the terms and conditions of the permit, you must promptly notify the regulatory authority, take the actions required under § 773.17(e) of this chapter, if any, and implement any applicable remedial measures required by the hydrologic reclamation plan approved in the permit in accordance with § 780.22 of this chapter.

(d) You may use the permit revision procedures of § 774.13 of this chapter to request that the regulatory authority modify the surface-water monitoring requirements (except those required by the NPDES permitting authority), including the parameters covered and the sampling frequency. The regulatory authority may approve your request if you demonstrate, using the monitoring data obtained under this section, that—

(1) Future changes in surface-water quantity or quality are unlikely to occur.

(2) The operation has—

(i) Minimized disturbance to the hydrologic balance in the permit and adjacent areas.

(ii) Prevented material damage to the hydrologic balance outside the permit area.

(iii) Preserved or restored the biological condition of perennial and intermittent streams within the permit and adjacent areas.

(iv) Maintained the availability and quality of surface water in a manner that can support existing and reasonably foreseeable uses and that does not preclude attainment of designated uses under section 101(a) or 303(c) of the Clean Water Act.

(v) Protected or replaced the water rights of other users.

(e) Whenever information available to the regulatory authority indicates that additional monitoring is necessary to protect the hydrologic balance, to detect hydrologic changes, or to meet other requirements of the regulatory program, the regulatory authority must issue an order under § 774.10(b) of this chapter requiring that you revise your permit to include the necessary additional monitoring.

(f) You must install, maintain, operate, and, when no longer needed, remove all equipment, structures, and other devices used in conjunction with monitoring surface water.

§ 816.37 How must I monitor the biological condition of streams?

(a)(1)(i) You must monitor the biological condition of perennial and intermittent streams in the manner specified in the plan approved in the permit in accordance with § 780.23(c) of this chapter.

(ii) You must adhere to the data collection, analysis, and reporting requirements of paragraphs (a) and (b) of § 777.13 of this chapter and use a bioassessment protocol that complies with § 780.19(e)(2) of this chapter when conducting monitoring under this section.

(2) Monitoring must continue through mining and during reclamation until the entire bond amount for the monitored area has been fully released under § 800.42(d) of this chapter.

(b)(1) You must submit biological condition monitoring data to the regulatory authority on an annual basis, or more frequently if prescribed by the regulatory authority.

(2) Monitoring reports must include analytical results from each sample taken during the reporting period.

(c) Whenever the analysis of any sample indicates noncompliance with the terms and conditions of the permit, you must promptly notify the regulatory authority, take the actions required under § 773.17(e) of this chapter, if any, and implement any applicable remedial measures required by the hydrologic reclamation plan approved in the permit in accordance with § 780.22 of this chapter.

(d) Whenever information available to the regulatory authority indicates that additional monitoring is necessary to meet the requirements of the regulatory program, the regulatory authority must issue an order under § 774.10(b) of this chapter requiring that you revise your permit to include the necessary additional monitoring.

§ 816.38 How must I handle acid-forming and toxic-forming materials?

You, the permittee, must use the best technology currently available to handle acid-forming and toxic-forming materials in a manner that will avoid the creation of acid or toxic mine drainage into surface water and groundwater. At a minimum, you must—

(a) Identify potential acid-forming and toxic-forming materials in overburden strata and the stratum immediately below the lowest coal seam to be mined and cover exposed coal seams and the stratum immediately beneath the lowest coal seam mined with a layer of compacted material with a hydraulic conductivity at least two orders of magnitude lower than the hydraulic conductivity of the adjacent less-compacted spoil to minimize contact and interaction with water.

(b) Identify the anticipated postmining groundwater level for all locations at which you propose to place acid-forming or toxic-forming materials.

(c) Selectively handle and place acid-forming and toxic-forming materials within the backfill in accordance with the plan approved in the permit under § 780.12(d)(4) of this chapter, unless the permit allows placement of those materials in an excess spoil fill or a coal mine waste refuse pile. When placing those materials in the backfill, you must use one or more of the following techniques, as appropriate and as approved in the permit:

(1) Completely surround acid-forming and toxic-forming materials with compacted material with a hydraulic conductivity at least two orders of magnitude lower than the hydraulic conductivity of adjacent less-compacted spoil.

(2) Place acid-forming and toxic-forming materials in a location below the water table where they will remain fully saturated at all times, provided that the permittee demonstrates, and the regulatory authority finds in writing in the permit, that complete saturation will prevent the formation of acid or toxic leachate.

(3) Treat or otherwise neutralize acid-forming and toxic-forming materials to prevent the formation of acid or toxic mine drainage. This technique also may be used in combination with either isolation under paragraph (c)(1) of this section or saturation under paragraph (c)(2) of this section.

(d) When approved in the permit, place acid-forming and toxic-forming materials in an excess spoil fill or a coal mine waste refuse pile, using one or both of the following techniques, as appropriate:

(1) Completely surround acid-forming and toxic-forming materials with compacted material with a hydraulic conductivity at least two orders of magnitude lower than the hydraulic conductivity of the adjacent uncompacted spoil or coal mine waste.

(2) Treat or otherwise neutralize acid-forming and toxic-forming materials to prevent the formation of acid or toxic mine drainage.

(e) Temporarily store acid-forming and toxic-forming materials only if the regulatory authority specifically approves temporary storage as necessary and finds in writing in the permit that the proposed storage method will protect surface water and groundwater by preventing erosion, the formation of polluted runoff, and the infiltration of polluted water into aquifers. The regulatory authority must specify a maximum time for temporary storage, which may not exceed the period until burial first becomes feasible. In addition, storage must not result in any risk of water pollution, adverse impacts to the biological condition of perennial or intermittent streams, or other environmental damage.

(f) Adhere to disposal, treatment, and storage practices that are consistent with other material handling and disposal provisions of this chapter.

§ 816.39 What must I do with exploratory or monitoring wells when I no longer need them?

(a) Except as provided in paragraph (b) of this section, you, the permittee, must permanently seal exploratory or monitoring wells in a safe and environmentally sound manner in accordance with § 816.13 of this part before the regulatory authority may approve full release of the bond posted for the land on which the wells are located under section § 800.42(d) of this chapter.

(b) With the prior approval of the regulatory authority, you may transfer wells to another party for further use. The conditions of the transfer must comply with state and local laws. You will remain responsible for the proper

management of the wells until full release of the bond posted for the land on which the wells are located under § 800.42(d) of this chapter.

§ 816.40 What responsibility do I have to replace water supplies?

(a) *Replacement of adversely-impacted water supplies.* (1) You, the permittee, must replace the water supply of an owner of interest in real property who obtains all or part of his or her supply of water for domestic, agricultural, industrial, or other legitimate use from an underground or surface source when the water supply has been adversely impacted by contamination, diminution, or interruption as a result of your surface mining activities.

(2) The replacement supply must be equivalent to the quantity and quality of the premining supply.

(3) Replacement includes provision of an equivalent water supply delivery system and payment of operation and maintenance expenses in excess of customary and reasonable delivery costs for the premining water supply. If you and the water supply owner agree, the obligation to pay operation and maintenance costs may be satisfied by a one-time payment in an amount that covers the present worth of the increased annual operation and maintenance costs for a period upon which you and the water supply owner agree.

(4) If the affected water supply was not needed for the land use in existence at the time of loss, contamination, or diminution, and if the supply is not needed to achieve the postmining land use, you may satisfy the replacement requirements by demonstrating that a suitable alternative water source is available and could feasibly be developed, provided you obtain written concurrence from the owner of the affected water supply.

(b) *Measures to address anticipated adverse impacts to protected water supply losses.* For anticipated loss of or damage to a protected water supply, you must adhere to the requirements set forth in the permit in accordance with § 780.22(b) of this chapter.

(c) *Measures to address unanticipated adverse impacts to protected water supplies.* For unanticipated loss of or damage to a protected water supply, you must—

(1) Provide an emergency temporary water supply within 24 hours of notification of the loss. The temporary supply must be adequate in quantity and quality to meet normal household needs.

(2) Develop and submit a plan for a permanent replacement supply to the regulatory authority within 30 days of receiving notice that an unanticipated loss of or damage to a protected water supply has occurred.

(3) Provide a permanent replacement water supply within 2 years of the date of receiving notice of an unanticipated loss of or damage to a protected water supply.

(d) *Basis for determination of adverse impact.* The regulatory authority must use the baseline hydrologic and geologic information required under § 780.19 of this chapter and all other available information to determine whether and to what extent the mining operation adversely impacted the damaged water supply.

§ 816.41 Under what conditions may I discharge water and other materials into an underground mine?

(a) You may not discharge any water or other materials from a surface coal mining and reclamation operation into an underground mine unless the regulatory authority specifically approves the discharge in writing, based upon a demonstration that—

(1) The discharge will be made in a manner that—

(i) Minimizes disturbances to the hydrologic balance within the permit area;

(ii) Prevents material damage to the hydrologic balance outside the permit area, including the hydrologic balance of the area in which the underground mine receiving the discharge is located;

(iii) Does not adversely impact the biological condition of perennial or intermittent streams; and

(iv) Otherwise eliminates public hazards resulting from surface mining activities.

(2) The discharge will not result in a violation of applicable water quality standards or effluent limitations.

(3)(i) The discharge will be at a known rate and of a quality that will meet the effluent limitations for pH and total suspended solids referenced in § 816.42 of this part.

(ii) The regulatory authority may approve discharges of water that exceed the effluent limitations for pH and total suspended solids if the available evidence indicates that there is no direct hydrologic connection between the underground mine and other waters and that those exceedances will not be inconsistent with paragraph (a)(1) of this section.

(4) The Mine Safety and Health Administration has approved the discharge.

(5) You have obtained written permission from the owner of the mine into which the discharge is to be made and you have provided a copy of that authorization to the regulatory authority.

(b) Discharges are limited to the following materials:

(1) Water.

(2) Coal processing waste.

(3) Fly ash from a coal-fired facility.

(4) Sludge from an acid-mine-drainage treatment facility.

(5) Flue-gas desulfurization sludge.

(6) Inert materials used for stabilizing underground mines.

(7) Underground mine development waste.

§ 816.42 What are my responsibilities to comply with water quality standards and effluent limitations?

(a) Discharges of water from surface mining activities and from areas disturbed by surface mining activities must be made in compliance with all applicable water quality laws and regulations, including the effluent limitations established in the National Pollutant Discharge Elimination System permit for the operation under section 402 of the Clean Water Act, 33 U.S.C. 1342.

(b) Discharges of overburden, coal mine waste, and other materials into waters of the United States must be made in compliance with section 404 of the Clean Water Act, 33 U.S.C. 1344, and its implementing regulations.

(c) You must construct water treatment facilities for discharges from the operation as soon as the need for those facilities becomes evident.

(d)(1) You must remove precipitates and otherwise maintain all water treatment facilities requiring the use of settling ponds or lagoons as necessary to maintain the functionality of those facilities.

(2) You must dispose of all precipitates removed from facilities under paragraph (d)(1) of this section either in an approved solid waste landfill or within the permit area in accordance with a plan approved by the regulatory authority.

(e) You must operate and maintain water treatment facilities until the regulatory authority authorizes removal based upon monitoring data demonstrating that influent to the facilities meets all applicable water quality standards and effluent limitations without treatment.

§ 816.43 How must I construct and maintain diversions and other channels to convey water?

(a) *General provisions.* (1) When approved in the permit, you may divert the following flows away from the

disturbed area by means of temporary or permanent diversions:

(i) Any flow from mined areas abandoned before May 3, 1978.

(ii) Any flow from undisturbed areas.

(iii) Any flow from reclaimed areas for which the criteria of § 816.46 of this part for siltation structure removal have been met.

(2) You may not divert water into underground mines without approval of the regulatory authority under § 816.41 of this part.

(3) When the permit requires the use of siltation structures for sediment control, you must construct diversions or other channels designed to the standards of this section to convey runoff from the disturbed area to a siltation structure unless the topography will naturally direct all runoff to a siltation structure.

(4) All diversions must be designed to—

(i) Ensure the safety of the public.

(ii) Minimize adverse impacts to the hydrologic balance, including the biological condition of perennial and intermittent streams, within the permit and adjacent areas.

(iii) Prevent material damage to the hydrologic balance outside the permit area.

(5) Each diversion and its appurtenant structures must be designed, located, constructed, maintained and used to—

(i) Be stable.

(ii) Provide and maintain a combination of channel and bank configuration adequate to pass safely the peak flow of surface runoff from a 2-year, 6-hour precipitation event for a temporary diversion and a 10-year, 6-hour precipitation event for a permanent diversion. You must use the appropriate regional Natural Resources Conservation Service synthetic storm distribution to determine peak flows.

(iii) Prevent, to the extent possible using the best technology currently available, additional contributions of suspended solids to streamflow or runoff outside the permit area.

(iv) Comply with all applicable federal, state, and local laws and regulations.

(6)(i) You must remove temporary diversions promptly when they are no longer needed to achieve the purpose for which they were authorized.

(ii) You must restore the land disturbed by the removal process in accordance with this part.

(iii) Before temporary diversions are removed, you must modify or remove downstream water-treatment facilities previously protected by the diversion when necessary to prevent overtopping or failure of the facilities. You must continue to maintain water-treatment facilities until they are no longer needed.

(7) The regulatory authority may specify additional design criteria for diversions to meet the requirements of this section.

(b) *Diversion of perennial and intermittent streams.* Sections 780.28 and 816.57 of this chapter contain additional requirements applicable to diversions of perennial and intermittent streams.

(c) *Diversion of miscellaneous flows.* (1) Miscellaneous flows, which consist of all surface-water flows except perennial and intermittent streams, may be diverted away from disturbed areas if required or approved by the regulatory authority.

(2) The design, location, construction, maintenance, and removal of diversions of miscellaneous flows must meet the requirements of paragraph (a) of this section.

§ 816.45 What sediment control measures must I implement?

(a) You must design, construct, and maintain appropriate sediment control measures, using the best technology currently available to—

(1) Prevent, to the extent possible, additional contributions of sediment to streamflow or to runoff outside the permit area.

(2) Meet the more stringent of the applicable effluent limitations referenced in § 816.42(a) of this part.

(3) Minimize erosion to the extent possible.

(b) Sediment control measures include practices carried out within and adjacent to the disturbed area. Sediment control measures consist of the use of proper mining and reclamation methods and sediment control practices, singly or in combination. Sediment control methods include but are not limited to—

(1) Disturbing the smallest practicable area at any one time during the mining operation through progressive backfilling, grading, and prompt revegetation.

(2) Shaping and stabilizing the backfilled material to promote a reduction in the rate and volume of runoff.

(3) Retaining sediment within disturbed areas.

(4) Diverting runoff away from disturbed areas.

(5) Diverting runoff using protected channels or pipes through disturbed areas so as not to cause additional erosion.

(6) Using straw dikes, riprap, check dams, mulches, vegetative sediment filters, dugout ponds, and other measures that reduce overland flow velocity, reduce runoff volume, or trap sediment.

(7) Treating with chemicals.

(8) Treating mine drainage in underground sumps.

§ 816.46 What requirements apply to siltation structures?

(a) *Scope.* For the purpose of this section only, *disturbed areas* do not include those areas—

(1) In which the only surface mining activities consist of diversions, siltation structures, or roads that are designed, constructed, and maintained in accordance with this part; and

(2) For which you do not plan to otherwise disturb the land surface upgradient of the diversion, siltation structure, or road.

(b) *General requirements.* (1) When siltation structures will be used to achieve the requirements of § 816.45 of this part, you must construct those structures before beginning any surface mining activities that will disturb the land surface.

(2) Upon completion of construction of a siltation structure, a qualified registered professional engineer, or, in any state that authorizes land surveyors to prepare and certify plans in accordance with § 780.25(a) of this chapter, a qualified registered professional land surveyor, must certify that the structure has been constructed as designed and as approved in the reclamation plan in the permit.

(3) Any siltation structure that impounds water must be designed, constructed and maintained in accordance with § 816.49 of this chapter.

(4) You must maintain siltation structures until removal is authorized by the regulatory authority and the disturbed area has been stabilized and revegetated.

(5)(i) When a siltation structure is removed, you must regrade the land upon which the structure was located and revegetate the land in accordance with the reclamation plan and §§ 816.111 and 816.116 of this chapter.

(ii) Paragraph (b)(5)(i) of this section does not apply to sedimentation ponds approved by the regulatory authority for retention as permanent impoundments under § 816.49(b) of this part if the maintenance requirements of § 800.42(c)(5) of this chapter are met.

(c) *Sedimentation ponds.* (1) When used, sedimentation ponds must—

(i) Be located as near as possible to the disturbed area and outside perennial or intermittent stream channels unless approved by the regulatory authority in

the permit in accordance with §§ 780.28 and 816.57(c) of this chapter.

(ii) Be designed, constructed, and maintained to—

(A) Provide adequate sediment storage volume.

(B) Provide adequate detention time to allow the effluent from the ponds to meet applicable effluent limitations.

(C) Contain or treat the 10-year, 24-hour precipitation event (''design event'') unless a lesser design event is approved by the regulatory authority based on terrain, climate, other site-specific conditions, and a demonstration that the effluent limitations referenced in § 816.42 of this part will be met.

(D) Provide a nonclogging dewatering device adequate to maintain the detention time required under paragraph (c)(1)(ii)(B) of this section.

(E) Minimize short circuiting to the extent possible.

(F) Provide periodic sediment removal sufficient to maintain adequate volume for the design event.

(G) Ensure against excessive settlement.

(H) Be free of sod, large roots, frozen soil, and acid-forming or toxic-forming materials.

(I) Be compacted properly.

(2) *Spillways.* A sedimentation pond must include either a combination of principal and emergency spillways or a single spillway configured as specified in § 816.49(a)(9) of this part.

(d) *Other treatment facilities.* (1) You must design other treatment facilities to treat the 10-year, 24-hour precipitation event unless the regulatory authority approves a lesser design event based upon terrain, climate, other site-specific conditions, and a demonstration that the effluent limitations referenced in § 816.42 of this part will be met.

(2) You must design other treatment facilities in accordance with the applicable requirements of paragraph (c) of this section.

(e) *Exemptions.* The regulatory authority may grant an exemption from the requirements of this section if—

(1) The disturbed drainage area within the total disturbed area is small; and

(2) You demonstrate that siltation structures and alternate sediment control measures are not necessary for drainage from the disturbed drainage area to meet the effluent limitations referenced in § 816.42 of this part and the applicable water quality standards for the receiving waters.

§ 816.47 What requirements apply to discharge structures for impoundments?

Discharges from sedimentation ponds, permanent and temporary impoundments, coal mine waste impounding structures, and diversions must be controlled by energy dissipators, riprap channels, and other devices, when necessary to reduce erosion, to prevent deepening or enlargement of stream channels, or to minimize disturbance of the hydrologic balance. Discharge structures must be designed according to standard engineering design procedures.

§ 816.49 What requirements apply to impoundments?

(a) Requirements that apply to both permanent and temporary impoundments—(1) *Impoundments with Significant Hazard Class or High Hazard Class dams.* Impoundments meeting the criteria for Significant Hazard Class or High Hazard Class dams in ''Earth Dams and Reservoirs,'' Technical Release No. 60 (210–VI–TR60, July 2005), published by the U.S. Department of Agriculture, Natural Resources Conservation Service, must comply with the ''Minimum Emergency Spillway Hydrologic Criteria'' table in that publication and the requirements of this section. Technical Release No. 60 (TR–60) is hereby incorporated by reference. The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. You may review and download the incorporated document from the Natural Resources Conservation Service's Web site at *http://www.info.usda.gov/scripts/lpsiis.dll/TR/TR_210_60.htm.* A copy of this document is on file for public inspection and copying at the Administrative Record Room, Office of Surface Mining Reclamation and Enforcement, 1951 Constitution Avenue NW., Washington, DC 20240. For information on the availability of this document at OSMRE, call 202–208–2823. You also may inspect a copy of this document at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.*

(2) *MSHA requirements.* An impoundment meeting the criteria of § 77.216(a) of this title must comply with the requirements of § 77.216 of this title and this section.

(3) Design certification. As provided in § 780.25(a) of this chapter, a qualified registered professional engineer or a qualified registered professional land surveyor must certify that that the impoundment design meets the requirements of this part, current prudent engineering practices, and any design criteria established by the regulatory authority. The qualified registered professional engineer or qualified registered professional land surveyor must be experienced in the design and construction of impoundments.

(4) Stability. (i) An impoundment that meets the criteria for High Hazard Class or Significant Hazard Class dams in TR–60, or that meets the criteria of § 77.216(a) of this title, must have a minimum static safety factor of 1.5 for a normal pool with steady state seepage saturation conditions and a seismic safety factor of at least 1.2.

(ii) Impoundments not included in paragraph (a)(4)(i) of this section, except for a coal mine waste impounding structure, must have a minimum static safety factor of 1.3 for a normal pool with steady state seepage saturation conditions or meet the requirements of § 780.25(c)(3) of this chapter.

(5) Freeboard. Impoundments must have adequate freeboard to resist overtopping by waves and by sudden increases in storage volume. Impoundments that meet the criteria for High Hazard Class or Significant Hazard Class dams in TR–60 must comply with the freeboard hydrograph criteria in the ''Minimum Emergency Spillway Hydrologic Criteria'' table in TR–60.

(6) Foundation. (i) Foundations and abutments for an impounding structure must be stable during all phases of construction and operation and must be designed based on adequate and accurate information on the foundation conditions. If the impoundment meets the criteria for High Hazard Class or Significant Hazard Class dams in TR–60, or the criteria of § 77.216(a) of this title, you must conduct a foundation investigation, as well as any necessary laboratory testing of foundation material, to determine the design requirements for foundation stability.

(ii) You must remove all vegetative and organic materials from the foundation area and excavate and prepare the foundation area to resist failure. You must install cutoff trenches if necessary to ensure stability.

(7) Protection of impoundment slopes. You must take measures to protect impoundment slopes from surface erosion and the adverse impacts of a sudden drawdown.

(8) Protection of embankment faces. Faces of embankments and surrounding areas shall be vegetated, except that faces where water is impounded may be riprapped or otherwise stabilized in accordance with accepted design practices.

(9) Spillways. An impoundment must include either a combination of

principal and emergency spillways or a single spillway configured as specified in paragraph (a)(9)(i) of this section, designed and constructed to safely pass the applicable design precipitation event specified in paragraph (a)(9)(ii) of this section, except as set forth in paragraph (c)(2) of this section.

(i) The regulatory authority may approve a single open-channel spillway that is:

(A) Of nonerodible construction and designed to carry sustained flows; or

(B) Earth- or grass-lined and designed to carry short-term, infrequent flows at non-erosive velocities where sustained flows are not expected.

(ii) Except as specified in paragraph (c)(2) of this section, the required design precipitation event for an impoundment meeting the spillway requirements of paragraph (a)(9) of this section is:

(A) For an impoundment that meets the criteria for High Hazard Class or Significant Hazard Class dams in TR–60, the emergency spillway hydrograph criteria in the ''Minimum Emergency Spillway Hydrologic Criteria'' table in TR–60, or any greater event specified by the regulatory authority.

(B) For an impoundment meeting or exceeding the criteria of § 77.216(a) of this title, the 100-year, 6-hour event, or any greater event specified by the regulatory authority.

(C) For an impoundment not included in paragraphs (a)(9)(ii) (A) and (B) of this section, the 25-year, 6-hour event, or any greater event specified by the regulatory authority.

(10) Highwalls. The vertical portion of any highwall remnant within the impoundment must be located far enough below the low-water line along the full extent of the highwall to provide adequate safety and access for the proposed water users.

(11) Inspections. Except as provided in paragraph (a)(11)(iv) of this section, a qualified registered professional engineer or other qualified professional specialist under the direction of a professional engineer must inspect each impoundment as provided in paragraph (a)(11)(i) of this section. The professional engineer or specialist must be experienced in the construction of impoundments.

(i) Inspections must be made regularly during construction, upon completion of construction, and at least yearly until removal of the structure or release of the performance bond.

(ii) After each inspection required by paragraph (a)(11)(i) of this section, the qualified registered professional engineer, or qualified registered professional land surveyor as specified in paragraph (a)(11)(iv) of this section, must promptly provide to the regulatory authority a certified report that the impoundment has been constructed and/or maintained as designed and in accordance with the approved plan and this chapter. The report must include a discussion of any appearance of instability, any structural weakness or other hazardous condition, the depth and elevation of any impounded waters, the existing storage capacity, any existing or required monitoring procedures and instrumentation, and any other aspects of the structure affecting stability.

(iii) You must retain a copy of the report at or near the minesite.

(iv) In any state that authorizes land surveyors to prepare and certify plans in accordance with § 780.25(a) of this chapter, a qualified registered professional land surveyor may inspect any temporary or permanent impoundment that does not meet the criteria for High Hazard Class or Significant Hazard Class dams in TR–60, or that does not meet the criteria of § 77.216(a) of this title, and certify and submit the report required by paragraph (a)(11)(ii) of this section, except that a qualified registered professional engineer must certify all coal mine waste impounding structures covered by § 816.84 of this chapter. The professional land surveyor must be experienced in the construction of impoundments.

(12) Examinations. Impoundments that meet the criteria for High Hazard Class or Significant Hazard Class dams in TR–60, or that meet the criteria of § 77.216 of this title, must be examined in accordance with § 77.216–3 of this title. Impoundments that do not meet the criteria for High Hazard Class or Significant Hazard Class dams in TR–60, or that are not subject to § 77.216 of this title, must be examined at least quarterly. A qualified person designated by the operator must examine impoundments for the appearance of structural weakness and other hazardous conditions.

(13) Emergency procedures. If any examination or inspection discloses that a potential hazard exists, the person who examined the impoundment must promptly inform the regulatory authority of the finding and of the emergency procedures formulated for public protection and remedial action. The regulatory authority must be notified immediately if adequate procedures cannot be formulated or implemented. The regulatory authority then must notify the appropriate agencies that other emergency procedures are required to protect the public.

(b) Requirements that apply only to permanent impoundments. A permanent impoundment of water may be created if authorized by the regulatory authority in the approved permit based upon the following demonstration:

(1) The size and configuration of the impoundment will be adequate for its intended purposes.

(2) The quality of impounded water will be suitable on a permanent basis for its intended use and, after reclamation, will meet applicable state and federal water quality standards. Discharges from the impoundment will meet applicable effluent limitations and will not degrade the quality of receiving water below applicable state and federal water quality standards.

(3) The water level will be sufficiently stable and be capable of supporting the intended use.

(4) Final grading will provide for adequate safety and access for proposed water users.

(5) The impoundment will not result in the diminution of the quality and quantity of water used by surrounding landowners for agricultural, industrial, recreational, or domestic uses.

(6) The impoundment will be suitable for the approved postmining land use.

(7) Approval of the impoundment will not result in retention of spoil piles or ridges that are inconsistent with the definition of approximate original contour.

(8) Approval of the impoundment will not result in the creation of an excess spoil fill elsewhere within the permit area.

(9) The impoundment has been designed with dimensions and other characteristics that will enhance fish and wildlife habitat to the extent that doing so is not inconsistent with the intended use.

(c) *Requirements that apply only to temporary impoundments that rely primarily upon storage.* (1) In lieu of meeting the requirements in paragraph (a)(9)(i) of this section, the regulatory authority may approve an impoundment that relies primarily on storage to control the runoff from the design precipitation event when you demonstrate, and a qualified registered professional engineer or qualified registered professional land surveyor in accordance with § 780.25(a) of this chapter certifies, that the impoundment will safely control the design precipitation event.

(2) You must use current prudent engineering practices to safely remove the water from an impoundment constructed in accordance with paragraph (c)(1) of this section.

(3) An impoundment constructed in accordance with paragraph (c)(1) of this section must be located where failure would not be expected to cause loss of life or serious property damage, unless the impoundment meets one of the following exceptions:

(i) An impoundment that meets the criteria for High Hazard Class or Significant Hazard Class dams in TR–60, or that meets the criteria of § 77.216(a) of this title, and is designed to control the precipitation of the probable maximum precipitation of a 6-hour event, or any greater event specified by the regulatory authority.

(ii) An impoundment not included in paragraph (c)(3)(i) of this section that is designed to control the precipitation of the 100-year, 6-hour event, or any greater event specified by the regulatory authority.

§ 816.56 How must I rehabilitate sedimentation ponds, diversions, impoundments, and treatment facilities after I no longer need them?

Before abandoning a permit area or seeking bond release, you must ensure that all temporary structures are removed and reclaimed, and that all permanent sedimentation ponds, diversions, impoundments, and treatment facilities meet the requirements of this chapter for permanent structures, have been maintained properly, and meet the requirements of the approved reclamation plan for permanent structures and impoundments. You must renovate these structures if necessary to meet the requirements of this chapter and to conform to the approved reclamation plan.

§ 816.57 What additional performance standards apply to activities in, through, or adjacent to perennial or intermittent streams?

(a)(1) *General prohibition.* You, the permittee or operator, may not conduct surface mining activities in or through a perennial or intermittent stream, or that would disturb the surface of land within 100 feet of a perennial or intermittent stream, unless the regulatory authority authorizes you to do so in the permit after making the findings required under § 780.28 of this chapter. The 100-foot distance must be measured horizontally on a line perpendicular to the stream beginning at the bankfull elevation or, if there are no discernible banks, the centerline of the active channel.

(2) *Clean Water Act requirements.* You may conduct surface mining activities in waters of the United States only if you first obtain all necessary authorizations, certifications, and permits under the Clean Water Act, 33 U.S.C. 1251 *et seq.*

(b) *Requirements for mining through or diverting perennial or intermittent streams*—(1) *Compliance with permit.* If your permit authorizes you to mine through or divert a perennial or intermittent stream, you must comply with the designs and construction and maintenance plans approved in the permit.

(2) *Restoration of form and function.* You must restore the form and ecological function of the stream segment as expeditiously as practicable. You must do so either as part of the construction of a permanent stream-channel diversion or as part of the construction of a restored stream channel when the area in which the stream was located before mining is no longer needed for surface mining activities.

(i) *Form.* A restored stream channel or a stream-channel diversion need not exactly replicate the channel morphology that existed before mining, but, except as provided in paragraph (b)(4) of this section, it must have a channel morphology comparable to the premining form of the affected stream segment in terms of baseline stream pattern, profile, and dimensions, including channel slope, sinuosity, water depth, bankfull depth, bankfull width, width of the flood-prone area, and dominant in-stream substrate.

(ii) *Function.* (A) A stream flowing through a restored stream channel or a stream-channel diversion must meet the functional restoration criteria established by the regulatory authority under § 780.28(e)(1) of this chapter.

(B) The restored stream need not have precisely the same biological condition or biota as the stream segment did before mining, but the biological condition of the restored stream must be adequate to support the uses of that stream segment that existed before mining and it must not preclude attainment of the designated uses of that stream segment under section 101(a) or 303(c) of the Clean Water Act before mining.

(C) The biological condition of the restored stream must be determined using a protocol that meets the requirements of § 780.19(e)(2) of this chapter.

(D) Populations of organisms used to determine the biological condition must be self-sustaining within the restored stream segment.

(iii) *Bond and bond release requirements.* (A) The performance bond calculations for the operation must include a specific line item for restoration of the ecological function of the stream segment, as provided in § 800.14(b)(2) of this chapter.

(B) You must post a surety bond, a collateral bond, or a combination of surety and collateral bonds to cover the cost of restoration of the ecological function of the stream segment.

(C) You must demonstrate full restoration of the hydrological form of the stream segment before you can qualify for Phase I bond release under § 800.42(b)(1) of this chapter.

(D) You must demonstrate full restoration of the ecological function of the stream segment before you can qualify for final bond release under § 800.42(d) of this chapter.

(3) *Certification.* Upon completion of construction of a stream-channel diversion or a restored stream channel, you must obtain a certification from a qualified registered professional engineer that the stream-channel diversion or restored stream channel has been constructed in accordance with the design approved in the permit and meets all requirements of this section other than the functional restoration requirements of paragraph (b)(2)(ii) of this section.

(4) *Special provision for restoration of degraded stream segments.* If the stream segment to be mined through or diverted is in a degraded condition before mining, you must implement measures to enhance the form and ecological function of the segment as part of the restoration or diversion process.

(c) *Prohibition on placement of sedimentation control structures in streams.* (1) Except as provided in paragraph (c)(2) of this section, you may not construct a sedimentation pond in a perennial or intermittent stream or use perennial or intermittent streams as waste treatment systems to convey surface runoff from the disturbed area to a sedimentation pond.

(2) The prohibition in paragraph (c)(1) of this section does not apply to excess spoil fills or coal mine waste disposal facilities in steep-slope areas when use of a perennial or intermittent stream segment as a waste treatment system for sediment control or construction of a sedimentation pond in a perennial or an intermittent stream would have less overall adverse impact on fish, wildlife, and related environmental values than construction of diversions and sedimentation ponds on slopes above the stream.

(3) When the circumstances described in paragraph (c)(2) of this situation exist, the following requirements apply:

(i) You must minimize the length of the stream segment used as a waste treatment system to the extent possible

and, when practicable, maintain an undisturbed buffer along that segment in accordance with paragraph (a)(1) of this section.

(ii) You must place the sedimentation pond as close to the toe of the excess spoil fill or coal mine waste disposal structure as possible.

(iii) Following the completion of construction and revegetation of the fill or coal mine waste disposal structure, you must remove the sedimentation pond and restore the stream segment in accordance with paragraph (b)(2) of this section.

§ 816.59 How must I maximize coal recovery?

You must conduct surface mining activities so as to maximize the utilization and conservation of the coal, while using the best appropriate technology currently available to maintain environmental integrity, so that reaffecting the land in the future through surface coal mining operations is minimized.

§ 816.61 Use of explosives: General requirements.

(a) Compliance with other laws and regulations. You must comply with all applicable state and federal laws and regulations governing the use of explosives.

(b) Compliance with blasting schedule. Blasts that use more than 5 pounds of explosive or blasting agent must be conducted according to the schedule required by § 816.64 of this part.

(c) Requirements for blasters. (1) No later than 12 months after the blaster certification program for a state required by part 850 of this chapter has been approved under the procedures of subchapter C of this chapter, all blasting operations in that state must be conducted under the direction of a certified blaster. Before that time, all blasting operations in that state must be conducted by competent, experienced persons who understand the hazards involved.

(2) Certificates of blaster certification must be carried by blasters or be on file at the permit area during blasting operations.

(3) A blaster and at least one other person shall be present at the firing of a blast.

(4) Any blaster who is responsible for conducting blasting operations at a blasting site must:

(i) Be familiar with the blasting plan and site-specific performance standards; and

(ii) Give direction and on-the-job training to persons who are not certified and who are assigned to the blasting crew or who assist in the use of explosives.

(d) Blast design. (1) You must submit an anticipated blast design if blasting operations will be conducted within—

(i) 1,000 feet of any building used as a dwelling, public building, school, church, or community or institutional building outside the permit area; or

(ii) 500 feet of an active or abandoned underground mine.

(2) The blast design may be submitted as part of a permit application or, if approved by the regulatory authority, at a later date, provided that the design is submitted and approved before blasting begins.

(3) The blast design must contain—

(i) Sketches of the drill patterns, delay periods, and decking.

(ii) The type and amount of explosives to be used.

(iii) Critical dimensions.

(iv) The location and general description of structures to be protected.

(v) A discussion of design factors to be used to protect the public and meet the applicable airblast, flyrock, and ground-vibration standards in § 816.67 of this part.

(4) A certified blaster must prepare and sign the blast design.

(5) The regulatory authority may require changes to the design submitted.

§ 816.62 Use of explosives: Preblasting survey.

(a) At least 30 days before initiation of blasting, you must notify, in writing, all residents or owners of dwellings or other structures located within ½ mile of the permit area how to request a preblasting survey.

(b)(1) A resident or owner of a dwelling or structure within ½ mile of any part of the permit area may request a preblasting survey. This request must be made, in writing, directly to you or to the regulatory authority. If the request is made to the regulatory authority, the regulatory authority will promptly notify you.

(2) You must promptly conduct a preblasting survey of the dwelling or structure and promptly prepare a written report of the survey.

(3) You must conduct an updated survey of any subsequent additions, modifications, or renovations to the dwelling or structure, if requested by the resident or owner.

(c) You must determine the condition of the dwelling or structure and document any preblasting damage and other physical factors that could reasonably be affected by the blasting. Structures such as pipelines, cables, transmission lines, and cisterns, wells, and other water systems warrant special attention; however, the assessment of these structures may be limited to surface conditions and other readily available data.

(d)(1) The person who conducted the survey must sign the written report of the survey.

(2) You must promptly provide copies of the report to the regulatory authority and to the person requesting the survey.

(3) If the person requesting the survey disagrees with the contents or recommendations of the survey, he or she may submit a detailed description of the specific areas of disagreement to both you and the regulatory authority.

(e) You must complete any surveys requested more than 10 days before the planned initiation of blasting before the initiation of blasting.

§ 816.64 Use of explosives: Blasting schedule.

(a) General requirements. (1) You must conduct blasting operations at times approved by the regulatory authority and announced in the blasting schedule. The regulatory authority may limit the area covered, the timing, and the sequence of blasting if those limitations are necessary and reasonable to protect public health and safety or welfare.

(2) You must conduct all blasting between sunrise and sunset, unless the regulatory authority approves night-time blasting based upon a showing that the public will be protected from adverse noise and other impacts. The regulatory authority may specify more restrictive time periods for blasting.

(3)(i) You may conduct unscheduled blasts only where public or operator health and safety so require and for emergency blasting actions.

(ii) When you conduct an unscheduled blast, you must use audible signals to notify residents within ½ mile of the blasting site.

(iii) You must document the reason for the unscheduled blast in accordance with § 816.68(c)(16) of this part.

(b) Blasting schedule publication and distribution. (1) You must publish the blasting schedule in a newspaper of general circulation in the locality of the blasting site at least 10 days, but not more than 30 days, before beginning a blasting program.

(2) You must distribute copies of the schedule to local governments and public utilities and to each local residence within ½ mile of the proposed blasting site described in the schedule.

(3) You must republish and redistribute the schedule at least every 12 months and revise and republish the

schedule at least 10 days, but not more than 30 days, before blasting whenever the area covered by the schedule changes or actual times for blasting significantly differ from the prior announcement.

(c) Blasting schedule contents. The blasting schedule must contain, at a minimum, the—

(1) Name, address, and telephone number of the operator;

(2) Identification of the specific areas in which blasting will take place;

(3) Dates and times when explosives are to be detonated;

(4) Methods to be used to control access to the blasting area; and

(5) Type and patterns of audible blast warning and all-clear signals to be used before and after blasting.

§ 816.66 Use of explosives: Blasting signs, warnings, and access control.

(a) Blasting signs. Blasting signs must meet the specifications of § 816.11 of this part.

(1) You must place conspicuous signs reading ''Blasting Area'' along the edge of any blasting area that comes within 100 feet of any public road right-of-way and at the point where any other road provides access to the blasting area.

(2) You must place conspicuous signs reading ''Warning! Explosives in Use'' at all entrances to the permit area from public roads or highways. The signs must clearly list and describe the meaning of the audible blast warning and all-clear signals that are in use and explain the marking of blasting areas and charged holes awaiting firing within the permit area.

(b) Warnings. You must give blast warning and all-clear signals of different character or pattern that are audible within a range of ½ mile from the point of the blast. You must notify each person within the permit area and each person who resides or regularly works within ½ mile of the permit area of the meaning of the signals in the blasting schedule.

(c) Access control. You must control access within the blasting area to prevent presence of livestock or unauthorized persons during blasting and until your authorized representative has reasonably determined that—

(1) No unusual hazards, such as imminent slides or undetonated charges, exist; and

(2) Access to and travel within the blasting area can be safely resumed.

§ 816.67 Use of explosives: Control of adverse effects.

(a) General requirements. You must conduct blasting in a manner that prevents—

(1) Injury to persons;

(2) Damage to public or private property outside the permit area;

(3) Adverse impacts on any underground mine; or

(4) Change in the course, channel, or availability of surface water or groundwater outside the permit area.

(b) Airblast—(1) Limits. (i) Airblast must not exceed the maximum limits listed below at the location of any dwelling, public building, school, church, or community or institutional building outside the permit area, except as provided in paragraph (e) of this section.

Lower frequency limit of measuring system, in Hz (±3 dB)
0.1 Hz or lower—flat response[1]
2 Hz or lower—flat response
6 Hz or lower—flat response
C-weighted—slow response[1]

[1] Only when approved by the regulatory authority.

(ii) If necessary to prevent damage, the regulatory authority must specify lower maximum allowable airblast levels than those of paragraph (b)(1)(i) of this section for use in the vicinity of a specific blasting operation.

(2) Monitoring. (i) You must conduct periodic monitoring to ensure compliance with the airblast standards. The regulatory authority may require airblast measurement of any or all blasts and may specify the locations at which measurements are taken.

(ii) The measuring systems must have an upper-end flat-frequency response of at least 200 Hz.

(c) Flyrock. Flyrock travelling in the air or along the ground must not be cast from the blasting site—

(1) More than one-half the distance to the nearest dwelling or other occupied structure;

(2) Beyond the area of control required under § 816.66(c) of this part; or

(3) Beyond the permit boundary.

(d) Ground vibration—(1) General. (i) In all blasting operations, except as otherwise authorized in paragraph (e) of this section, the maximum ground vibration must not exceed the values approved in the blasting plan required under § 780.15 of this chapter.

(ii) The maximum ground vibration for protected structures listed in paragraph (d)(2)(i) of this section must be established in accordance with either the maximum peak-particle-velocity limits of paragraph (d)(2) of this section, the scaled-distance equation of paragraph (d)(3) of this section, the blasting-level chart of paragraph (d)(4) of this section, or by the regulatory authority under paragraph (d)(5) of this section.

(iii) All structures in the vicinity of the blasting area not listed in paragraph (d)(2)(i) of this section, such as water towers, pipelines and other utilities, tunnels, dams, impoundments, and underground mines, must be protected from damage by establishment of a maximum allowable limit on the ground vibration, submitted by the operator in the blasting plan and approved by the regulatory authority.

(2) Maximum peak particle velocity. (i) The maximum ground vibration must not exceed the following limits at the location of any dwelling, public building, school, church, or community or institutional building outside the permit area:

Distance (*D*), from the blasting site, in feet	Maximum allowable peak particle velocity (*V* max) for ground vibration, in inches/second[1]	Scaled-distance factor to be applied without seismic monitoring[2] (*Ds*)
0 to 300	1.25	50
301 to 5,000	1.00	55
5,001 and beyond	0.75	65

[1] Ground vibration must be measured as the particle velocity. Particle velocity must be recorded in three mutually perpendicular directions. The maximum allowable peak particle velocity applies to each of the three measurements.

[2] Applicable to the scaled-distance equation of paragraph (d)(3)(i) of this section.

(ii) You must provide a seismographic record for each blast.

(3) Scaled-distance equation. (i) You may use the scaled-distance equation, W = (D/Ds)2, to determine the allowable charge weight of explosives to be detonated in any 8-millisecond period, without seismic monitoring, where W = the maximum weight of explosives, in pounds; D = the distance, in feet, from the blasting site to the nearest protected structure; and Ds = the scaled-distance factor. The regulatory authority may initially approve the scaled-distance equation using the values for the scaled-distance factor listed in paragraph (d)(2)(i) of this section.

(ii) The regulatory authority may authorize development of a modified scaled-distance factor upon receipt of a written request by the operator, supported by seismographic records of blasting at the minesite. The modified scale-distance factor must be determined such that the particle velocity of the predicted ground vibration will not exceed the prescribed maximum allowable peak particle velocity of paragraph (d)(2)(i) of this section at a 95-percent confidence level.

(4) Blasting-level chart. (i) You may use the ground-vibration limits in Figure 1 to determine the maximum allowable ground vibration.

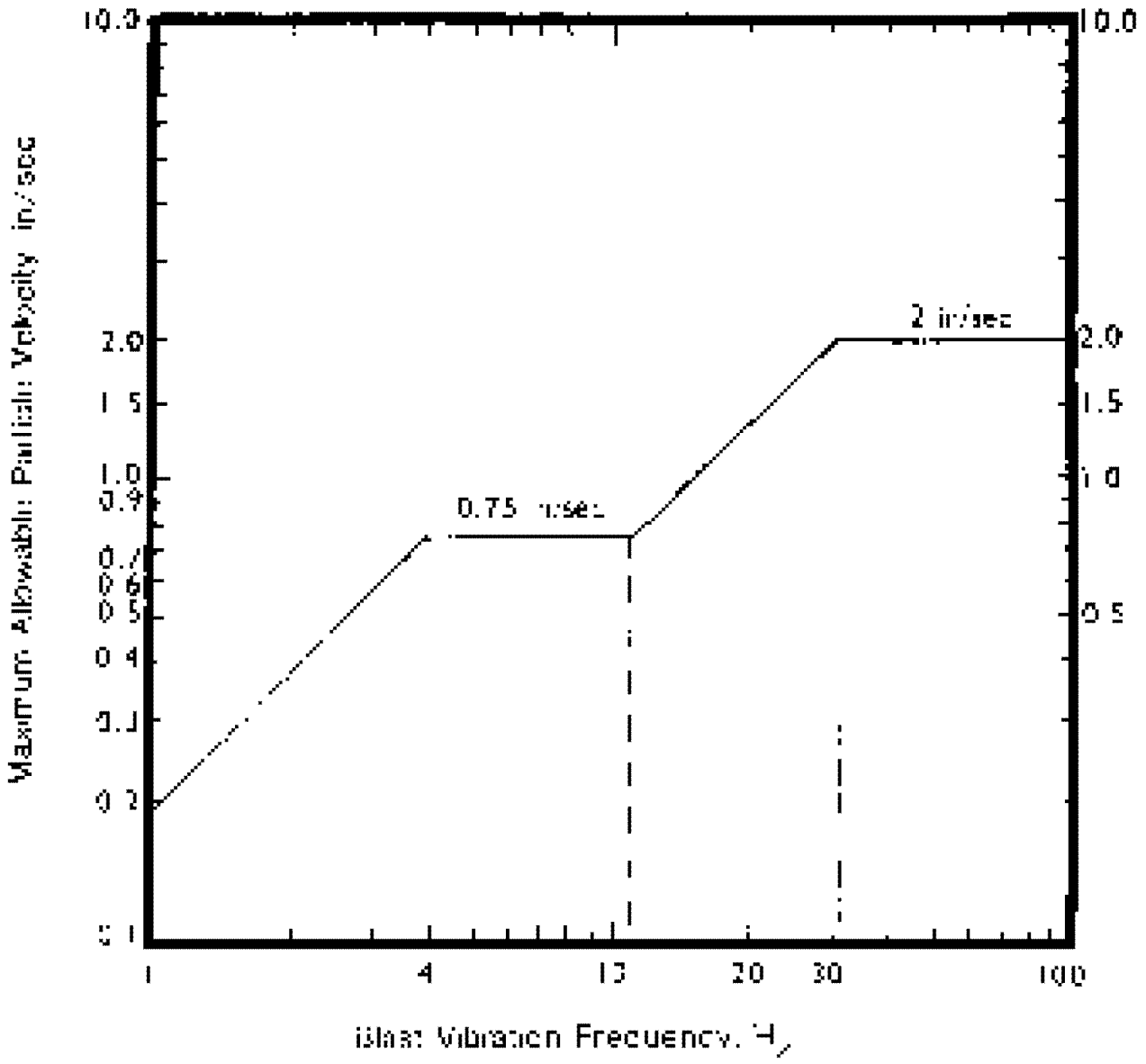

Figure 1. Alternative blasting level criteria

(Source: Modified from figure B-1, Bureau of Mines, RI 8507)

(ii) If the Figure 1 limits are used, you must provide a seismographic record including both particle velocity and vibration-frequency levels for each blast. The regulatory authority must approve the method for the analysis of the predominant frequency contained in the blasting records before application of this alternative blasting criterion.

(5) The regulatory authority must reduce the maximum allowable ground vibration beyond the limits otherwise provided by this section, if determined necessary to provide damage protection.

(6) The regulatory authority may require that you conduct seismic monitoring of any or all blasts or may specify the location at which the measurements are taken and the degree of detail necessary in the measurement.

(e) The maximum airblast and ground-vibration standards of paragraphs (b) and (d) of this section do not apply at the following locations:

(1) At structures owned by the permittee and not leased to another person.

(2) At structures owned by the permittee and leased to another person, if a written waiver by the lessee is submitted to the regulatory authority before blasting.

§ 816.68 Use of explosives: Records of blasting operations.

(a) You must retain a record of all blasts for at least 3 years.

(b) Upon request, you must make copies of these records available to the regulatory authority and to the public for inspection.

(c) The records must contain the following data:

(1) Name of the operator conducting the blast.

(2) Location, date, and time of the blast.

(3) Name, signature, and certification number of the blaster conducting the blast.

(4) Identification, direction, and distance, in feet, from the nearest blast hole to the nearest dwelling, public building, school, church, community or institutional building outside the permit area, except those described in § 816.67(e) of this part.

(5) Weather conditions, including those which may cause possible adverse blasting effects.

(6) Type of material blasted.

(7) Sketches of the blast pattern, including number of holes, burden, spacing, decks, and delay pattern.

(8) Diameter and depth of holes.

(9) Types of explosives used.

(10) Total weight of explosives used per hole.

(11) The maximum weight of explosives detonated in an 8-millisecond period.

(12) Initiation system.

(13) Type and length of stemming.

(14) Mats or other protections used.

(15) Seismographic and airblast records, if required, which must include—

(i) Type of instrument, sensitivity, and calibration signal or certification of annual calibration;

(ii) Exact location of instrument and the date, time, and distance from the blast;

(iii) Name of the person and firm taking the reading;

(iv) Name of the person and firm analyzing the seismographic record; and

(v) The vibration and/or airblast level recorded.

(16) Reasons and conditions for each unscheduled blast.

§ 816.71 How must I dispose of excess spoil?

(a) *General requirements.* You, the permittee or operator, must mechanically transport and place excess spoil in designated disposal areas, including approved valley fills and other types of approved fills, within the permit area in a controlled manner in compliance with the requirements of this section. In general, you must place excess spoil in a manner that will—

(1) Minimize the adverse effects of leachate and surface water runoff from the fill on surface water, groundwater, and the biological condition of perennial and intermittent streams within the permit and adjacent areas.

(2) Ensure mass stability and prevent mass movement during and after construction.

(3) Ensure that the final surface configuration of the fill is suitable for revegetation and the approved postmining land use or uses and is compatible with the natural drainage pattern and surroundings.

(4) Minimize disturbances to, and adverse impacts on, fish, wildlife, and related environmental values to the extent possible, using the best technology currently available.

(5) Ensure that the fill will not change the size or frequency of peak flows from precipitation events or thaws in a way that would result in an increase in damage from flooding when compared with the impacts of premining peak flows.

(6) Ensure that the fill will not preclude any existing or reasonably foreseeable use of surface water or groundwater or, for surface water downstream of the fill, preclude attainment of any designated use under section 101(a) or 303(c) of the Clean Water Act.

(7) Ensure that the fill will not cause or contribute to an exceedance of any applicable water quality standards.

(b) *Stability requirements*—(1) *Static safety factor.* You must design and construct the fill to attain a minimum long-term static safety factor of 1.5. The foundation and abutments of the fill must be stable under all conditions of construction.

(2) *Special requirement for steep-slope conditions.* Where the slope in the disposal area exceeds 2.8h:1v (36 percent), or any lesser slope designated by the regulatory authority based on local conditions, you must construct bench cuts (excavations into stable bedrock) or rock-toe buttresses to ensure fill stability.

(c) *Compliance with permit.* You must construct the fill in accordance with the design and plans approved in the permit in accordance with § 780.35 of this chapter.

(d) *Requirements for handling of organic matter and soil materials.* You must remove all vegetation, other organic matter, and soil materials from the disposal area prior to placement of the excess spoil. You must store, redistribute, or otherwise use those materials in accordance with § 816.22 of this part. You may use soil substitutes and supplements if approved in the permit in accordance with § 780.12(e) of this chapter.

(e) *Surface runoff control requirements.* (1) You must direct surface runoff from areas above the fill and runoff from the surface of the fill into stabilized channels designed to—

(i) Meet the requirements of § 816.43 of this part; and

(ii) Safely pass the runoff from the 100-year, 6-hour precipitation event. You must use the appropriate regional Natural Resources Conservation Service synthetic storm distribution to determine the peak flow from surface runoff from this event.

(2) You must grade the top surface of a completed fill such that the final slope after settlement will be toward properly designed drainage channels. You may not direct uncontrolled surface runoff over the outslope of the fill.

(f) *Control of water within the footprint of the fill*—(1) *General requirements.* If the disposal area contains springs, natural or manmade water courses, or wet weather seeps, you must design and construct underdrains and temporary diversions as necessary to control erosion, prevent water infiltration into the fill, and ensure stability.

(2) *Temporary diversions.* Temporary diversions must comply with the requirements of § 816.43 of this part.

(3) *Underdrains.* (i) You must construct underdrains that are comprised of hard rock that is resistant to weathering.

(ii) You must design and construct underdrains using current, prudent engineering practices and any design criteria established by the regulatory authority.

(iii) In constructing rock underdrains, you may use only hard rock that is resistant to weathering, such as well-cemented sandstone and massive limestone, and that is not acid-forming or toxic-forming. The underdrain must be free of soil and fine-grained, clastic rocks such as siltstone, shale, mudstone, and claystone. All rock used to construct underdrains must meet the criteria in the following table:

Test	ASTM standard	AASHTO standard	Acceptable results
Los Angeles Abrasion	C 131 or C 535	T 96	Loss of no more than 50 percent of test sample by weight.
Sulfate Soundness	C 88 or C 5240	T 104	Sodium sulfate test: Loss of no more than 12 percent of test sample by weight. Magnesium sulfate test: Loss of no more than 18 percent of test sample by weight.

(iv) The underdrain system must be designed and constructed to carry the maximum anticipated infiltration of water due to precipitation, snowmelt, and water from seeps and springs in the foundation of the disposal area away from the excess spoil fill.

(v) To provide a safety factor against future changes in local surface-water and groundwater hydrology, perforated pipe may be embedded within the rock underdrain to enhance the underdrain capacity to carry water in excess of the anticipated maximum infiltration away from the excess spoil fill. The pipe must be manufactured of materials that are not susceptible to corrosion and must be demonstrated to be suitable for the deep burial conditions commonly associated with excess spoil fill underdrains.

(vi) The underdrain system must be protected from material piping, clogging, and contamination by an adequate filter system designed and constructed using current, prudent engineering practices to ensure the long-term functioning of the underdrain system.

(g) *Placement of excess spoil.* (1) Using mechanized equipment, you must transport and place excess spoil in a controlled manner in horizontal lifts not exceeding 4 feet in thickness; concurrently compacted as necessary to ensure mass stability and to prevent mass movement during and after construction; and graded so that surface and subsurface drainage is compatible with the natural surroundings.

(2) You may not use any excess spoil transport and placement technique that involves end-dumping, wing-dumping, cast-blasting, gravity placement, or casting spoil downslope.

(3) *Acid-forming, toxic-forming, and combustible materials.* (i) You must handle acid-forming and toxic-forming materials in accordance with § 816.38 of this part and in a manner that will minimize adverse effects on plant growth and the approved postmining land use.

(ii) You must cover combustible materials with noncombustible materials in a manner that will prevent sustained combustion and minimize adverse effects on plant growth and the approved postmining land use.

(h) *Final configuration.* (1) The final configuration of the fill must be suitable for the approved postmining land use, compatible with the natural drainage pattern and the surrounding terrain, and, to the extent practicable, consistent with natural landforms.

(2) You may construct terraces on the outslope of the fill if required for stability, to control erosion, to conserve soil moisture, or to facilitate the approved postmining land use. The grade of the outslope between terrace benches may not be steeper than 2h: 1v (50 percent).

(3)(i) You must configure the top surface of the fill to create a topography that includes ridgelines and valleys with varied hillslope configurations when practicable, compatible with stability and postmining land use considerations, and generally consistent with the premining topography.

(ii) The final surface elevation of the fill may exceed the elevation of the surrounding terrain when necessary to minimize placement of excess spoil in perennial and intermittent streams, provided the final configuration complies with the requirements of paragraphs (a)(3) and (h)(1) of this section.

(iii) The geomorphic reclamation requirements of paragraph (h)(3)(i) of this section do not apply in situations in which they would result in burial of a greater length of perennial or intermittent streams than traditional fill design and construction techniques.

(i) *Impoundments and depressions.* No permanent impoundments are allowed on the completed fill. You may construct small depressions if they—

(1) Are needed to retain moisture, minimize erosion, create or enhance wildlife habitat, or assist revegetation;

(2) Are not incompatible with the stability of the fill;

(3) Are consistent with the hydrologic reclamation plan approved in the permit in accordance with § 780.22 of this chapter;

(4) Will not result in elevated levels of parameters of concern in discharges from the fill; and

(5) Are approved by the regulatory authority.

(j) *Surface area stabilization.* You must provide slope protection to minimize surface erosion at the site. You must revegetate all disturbed areas, including diversion channels that are not riprapped or otherwise protected, upon completion of construction.

(k) *Inspections and examinations.* A qualified registered professional engineer, or other qualified professional specialist under the direction of the professional engineer, must inspect the fill during construction. The professional engineer or specialist must be experienced in the construction of earth and rock fills.

(1) Complete inspections that include the entire fill must be made at least quarterly throughout construction, with additional complete inspections conducted during critical construction periods. Critical construction periods include, at a minimum—

(i) Foundation preparation, including the removal of all organic matter and soil materials.

(ii) Placement of underdrains and protective filter systems.

(iii) Installation of final surface drainage systems.

(iv) Final grading and revegetation of the fill.

(2) The engineer or specialist also must—

(i) Conduct daily examinations during placement and compaction of fill materials.

(ii) Maintain a log recording the daily examinations for each fill. The log must include a description of the specific work locations, excess spoil placement methods, compaction adequacy, lift thickness, suitability of fill material, special handling of acid-forming and toxic-forming materials, deviations from the approved permit, and remedial measures taken.

(3) The qualified registered professional engineer must provide a certified report to the regulatory authority promptly after each complete inspection conducted under paragraph (k)(1) of this section. The report must—

(i) Certify that the fill has been constructed and maintained as designed and in accordance with the approved plan and this chapter.

(ii) Identify and discuss any evidence of instability, structural weakness, or other hazardous conditions. If one of more of those conditions exists, you must submit an application for a permit revision that includes appropriate remedial design specifications.

(iii) Include a review and summary of the logs maintained under paragraph (k)(2)(ii) of this section.

(4)(i) The certified report on the drainage system and protective filters must include color photographs taken during and after construction, but before underdrains are covered with excess spoil. If the underdrain system is constructed in phases, each phase must be certified separately.

(ii) The photographs accompanying each certified report must be taken in adequate size and number with enough terrain or other physical features of the site shown to provide a relative scale to the photographs and to specifically and clearly identify the site.

(5) You must retain a copy of each complete inspection report at or near the mine site.

(l) *Coal mine waste.* You may dispose of coal mine waste in excess spoil fills only if approved by the regulatory authority and only if—

(1) You demonstrate, and the regulatory authority finds in writing, that there is no credible evidence that

the disposal of coal mine waste in the excess spoil fill will cause or contribute to a violation of applicable water quality standards or effluent limitations or result in material damage to the hydrologic balance outside the permit area.

(2) The waste is placed in accordance with §§ 816.81 and 816.83 of this part.

(3) The waste is nontoxic-forming, nonacid-forming, and non-combustible.

(4) The waste is of the proper characteristics to be consistent with the design stability of the fill.

(m) *Underground disposal.* You may dispose of excess spoil in underground mine workings only in accordance with a plan approved by the regulatory authority and the Mine Safety and Health Administration under § 784.26 of this chapter.

§ 816.72 [Reserved]

§ 816.73 [Reserved]

§ 816.74 What special requirements apply to the disposal of excess spoil on a preexisting bench?

(a) *General requirements.* The regulatory authority may approve the disposal of excess spoil through placement on a preexisting bench on a previously mined area or a bond forfeiture site if—

(1) The proposed permit area includes the portion of the preexisting bench on which the spoil will be placed;

(2) The proposed operation will comply with the applicable requirements of § 816.102 of this part; and

(3) The requirements of this section are met.

(b) *Requirements for removal and disposition of vegetation, other organic matter, and soil materials.* You must remove all vegetation, other organic matter, topsoil, and subsoil from the disposal area prior to placement of the excess spoil and store, redistribute, or otherwise use those materials in accordance with § 816.22 of this part. You may use soil substitutes and supplements if approved in the permit in accordance with § 780.12(e) of this chapter.

(c)(1) The fill must be designed and constructed using current, prudent engineering practices.

(2) The design must be certified by a registered professional engineer.

(3) If the disposal area contains springs, natural or manmade water courses, or wet weather seeps, the fill design must include underdrains and temporary diversions as necessary to control erosion, prevent water infiltration into the fill, and ensure stability. Underdrains must comply with the requirements of § 816.71(f)(3) of this part.

(d)(1) The spoil must be placed on the solid portion of the bench in a controlled manner and concurrently compacted as necessary to attain a long-term static safety factor of 1.3 for all portions of the fill.

(2) Any spoil deposited on any fill portion of the bench must be treated as an excess spoil fill under § 816.71 of this part.

(e) You must grade the spoil placed on the preexisting bench to—

(1) Achieve a stable slope that does not exceed the angle of repose.

(2) Eliminate the preexisting highwall to the maximum extent technically practical, using all reasonably available spoil, as that term is defined in § 701.5 of this chapter.

(3) Minimize erosion and water pollution both on and off the site.

(f) All disturbed areas, including diversion channels that are not riprapped or otherwise protected, must be revegetated upon completion of construction.

(g) You may not construct permanent impoundments on preexisting benches on which excess spoil is placed under this section.

(h) The final configuration of the fill on the preexisting bench must—

(1) Be compatible with natural drainage patterns and the surrounding area.

(2) Support the approved postmining land use.

§ 816.79 What measures must I take to protect underground mines in the vicinity of my surface mine?

No surface mining activities may be conducted closer than 500 feet to any point of either an active or abandoned underground mine, except to the extent that—

(a) The activities result in improved resource recovery, abatement of water pollution, or elimination of hazards to the health and safety of the public; and

(b) The nature, timing, and sequence of the activities that propose to mine closer than 500 feet to an active underground mine are jointly approved by the regulatory authority, the Mine Safety and Health Administration, and the state agency, if any, responsible for the safety of underground mine workers.

§ 816.81 How must I dispose of coal mine waste?

(a) *General requirements.* If you, the permittee, intend to dispose of coal mine waste in an area other than the mine workings or excavations, you must place the waste in new or existing disposal areas within a permit area in accordance with this section and, as applicable, §§ 816.83 and 816.84 of this part.

(b) *Basic performance standards.* You must haul or convey and place the coal mine waste in a controlled manner to—

(1) Minimize the adverse effects of leachate and surface-water runoff on the quality and quantity of surface water and groundwater and on the biological condition of perennial and intermittent streams within the permit and adjacent areas to the extent possible, using the best technology currently available.

(2) Ensure mass stability and prevent mass movement during and after construction.

(3) Ensure that the final disposal facility is suitable for revegetation, compatible with the natural surroundings, and consistent with the approved postmining land use.

(4) Not create a public hazard.

(5) Prevent combustion.

(6) Ensure that the disposal facility will not change the size or frequency of peak flows from precipitation events or thaws in a way that would result in an increase in damage from flooding when compared with the impacts of premining peak flows.

(7) Ensure that the disposal facility will not preclude any existing or reasonably foreseeable use of surface water or groundwater or, for surface water downstream of the facility, preclude attainment of any designated use under section 101(a) or 303(c) of the Clean Water Act.

(8) Ensure that the disposal facility will not cause or contribute to a violation of any applicable water quality standards.

(9) Ensure that the disposal facility will not discharge acid or toxic mine drainage.

(c) *Coal mine waste from outside the permit area.* You may dispose of coal mine waste materials from activities located outside the permit area within the permit area only if approved by the regulatory authority. Approval must be based upon a showing that disposal will be in accordance with the standards of this section.

(d) *Design and construction requirements.* (1)(i) You must design and construct coal mine waste disposal facilities using current, prudent engineering practices and any design or construction criteria established by the regulatory authority.

(ii) A qualified registered professional engineer, experienced in the design and construction of similar earth and waste structures, must certify the design of the disposal facility. The engineer must specifically certify that any existing and planned underground mine workings in

the vicinity of the disposal facility will not adversely impact the stability of the structure.

(iii) You must construct the disposal facility in accordance with the design and plans submitted under § 780.25 of this chapter and approved in the permit. A qualified registered professional engineer experienced in the design and construction of similar earth and waste structures must certify that the facility has been constructed in accordance with the requirements of this paragraph.

(2) You must design and construct the disposal facility to attain a minimum long-term static safety factor of 1.5. The foundation and abutments must be stable under all conditions of construction.

(e) *Foundation investigations.* You must perform sufficient foundation investigations, as well as any necessary laboratory testing of foundation material, to determine the design requirements for foundation stability. The analyses of the foundation conditions must take into consideration the effect of any underground mine workings located in the permit and adjacent areas upon the stability of the disposal facility.

(f) *Soil handling requirements.* You must remove all vegetation, other organic matter, and soil materials from the disposal area prior to placement of the coal mine waste. You must store, redistribute, or otherwise use those materials in accordance with § 816.22 of this part. You may use soil substitutes and supplements if approved in the permit in accordance with § 780.12(e) of this chapter.

(g) *Emergency procedures.* (1) If any examination or inspection discloses that a potential hazard exists, you must inform the regulatory authority promptly of the finding and of the emergency procedures formulated for public protection and remedial action.

(2) If adequate procedures cannot be formulated or implemented, you must notify the regulatory authority immediately. The regulatory authority then must notify the appropriate agencies that other emergency procedures are required to protect the public.

(h) *Underground disposal.* You may dispose of coal mine waste in underground mine workings only in accordance with a plan approved by the regulatory authority and the Mine Safety and Health Administration under § 784.26 of this chapter.

§ 816.83 What special requirements apply to coal mine waste refuse piles?

(a) *General requirements.* Refuse piles must meet the applicable requirements of § 816.81 of this part, the additional requirements of this section, and the requirements of §§ 77.214 and 77.215 of this title.

(b) *Surface runoff and drainage control.* (1) If the disposal area contains springs, natural or manmade water courses, or wet weather seeps, you must design and construct the refuse pile with diversions and underdrains as necessary to control erosion, prevent water infiltration into the disposal facility, and ensure stability.

(2) You may not direct or divert uncontrolled surface runoff over the outslope of the refuse pile.

(3) You must direct runoff from areas above the refuse pile and runoff from the surface of the refuse pile into stabilized channels designed to meet the requirements of § 816.43 of this part and to safely pass the runoff from the 100-year, 6-hour precipitation event. You must use the appropriate regional Natural Resources Conservation Service synthetic storm distribution to determine the peak flow from surface runoff from this event.

(4) Runoff diverted from undisturbed areas need not be commingled with runoff from the surface of the refuse pile.

(5) Underdrains must comply with the requirements of § 816.71(f) of this part.

(c) *Surface area stabilization.* You must provide slope protection to minimize surface erosion at the site. You must revegetate all disturbed areas, including diversion channels that are not riprapped or otherwise protected, upon completion of construction.

(d) *Final configuration and cover.* (1) The final configuration of the refuse pile must be suitable for the approved postmining land use. Terraces may be constructed on the outslope of the refuse pile if required for stability, erosion control, conservation of soil moisture, or facilitation of the approved postmining land use. The grade of the outslope between terrace benches may not be steeper than 2h:1v (50 percent).

(2) No permanent impoundments or depressions are allowed on the completed refuse pile.

(3) Following final grading of the refuse pile, you must cover the coal mine waste with a minimum of 4 feet of the best available, nontoxic, and noncombustible material in a manner that does not impede drainage from the underdrains. The regulatory authority may allow less than 4 feet of cover material based on physical and chemical analyses showing that the revegetation requirements of §§ 816.111 and 816.116 of this part will be met.

(e) *Inspections.* You must comply with the inspection and examination requirements of § 816.71(l) of this part.

§ 816.84 What special requirements apply to coal mine waste impounding structures?

(a) Impounding structures constructed of coal mine waste or intended to impound coal mine waste must meet the requirements of § 816.81 of this part.

(b) You may not use coal mine waste to construct impounding structures unless you demonstrate, and the regulatory authority finds in writing, that the stability of such a structure conforms to the requirements of this part and that the use of coal mine waste will not have a detrimental effect on downstream water quality or the environment as a result of acid drainage or toxic seepage through the impounding structure. You must discuss the stability of the structure and the prevention and potential impact of acid drainage or toxic seepage through the impounding structure in detail in the design plan submitted to the regulatory authority in accordance with § 780.25 of this chapter.

(c)(1) You must design, construct, and maintain each impounding structure constructed of coal mine waste or intended to impound coal mine waste in accordance with paragraphs (a) and (c) of § 816.49 of this part.

(2) You may not retain these structures permanently as part of the approved postmining land use.

(3) Each impounding structure constructed of coal mine waste or intended to impound coal mine waste that meets the criteria of § 77.216(a) of this title must have sufficient spillway capacity to safely pass, adequate storage capacity to safely contain, or a combination of storage capacity and spillway capacity to safely control, the probable maximum precipitation of a 6-hour precipitation event or greater event as specified by the regulatory authority.

(d) You must design spillways and outlet works to provide adequate protection against erosion and corrosion. Inlets must be protected against blockage.

(e) You must direct surface runoff from areas above the disposal facility and runoff from the surface of the facility that may cause instability or erosion of the impounding structure into stabilized channels designed and constructed to meet the requirements of § 816.43 of this part and to safely pass the runoff from a 100-year, 6-hour precipitation event. You must use the appropriate regional Natural Resources Conservation Service synthetic storm distribution to determine the peak flow from surface runoff from this event.

(f) For an impounding structure constructed of or impounding coal mine waste, you must remove at least 90 percent of the water stored during the design precipitation event within the 10-day period following the design precipitation event.

§ 816.87 What special performance standards apply to burning and burned coal mine waste?

(a) Coal mine waste fires must be extinguished by the person who conducts the surface mining activities, in accordance with a plan approved by the regulatory authority and the Mine Safety and Health Administration. The plan must contain, at a minimum, provisions to ensure that only those persons authorized by the operator, and who have an understanding of the procedures to be used, are involved in the extinguishing operations.

(b) No burning or burned coal mine waste may be removed from a permitted disposal area without a removal plan approved by the regulatory authority. Consideration must be given to potential hazards to persons working or living in the vicinity of the structure.

§ 816.89 How must I dispose of noncoal mine wastes?

(a)(1) Noncoal mine wastes including, but not limited to grease, lubricants, paints, flammable liquids, garbage, abandoned mining machinery, lumber, and other combustible materials generated during mining activities must be placed and stored in a controlled manner in a designated portion of the permit area.

(2) Placement and storage of noncoal wastes must ensure that leachate and surface runoff do not degrade surface water or groundwater, that fires are prevented, and that the area remains stable and suitable for reclamation and revegetation compatible with the natural surroundings.

(b)(1) Final disposal of noncoal mine wastes must be in a designated disposal site within the permit area or in a state-approved solid waste disposal area.

(2) Disposal sites within the permit area must meet the following requirements:

(i) The site must be designed and constructed to ensure that leachate and drainage from the noncoal mine waste area does not degrade surface water or groundwater.

(ii) Wastes must be routinely compacted and covered to prevent combustion and wind-borne waste.

(iii) When the disposal of noncoal wastes is completed, the site must be covered with a minimum of 2 feet of soil, slopes must be stabilized, and the site must be revegetated in accordance with §§ 816.111 through 816.116 of this part.

(iv) The disposal site must be operated in accordance with all local, state and federal requirements.

(c) At no time may any noncoal mine waste be deposited in a refuse pile or impounding structure, nor may an excavation for a noncoal mine waste disposal site be located within 8 feet of any coal outcrop or coal storage area.

§ 816.95 How must I protect surface areas from wind and water erosion?

(a) You must protect and stabilize all exposed surface areas to effectively control erosion and air pollution attendant to erosion.

(b)(1) You must fill, regrade, or otherwise stabilize rills and gullies that form in areas that have been regraded and upon which soil or soil substitute materials have been redistributed. This requirement applies only to rills and gullies that either—

(i) Disrupt the approved postmining land use or reestablishment of the vegetative cover; or

(ii) Cause or contribute to a violation of water quality standards for receiving waters.

(2) You must reapply soil materials to the filled or regraded rills and gullies when necessary to reestablish a vegetative cover. You must then replant those areas.

§ 816.97 How must I protect and enhance fish, wildlife, and related environmental values?

(a) *General requirements.* You, the permittee, must, to the extent possible using the best technology currently available, minimize disturbances and adverse impacts on fish, wildlife, and related environmental values and achieve enhancement of those resources where practicable, as described in detail in the fish and wildlife protection and enhancement plan approved in the permit in accordance with § 780.16 of this chapter.

(b) *Species listed or proposed for listing as threatened or endangered*—(1) *Federally-listed species.* (i) You may not conduct any surface mining activity that is likely to jeopardize the continued existence of threatened or endangered species listed by the Secretary or proposed for listing by the Secretary or that is likely to result in the destruction or adverse modification of designated critical habitat in violation of the Endangered Species Act of 1973, 16 U.S.C. 1531 *et seq.*

(ii) You must promptly report to the regulatory authority any federally-listed threatened or endangered species within the permit area or the adjacent area of which you become aware. This requirement applies regardless of whether the species was listed before or after permit issuance.

(iii)(A) Upon receipt of a notification under paragraph (b)(2)(ii) of this section, the regulatory authority will contact and coordinate with the appropriate state and federal fish and wildlife agencies.

(B) The regulatory authority, in coordination with the appropriate state and federal fish and wildlife agencies, will identify whether, and under what conditions, you may proceed. When necessary, the regulatory authority will issue an order under § 774.10(b) of this chapter requiring that you revise the permit.

(iv) You must comply with any species-specific protection measures required by the regulatory authority in coordination with the U.S. Fish and Wildlife Service.

(v) Nothing in this chapter authorizes the taking of a threatened or endangered species in violation of the Endangered Species Act of 1973, 16 U.S.C. 1531 *et seq.*

(2) *State-listed species.* (i) You must promptly report to the regulatory authority any state-listed threatened or endangered species within the permit are or the adjacent area of which you become aware. This requirement applies regardless of whether the species was listed before or after permit issuance.

(ii)(A) Upon receipt of a notification under paragraph (b)(2)(i) of this section, the regulatory authority will contact and coordinate with the appropriate state fish and wildlife agencies.

(B) The regulatory authority, in coordination with the appropriate state fish and wildlife agencies, will identify whether, and under what conditions, you may proceed. When necessary, the regulatory authority will issue an order under § 774.10(b) of this chapter requiring that you revise the permit.

(c) *Bald and golden eagles.* (1) You may not conduct any surface mining activity in a manner that would result in the unlawful taking of a bald or golden eagle, its nest, or any of its eggs.

(2) You must promptly report to the regulatory authority any golden or bald eagle nest within the permit area of which you become aware.

(3) Upon notification, the regulatory authority will contact and coordinate with the U.S. Fish and Wildlife Service and, when appropriate, the state fish and wildlife agency to identify whether, and under what conditions, you may proceed.

(4) Nothing in this chapter authorizes the taking of a bald or golden eagle, its nest, or any of its eggs in violation of the

Bald and Golden Eagle Protection Act, 16 U.S.C. 668–668d.

(d) *Miscellaneous protective measures for other species of fish and wildlife.* To the extent possible, using the best technology currently available, you must—

(1) Ensure that electric power transmission lines and other transmission facilities used for, or incidental to, surface mining activities on the permit area are designed and constructed to minimize electrocution hazards to raptors and other avian species with large wingspans.

(2) Locate, construct, operate, and maintain haul and access roads and sedimentation control structures in a manner that avoids or minimizes impacts on important fish and wildlife species or other species protected by state or federal law.

(3) Design fences, overland conveyors, and other potential barriers to permit passage for large mammals, except where the regulatory authority determines that such requirements are unnecessary.

(4) Fence, cover, or use other appropriate methods to exclude wildlife from ponds that contain hazardous concentrations of toxic or toxic-forming materials.

(5) Reclaim and reforest lands that were forested at the time of application and lands that would revert to forest under conditions of natural succession in a manner that enhances recovery of the native forest ecosystem as expeditiously as practicable.

(e) *Wetlands and habitat of unusually high value for fish and wildlife.* To the extent possible, you must avoid disturbances to, restore or replace, and, where practicable, enhance, wetlands, riparian vegetation along rivers and streams, lentic vegetation bordering ponds and lakes, and habitat of unusually high value for fish and wildlife.

(f) *Vegetation requirements for fish and wildlife habitat postmining land use.* Where fish and wildlife habitat is a postmining land use, you must select and arrange the plant species to be used for revegetation to maximize the benefits to fish and wildlife. Plant species must be native to the area and must be selected on the basis of the following criteria:

(1) Their proven nutritional value for fish or wildlife.

(2) Their value as cover for fish or wildlife.

(3) Their ability to support and enhance fish or wildlife habitat after the release of performance bonds.

(4) Their ability to sustain natural succession by allowing the establishment and spread of plant species across ecological gradients. You may not use invasive plant species that are known to inhibit natural succession.

(g) *Vegetation requirements for cropland postmining land use.* Where cropland is the postmining land use, and where appropriate for wildlife-management and crop-management practices, you must intersperse the crop fields with trees, hedges, or fence rows to break up large blocks of monoculture and to diversify habitat types for birds and other animals.

(h) *Vegetation requirements for forestry postmining land uses.* Where forestry, whether managed or unmanaged, is the postmining land use, you must plant native tree and understory species to the extent that doing so is not inconsistent with the type of forestry to be practiced as part of the postmining land use. In all cases, regardless of the type of forestry to be practiced as part of the postmining land use, you must intersperse plantings of commercial species with plantings of native trees and shrubs of high value to wildlife.

(i) *Vegetation requirements for other postmining land uses.* Where residential, public service, commercial, industrial, or intensive recreational uses are the postmining land use, you must establish—

(1) Greenbelts comprised of non-invasive native plants that provide food or cover for wildlife, unless greenbelts would be inconsistent with the approved postmining land use plan for that site.

(2)(i) A vegetated buffer at least 100 feet wide along each bank of all perennial and intermittent streams within the permit area. The width of the buffer must be measured horizontally on a line perpendicular to the stream beginning at the bankfull elevation or, if there are no discernible banks, the centerline of the active channel. The buffer must be planted with species native to the area, including species adapted to and suitable for planting in riparian zones within the buffer. The species planted must consist of native tree and understory species if the land was forested at the time of application or if it would revert to forest under conditions of natural succession.

(ii) Paragraph (i)(2)(i) of this section does not apply to situations in which a riparian buffer would be incompatible with an approved postmining land use that is implemented during the revegetation responsibility period before final bond release under § 800.42(d) of this chapter.

(j) *Planting arrangement requirements.* You must design and arrange plantings in a manner that optimizes benefits to wildlife to the extent practicable and consistent with the postmining land use.

§ 816.99 What measures must I take to prevent and remediate landslides?

(a) You, the permittee or operator, must provide an undisturbed natural barrier beginning at the elevation of the lowest coal seam to be mined and extending from the outslope for the distance that the regulatory authority determines is needed to assure stability. The barrier must be retained in place to prevent slides.

(b)(1) You must notify the regulatory authority by the fastest available means whenever a landslide occurs that has the potential to adversely affect public property, health, safety, or the environment.

(2) You must comply with any remedial measures that the regulatory authority requires in response to the notification provided in paragraph (b)(1) of this section.

§ 816.100 What are the standards for conducting reclamation contemporaneously with mining?

You must reclaim all land disturbed by surface mining activities as contemporaneously as practicable with the mining operations, except when the mining operations are conducted in accordance with a variance for concurrent surface and underground mining activities under § 785.18 of this chapter. Reclamation activities include, but are not limited to, backfilling, grading, soil replacement, revegetation, and stream restoration.

§ 816.101 [Reserved]

§ 816.102 How must I backfill the mined area and grade and configure the land surface?

(a) You, the permittee or operator, must backfill all mined areas and grade all disturbed areas in compliance with the plan approved in the permit in accordance with § 780.12(d) of this chapter to—

(1) Restore the approximate original contour as the final surface configuration, except in the following situations:

(i) Mountaintop removal mining operations approved under § 785.14 of this chapter.

(ii) Sites for which the regulatory authority has approved a variance under § 785.16 of this chapter.

(iii) Operations to which the thin overburden standards of § 816.104 of this part apply.

(iv) Operations to which the thick overburden standards of § 816.105 of this part apply.

(v) Remining operations on previously mined areas, but only to the extent specified in § 816.106(b) of this part.

(vi) Excess spoil fills constructed in accordance with § 816.71 or § 816.74 of this part.

(vii) Refuse piles constructed in accordance with § 816.83 of this part.

(viii) Permanent impoundments that meet the requirements of paragraph (a)(3)(ii) of this section and § 780.35(b)(4) of this chapter.

(ix) The placement, in accordance with § 780.35(b)(3) of this chapter, of what would otherwise be excess spoil on the mined-out area to heights in excess of the premining elevation when necessary to avoid or minimize construction of excess spoil fills on undisturbed land.

(2) Minimize the creation of uniform slopes and cut-and-fill terraces. The regulatory authority may approve cut-and-fill terraces only if—

(i) They are compatible with the approved postmining land use and are needed to conserve soil moisture, ensure stability, or control erosion on final-graded slopes; or

(ii) Specialized grading, foundation conditions, or roads are required for the approved postmining land use, in which case the final grading may include a terrace of adequate width to ensure the safety, stability, and erosion control necessary to implement the postmining land use.

(3) Eliminate all highwalls, spoil piles, impoundments, and depressions, except in the following situations:

(i) You may construct or retain small depressions if—

(A) They are needed to retain moisture, minimize erosion, create or enhance wildlife habitat, or assist revegetation;

(B) They are consistent with the hydrologic reclamation plan approved in the permit in accordance with § 780.22 of this chapter; and

(C) You demonstrate that they will not result in elevated levels of parameters of concern in discharges from the backfilled and graded area.

(ii) The regulatory authority may approve the retention of permanent impoundments if—

(A) They meet the requirements of §§ 816.49 and 816.56 of this part;

(B) They are suitable for the approved postmining land use;

(C) You can demonstrate compliance with the future maintenance provisions of § 800.42(c)(5) of this chapter; and

(D) You have obtained all necessary approvals and authorizations under section 404 of the Clean Water Act when the impoundment is located in waters of the United States.

(iii) You may retain highwalls on previously mined areas to the extent provided in § 816.106(b) of this part.

(iv) You may retain modified highwall segments to the extent necessary to replace similar natural landforms removed by the mining operation. The regulatory program must establish the conditions under which these highwall segments may be retained and the modifications that must be made to the highwall to ensure that the retained segment resembles similar premining landforms and restores the ecological niches that the premining landforms provided. Nothing in this paragraph authorizes the retention of modified highwall segments in excess of the number, length, and height needed to replace similar premining landforms.

(4) Achieve a postmining slope that does not exceed either the angle of repose or such lesser slope as is necessary to achieve a minimum long-term static safety factor of 1.3 and to prevent slides.

(5) Minimize erosion and water pollution, including discharges of parameters of concern for which no numerical effluent limitations or water quality standards have been established, both on and off the site.

(6) Support the approved postmining land use.

(b) You must return all spoil to the mined-out area. This requirement does not apply to—

(1) Excess spoil disposed of in accordance with § 816.71 or § 816.74 of this part.

(2) Mountaintop removal mining operations approved under § 785.14 of this chapter.

(3) Spoil placed outside the mined-out area in non-steep slope areas to restore the approximate original contour by blending the spoil into the surrounding terrain, provided that you comply with the following requirements:

(i) You must remove all vegetation and other organic matter from the area outside the mined-out area before spoil placement begins. You may not burn or bury these materials; you must store, redistribute, or use them in the manner specified in § 816.22(f) of this part.

(ii) You must remove, segregate, store, and redistribute topsoil on the area outside the mined-out area in accordance with § 816.22 of this part.

(c) You must compact spoil and waste materials when necessary to ensure stability or to prevent the formation of acid or toxic mine drainage, but, to the extent possible, you must avoid compacting spoil, soil, and other materials placed in what will be the root zone of the species planted under the revegetation plan approved in the permit in accordance with § 780.12(g) of this chapter.

(d)(1) You must cover all exposed coal seams with material that is noncombustible, nonacid-forming, and nontoxic-forming.

(2) You must handle and dispose of all other combustible materials exposed, used, or produced during mining in accordance with § 816.89 of this part in a manner that will prevent sustained combustion, as approved in the permit in accordance with § 780.12(j) of this chapter.

(3) You must handle all other acid-forming and toxic-forming materials—

(i) In compliance with the plan approved in the permit in accordance with § 780.12(d)(4) of this chapter;

(ii) In compliance with § 816.38 of this part;

(iii) In compliance with the hydrologic reclamation plan approved in the permit in accordance with § 780.22(a) of this chapter; and

(iv) In a manner that will minimize adverse effects on plant growth and the approved postmining land use.

(e) You must dispose of any coal mine waste placed in the mined-out area in accordance with §§ 816.81 and 816.83 of this part, except that a long-term static safety factor of 1.3 will apply instead of the 1.5 factor specified in § 816.81(d)(2) of this part.

(f) You must prepare final-graded surfaces in a manner that minimizes erosion and provides a surface for replacement of soil materials that will minimize slippage.

§ 816.104 What special provisions for backfilling, grading, and surface configuration apply to sites with thin overburden?

(a) *Applicability.* This section applies only where the thickness of all overburden strata multiplied by the swell factor for those strata plus the thickness of any waste materials to be returned to the mined-out area is less than the combined thickness of the overburden and coal seam or seams prior to removing the coal to the extent that there is insufficient material to restore the approximate original contour. Specifically, there is insufficient material to achieve a surface configuration that—

(1) Closely resembles the surface configuration of the mined area prior to any mining; and

(2) Blends into and complements the drainage pattern of the surrounding terrain.

(b) *Performance standards.* Where thin overburden as described in paragraph (a) of this section occurs

within the permit area, you must backfill all mined areas and grade all disturbed areas in accordance with the plan approved in the permit under § 780.12(d) of this chapter. At a minimum, you must—

(1) Use all spoil and waste materials available from the entire permit area to attain the lowest practicable grade that does not exceed the angle of repose.

(2) Comply with the requirements of paragraphs (a)(2) through (f) of § 816.102 of this part.

(3) Ensure that the final surface configuration blends into and complements the drainage pattern of the surrounding terrain to the extent possible.

§ 816.105 What special provisions for backfilling, grading, and surface configuration apply to sites with thick overburden?

(a) *Applicability.* This section applies only where the thickness of all overburden strata multiplied by the swell factor for those strata plus the thickness of any waste materials to be returned to the mined-out area exceeds the combined thickness of the overburden strata and the coal seam or seams in place to the extent that there is more material than can be used to restore the approximate original contour. Specifically, the amount of material to be returned to the mined-out area is so large that it is not possible to achieve a surface configuration that closely resembles the surface configuration of the mined land prior to any mining.

(b) *Performance standards.* Where thick overburden as described in paragraph (a) of this section occurs within the permit area, you must backfill all mined areas and grade all disturbed areas in accordance with the plan approved in the permit under § 780.12(d) of this chapter. At a minimum, you must—

(1) Backfill the mined-out area to the approximate original contour and then place the remaining spoil and waste materials on top of the backfilled area to the extent possible, as determined in accordance with the excess spoil minimization requirements of § 780.35(b) of this chapter.

(2) Grade the backfilled area to the lowest practicable grade that is ecologically sound, consistent with the postmining land use, and compatible with the surrounding region. No slope may exceed the angle of repose.

(3) Comply with the requirements of paragraphs (a)(2) through (f) of § 816.102 of this part.

(4) Dispose of any excess spoil in accordance with § 816.71 or § 816.74 of this part.

(5) Ensure that the final surface configuration blends into and complements the drainage pattern of the surrounding terrain to the extent possible.

§ 816.106 What special provisions for backfilling, grading, and surface configuration apply to previously mined areas with a preexisting highwall?

(a) Remining operations on previously mined areas that contain a preexisting highwall must comply with the requirements of §§ 816.102 through 816.107 of this part, except as provided in this section.

(b) The highwall elimination requirements of § 816.102(a) of this part do not apply to remining operations for which you demonstrate in writing, to the regulatory authority's satisfaction, that the volume of all reasonably available spoil is insufficient to completely backfill the reaffected or enlarged highwall. Instead, for those operations, you must eliminate the highwall to the maximum extent technically practical in accordance with the following criteria:

(1) You must use all spoil generated by the remining operation and any other reasonably available spoil to backfill the area. You must include reasonably available spoil in the immediate vicinity of the remining operation within the permit area.

(2) You must grade the backfilled area to a slope that is compatible with the approved postmining land use and that provides adequate drainage and long-term stability.

(3) Any highwall remnant must be stable and not pose a hazard to the public health and safety or to the environment. You must demonstrate, to the satisfaction of the regulatory authority, that the highwall remnant is stable.

(4) You must not disturb spoil placed on the outslope during previous mining operations if disturbance would cause instability of the remaining spoil or otherwise increase the hazard to the public health and safety or to the environment.

§ 816.107 What special provisions for backfilling, grading, and surface configuration apply to operations on steep slopes?

(a) Surface mining activities on steep slopes must comply with this section and the requirements of §§ 816.102 through 816.106 of this part, except where—

(1) Mining is conducted on flat or gently rolling terrain with an occasional steep slope through which the mining proceeds and leaves a plain or predominantly flat area; or

(2) Operations are conducted in accordance with part 824 of this chapter.

(b) You may not place the following materials on the downslope:

(1) Spoil.

(2) Waste materials of any type.

(3) Debris, including debris from clearing and grubbing, except for woody materials used to enhance fish and wildlife habitat.

(4) Abandoned or disabled equipment.

(c) You may not disturb land above the highwall unless the regulatory authority finds that disturbance will facilitate compliance with the environmental protection standards of this subchapter and the disturbance is limited to that necessary to facilitate compliance.

(d) You must handle woody materials in accordance with § 816.22(f) of this part. You may not bury them in the backfill.

§ 816.111 How must I revegetate areas disturbed by mining activities?

(a) You, the permittee, must establish a diverse, effective, permanent vegetative cover on regraded areas and on all other disturbed areas except—

(1) Water areas approved as a postmining land use or in support of the postmining land use.

(2) The surfaces of roads approved for retention to support the postmining land use.

(3) Rock piles, water areas, and other non-vegetative features created to restore or enhance wildlife habitat under the fish and wildlife protection and enhancement plan approved in the permit in accordance with § 780.16 of this chapter.

(4) Any other impervious surface, such as a building or a parking lot, approved as part of or in support of the postmining land use. This provision applies only to structures and facilities constructed before expiration of the revegetation responsibility period.

(b) The reestablished vegetative cover must—

(1) Comply with the revegetation plan approved in the permit in accordance with § 780.12(g) of this chapter.

(2) Be consistent with the approved postmining land use and the plant communities described in § 779.19 of this chapter.

(3) Be at least equal in extent of cover to the natural vegetation of the area.

(4) Be capable of stabilizing the soil surface and, in the long term, preventing erosion in excess of what would have occurred naturally had the site not been disturbed.

(5) Not inhibit the establishment of trees and shrubs when the revegetation

plan approved in the permit requires the use of woody plants.

(c) Volunteer plants of species that are desirable components of the plant communities described in the permit application under § 779.19 of this chapter and that are not inconsistent with the postmining land use may be considered in determining whether the requirements of §§ 816.111 and 816.116 have been met.

(d) You must stabilize all areas upon which you have redistributed soil or soil substitute materials. You must use one or a combination of the following methods, unless the regulatory authority determines that neither method is necessary to stabilize the surface and control erosion—

(1) Establishing a temporary vegetative cover consisting of noncompetitive and non-invasive species, either native or domesticated or a combination thereof.

(2) Applying a suitable mulch free of weed and noxious plant seeds. You must use native hay mulch to the extent that it is commercially available.

(e) You must plant all disturbed areas with the species needed to establish a permanent vegetative cover during the first normal period for favorable planting conditions after distribution of the topsoil or other plant-growth medium. The normal period for favorable planting conditions is the generally accepted local planting time for the type of plant materials approved in the permit as part of the revegetation plan under § 780.12(g) of this chapter.

§ 816.113 [Reserved]

§ 816.114 [Reserved]

§ 816.115 How long am I responsible for revegetation after planting?

(a) *General provisions.* (1) The period of extended responsibility for successful revegetation will begin after the last year of augmented seeding, fertilizing, irrigation, or other work, excluding husbandry practices that are approved by the regulatory authority in accordance with paragraph (d) of this section.

(2) The initial planting of small areas that are regraded and planted as a result of the removal of sediment control structures and associated structures and facilities such as diversion ditches, disposal and storage areas for accumulated sediment, sediment pond embankments, and ancillary roads used to access those structures need not be considered an augmented seeding necessitating an extended or separate revegetation responsibility period.

(b) *Areas of more than 26.0 inches of average annual precipitation.* In areas of more than 26.0 inches of annual average precipitation, the period of responsibility will continue for a period of not less than—

(1) Five full years, except as provided in paragraph (b)(2) of this section.

(i) The vegetation parameters for grazing land, pasture land, or cropland must equal or exceed the approved success standard during the growing season of any 2 years of the responsibility period, except the first year.

(ii) On all other areas, the parameters must equal or exceed the applicable success standard during the growing season of the last year of the responsibility period.

(2) Two full years for lands eligible for remining included in a permit approved under § 785.25 of this chapter. The lands must equal or exceed the applicable ground cover standard during the growing season of the last year of the responsibility period.

(c) *Areas of 26.0 inches or less average annual precipitation.* In areas of 26.0 inches or less average annual precipitation, the period of responsibility will continue for a period of not less than:

(1) Ten full years, except as provided in paragraph (c)(2) of this section.

(i) The vegetation parameters for grazing land, pasture land, or cropland must equal or exceed the approved success standard during the growing season of any two years after year six of the responsibility period.

(ii) On all other areas, the parameters must equal or exceed the applicable success standard during the growing season of the last year of the responsibility period.

(2) Five full years for lands eligible for remining included in a permit approved under § 785.25 of this chapter. The lands must equal or exceed the applicable ground cover standard during the growing seasons of the last two consecutive years of the responsibility period.

(d) *Normal husbandry practices.* (1) The regulatory authority may approve selective husbandry practices, excluding augmented seeding, fertilization, or irrigation, provided it obtains prior approval from OSMRE in accordance with § 732.17 of this chapter that the practices are normal husbandry practices, without extending the period of responsibility for revegetation success and bond liability, if those practices can be expected to continue as part of the postmining land use or if discontinuance of the practices after the liability period expires will not reduce the probability of permanent revegetation success.

(2) Approved practices must be normal husbandry practices within the region for unmined lands having land uses similar to the approved postmining land use of the disturbed area, including such practices as disease, pest, and vermin control; and any pruning, reseeding, and transplanting specifically necessitated by such actions.

§ 816.116 What are the standards for determining revegetation success?

(a) The regulatory authority must select standards for revegetation success and statistically valid sampling techniques for measuring revegetation success. The standards and techniques must be made available to the public in written form.

(b) The standards for success applied to a specific permit must be adequate to demonstrate restoration of premining land use capability and must reflect the revegetation plan requirements of § 780.12(g) of this chapter. They must be based upon the following data—

(1) The plant community and vegetation information required under § 779.19 of this chapter.

(2) The soil type and productivity information required under § 779.21 of this chapter.

(3) The land use capability and productivity information required under § 779.22 of this chapter.

(4) The postmining land use approved under § 780.24 of this chapter, but only to the extent that the approved postmining land use actually will be implemented before expiration of the revegetation responsibility period. Otherwise, the site must be revegetated in a manner that will restore native plant communities and the revegetation success standards for the site must reflect that requirement.

(c) Except for the areas identified in § 816.111(a) of this part, standards for success must include—

(1) Species diversity.

(2) Areal distribution of species.

(3) Ground cover, except for land actually used for cropland after the completion of regrading and redistribution of soil materials.

(4) Production, for land used for cropland, pasture, or grazing land either before permit issuance or after the completion of regrading and redistribution of soil materials.

(5) Stocking, for areas revegetated with woody plants.

(d) The ground cover, production, or stocking of the revegetated area will be considered equal to the approved success standard for those parameters when the measured values are not less than 90 percent of the success standard, using a 90-percent statistical confidence

interval (*i.e.,* a one-sided test with a 0.10 alpha error).

(e) For all areas revegetated with woody plants, regardless of the postmining land use, the regulatory authority must specify minimum stocking and planting arrangements on the basis of local and regional conditions and after coordination with and approval by the state agencies responsible for the administration of forestry and wildlife programs. Coordination and approval may occur on either a program-wide basis or a permit-specific basis.

(f)(1) Only those species of trees and shrubs approved in the permit as part of the revegetation plan under § 780.12(g) of this chapter or volunteer trees and shrubs of species that meet the requirements of § 816.111(c) of this part may be counted in determining whether stocking standards have been met.

(2)(i) At the time of final bond release under § 800.42(d) of this chapter, at least 80 percent of the trees and shrubs used to determine success must have been in place for 60 percent of the applicable minimum period of responsibility under § 816.115 of this part.

(ii) Trees and shrubs counted in determining revegetation success must be healthy and have been in place for not less than two growing seasons. Any replanting must be done by means of transplants to allow for proper accounting of plant stocking.

(iii)(A) For purposes of paragraph (f)(2)(ii) of this section, volunteer trees and shrubs of species that meet the requirements of § 816.111(c) of this part may be deemed equivalent to planted specimens two years of age or older.

(B) Suckers on shrubby vegetation can be counted as volunteer plants when it is evident that the shrub community is vigorous and expanding.

(iv) The requirements of paragraphs (f)(2)(i) and (ii) of this section will be deemed met when records of woody vegetation planted show that—

(A) No woody plants were planted during the last two growing seasons of the responsibility period; and

(B) If any replanting of woody plants took place earlier during the responsibility period, the total number planted during the last 60 percent of that period is less than 20 percent of the total number of woody plants required to meet the stocking standard.

(3) Vegetative ground cover on areas planted with trees or shrubs must be of a nature that allows for natural establishment and succession of native plants, including trees and shrubs.

(g) *Special provision for areas that are to be developed within the revegetation responsibility period.* Portions of the permit area that are to be developed for industrial, commercial, or residential use within the revegetation responsibility period need not meet production or stocking standards. For those areas, the vegetative ground cover must not be less than that required to control erosion.

(h) *Special provision for previously mined areas.* Previously mined areas need only meet a vegetative ground cover standard, unless the regulatory authority specifies otherwise. At a minimum, the cover on the revegetated previously mined area must not be less than the ground cover existing before redisturbance and must be adequate to control erosion.

(i) *Special provision for prime farmland.* For prime farmland, the revegetation success standard provisions of § 823.15 of this chapter apply in lieu of the requirements of paragraphs (b) through (h) of this section.

§ 816.131 What actions must I take when I temporarily cease mining operations?

(a)(1) Each person who temporarily ceases to conduct surface mining activities at a particular site must effectively secure surface facilities in areas in which there are no current operations, but where operations are to be resumed under an approved permit.

(2) Temporary cessation does not relieve a person of his or her obligation to comply with any provisions of the approved permit.

(b)(1) You must submit a notice of intent to temporarily cease operations to the regulatory authority before ceasing mining and reclamation operations for 30 or more days, or as soon as you know that a temporary cessation will extend beyond 30 days.

(2) The notice of temporary cessation must include a statement of the—

(i) Exact number of surface acres disturbed within the permit area prior to temporary cessation;

(ii) Extent and kind of reclamation accomplished before temporary cessation; and

(iii) Backfilling, regrading, revegetation, environmental monitoring, and water treatment activities that will continue during temporary cessation.

§ 816.132 What actions must I take when I permanently cease mining operations?

(a) Persons who permanently cease surface mining activities at a particular site must close, backfill, or otherwise permanently reclaim all disturbed areas in accordance with this chapter and the permit approved by the regulatory authority.

(b) All equipment, structures, underground openings, or other facilities must be removed and the affected land reclaimed, unless the regulatory authority approves retention of those features because they are suitable for the postmining land use or environmental monitoring.

§ 816.133 What provisions concerning postmining land use apply to my operation?

Except as provided in § 780.24(c) of this chapter, you, the permittee, must restore all disturbed areas in a timely manner to conditions that are capable of supporting—

(a) The uses they were capable of supporting before any mining, as described under § 779.22 of this chapter; or

(b) Higher or better uses approved under § 780.24(b) of this chapter.

§ 816.150 What are the general standards for haul and access roads?

(a) *Road classification system.* (1) Each road meeting the definition of that term in § 701.5 of this chapter must be classified as either a primary road or an ancillary road.

(2) A primary road is any road that is—

(i) Used for transporting coal or spoil;

(ii) Frequently used for access or other purposes for a period in excess of 6 months; or

(iii) To be retained for an approved postmining land use.

(3) An ancillary road is any road not classified as a primary road.

(b) *Performance standards.* Each road must be located, designed, constructed, reconstructed, used, maintained, and reclaimed so as to—

(1) Control or prevent erosion, siltation, and air pollution attendant to erosion, including road dust and dust occurring on other exposed surfaces, by measures such as vegetating, watering, using chemical or other dust suppressants, or otherwise stabilizing all exposed surfaces in accordance with current, prudent engineering practices.

(2) Control or prevent damage to fish, wildlife, or their habitat and related environmental values.

(3) Control or prevent additional contributions of suspended solids to streamflow or runoff outside the permit area;

(4) Neither cause nor contribute to, directly or indirectly, the violation of water quality standards applicable to receiving waters.

(5) Refrain from seriously altering the normal flow of water in streambeds or drainage channels.

(6) Prevent or control damage to public or private property, including the

prevention or mitigation of adverse effects on lands within the boundaries of units of the National Park System, the National Wildlife Refuge System, the National System of Trails, the National Wilderness Preservation System, the Wild and Scenic Rivers System, including designated study rivers, and National Recreation Areas designated by Act of Congress.

(7) Use nonacid- and nontoxic-forming substances in road surfacing.

(c) *Design and construction limits and establishment of design criteria.* To ensure environmental protection appropriate for their planned duration and use, including consideration of the type and size of equipment used, the design and construction or reconstruction of roads must include appropriate limits for grade, width, surface materials, surface drainage control, culvert placement, and culvert size, in accordance with current, prudent engineering practices, and any necessary design criteria established by the regulatory authority.

(d) *Location.* (1) No part of any road may be located in the channel of an intermittent or perennial stream unless specifically approved by the regulatory authority in accordance with § 780.28 of this chapter and § 816.57 of this part.

(2) Roads must be located to minimize downstream sedimentation and flooding.

(e) *Maintenance.* (1) A road must be maintained to meet the performance standards of this part and any additional criteria specified by the regulatory authority.

(2) A road damaged by a catastrophic event, such as a flood or earthquake, must be repaired as soon as is practicable after the damage has occurred.

(f) *Reclamation.* A road not to be retained as part of an approved postmining land use must be reclaimed in accordance with the approved reclamation plan as soon as practicable after it is no longer needed for mining and reclamation operations. Reclamation must include—

(1) Closing the road to traffic.

(2) Removing all bridges and culverts unless approved as part of the postmining land use.

(3) Removing or otherwise disposing of road-surfacing materials that are incompatible with the postmining land use and revegetation requirements.

(4) Reshaping the slopes of road cuts and fills as necessary to be compatible with the postmining land use and to complement the natural drainage pattern of the surrounding terrain.

(5) Protecting the natural drainage patterns by installing dikes or cross-drains as necessary to control surface runoff and erosion.

(6) Scarifying or ripping the roadbed, replacing topsoil or substitute material in accordance with § 816.22 of this part, and revegetating disturbed surfaces in accordance with §§ 816.111, 816.115, and 816.116 of this chapter.

§ 816.151 What additional standards apply to primary roads?

(a) Primary roads must meet the requirements of § 816.150 of this part and the additional requirements of this section.

(b) *Certification.* The construction or reconstruction of primary roads must be certified in a report to the regulatory authority by a qualified registered professional engineer, or in any state that authorizes land surveyors to certify the construction or reconstruction of primary roads, a qualified registered professional land surveyor with experience in the design and construction of roads. The report must indicate that the primary road has been constructed or reconstructed as designed and in accordance with the approved plan.

(c) *Safety factor.* Each primary road embankment must have a minimum static factor of 1.3 or meet the requirements established under § 780.37(c) of this chapter.

(d) *Location.* (1) To minimize erosion, a primary road must be located, insofar as is practicable, on the most stable available surface.

(2) Fords of perennial or intermittent streams are prohibited unless they are specifically approved by the regulatory authority as temporary routes during periods of road construction.

(e) *Drainage control.* In accordance with the approved plan—

(1) Each primary road must be constructed, or reconstructed, and maintained to have adequate drainage control, using structures such as, but not limited to, bridges, ditches, cross drains, and ditch relief drains. The drainage control system must be designed to safely pass the peak runoff from the 10-year, 6-hour precipitation event, or any greater event specified by the regulatory authority.

(2) Drainage pipes and culverts must be installed as designed, and maintained in a free and operating condition and to prevent or control erosion at inlets and outlets.

(3) Drainage ditches must be constructed and maintained to prevent uncontrolled drainage over the road surface and embankment.

(4) Culverts must be installed and maintained to sustain the vertical soil pressure, the passive resistance of the foundation, and the weight of vehicles using the road.

(5) Natural stream channels must not be altered or relocated without the prior approval of the regulatory authority in accordance with § 780.28 of this chapter and § 816.57 of this part.

(6) Except as provided in paragraph (d)(2) of this section, structures for perennial or intermittent stream channel crossings must be made using bridges, culverts, low-water crossings, or other structures designed, constructed, and maintained using current prudent engineering practices. The regulatory authority must ensure that low-water crossings are designed, constructed, and maintained to prevent erosion of the structure or streambed and additional contributions of suspended solids to streamflow.

(f) *Surfacing.* Primary roads must be surfaced with material approved by the regulatory authority as being sufficiently durable for the anticipated volume of traffic and the weight and speed of vehicles using the road.

§ 816.180 To what extent must I protect utility installations?

You must conduct all surface coal mining operations in a manner that minimizes damage, destruction, or disruption of services provided by oil, gas, and water wells; oil, gas, and coal-slurry pipelines; railroads; electric and telephone lines; and water and sewage lines that pass over, under, or through the permit area, unless otherwise approved by the owner of those facilities and the regulatory authority.

§ 816.181 What requirements apply to support facilities?

(a) You must operate each support facility in accordance with the permit issued for the mine or coal preparation plant to which the facility is incident or from which its operation results.

(b) In addition to the other provisions of this part, you must locate, maintain, and use support facilities in a manner that—

(1) Prevents or controls erosion and siltation, water pollution, and damage to public or private property; and

(2) To the extent possible using the best technology currently available—

(i) Minimizes damage to fish, wildlife, and related environmental values; and

(ii) Minimizes additional contributions of suspended solids to streamflow or runoff outside the permit area. Any such contributions may not be in excess of limitations of state or federal law.

§ 816.200 [Reserved]

■ 33. Lift the suspensions of § 817.46(b)(2) and § 817.121(c)(4)(i)

through (iv), and revise part 817 to read as follows:

PART 817—PERMANENT PROGRAM PERFORMANCE STANDARDS—UNDERGROUND MINING ACTIVITIES

Authority: 30 U.S.C. 1201 *et seq.*

§ 817.1 Scope: What does this part do?

This part sets forth the minimum environmental protection performance standards for surface mining activities under the Act.

§ 817.2 What is the objective of this part?

This part is intended to ensure that all underground mining activities are conducted in an environmentally sound manner in accordance with the Act.

§ 817.10 Information collection.

In accordance with 44 U.S.C. 3501 *et seq.,* the Office of Management and Budget (OMB) has approved the information collection requirements of this part and assigned it control number 1029–xxxx. Collection of this information is required under section 516 of SMCRA, which provides that permittees conducting underground coal mining operations must meet all applicable performance standards of the regulatory program approved under the Act. The regulatory authority uses the information collected to ensure that underground mining activities are conducted in compliance with the requirements of the applicable regulatory program. Persons intending to conduct such operations must respond to obtain a benefit. A federal agency may not conduct or sponsor, and you are not required to respond to, a collection of information unless it displays a currently valid OMB control number.

§ 817.11 What signs and markers must I post?

(a) *General specifications.* Signs and markers required under this part must—

(1) Be posted and maintained by the person who conducts the surface mining activities;

(2) Be of a uniform design throughout the operation;

(3) Be easily seen and read;

(4) Be made of durable material; and

(5) Conform to local ordinances and codes.

(b) *Duration of maintenance.* You must maintain signs and markers during the conduct of all activities to which they pertain.

(c) *Mine and permit identification signs.* (1) You must display identification signs at each point of access from public roads to areas of surface operations and facilities on permit areas for underground mining activities.

(2) The signs must show the name, business address, and telephone number of the person who conducts the underground mining activities and the identification number of the current regulatory program permit authorizing underground mining activities.

(3) You must retain and maintain the signs until the release of all bonds for the permit area.

(d) *Perimeter markers.* You must clearly mark the perimeter of all areas

to be disturbed by surface operations or facilities before beginning mining activities on the surface of land within the permit area.

(e) *Stream buffer zone markers.* You must clearly mark the boundaries of any buffer to be maintained between surface activities and a perennial or intermittent stream in accordance with §§ 784.28 and 817.57 of this chapter to avoid disturbance by surface operations and facilities.

(f) *Topsoil markers.* You must clearly mark stockpiles of topsoil, subsoil, or other plant growth media segregated and stored as required in the permit in accordance with § 817.22 of this part.

§ 817.13 What special requirements apply to drilled holes, wells, and exposed underground openings?

(a) Except as provided in paragraph (f) of this section, you must case, line, otherwise manage each exploration hole, drilled hole, borehole, shaft, well, or other exposed underground opening in a manner approved by the regulatory authority to—

(1) Prevent acid or other toxic drainage from entering groundwater and surface water.

(2) Minimize disturbance to the prevailing hydrologic balance.

(3) Ensure the safety of people, livestock, fish and wildlife, and machinery in the permit area and the adjacent area.

(b) You must prevent access to each temporarily inactive mine entry by constructing fences and barricades or other covering devices and posting signs that identify the hazardous nature of the opening. You must periodically inspect and maintain these fences and barricades in good operating condition.

(c) You must temporarily seal each exploration hole, drilled hole, borehole, shaft, well, or other exposed underground opening that the approved permit identifies for use to monitor groundwater or to return underground development waste, coal processing waste, or water to underground workings until you are ready to actually use the hole or opening for that purpose.

(d) You may retain a drilled hole or groundwater monitoring well for use as a water well under the conditions established in § 817.39 of this part.

(e) Except as provided in paragraph (d) of this section, you must permanently close each exploration hole, drilled hole, borehole, well, or underground opening that mining activities uncover or expose within the permit area, unless the regulatory authority—

(1) Approves use of the hole, well, or opening for water monitoring purposes; or

(2) Authorizes other management of the hole or well.

(f)(1) Except as provided in paragraph (d) of this section, you must cap, seal, backfill, or otherwise properly manage each shaft, drift, adit, tunnel, exploratory hole, entryway or other opening to the surface when no longer needed for monitoring or any other use that the regulatory authority approves after finding that the use would not adversely affect the environment or public health and safety.

(2) Permanent closure measures taken under paragraph (f)(1) of this section must be—

(i) Consistent with § 75.1771 of this title;

(ii) Designed to prevent access to the mine workings by people, livestock, fish and wildlife, and machinery; and

(iii) Designed to keep acid or toxic mine drainage from entering groundwater or surface water.

(g) The requirements of this section do not apply to holes drilled and used for blasting as part of surface operations.

§ 817.14 [Reserved]

§ 817.15 [Reserved]

§ 817.22 How must I handle topsoil, subsoil, and other plant growth media?

(a) *Removal and salvage.* (1) You, the permittee, must separately remove and salvage all topsoil and other soil materials identified for salvage and use as postmining plant growth media in the soil handling plan approved in the permit under § 784.12(e) of this chapter. You must complete removal and salvage of these materials from the area to be disturbed before any drilling, blasting, mining, or other surface disturbance takes place on that area.

(2) The regulatory authority may choose not to require the removal of topsoil and other soil materials for minor disturbances that—

(i) Occur at the site of small structures, such as power poles, signs, or fence lines; or

(ii) Will not destroy the existing vegetation and will not cause erosion.

(b) *Storage.* (1) You must segregate and, except as provided in paragraph (b)(3) of this section, stockpile the materials removed under paragraph (a) of this section when it is impractical to redistribute those materials promptly on regraded areas.

(2) Stockpiled materials must—

(i) Be selectively placed on a stable site within the permit area;

(ii) Be protected from contaminants and unnecessary compaction that would interfere with revegetation;

(iii) Be protected from wind and water erosion through prompt establishment and maintenance of an effective, quick-growing, non-invasive vegetative cover or through other measures approved by the regulatory authority; and

(iv) Not be moved until required for redistribution unless approved by the regulatory authority.

(3) When stockpiling of organic matter and soil materials removed under paragraphs (a) and (f) of this section would be detrimental to the quality or quantity of those materials, you may temporarily redistribute those soil materials on an approved site within the permit area to enhance the current use of that site until the materials are needed for later reclamation, provided that—

(i) Temporary redistribution will not permanently diminish the capability of the topsoil of the host site; and

(ii) The redistributed material will be preserved in a condition more suitable for redistribution than if it were stockpiled.

(c) *Soil substitutes and supplements.* When the soil handling plan approved in the permit in accordance with § 784.12(e) of this chapter provides for the use of substitutes for or supplements to the existing topsoil or subsoil, you must salvage, store, and redistribute the overburden materials selected and approved for that purpose in a manner consistent with paragraphs (a), (b), and (e) of this section.

(d) *Site preparation.* (1) You must minimize grading of backfilled areas to avoid compaction of the reconstructed root zone, as specified in the soil handling plan approved in the permit in accordance with § 784.12(e) of this chapter. Compaction is allowed only to the extent necessary to ensure stability and to comply with water quality standards.

(2) If necessary, you must rip, chisel-plow, or otherwise mechanically treat backfilled and graded areas before topsoil redistribution to reduce potential slippage of the redistributed material and to promote root penetration. You may conduct this treatment after soil redistribution if doing so will not harm the redistributed material.

(e) *Redistribution.* (1) You must redistribute the materials removed, salvaged, and, if necessary, stored under paragraphs (a) through (c) of this section in a manner that—

(i) Complies with the soil handling plan developed under § 784.12(e) of this chapter and approved as part of the permit.

(ii) Is consistent with the approved postmining land use, contours, and surface-water drainage systems.

(iii) Minimizes compaction of the materials to the extent possible and alleviates any excess compaction that may occur.

(iv) Protects the materials from wind and water erosion before and after seeding and planting to the extent necessary to ensure establishment of a successful vegetative cover and to avoid causing or contributing to a violation of applicable water quality standards.

(v) Achieves an approximately uniform, stable thickness across the regraded area, except that the thickness may vary when consistent with the postmining land use and when variations are necessary or desirable to achieve specific revegetation goals and ecological diversity, as set forth in the revegetation plan developed under § 784.12(g) of this chapter and approved as part of the permit.

(2) You must use a statistically valid sampling technique to document that soil materials have been redistributed in the locations and depths required by the soil handling plan developed under § 784.12(e) of this chapter and approved as part of the permit.

(3) The regulatory authority may choose not to require the redistribution of topsoil on the embankments of permanent impoundments or on the embankments of roads to be retained as part of the postmining land use if it determines that—

(i) Placement of topsoil on those embankments is inconsistent with the requirement to use the best technology currently available to prevent sedimentation, and

(ii) The embankments will be otherwise stabilized.

(f) *Organic matter.* (1) You must salvage duff, other organic litter, and vegetative materials such as tree tops, small logs, and root balls. You may not burn organic matter or bury it in the backfill.

(2) Except as otherwise provided in paragraph (f)(3) of this section, you must redistribute the materials salvaged under paragraph (f)(1) of this section across the regraded surface or incorporate them into the soil to control erosion, promote growth of vegetation, serve as a source of native plant seeds and soil inoculants to speed restoration of the soil's ecological community, and increase the moisture retention capability of the soil.

(3) Vegetative debris must be redistributed in accordance with paragraph (f)(2) of this section, used for stream restoration purposes, or used to construct fish and wildlife habitat enhancement features.

§ 817.34 How must I protect the hydrologic balance?

(a) You, the permittee, must conduct all underground mining and reclamation activities to—

(1) Minimize disturbance of the hydrologic balance within the permit and adjacent areas.

(2) Prevent material damage to the hydrologic balance outside the permit area.

(3) Protect streams in accordance with §§ 784.28 and 817.57 of this chapter.

(4) Assure the replacement of water supplies to the extent required by § 817.40 of this part.

(5) Protect existing water rights under state law.

(6) Support approved postmining land uses in accordance with the terms and conditions of the approved permit and the performance standards of this part.

(7) Comply with the hydrologic reclamation plan as submitted under § 784.22 of this chapter and approved in the permit.

(8) Protect groundwater quality by using the best technology currently available to handle earth materials and runoff in a manner that avoids the formation of acid or toxic mine drainage and by managing excavations and other disturbances to prevent or control groundwater degradation.

(9) Protect groundwater quantity by handling earth materials and runoff in a manner that will restore the approximate premining recharge capacity of the reclaimed area as a whole, excluding coal mine waste disposal areas and excess spoil fills, so as to allow the movement of water into the groundwater system.

(10) Protect surface-water quality by using the best technology currently available to handle earth materials, groundwater discharges, and runoff in a manner that—

(i) Avoids the formation of acid or toxic mine drainage.

(ii) Prevents additional contribution of suspended solids to streamflow or runoff outside the permit area to the extent possible.

(iii) Otherwise prevents water pollution.

(11) Protect surface-water quality and flow rates by handling earth materials and runoff in accordance with the steps outlined in the hydrologic reclamation plan and the surface-water runoff control plan approved in the permit in accordance with §§ 784.22 and 780.29 of this chapter, respectively.

(b)(1) To the maximum extent practicable, you must use mining and reclamation practices that minimize water pollution, changes in flow, and adverse impacts on stream biota rather than relying upon water treatment to minimize those impacts.

(2) You must install, use, and maintain any necessary water-treatment facilities or water-quality controls if drainage control, materials handling, stabilization and revegetation of disturbed areas, diversion of runoff, mulching, and other reclamation and remedial practices are not adequate to meet the requirements of this section and § 817.42 of this part.

(c) The regulatory authority may require that you take preventive, remedial, or monitoring measures in addition to those set forth in this part to prevent material damage to the hydrologic balance outside the permit area.

(d)(1) You must examine the hydraulic structures identified under § 784.29 of this chapter after each occurrence of the following precipitation events:

(i) In areas with an average annual precipitation of more than 26.0 inches, an event of a size equal to or greater than that of a storm with a 2-year recurrence interval. You must use the appropriate regional Natural Resources Conservation Service synthetic storm distribution to determine peak flow for a storm with that recurrence interval.

(ii) In areas with an average annual precipitation of 26.0 inches or less, a significant event of a size specified by the regulatory authority.

(2) You must prepare a report, which must be certified by a registered professional engineer, and submit the report to the regulatory authority within 48 hours of cessation of the applicable precipitation event under paragraph (d)(1) of this section. The report must address the performance of the hydraulic structures, identify and describe any material damage to the hydrologic balance outside the permit area that occurred, and identify and describe the remedial measures taken in response to that damage.

§ 817.35 How must I monitor groundwater?

(a)(1)(i) You, the permittee, must monitor groundwater in the manner specified in the groundwater monitoring plan approved in the permit in accordance with § 784.23(a) of this chapter.

(ii) You must adhere to the data collection, analysis, and reporting requirements of paragraphs (a) and (b) of § 777.13 of this chapter when conducting monitoring under this section.

(2) Monitoring must continue through mining and during reclamation until the entire bond amount for the monitored

area has been fully released under § 800.42(d) of this chapter.

(b)(1) You must submit groundwater monitoring data to the regulatory authority every 3 months, or more frequently if prescribed by the regulatory authority.

(2) Monitoring reports must include analytical results from each sample taken during the reporting period.

(c) When the analysis of any sample indicates noncompliance with the terms and conditions of the permit, you must promptly notify the regulatory authority, take the actions required under § 773.17(e) of this chapter, if any, and implement any applicable remedial measures required by the hydrologic reclamation plan approved in the permit in accordance with § 784.22 of this chapter.

(d) You may use the permit revision procedures of § 774.13 of this chapter to request that the regulatory authority modify the groundwater monitoring requirements, including the parameters covered and the sampling frequency. The regulatory authority may approve your request if you demonstrate, using the monitoring data obtained under this section, that—

(1) Future changes in groundwater quantity or quality are unlikely to occur.

(2) The operation has—

(i) Minimized disturbance to the hydrologic balance in the permit and adjacent areas.

(ii) Prevented material damage to the hydrologic balance outside the permit area.

(iii) Preserved or restored the biological condition of perennial and intermittent streams within the permit and adjacent areas when groundwater from the permit area provides all or part of the base flow of those streams.

(iv) Maintained the availability and quality of groundwater in a manner that can support existing and reasonably foreseeable uses.

(v) Protected or replaced the water rights of other users.

(e) Whenever information available to the regulatory authority indicates that additional monitoring is necessary to protect the hydrologic balance, to detect hydrologic changes, or to meet other requirements of the regulatory program, the regulatory authority must issue an order under § 774.10(b) of this chapter requiring that you revise your permit to include the necessary additional monitoring.

(f) You must install, maintain, operate, and, when no longer needed, remove all equipment, structures, and other devices used in conjunction with monitoring groundwater, consistent with §§ 817.13 and 817.39 of this part.

§ 817.36 How must I monitor surface water?

(a)(1)(i) You, the permittee, must monitor surface water in the manner specified in the surface-water monitoring plan approved in the permit in accordance with § 784.23(b) of this chapter.

(ii) You must adhere to the data collection, analysis, and reporting requirements of paragraphs (a) and (b) of § 777.13 of this chapter when conducting monitoring under this section.

(2) Monitoring must continue through mining and during reclamation until the entire bond amount for the monitored area has been fully released under § 800.42(d) of this chapter.

(b)(1) You must submit surface-water monitoring data to the regulatory authority every 3 months, or more frequently when prescribed by the regulatory authority.

(2) Monitoring reports must include analytical results from each sample taken during the reporting period.

(3) The reporting requirements of paragraph (b) of this section do not exempt you from meeting any National Pollutant Discharge Elimination System (NPDES) reporting requirements.

(c) When the analysis of any sample indicates noncompliance with the terms and conditions of the permit, you must promptly notify the regulatory authority, take the actions required under § 773.17(e) of this chapter, if any, and implement any applicable remedial measures required by the hydrologic reclamation plan approved in the permit in accordance with § 784.22 of this chapter.

(d) You may use the permit revision procedures of § 774.13 of this chapter to request that the regulatory authority modify the surface-water monitoring requirements (except those required by the NPDES permitting authority), including the parameters covered and the sampling frequency. The regulatory authority may approve your request if you demonstrate, using the monitoring data obtained under this section, that—

(1) Future changes in surface-water quantity or quality are unlikely to occur.

(2) The operation has—

(i) Minimized disturbance to the hydrologic balance in the permit and adjacent areas.

(ii) Prevented material damage to the hydrologic balance outside the permit area.

(iii) Preserved or restored the biological condition of perennial and intermittent streams within the permit and adjacent areas.

(iv) Maintained the availability and quality of surface water in a manner that can support existing and reasonably foreseeable uses and that does not preclude attainment of designated uses under section 101(a) or 303(c) of the Clean Water Act.

(v) Protected or replaced the water rights of other users.

(e) Whenever information available to the regulatory authority indicates that additional monitoring is necessary to protect the hydrologic balance, to detect hydrologic changes, or to meet other requirements of the regulatory program, the regulatory authority must issue an order under § 774.10(b) of this chapter requiring that you revise your permit to include the necessary additional monitoring.

(f) You must install, maintain, operate, and, when no longer needed, remove all equipment, structures, and other devices used in conjunction with monitoring surface water.

§ 817.37 How must I monitor the biological condition of streams?

(a)(1)(i) You must monitor the biological condition of perennial and intermittent streams in the manner specified in the plan approved in the permit in accordance with § 784.23(c) of this chapter.

(ii) You must adhere to the data collection, analysis, and reporting requirements of paragraphs (a) and (b) of § 777.13 of this chapter and use a bioassessment protocol that complies with § 784.19(e)(2) of this chapter when conducting monitoring under this section.

(2) Monitoring must continue through mining and during reclamation until final release of bond under § 800.42(d) of this chapter. As provided in § 800.42(a) of this chapter, the regulatory authority may not release any portion of the bond if an evaluation of monitoring data indicates that adverse trends exist that could result in material damage to the hydrologic balance outside the permit area.

(b)(1) You must submit biological condition monitoring data to the regulatory authority on an annual basis, or more frequently if prescribed by the regulatory authority.

(2) Monitoring reports must include analytical results from each sample taken during the reporting period.

(c) You must promptly notify the regulatory authority and take the actions required under § 773.17(e) of this chapter whenever the analysis of any sample indicates noncompliance with the terms and conditions of the permit.

(d) Whenever information available to the regulatory authority indicates that additional monitoring is necessary to meet the requirements of the regulatory

program, the regulatory authority must issue an order under § 774.10(b) of this chapter requiring that you revise your permit to include the necessary additional monitoring.

§ 817.38 How must I handle acid-forming and toxic-forming materials?

You, the permittee, must use the best technology currently available to handle acid-forming and toxic-forming materials and underground development waste in a manner that will avoid the creation of acid or toxic mine drainage into surface water and groundwater. At a minimum, you must—

(a) Identify potential acid-forming and toxic-forming materials in overburden strata and the stratum immediately below the lowest coal seam to be mined and cover exposed coal seams and the stratum immediately beneath the lowest coal seam mined with a layer of compacted material with a hydraulic conductivity at least two orders of magnitude lower than the hydraulic conductivity of the adjacent less-compacted spoil to minimize contact and interaction with water.

(b) Identify the anticipated postmining groundwater level for all locations at which you propose to place acid-forming or toxic-forming materials.

(c) Selectively handle and place acid-forming and toxic-forming materials within the backfill in accordance with the plan approved in the permit under § 784.12(d)(4) of this chapter, unless the permit allows placement of those materials in an excess spoil fill or a coal mine waste refuse pile. When placing those materials in the backfill, you must use one or more of the following techniques, as appropriate and as approved in the permit:

(1) Completely surround acid-forming and toxic-forming materials with compacted material with a hydraulic conductivity at least two orders of magnitude lower than the hydraulic conductivity of adjacent less-compacted spoil.

(2) Place acid-forming and toxic-forming materials in a location below the water table where they will remain fully saturated at all times, provided that the permittee demonstrates, and the regulatory authority finds in writing in the permit, that complete saturation will prevent the formation of acid or toxic leachate.

(3) Treat or otherwise neutralize acid-forming and toxic-forming materials to prevent the formation of acid or toxic mine drainage. This technique also may be used in combination with either isolation under paragraph (c)(1) of this section or saturation under paragraph (c)(2) of this section.

(d) When approved in the permit, place acid-forming and toxic-forming materials in an excess spoil fill or a coal mine waste refuse pile, using one or both of the following techniques, as appropriate:

(1) Completely surround acid-forming and toxic-forming materials with compacted material with a hydraulic conductivity at least two orders of magnitude lower than the hydraulic conductivity of the adjacent less-compacted spoil or coal mine waste.

(2) Treat or otherwise neutralize acid-forming and toxic-forming materials to prevent the formation of acid or toxic mine drainage.

(e) Temporarily store acid-forming and toxic-forming materials only if the regulatory authority specifically approves temporary storage as necessary and finds in writing in the permit that the proposed storage method will protect surface water and groundwater by preventing erosion, the formation of polluted runoff, and the infiltration of polluted water into aquifers. The regulatory authority must specify a maximum time for temporary storage, which may not exceed the period until burial first becomes feasible. In addition, storage must not result in any risk of water pollution, adverse impacts to the biological condition of perennial or intermittent streams, or other environmental damage.

(f) Adhere to disposal, treatment, and storage practices that are consistent with other material handling and disposal provisions of this chapter.

§ 817.39 What must I do with exploratory or monitoring wells when I no longer need them?

(a) Except as provided in paragraph (b) of this section, you, the permittee, must permanently seal exploratory or monitoring wells in a safe and environmentally sound manner in accordance with § 817.13 of this part before the regulatory authority may approve full release of the bond posted for the land on which the wells are located under section § 800.42(d) of this chapter.

(b) With the prior approval of the regulatory authority, you may transfer wells to another party for further use. The conditions of the transfer must comply with state and local laws. You will remain responsible for the proper management of the wells until full release of the bond posted for the land on which the wells are located under § 800.42(d) of this chapter.

§ 817.40 What responsibility do I have to replace water supplies?

(a) Replacement of adversely-impacted water supplies. (1) You, the permittee, must promptly replace any drinking, domestic or residential water supply that is contaminated, diminished or interrupted as a result of underground mining activities that you conducted after October 24, 1992, if the affected well or spring was in existence before the date the regulatory authority received the permit application for the activities causing the loss, contamination or interruption.

(2) The replacement supply must be equivalent to the quantity and quality of the premining supply.

(3) Replacement includes provision of an equivalent water supply delivery system and payment of operation and maintenance expenses in excess of customary and reasonable delivery costs for the premining water supply. If you and the water supply owner agree, the obligation to pay operation and maintenance costs may be satisfied by a one-time payment in an amount that covers the present worth of the increased annual operation and maintenance costs for a period upon which you and the water supply owner agree.

(4) If the affected water supply was not needed for the land use in existence at the time of loss, contamination, or diminution, you may satisfy the replacement requirements by demonstrating that a suitable alternative water source is available and could feasibly be developed, provided you obtain written concurrence from the owner of the affected water supply.

(b) *Measures to address anticipated adverse impacts to protected water supplies.* For anticipated loss of or damage to a protected water supply, you must adhere to the requirements set forth in the permit in accordance with § 784.22(b) of this chapter.

(c) *Measures to address unanticipated adverse impacts to protected water supplies.* For unanticipated loss of or damage to a protected water supply, you must—

(1) Provide an emergency temporary water supply within 24 hours of notification of the loss. The temporary supply must be adequate in quantity and quality to meet normal household needs.

(2) Develop and submit a plan for a permanent replacement supply to the regulatory authority within 30 days of receiving notice that an unanticipated loss of or damage to a protected water supply has occurred.

(3) Provide a permanent replacement water supply within 2 years of the date

of receiving notice of an unanticipated loss of or damage to a protected water supply.

(d) Basis for determination of adverse impact. The regulatory authority must use the baseline hydrologic and geologic information required under § 784.19 of this chapter and all other available information to determine whether and to what extent the mining operation adversely impacted the damaged water supply.

§ 817.41 Under what conditions may I discharge water and other materials into an underground mine?

(a) You may not discharge any water or other materials from your operation into an underground mine unless the regulatory authority specifically approves the discharge in writing, based upon a demonstration that—

(1) The discharge will be made in a manner that—

(i) Minimizes disturbances to the hydrologic balance within the permit area;

(ii) Prevents material damage to the hydrologic balance outside the permit area, including the hydrologic balance of the area in which the underground mine receiving the discharge is located;

(iii) Does not adversely impact the biological condition of perennial or intermittent streams; and

(iv) Otherwise eliminates public hazards resulting from surface mining activities.

(2) The discharge will not result in a violation of applicable water quality standards or effluent limitations.

(3)(i) The discharge will be at a known rate and of a quality that will meet the effluent limitations for pH and total suspended solids referenced in § 817.42 of this part.

(ii) The regulatory authority may approve discharges of water that exceed the effluent limitations for pH and total suspended solids if the available evidence indicates that there is no direct hydrologic connection between the underground mine and other waters and that those exceedances will not be inconsistent with paragraph (a)(1) of this section.

(4) The Mine Safety and Health Administration has approved the discharge.

(5) You have obtained written permission from the owner of the mine into which the discharge is to be made and you have provided a copy of that authorization to the regulatory authority.

(b) Discharges are limited to the following materials:

(1) Water.

(2) Coal processing waste.

(3) Fly ash from a coal-fired facility.

(4) Sludge from an acid-mine-drainage treatment facility.

(5) Flue-gas desulfurization sludge.

(6) Inert materials used for stabilizing underground mines.

(7) Underground mine development waste.

§ 817.42 What are my responsibilities to comply with water quality standards and effluent limitations?

(a) Discharges of water from underground mining activities and from areas disturbed by underground mining activities must be made in compliance with all applicable water quality laws and regulations, including the effluent limitations established in the National Pollutant Discharge Elimination System permit for the operation under section 402 of the Clean Water Act, 33 U.S.C. 1342.

(b) Discharges of overburden, coal mine waste, and other materials into waters of the United States must be made in compliance with section 404 of the Clean Water Act, 33 U.S.C. 1344, and its implementing regulations.

(c) You must construct water treatment facilities for discharges from the operation as soon as the need for those facilities becomes evident.

(d)(1) You must remove precipitates and otherwise maintain all water treatment facilities requiring the use of settling ponds or lagoons as necessary to maintain the functionality of those facilities.

(2) You must dispose of all precipitates removed from facilities under paragraph (d)(1) of this section either in an approved solid waste landfill or within the permit area in accordance with a plan approved by the regulatory authority.

(e) You must operate and maintain water treatment facilities until the regulatory authority authorizes removal based upon monitoring data demonstrating that influent to the facilities meets all applicable water quality standards and effluent limitations without treatment.

§ 817.43 How must I construct and maintain diversions and other channels to convey water?

(a) *General provisions.* (1) When approved in the permit, you may divert the following flows away from the disturbed area by means of temporary or permanent diversions:

(i) Any flow from mined areas abandoned before May 3, 1978.

(ii) Any flow from undisturbed areas.

(iii) Any flow from reclaimed areas for which the criteria of § 817.46 of this part for siltation structure removal have been met.

(2) You may not divert water into underground mines without approval of the regulatory authority under § 817.41 of this part.

(3) When the permit requires the use of siltation structures for sediment control, you must construct diversions or other channels designed to the standards of this section to convey runoff from the disturbed area to a siltation structure unless the topography will naturally direct all runoff to a siltation structure.

(4) All diversions must be designed to—

(i) Ensure the safety of the public.

(ii) Minimize adverse impacts to the hydrologic balance, including the biological condition of perennial and intermittent streams, within the permit and adjacent areas.

(iii) Prevent material damage to the hydrologic balance outside the permit area.

(5) Each diversion and its appurtenant structures must be designed, located, constructed, maintained and used to—

(i) Be stable.

(ii) Provide and maintain a combination of channel and bank configuration adequate to pass safely the peak flow of surface runoff from a 2-year, 6-hour precipitation event for a temporary diversion and a 10-year, 6-hour precipitation event for a permanent diversion. You must use the appropriate regional Natural Resources Conservation Service synthetic storm distribution to determine peak flows.

(iii) Prevent, to the extent possible using the best technology currently available, additional contributions of suspended solids to streamflow or runoff outside the permit area.

(iv) Comply with all applicable federal, state, and local laws and regulations.

(6)(i) You must remove temporary diversions promptly when they are no longer needed to achieve the purpose for which they were authorized.

(ii) You must restore the land disturbed by the removal process in accordance with this part.

(iii) Before temporary diversions are removed, you must modify or remove downstream water-treatment facilities previously protected by the diversion when necessary to prevent overtopping or failure of the facilities. You must continue to maintain water-treatment facilities until they are no longer needed.

(7) The regulatory authority may specify additional design criteria for diversions to meet the requirements of this section.

(b) *Diversion of perennial and intermittent streams.* Sections 784.28

and 817.57 of this chapter contain additional requirements applicable to diversions of perennial and intermittent streams.

(c) *Diversion of miscellaneous flows.* (1) Miscellaneous flows, which consist of all surface-water flows except perennial and intermittent streams, may be diverted away from disturbed areas if required or approved by the regulatory authority.

(2) The design, location, construction, maintenance, and removal of diversions of miscellaneous flows must meet the requirements of paragraph (a) of this section.

§ 817.44 What restrictions apply to gravity discharges from underground mines?

(a)(1) You must locate and manage surface entries and accesses to underground workings to prevent or control gravity discharge of water from the mine.

(2) The regulatory authority may approve gravity discharges of water from an underground mine, other than a drift mine subject to paragraph (b) of this section, if you—

(i) Demonstrate that the untreated or treated discharge will comply with the performance standards of this part and any additional National Pollutant Discharge Elimination System permit requirements under the Clean Water Act.

(ii) Design the discharge control structure to prevent a mine pool blowout.

(3) You must construct and maintain the discharge control structure in accordance with the design approved by the regulatory authority and any other conditions imposed by the regulatory authority.

(b) Notwithstanding anything to the contrary in paragraph (a) of this section, you must locate the surface entries and accesses of drift mines first used after the implementation of a state, federal, or federal lands program under this chapter and located in acid-producing or iron-producing coal seams in such a manner as to prevent any gravity discharge from the mine.

§ 817.45 What sediment control measures must I implement?

(a) You must design, construct, and maintain appropriate sediment control measures, using the best technology currently available to—

(1) Prevent, to the extent possible, additional contributions of sediment to streamflow or to runoff outside the permit area.

(2) Meet the more stringent of the applicable effluent limitations referenced in § 817.42(a) of this part.

(3) Minimize erosion to the extent possible.

(b) Sediment control measures include practices carried out within and adjacent to the disturbed area. Sediment control measures consist of the use of proper mining and reclamation methods and sediment control practices, singly or in combination. Sediment control methods include but are not limited to—

(1) Disturbing the smallest practicable area at any one time during the mining operation through progressive backfilling, grading, and prompt revegetation.

(2) Shaping and stabilizing the backfilled material to promote a reduction in the rate and volume of runoff.

(3) Retaining sediment within disturbed areas.

(4) Diverting runoff away from disturbed areas.

(5) Diverting runoff using protected channels or pipes through disturbed areas so as not to cause additional erosion.

(6) Using straw dikes, riprap, check dams, mulches, vegetative sediment filters, dugout ponds, and other measures that reduce overland flow velocity, reduce runoff volume, or trap sediment.

(7) Treating with chemicals.

(8) Treating mine drainage in underground sumps.

§ 817.46 What requirements apply to siltation structures?

(a) *Scope.* For the purpose of this section only, *disturbed areas* do not include those areas—

(1) In which the only underground mining activities conducted on the land surface consist of diversions, siltation structures, or roads that are designed, constructed, and maintained in accordance with this part; and

(2) For which you do not plan to otherwise disturb the land surface upgradient of the diversion, siltation structure, or road.

(b) *General requirements.* (1) When siltation structures will be used to achieve the requirements of § 817.45 of this part, you must construct those structures before beginning any underground mining activities that will disturb the land surface.

(2) Upon completion of construction of a siltation structure, a qualified registered professional engineer, or, in any state that authorizes land surveyors to prepare and certify plans in accordance with § 784.25(a) of this chapter, a qualified registered professional land surveyor, must certify that the structure has been constructed as designed and as approved in the reclamation plan in the permit.

(3) Any siltation structure that impounds water must be designed, constructed and maintained in accordance with § 817.49 of this chapter.

(4) You must maintain siltation structures until removal is authorized by the regulatory authority and the disturbed area has been stabilized and revegetated.

(5)(i) When a siltation structure is removed, you must regrade the land upon which the structure was located and revegetate the land in accordance with the reclamation plan and §§ 817.111 and 817.116 of this chapter.

(ii) Paragraph (b)(5)(i) of this section does not apply to sedimentation ponds approved by the regulatory authority for retention as permanent impoundments under § 817.49(b) of this part if the maintenance requirements of § 800.42(c)(5) of this chapter are met.

(c) *Sedimentation ponds.* (1) When used, sedimentation ponds must—

(i) Be located as near as possible to the disturbed area and out of perennial or intermittent stream channels unless approved by the regulatory authority in the permit in accordance with §§ 784.28 and 817.57(c) of this chapter.

(ii) Be designed, constructed, and maintained to—

(A) Provide adequate sediment storage volume.

(B) Provide adequate detention time to allow the effluent from the ponds to meet applicable effluent limitations.

(C) Contain or treat the 10-year, 24-hour precipitation event (''design event'') unless a lesser design event is approved by the regulatory authority based on terrain, climate, other site-specific conditions, and a demonstration that the effluent limitations referenced in § 817.42 of this part will be met.

(D) Provide a nonclogging dewatering device adequate to maintain the detention time required under paragraph (c)(1)(ii)(B) of this section.

(E) Minimize short circuiting to the extent possible.

(F) Provide periodic sediment removal sufficient to maintain adequate volume for the design event.

(G) Ensure against excessive settlement.

(H) Be free of sod, large roots, frozen soil, and acid-forming or toxic-forming materials.

(I) Be compacted properly.

(2) *Spillways.* A sedimentation pond must include either a combination of principal and emergency spillways or a single spillway configured as specified in § 817.49(a)(9) of this part.

(d) *Other treatment facilities.* (1) You must design other treatment facilities to treat the 10-year, 24-hour precipitation event unless the regulatory authority approves a lesser design event based upon terrain, climate, other site-specific conditions, and a demonstration that the effluent limitations referenced in § 817.42 of this part will be met.

(2) You must design other treatment facilities in accordance with the applicable requirements of paragraph (c) of this section.

(e) *Exemptions.* The regulatory authority may grant an exemption from the requirements of this section if—

(1) The disturbed drainage area within the total disturbed area is small; and

(2) You demonstrate that siltation structures and alternate sediment control measures are not necessary for drainage from the disturbed drainage area to meet the effluent limitations referenced in § 817.42 of this part and the applicable water quality standards for the receiving waters.

§ 817.47 What requirements apply to discharge structures for impoundments?

Discharges from sedimentation ponds, permanent and temporary impoundments, coal mine waste impounding structures, and diversions must be controlled by energy dissipators, riprap channels, and other devices, when necessary to reduce erosion, to prevent deepening or enlargement of stream channels, or to minimize disturbance of the hydrologic balance. Discharge structures must be designed according to standard engineering design procedures.

§ 817.49 What requirements apply to impoundments?

(a) Requirements that apply to both permanent and temporary impoundments—(1) Impoundments with Significant Hazard Class or High Hazard Class dams. Impoundments meeting the criteria for Significant Hazard Class or High Hazard Class dams in ''Earth Dams and Reservoirs,'' Technical Release No. 60 (210–VI–TR60, July 2005), published by the U.S. Department of Agriculture, Natural Resources Conservation Service, must comply with the ''Minimum Emergency Spillway Hydrologic Criteria'' table in that publication and the requirements of this section. Technical Release No. 60 (TR–60) is hereby incorporated by reference. The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. You may review and download the incorporated document from the Natural Resources Conservation Service's Web site at *http://www.info.usda.gov/scripts/lpsiis.dll/TR/TR_210_60.htm.* A copy of this document is on file for public inspection and copying at the Administrative Record Room, Office of Surface Mining Reclamation and Enforcement, 1951 Constitution Avenue NW., Washington, DC 20240. For information on the availability of this document at OSMRE, call 202–208–2823. You also may inspect a copy of this document at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.*

(2) MSHA requirements. An impoundment meeting the criteria of § 77.216(a) of this title must comply with the requirements of § 77.216 of this title and this section.

(3) Design certification. As provided in § 784.25(a) of this chapter, a qualified registered professional engineer or a qualified registered professional land surveyor must certify that that the impoundment design meets the requirements of this part, current prudent engineering practices, and any design criteria established by the regulatory authority. The qualified registered professional engineer or qualified registered professional land surveyor must be experienced in the design and construction of impoundments.

(4) Stability. (i) An impoundment that meets the criteria for High Hazard Class or Significant Hazard Class dams in TR–60, or that meets the criteria of § 77.216(a) of this title, must have a minimum static safety factor of 1.5 for a normal pool with steady state seepage saturation conditions and a seismic safety factor of at least 1.2.

(ii) Impoundments not included in paragraph (a)(4)(i) of this section, except for a coal mine waste impounding structure, must have a minimum static safety factor of 1.3 for a normal pool with steady state seepage saturation conditions or meet the requirements of § 784.25(c)(3) of this chapter.

(5) Freeboard. Impoundments must have adequate freeboard to resist overtopping by waves and by sudden increases in storage volume. Impoundments that meet the criteria for High Hazard Class or Significant Hazard Class dams in TR–60 must comply with the freeboard hydrograph criteria in the ''Minimum Emergency Spillway Hydrologic Criteria'' table in TR–60.

(6) Foundation. (i) Foundations and abutments for an impounding structure must be stable during all phases of construction and operation and must be designed based on adequate and accurate information on the foundation conditions. If the impoundment meets the criteria for High Hazard Class or Significant Hazard Class dams in TR–60, or the criteria of § 77.216(a) of this title, you must conduct a foundation investigation, as well as any necessary laboratory testing of foundation material, to determine the design requirements for foundation stability.

(ii) You must remove all vegetative and organic materials from the foundation area and excavate and prepare the foundation area to resist failure. You must install cutoff trenches if necessary to ensure stability.

(7) Protection of impoundment slopes. You must take measures to protect impoundment slopes from surface erosion and the adverse impacts of a sudden drawdown.

(8) Protection of embankment faces. Faces of embankments and surrounding areas shall be vegetated, except that faces where water is impounded may be riprapped or otherwise stabilized in accordance with accepted design practices.

(9) Spillways. An impoundment must include either a combination of principal and emergency spillways or a single spillway configured as specified in paragraph (a)(9)(i) of this section, designed and constructed to safely pass the applicable design precipitation event specified in paragraph (a)(9)(ii) of this section, except as set forth in paragraph (c)(2) of this section.

(i) The regulatory authority may approve a single open-channel spillway that is:

(A) Of nonerodible construction and designed to carry sustained flows; or

(B) Earth- or grass-lined and designed to carry short-term, infrequent flows at non-erosive velocities where sustained flows are not expected.

(ii) Except as specified in paragraph (c)(2) of this section, the required design precipitation event for an impoundment meeting the spillway requirements of paragraph (a)(9) of this section is:

(A) For an impoundment that meets the criteria for High Hazard Class or Significant Hazard Class dams in TR–60, the emergency spillway hydrograph criteria in the ''Minimum Emergency Spillway Hydrologic Criteria'' table in TR–60, or any greater event specified by the regulatory authority.

(B) For an impoundment meeting or exceeding the criteria of § 77.216(a) of this title, the 100-year, 6-hour event, or any greater event specified by the regulatory authority.

(C) For an impoundment not included in paragraphs (a)(9)(ii) (A) and (B) of this section, the 25-year, 6-hour event,

or any greater event specified by the regulatory authority.

(10) Highwalls. The vertical portion of any highwall remnant within the impoundment must be located far enough below the low-water line along the full extent of the highwall to provide adequate safety and access for the proposed water users.

(11) Inspections. Except as provided in paragraph (a)(11)(iv) of this section, a qualified registered professional engineer or other qualified professional specialist under the direction of a professional engineer must inspect each impoundment as provided in paragraph (a)(11)(i) of this section. The professional engineer or specialist must be experienced in the construction of impoundments.

(i) Inspections must be made regularly during construction, upon completion of construction, and at least yearly until removal of the structure or release of the performance bond.

(ii) After each inspection required by paragraph (a)(11)(i) of this section, the qualified registered professional engineer, or qualified registered professional land surveyor as specified in paragraph (a)(11)(iv) of this section, must promptly provide to the regulatory authority a certified report that the impoundment has been constructed and/or maintained as designed and in accordance with the approved plan and this chapter. The report must include a discussion of any appearance of instability, any structural weakness or other hazardous condition, the depth and elevation of any impounded waters, the existing storage capacity, any existing or required monitoring procedures and instrumentation, and any other aspects of the structure affecting stability.

(iii) You must retain a copy of the report at or near the minesite.

(iv) In any state that authorizes land surveyors to prepare and certify plans in accordance with § 784.25(a) of this chapter, a qualified registered professional land surveyor may inspect any temporary or permanent impoundment that does not meet the criteria for High Hazard Class or Significant Hazard Class dams in TR–60, or that does not meet the criteria of § 77.216(a) of this title, and certify and submit the report required by paragraph (a)(11)(ii) of this section, except that a qualified registered professional engineer must certify all coal mine waste impounding structures covered by § 817.84 of this chapter. The professional land surveyor must be experienced in the construction of impoundments.

(12) Examinations. Impoundments that meet the criteria for High Hazard Class or Significant Hazard Class dams in TR–60, or that meet the criteria of § 77.216 of this title, must be examined in accordance with § 77.216–3 of this title. Impoundments that do not meet the criteria for High Hazard Class or Significant Hazard Class dams in TR–60, or that are not subject to § 77.216 of this title, must be examined at least quarterly. A qualified person designated by the operator must examine impoundments for the appearance of structural weakness and other hazardous conditions.

(13) Emergency procedures. If any examination or inspection discloses that a potential hazard exists, the person who examined the impoundment must promptly inform the regulatory authority of the finding and of the emergency procedures formulated for public protection and remedial action. The regulatory authority must be notified immediately if adequate procedures cannot be formulated or implemented. The regulatory authority then must notify the appropriate agencies that other emergency procedures are required to protect the public.

(b) Requirements that apply only to permanent impoundments. A permanent impoundment of water may be created if authorized by the regulatory authority in the approved permit based upon the following demonstration:

(1) The size and configuration of the impoundment will be adequate for its intended purposes.

(2) The quality of impounded water will be suitable on a permanent basis for its intended use and, after reclamation, will meet applicable state and federal water quality standards. Discharges from the impoundment will meet applicable effluent limitations and will not degrade the quality of receiving water below applicable state and federal water quality standards.

(3) The water level will be sufficiently stable and be capable of supporting the intended use.

(4) Final grading will provide for adequate safety and access for proposed water users.

(5) The impoundment will not result in the diminution of the quality and quantity of water used by surrounding landowners for agricultural, industrial, recreational, or domestic uses.

(6) The impoundment will be suitable for the approved postmining land use.

(7) Approval of the impoundment will not result in retention of spoil piles or ridges that are inconsistent with the definition of approximate original contour.

(8) Approval of the impoundment will not result in the creation of an excess spoil fill elsewhere within the permit area.

(9) The impoundment has been designed with dimensions and other characteristics that will enhance fish and wildlife habitat to the extent that doing so is not inconsistent with the intended use.

(c) *Requirements that apply only to temporary impoundments that rely primarily upon storage.* (1) In lieu of meeting the requirements in paragraph (a)(9)(i) of this section, the regulatory authority may approve an impoundment that relies primarily on storage to control the runoff from the design precipitation event when you demonstrate, and a qualified registered professional engineer or qualified registered professional land surveyor in accordance with § 784.25(a) of this chapter certifies, that the impoundment will safely control the design precipitation event.

(2) You must use current prudent engineering practices to safely remove the water from an impoundment constructed in accordance with paragraph (c)(1) of this section.

(3) An impoundment constructed in accordance with paragraph (c)(1) of this section must be located where failure would not be expected to cause loss of life or serious property damage, unless the impoundment meets one of the following exceptions:

(i) An impoundment that meets the criteria for High Hazard Class or Significant Hazard Class dams in TR–60, or that meets the criteria of § 77.216(a) of this title, and is designed to control the precipitation of the probable maximum precipitation of a 6-hour event, or any greater event specified by the regulatory authority.

(ii) An impoundment not included in paragraph (c)(3)(i) of this section that is designed to control the precipitation of the 100-year, 6-hour event, or any greater event specified by the regulatory authority.

§ 817.56 How must I rehabilitate sedimentation ponds, diversions, impoundments, and treatment facilities after I no longer need them?

Before abandoning a permit area or seeking bond release, you must ensure that all temporary structures are removed and reclaimed, and that all permanent sedimentation ponds, diversions, impoundments, and treatment facilities meet the requirements of this chapter for permanent structures, have been

maintained properly, and meet the requirements of the approved reclamation plan for permanent structures and impoundments. You must renovate these structures if necessary to meet the requirements of this chapter and to conform to the approved reclamation plan.

§ 817.57 What additional performance standards apply to surface activities conducted in, through, or adjacent to a perennial or intermittent stream?

(a)(1) *General prohibition.* (i) You, the permittee or operator, may not conduct underground mining activities in or through a perennial or intermittent stream, or that would disturb the surface of land within 100 feet of a perennial or intermittent stream, unless the regulatory authority authorizes you to do so in the permit after making the findings required under § 784.28 of this chapter. The 100-foot distance must be measured horizontally on a line perpendicular to the stream beginning at the bankfull elevation or, if there are no discernible banks, the centerline of the active channel.

(ii) The prohibition in paragraph (a)(1)(i) of this section applies only to activities conducted on the land surface. It does not apply to underground mining activities conducted beneath the land surface, including activities conducted beneath a perennial or intermittent stream.

(2) *Clean Water Act requirements.* You may conduct underground mining activities in waters of the United States only if you first obtain all necessary authorizations, certifications, and permits under the Clean Water Act, 33 U.S.C. 1251 *et seq.*

(b) *Requirements for mining through or diverting perennial or intermittent streams*—(1) *Compliance with permit.* If your permit authorizes you to mine through or divert a perennial or intermittent stream, you must comply with the designs and construction and maintenance plans approved in the permit.

(2) *Restoration of form and function.* You must restore the form and ecological function of the stream segment as expeditiously as practicable. You must do so either as part of the construction of a permanent stream-channel diversion or as part of the construction of a restored stream channel when the area in which the stream was located before mining is no longer needed for surface mining activities.

(i) *Form.* A restored stream channel or a stream-channel diversion need not exactly replicate the channel morphology that existed before mining, but, except as provided in paragraph (b)(4) of this section, it must have a channel morphology comparable to the premining form of the affected stream segment in terms of baseline stream pattern, profile, and dimensions, including channel slope, sinuosity, water depth, bankfull depth, bankfull width, width of the flood-prone area, and dominant in-stream substrate.

(ii) *Function.* (A) A stream flowing through a restored stream channel or a stream-channel diversion must meet the functional restoration criteria established by the regulatory authority under § 784.28(e)(1) of this chapter.

(B) The restored stream need not have precisely the same biological condition or biota as the stream segment did before mining, but the biological condition of the restored stream must be adequate to support the uses of that stream segment that existed before mining and it must not preclude attainment of the premining designated uses of that stream segment under section 101(a) or 303(c) of the Clean Water Act before mining.

(C) The biological condition of the restored stream must be determined using a protocol that meets the requirements of § 784.19(e)(2) of this chapter.

(D) Populations of organisms used to determine the biological condition must be self-sustaining within the restored stream segment.

(iii) *Bond and bond release requirements.* (A) The performance bond calculations for the operation must include a specific line item for restoration of the ecological function of the stream segment, as provided in § 800.14(b)(2) of this chapter.

(B) You must post a surety bond, a collateral bond, or a combination of surety and collateral bonds to cover the cost of restoration of the ecological function of the stream segment.

(C) You must demonstrate full restoration of the physical form of the stream segment before you can qualify for Phase I bond release under § 800.42(b)(1) of this chapter.

(D) You must demonstrate full restoration of the ecological function of the stream segment before you can qualify for final bond release under § 800.42(d) of this chapter.

(3) *Certification.* Upon completion of construction of a stream-channel diversion or a restored stream channel, you must obtain a certification from a qualified registered professional engineer that the stream-channel diversion or restored stream channel has been constructed in accordance with the design approved in the permit and meets all requirements of this section other than the functional restoration requirements of paragraph (b)(2)(ii) of this section.

(4) *Special provision for restoration of degraded stream segments.* If the stream segment to be mined through or diverted is in a degraded condition before mining, you must implement measures to enhance the form and ecological function of the segment as part of the restoration or diversion process.

(c) *Prohibition on placement of sedimentation control structures in streams.* (1) Except as provided in paragraph (c)(2) of this section, you may not construct a sedimentation pond in a perennial or intermittent stream or use perennial or intermittent streams as waste treatment systems to convey surface runoff from the disturbed area to a sedimentation pond.

(2) The prohibition in paragraph (c)(1) of this section does not apply to excess spoil fills or coal mine waste disposal facilities in steep-slope areas when use of a perennial or intermittent stream segment as a waste treatment system for sediment control or construction of a sedimentation pond in a perennial or intermittent stream would have less overall adverse impact on fish, wildlife, and related environmental values than construction of diversions and sedimentation ponds on slopes above the stream.

(3) When the circumstances described in paragraph (c)(2) of this situation exist, the following requirements apply:

(i) You must minimize the length of the stream segment used as a waste treatment system to the extent possible and, when practicable, maintain an undisturbed buffer along that segment in accordance with paragraph (a)(1) of this section.

(ii) You must place the sedimentation pond as close to the toe of the excess spoil fill or coal mine waste disposal structure as possible.

(iii) Following the completion of construction and revegetation of the fill or coal mine waste disposal structure, you must remove the sedimentation pond and restore the stream segment in accordance with paragraph (b)(2) of this section.

§ 817.59 How must I maximize coal recovery?

You must conduct underground mining activities so as to maximize the utilization and conservation of the coal, while using the best appropriate technology currently available to maintain environmental integrity, so that reaffecting the land in the future through surface coal mining operations is minimized.

§ 817.61 Use of explosives: General requirements.

(a) Applicability. Sections 817.61 through 817.68 apply to surface blasting activities incident to underground coal mining, including, but not limited to, initial rounds of slopes and shafts.

(b) Compliance with other laws and regulations. You must comply with all applicable state and federal laws and regulations governing the use of explosives.

(c) Requirements for blasters. (1) No later than 12 months after the blaster certification program for a state required by part 850 of this chapter has been approved under the procedures of subchapter C of this chapter, all blasting operations in that state must be conducted under the direction of a certified blaster. Before that time, all blasting operations in that state must be conducted by competent, experienced persons who understand the hazards involved.

(2) Certificates of blaster certification must be carried by blasters or be on file at the permit area during blasting operations.

(3) A blaster and at least one other person shall be present at the firing of a blast.

(4) Any blaster who is responsible for conducting blasting operations at a blasting site must:

(i) Be familiar with the site-specific performance standards; and

(ii) Give direction and on-the-job training to persons who are not certified and who are assigned to the blasting crew or who assist in the use of explosives.

(d) Blast design. (1) You must submit an anticipated blast design if blasting operations will be conducted within—

(i) 1,000 feet of any building used as a dwelling, public building, school, church, or community or institutional building outside the permit area; or

(ii) 500 feet of an active or abandoned underground mine.

(2) The blast design may be submitted as part of a permit application or, if approved by the regulatory authority, at a later date, provided that the design is submitted and approved before blasting begins.

(3) The blast design must contain—

(i) Sketches of the drill patterns, delay periods, and decking.

(ii) The type and amount of explosives to be used.

(iii) Critical dimensions.

(iv) The location and general description of structures to be protected.

(v) A discussion of design factors to be used to protect the public and meet the applicable airblast, flyrock, and ground-vibration standards in § 817.67 of this part.

(4) A certified blaster must prepare and sign the blast design.

(5) The regulatory authority may require changes to the design submitted.

§ 817.62 Use of explosives: Preblasting survey.

(a) At least 30 days before initiation of blasting, you must notify, in writing, all residents or owners of dwellings or other structures located within ½ mile of the permit area how to request a preblasting survey.

(b)(1) A resident or owner of a dwelling or structure within ½ mile of any part of the permit area may request a preblasting survey. This request must be made, in writing, directly to you or to the regulatory authority. If the request is made to the regulatory authority, the regulatory authority will promptly notify you.

(2) You must promptly conduct a preblasting survey of the dwelling or structure and promptly prepare a written report of the survey.

(3) You must conduct an updated survey of any subsequent additions, modifications, or renovations to the dwelling or structure, if requested by the resident or owner.

(c) You must determine the condition of the dwelling or structure and document any preblasting damage and other physical factors that could reasonably be affected by the blasting. Structures such as pipelines, cables, transmission lines, and cisterns, wells, and other water systems warrant special attention; however, the assessment of these structures may be limited to surface conditions and other readily available data.

(d)(1) The person who conducted the survey must sign the written report of the survey.

(2) You must promptly provide copies of the report to the regulatory authority and to the person requesting the survey.

(3) If the person requesting the survey disagrees with the contents or recommendations of the survey, he or she may submit a detailed description of the specific areas of disagreement to both you and the regulatory authority.

(e) You must complete any surveys requested more than 10 days before the planned initiation of blasting before the initiation of blasting.

§ 817.64 Use of explosives: General performance standards.

(a)(1) You must notify, in writing, residents within ½ mile of the blasting site and local governments of the proposed times and locations of blasting operations.

(2) You may provide this notice weekly, but in no case less than 24 hours before blasting will occur.

(b) You must conduct all blasting between sunrise and sunset, unless the regulatory authority approves night-time blasting based upon a showing that the public will be protected from adverse noise and other impacts. The regulatory authority may specify more restrictive time periods for blasting.

(c)(1) You may conduct unscheduled blasts only where public or operator health and safety so require and for emergency blasting actions.

(2) When you conduct an unscheduled blast, you must use audible signals to notify residents within ½ mile of the blasting site.

(3) You must document the reason for the unscheduled blast in accordance with § 817.68(c)(16) of this part.

§ 817.66 Use of explosives: Blasting signs, warnings, and access control.

(a) Blasting signs. Blasting signs must meet the specifications of § 817.11 of this part.

(1) You must place conspicuous signs reading ''Blasting Area'' along the edge of any blasting area that comes within 100 feet of any public road right-of-way and at the point where any other road provides access to the blasting area.

(2) You must place conspicuous signs reading ''Warning! Explosives in Use'' at all entrances to the permit area from public roads or highways. The signs must clearly list and describe the meaning of the audible blast warning and all-clear signals that are in use and explain the marking of blasting areas and charged holes awaiting firing within the permit area.

(b) Warnings. You must give blast warning and all-clear signals of different character or pattern that are audible within a range of ½ mile from the point of the blast. You must notify each person within the permit area and each person who resides or regularly works within ½ mile of the permit area of the meaning of the signals in the blasting notification required in § 817.64(a) of this part.

(c) Access control. You must control access within the blasting area to prevent presence of livestock or unauthorized persons during blasting and until your authorized representative has reasonably determined that—

(1) No unusual hazards, such as imminent slides or undetonated charges, exist; and

(2) Access to and travel within the blasting area can be safely resumed.

§ 817.67 Use of explosives: Control of adverse effects.

(a) General requirements. You must conduct blasting in a manner that prevents—

(1) Injury to persons;

(2) Damage to public or private property outside the permit area;

(3) Adverse impacts on any underground mine; or

(4) Change in the course, channel, or availability of surface water or groundwater outside the permit area.

(b) Airblast—(1) Limits. (i) Airblast must not exceed the maximum limits listed below at the location of any dwelling, public building, school, church, or community or institutional building outside the permit area, except as provided in paragraph (e) of this section.

Lower frequency limit of measuring system, in Hz (±3 dB)
0.1 Hz or lower—flat response[1]
2 Hz or lower—flat response
6 Hz or lower—flat response
C-weighted—slow response[1]

[1] Only when approved by the regulatory authority.

(ii) If necessary to prevent damage, the regulatory authority must specify lower maximum allowable airblast levels than those of paragraph (b)(1)(i) of this section for use in the vicinity of a specific blasting operation.

(2) Monitoring. (i) You must conduct periodic monitoring to ensure compliance with the airblast standards. The regulatory authority may require airblast measurement of any or all blasts and may specify the locations at which measurements are taken.

(ii) The measuring systems must have an upper-end flat-frequency response of at least 200 Hz.

(c) Flyrock. Flyrock travelling in the air or along the ground must not be cast from the blasting site—

(1) More than one-half the distance to the nearest dwelling or other occupied structure;

(2) Beyond the area of control required under § 817.66(c) of this part; or

(3) Beyond the permit boundary.

(d) Ground vibration—(1) General. (i) In all blasting operations, except as otherwise authorized in paragraph (e) of this section, the maximum ground vibration must not exceed the values approved in the blasting plan required under § 784.15 of this chapter.

(ii) The maximum ground vibration for protected structures listed in paragraph (d)(2)(i) of this section must be established in accordance with either the maximum peak-particle-velocity limits of paragraph (d)(2) of this section, the scaled-distance equation of paragraph (d)(3) of this section, the blasting-level chart of paragraph (d)(4) of this section, or by the regulatory authority under paragraph (d)(5) of this section.

(iii) All structures in the vicinity of the blasting area not listed in paragraph (d)(2)(i) of this section, such as water towers, pipelines and other utilities, tunnels, dams, impoundments, and underground mines, must be protected from damage by establishment of a maximum allowable limit on the ground vibration, submitted by the operator in the blasting plan and approved by the regulatory authority.

(2) Maximum peak particle velocity. (i) The maximum ground vibration must not exceed the following limits at the location of any dwelling, public building, school, church, or community or institutional building outside the permit area:

Distance (*D*), from the blasting site, in feet	Maximum allowable peak particle velocity (*V* max) for ground vibration, in inches/second[1]	Scaled-distance factor to be applied without seismic monitoring[2] (*Ds*)
0 to 300	1.25	50
301 to 5,000	1.00	55
5,001 and beyond	0.75	65

[1] Ground vibration must be measured as the particle velocity. Particle velocity must be recorded in three mutually perpendicular directions. The maximum allowable peak particle velocity applies to each of the three measurements.

[2] Applicable to the scaled-distance equation of paragraph (d)(3)(i) of this section.

(ii) You must provide a seismographic record for each blast.

(3) Scaled-distance equation. (i) You may use the scaled-distance equation, W = (D/Ds)2, to determine the allowable charge weight of explosives to be detonated in any 8-millisecond period, without seismic monitoring, where W = the maximum weight of explosives, in pounds; D = the distance, in feet, from the blasting site to the nearest protected structure; and Ds = the scaled-distance factor. The regulatory authority may initially approve the scaled-distance equation using the values for the scaled-distance factor listed in paragraph (d)(2)(i) of this section.

(ii) The regulatory authority may authorize development of a modified scaled-distance factor upon receipt of a written request by the operator, supported by seismographic records of blasting at the minesite. The modified scale-distance factor must be determined such that the particle velocity of the predicted ground vibration will not exceed the prescribed maximum allowable peak particle velocity of paragraph (d)(2)(i) of this section at a 95-percent confidence level.

(4) Blasting-level chart. (i) You may use the ground-vibration limits in Figure 1 to determine the maximum allowable ground vibration.

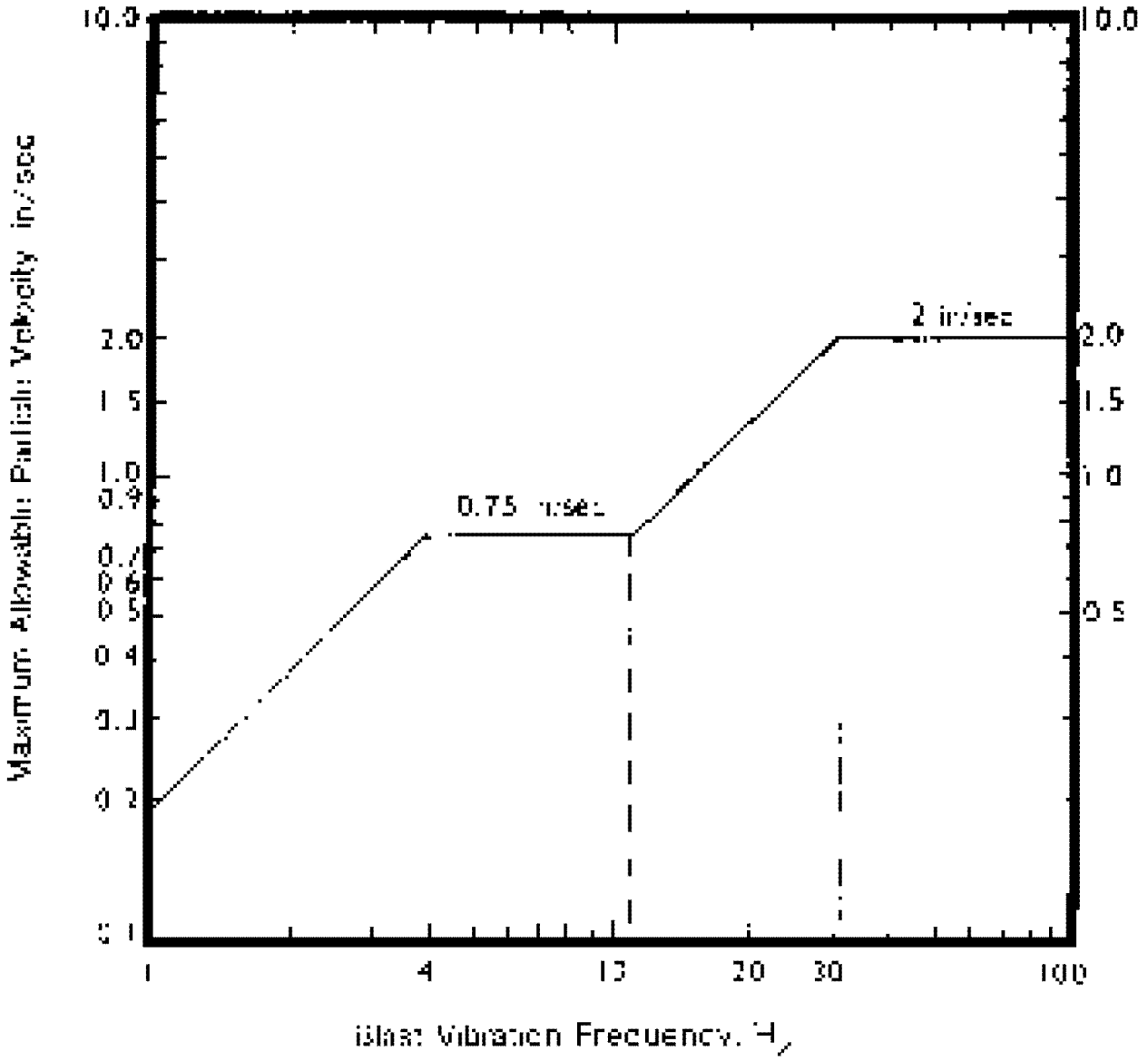

Figure 1. Alternative blasting level criteria

Source: Modified from figure B-1, Bureau of Mines RI 8507.

(ii) If the Figure 1 limits are used, you must provide a seismographic record including both particle velocity and vibration-frequency levels for each blast. The regulatory authority must approve the method for the analysis of the predominant frequency contained in the blasting records before application of this alternative blasting criterion.

(5) The regulatory authority must reduce the maximum allowable ground vibration beyond the limits otherwise provided by this section, if determined necessary to provide damage protection.

(6) The regulatory authority may require that you conduct seismic monitoring of any or all blasts or may specify the location at which the measurements are taken and the degree of detail necessary in the measurement.

(e) The maximum airblast and ground-vibration standards of paragraphs (b) and (d) of this section do not apply at the following locations:

(1) At structures owned by the permittee and not leased to another person.

(2) At structures owned by the permittee and leased to another person, if a written waiver by the lessee is submitted to the regulatory authority before blasting.

§ 817.68 Use of explosives: Records of blasting operations.

(*a*) You must retain a record of all blasts for at least 3 years.

(b) Upon request, you must make copies of these records available to the regulatory authority and to the public for inspection.

(c) The records must contain the following data:

(1) Name of the operator conducting the blast.

(2) Location, date, and time of the blast.

(3) Name, signature, and certification number of the blaster conducting the blast.

(4) Identification, direction, and distance, in feet, from the nearest blast hole to the nearest dwelling, public building, school, church, community or institutional building outside the permit

area, except those described in § 817.67(e) of this part.

(5) Weather conditions, including those which may cause possible adverse blasting effects.

(6) Type of material blasted.

(7) Sketches of the blast pattern, including number of holes, burden, spacing, decks, and delay pattern.

(8) Diameter and depth of holes.

(9) Types of explosives used.

(10) Total weight of explosives used per hole.

(11) The maximum weight of explosives detonated in an 8-millisecond period.

(12) Initiation system.

(13) Type and length of stemming.

(14) Mats or other protections used.

(15) Seismographic and airblast records, if required, which must include—

(i) Type of instrument, sensitivity, and calibration signal or certification of annual calibration;

(ii) Exact location of instrument and the date, time, and distance from the blast;

(iii) Name of the person and firm taking the reading;

(iv) Name of the person and firm analyzing the seismographic record; and

(v) The vibration and/or airblast level recorded.

(16) Reasons and conditions for each unscheduled blast.

§ 817.71 How must I dispose of excess spoil?

(a) *General requirements.* You, the permittee or operator, must mechanically transport and place excess spoil in designated disposal areas, including approved valley fills and other types of approved fills, within the permit area in a controlled manner in compliance with the requirements of this section. In general, you must place excess spoil in a manner that will—

(1) Minimize the adverse effects of leachate and surface water runoff from the fill on surface water, groundwater, and the biological condition of perennial and intermittent streams within the permit and adjacent areas.

(2) Ensure mass stability and prevent mass movement during and after construction.

(3) Ensure that the final surface configuration of the fill is suitable for revegetation and the approved postmining land use or uses and is compatible with the natural drainage pattern and surroundings.

(4) Minimize disturbances to, and adverse impacts on, fish, wildlife, and related environmental values to the extent possible, using the best technology currently available.

(5) Ensure that the fill will not change the size or frequency of peak flows from precipitation events or thaws in a way that would result in an increase in damage from flooding when compared with the impacts of premining peak flows.

(6) Ensure that the fill will not preclude any existing or reasonably foreseeable use of surface water or groundwater or, for surface water downstream of the fill, preclude attainment of any designated use under section 101(a) or 303(c) of the Clean Water Act.

(7) Ensure that the fill will not cause or contribute to an exceedance of any applicable water quality standards.

(b) *Stability requirements.* (1) *Static safety factor.* You must design and construct the fill to attain a minimum long-term static safety factor of 1.5. The foundation and abutments of the fill must be stable under all conditions of construction.

(2) *Special requirement for steep-slope conditions.* Where the slope in the disposal area exceeds 2.8h:1v (36 percent), or any lesser slope designated by the regulatory authority based on local conditions, you must construct bench cuts (excavations into stable bedrock) or rock-toe buttresses to ensure fill stability.

(c) *Compliance with permit.* You must construct the fill in accordance with the design and plans approved in the permit in accordance with § 784.35 of this chapter.

(d) *Requirements for handling of organic matter and soil materials.* You must remove all vegetation, other organic matter, and soil materials from the disposal area prior to placement of the excess spoil. You must store, redistribute, or otherwise use those materials in accordance with § 817.22 of this part. You may use soil substitutes and supplements if approved in the permit in accordance with § 784.12(e) of this chapter.

(e) *Surface runoff control requirements.* (1) You must direct surface runoff from areas above the fill and runoff from the surface of the fill into stabilized channels designed to—

(i) Meet the requirements of § 817.43 of this part; and

(ii) Safely pass the runoff from a 100-year, 6-hour precipitation event. You must use the appropriate regional Natural Resources Conservation Service synthetic storm distribution to determine the peak flow from surface runoff from this event.

(2) You must grade the top surface of a completed fill such that the final slope after settlement will be toward properly designed drainage channels. You may not direct uncontrolled surface runoff over the outslope of the fill.

(f) *Control of water within the footprint of the fill.* (1) General requirements. If the disposal area contains springs, natural or manmade water courses, or wet weather seeps, you must design and construct underdrains and temporary diversions as necessary to control erosion, prevent water infiltration into the fill, and ensure stability.

(2) *Temporary diversions.* Temporary diversions must comply with the requirements of § 817.43 of this part.

(3) *Underdrains.* (i) You must construct underdrains that are comprised of hard rock that is resistant to weathering.

(ii) You must design and construct underdrains using current, prudent engineering practices and any design criteria established by the regulatory authority.

(iii) In constructing rock underdrains, you may use only hard rock that is resistant to weathering, such as well-cemented sandstone and massive limestone, and that is not acid-forming or toxic-forming. The underdrain must be free of soil and fine-grained, clastic rocks such as siltstone, shale, mudstone, and claystone. All rock used to construct underdrains must meet the criteria in the following table:

Test	ASTM standard	AASHTO standard	Acceptable results
Los Angeles Abrasion	C 131 or C 535	T 96	Loss of no more than 50 percent of test sample by weight.
Sulfate Soundness	C 88 or C 5240	T 104	Sodium sulfate test: Loss of no more than 12 percent of test sample by weight. Magnesium sulfate test: Loss of no more than 18 percent of test sample by weight.

(iv) The underdrain system must be designed and constructed to carry the maximum anticipated infiltration of water due to precipitation, snowmelt, and water from seeps and springs in the foundation of the disposal area away from the excess spoil fill.

(v) To provide a safety factor against future changes in local surface-water and groundwater hydrology, perforated pipe may be embedded within the rock underdrain to enhance the underdrain capacity to carry water in excess of the anticipated maximum infiltration away from the excess spoil fill. The pipe must be manufactured of materials that are not susceptible to corrosion and must be demonstrated to be suitable for the deep burial conditions commonly associated with excess spoil fill underdrains.

(vi) The underdrain system must be protected from material piping, clogging, and contamination by an adequate filter system designed and constructed using current, prudent engineering practices to ensure the long-term functioning of the underdrain system.

(g) *Placement of excess spoil.* (1) Using mechanized equipment, you must transport and place excess spoil in a controlled manner in horizontal lifts not exceeding 4 feet in thickness; concurrently compacted as necessary to ensure mass stability and to prevent mass movement during and after construction; and graded so that surface and subsurface drainage is compatible with the natural surroundings.

(2) You may not use any excess spoil transport and placement technique that involves end-dumping, wing-dumping, cast-blasting, gravity placement, or casting spoil downslope.

(3) *Acid-forming, toxic-forming, and combustible materials.* (i) You must handle acid-forming and toxic-forming materials in accordance with § 817.38 of this part and in a manner that will minimize adverse effects on plant growth and the approved postmining land use.

(ii) You must cover combustible materials with noncombustible materials in a manner that will prevent sustained combustion and minimize adverse effects on plant growth and the approved postmining land use.

(h) *Final configuration.* (1) The final configuration of the fill must be suitable for the approved postmining land use, compatible with the natural drainage pattern and the surrounding terrain, and, to the extent practicable, consistent with natural landforms.

(2) You may construct terraces on the outslope of the fill if required for stability, to control erosion, to conserve soil moisture, or to facilitate the approved postmining land use. The grade of the outslope between terrace benches may not be steeper than 2h: 1v (50 percent).

(3)(i) You must configure the top surface of the fill to create a topography that includes ridgelines and valleys with varied hillslope configurations when practicable, compatible with stability and postmining land use considerations, and generally consistent with the premining topography.

(ii) The final surface elevation of the fill may exceed the elevation of the surrounding terrain when necessary to minimize placement of excess spoil in perennial and intermittent streams, provided the final configuration complies with the requirements of paragraphs (a)(3) and (h)(1) of this section.

(iii) The geomorphic reclamation requirements of paragraph (h)(3)(i) of this section do not apply in situations in which they would result in burial of a greater length of perennial or intermittent streams than traditional fill design and construction techniques.

(i) *Impoundments and depressions.* No permanent impoundments are allowed on the completed fill. You may construct small depressions if they—

(1) Are needed to retain moisture, minimize erosion, create or enhance wildlife habitat, or assist revegetation;

(2) Are not incompatible with the stability of the fill;

(3) Are consistent with the hydrologic reclamation plan approved in the permit in accordance with § 784.22 of this chapter;

(4) Will not result in elevated levels of parameters of concern in discharges from the fill; and

(5) Are approved by the regulatory authority.

(j) *Surface area stabilization.* You must provide slope protection to minimize surface erosion at the site. You must revegetate all disturbed areas, including diversion channels that are not riprapped or otherwise protected, upon completion of construction.

(k) *Inspections and examinations.* A qualified registered professional engineer, or other qualified professional specialist under the direction of the professional engineer, must inspect the fill during construction. The professional engineer or specialist must be experienced in the construction of earth and rock fills.

(1) Complete inspections that include the entire fill must be made at least quarterly throughout construction, with additional complete inspections conducted during critical construction periods. Critical construction periods include, at a minimum—

(i) Foundation preparation, including the removal of all organic matter and soil materials.

(ii) Placement of underdrains and protective filter systems.

(iii) Installation of final surface drainage systems.

(iv) Final grading and revegetation of the fill.

(2) The engineer or specialist also must—

(i) Conduct daily examinations during placement and compaction of fill materials.

(ii) Maintain a log recording the daily examinations for each fill. The log must include a description of the specific work locations, excess spoil placement methods, compaction adequacy, lift thickness, suitability of fill material, special handling of acid-forming and toxic-forming materials, deviations from the approved permit, and remedial measures taken.

(3) The qualified registered professional engineer must provide a certified report to the regulatory authority promptly after each complete inspection conducted under paragraph (k)(1) of this section. The report must—

(i) Certify that the fill has been constructed and maintained as designed and in accordance with the approved plan and this chapter.

(ii) Identify and discuss any evidence of instability, structural weakness, or other hazardous conditions. If one of more of those conditions exists, you must submit an application for a permit revision that includes appropriate remedial design specifications.

(iii) Include a review and summary of the logs maintained under paragraph (k)(2)(ii) of this section.

(4)(i) The certified report on the drainage system and protective filters must include color photographs taken during and after construction, but before underdrains are covered with excess spoil. If the underdrain system is constructed in phases, each phase must be certified separately.

(ii) The photographs accompanying each certified report must be taken in adequate size and number with enough terrain or other physical features of the site shown to provide a relative scale to the photographs and to specifically and clearly identify the site.

(5) You must retain a copy of each complete inspection report at or near the mine site.

(l) *Coal mine waste.* You may dispose of coal mine waste in excess spoil fills only if approved by the regulatory authority and only if—

(1) You demonstrate, and the regulatory authority finds in writing, that there is no credible evidence that

the disposal of coal mine waste in the excess spoil fill will cause or contribute to a violation of applicable water quality standards or effluent limitations or result in material damage to the hydrologic balance outside the permit area.

(2) The waste is placed in accordance with §§ 817.81 and 817.83 of this part.

(3) The waste is nontoxic-forming, nonacid-forming, and non-combustible.

(4) The waste is of the proper characteristics to be consistent with the design stability of the fill.

(m) *Underground disposal.* You may dispose of excess spoil in underground mine workings only in accordance with a plan approved by the regulatory authority and the Mine Safety and Health Administration under § 784.26 of this chapter.

§ 817.72 [Reserved]

§ 817.73 [Reserved]

§ 817.74 What special provisions apply to disposal of excess spoil on a preexisting bench?

(a) General requirements. The regulatory authority may approve the disposal of excess spoil through placement on a preexisting bench on a previously mined area or a bond forfeiture site if—

(1) The proposed permit area includes the portion of the preexisting bench on which the spoil will be placed;

(2) The proposed operation will comply with the applicable requirements of § 817.102 of this part; and

(3) The requirements of this section are met.

(b) *Requirements for removal and disposition of vegetation, other organic matter, and soil materials.* You must remove all vegetation, other organic matter, topsoil, and subsoil from the disposal area prior to placement of the excess spoil and store, redistribute, or otherwise use those materials in accordance with § 817.22 of this part. You may use soil substitutes and supplements if approved in the permit in accordance with § 784.12(e) of this chapter.

(c)(1) The fill must be designed and constructed using current, prudent engineering practices.

(2) The design must be certified by a registered professional engineer.

(3) If the disposal area contains springs, natural or manmade water courses, or wet weather seeps, the fill design must include underdrains and temporary diversions as necessary to control erosion, prevent water infiltration into the fill, and ensure stability. Underdrains must comply with the requirements of § 817.71(f)(3) of this part.

(d)(1) The spoil must be placed on the solid portion of the bench in a controlled manner and concurrently compacted as necessary to attain a long-term static safety factor of 1.3 for all portions of the fill.

(2) Any spoil deposited on any fill portion of the bench must be treated as an excess spoil fill under § 817.71 of this part.

(e) You must grade the spoil placed on the preexisting bench to—

(1) Achieve a stable slope that does not exceed the angle of repose.

(2) Eliminate the preexisting highwall to the maximum extent technically practical, using all reasonably available spoil, as that term is defined in § 701.5 of this chapter.

(3) Minimize erosion and water pollution both on and off the site.

(f) All disturbed areas, including diversion channels that are not riprapped or otherwise protected, must be revegetated upon completion of construction.

(g) You may not construct permanent impoundments on preexisting benches on which excess spoil is placed under this section.

(h) The final configuration of the fill on the preexisting bench must—

(1) Be compatible with natural drainage patterns and the surrounding area.

(2) Support the approved postmining land use.

§ 817.81 How must I dispose of coal mine waste?

(a) *General requirements.* If you, the permittee, intend to dispose of coal mine waste in an area other than the mine workings or excavations, you must place the waste in new or existing disposal areas within a permit area in accordance with this section and, as applicable, §§ 817.83 and 817.84 of this part.

(b) *Basic performance standards.* You must haul or convey and place the coal mine waste in a controlled manner to—

(1) Minimize the adverse effects of leachate and surface-water runoff on the quality and quantity of surface water and groundwater and on the biological condition of perennial and intermittent streams within the permit and adjacent areas to the extent possible, using the best technology currently available.

(2) Ensure mass stability and prevent mass movement during and after construction.

(3) Ensure that the final disposal facility is suitable for revegetation, compatible with the natural surroundings, and consistent with the approved postmining land use.

(4) Not create a public hazard.

(5) Prevent combustion.

(6) Ensure that the disposal facility will not change the size or frequency of peak flows from precipitation events or thaws in a way that would result in an increase in damage from flooding when compared with the impact of premining peak flows.

(7) Ensure that the disposal facility will not preclude any existing or reasonably foreseeable use of surface water or groundwater or, for surface water downstream of the facility, preclude attainment of any designated use under section 101(a) or 303(c) of the Clean Water Act.

(8) Ensure that the disposal facility will not cause or contribute to a violation of any applicable water quality standards.

(9) Ensure that the disposal facility will not discharge acid or toxic mine drainage.

(c) *Coal mine waste from outside the permit area.* Coal mine waste materials from activities located outside a permit area may be disposed of within the permit area only if approved by the regulatory authority. Approval must be based upon a showing that disposal will be in accordance with the standards of this section.

(d) *Design and construction requirements.* (1)(i) You must design and construct coal mine waste disposal facilities using current, prudent engineering practices and any design and construction criteria established by the regulatory authority.

(ii) A qualified registered professional engineer, experienced in the design and construction of similar earth and waste structures, must certify the design of the disposal facility. The engineer must specifically certify that any existing and planned underground mine workings in the vicinity of the disposal facility will not adversely impact the stability of the structure.

(iii) You must construct the disposal facility in accordance with the design and plans submitted under § 784.25 of this chapter and approved in the permit. A qualified registered professional engineer experienced in the design and construction of similar earth and waste structures must certify that the facility has been constructed in accordance with the requirements of this paragraph.

(2) You must design and construct the disposal facility to attain a minimum long-term static safety factor of 1.5. The foundation and abutments must be stable under all conditions of construction.

(e) *Foundation investigations.* (1) You must perform sufficient foundation investigations, as well as any necessary

laboratory testing of foundation material, to determine the design requirements for foundation stability. The analyses of the foundation conditions must take into consideration the effect of any underground mine workings located in the permit and adjacent areas upon the stability of the disposal facility.

(f) *Soil handling requirements.* You must remove all vegetation, organic matter, and soil materials from the disposal area prior to placement of the coal mine waste. You must store, redistribute, or otherwise use those materials in accordance with § 817.22 of this part. You may use soil substitutes and substitutes if approved in the permit in accordance with § 784.12(e) of this part.

(g) *Emergency procedures.* (1) If any examination or inspection discloses that a potential hazard exists, you must inform the regulatory authority promptly of the finding and of the emergency procedures formulated for public protection and remedial action.

(2) If adequate procedures cannot be formulated or implemented, you must notify the regulatory authority immediately. The regulatory authority then must notify the appropriate agencies that other emergency procedures are required to protect the public.

(h) *Underground disposal.* You may dispose of coal mine waste in underground mine workings only in accordance with a plan approved by the regulatory authority and the Mine Safety and Health Administration under § 784.26 of this chapter.

§ 817.83 What special performance standards apply to coal mine waste refuse piles?

(a) *General requirements.* Refuse piles must meet the requirements of § 817.81, the additional requirements of this section, and the requirements of §§ 77.214 and 77.215 of this title.

(b) *Surface runoff and drainage control.* (1) If the disposal area contains springs, natural or manmade water courses, or wet weather seeps, you must design and construct the refuse pile with diversions and underdrains as necessary to control erosion, prevent water infiltration into the disposal facility, and ensure stability.

(2) You may not direct or divert uncontrolled surface runoff over the outslope of the refuse pile.

(3) You must direct runoff from areas above the refuse pile and runoff from the surface of the refuse pile into stabilized channels designed to meet the requirements of § 817.43 of this part and to safely pass the runoff from the 100-year, 6-hour precipitation event. You must use the appropriate regional Natural Resources Conservation Service synthetic storm distribution to determine the peak flow from surface runoff from this event.

(4) Runoff diverted from undisturbed areas need not be commingled with runoff from the surface of the refuse pile.

(5) Underdrains must comply with the requirements of § 817.71(f) of this part.

(c) *Surface area stabilization.* You must provide slope protection to minimize surface erosion at the site. You must revegetate all disturbed areas, including diversion channels that are not riprapped or otherwise protected, upon completion of construction.

(d) *Final configuration and cover.* (1) The final configuration of the refuse pile must be suitable for the approved postmining land use. Terraces may be constructed on the outslope of the refuse pile if required for stability, erosion control, conservation of soil moisture, or facilitation of the approved postmining land use. The grade of the outslope between terrace benches may not be steeper than 2h:1v (50 percent).

(2) No permanent impoundments or depressions are allowed on the completed refuse pile.

(3) Following final grading of the refuse pile, you must cover the coal mine waste with a minimum of 4 feet of the best available, nontoxic, and noncombustible material in a manner that does not impede drainage from the underdrains. The regulatory authority may allow less than 4 feet of cover material based on physical and chemical analyses showing that the revegetation requirements of §§ 817.111 and 817.116 of this part will be met.

(e) *Inspections.* You must comply with the inspection and examination requirements of § 817.71(l) of this part.

§ 817.84 What special performance standards apply to coal mine waste impounding structures?

(a) Impounding structures constructed of coal mine waste or intended to impound coal mine waste must meet the requirements of § 817.81 of this part.

(b) You may not use coal mine waste to construct impounding structures unless you demonstrate, and the regulatory authority finds in writing, that the stability of such a structure conforms to the requirements of this part and that the use of coal mine waste will not have a detrimental effect on downstream water quality or the environment as a result of acid drainage or toxic seepage through the impounding structure. You must discuss the stability of the structure and the prevention and potential impact of acid drainage or toxic seepage through the impounding structure in detail in the design plan submitted to the regulatory authority in accordance with § 784.25 of this chapter.

(c)(1) You must design, construct, and maintain each impounding structure constructed of coal mine waste or intended to impound coal mine waste in accordance with paragraphs (a) and (c) of § 817.49 of this part.

(2) You may not retain these structures permanently as part of the approved postmining land use.

(3) Each impounding structure constructed of coal mine waste or intended to impound coal mine waste that meets the criteria of § 77.216(a) of this title must have sufficient spillway capacity to safely pass, adequate storage capacity to safely contain, or a combination of storage capacity and spillway capacity to safely control, the probable maximum precipitation of a 6-hour precipitation event, or greater event as specified by the regulatory authority.

(d) You must design spillways and outlet works to provide adequate protection against erosion and corrosion. Inlets must be protected against blockage.

(e) You must direct surface runoff from areas above the disposal facility and runoff from the surface of the facility that may cause instability or erosion of the impounding structure into stabilized channels designed and constructed to meet the requirements of § 817.43 of this part and to safely pass the runoff from a 100-year, 6-hour precipitation event. You must use the appropriate regional Natural Resources Conservation Service synthetic storm distribution to determine the peak flow from surface runoff from this event.

(f) For an impounding structure constructed of or impounding coal mine waste, at least 90 percent of the water stored during the design precipitation event must be removed within the 10-day period following the design precipitation event.

§ 817.87 What special performance standards apply to burning and burned coal mine waste?

(a) Coal mine waste fires must be extinguished by the person who conducts the mining activities, in accordance with a plan approved by the regulatory authority and the Mine Safety and Health Administration. The plan must contain, at a minimum, provisions to ensure that only those persons authorized by the operator, and who have an understanding of the

procedures to be used, are involved in the extinguishing operations.

(b) No burning or burned coal mine waste may be removed from a permitted disposal area without a removal plan approved by the regulatory authority. Consideration must be given to potential hazards to persons working or living in the vicinity of the structure.

§ 817.89 How must I dispose of noncoal mine wastes?

(a)(1) Noncoal mine wastes including, but not limited to grease, lubricants, paints, flammable liquids, garbage, abandoned mining machinery, lumber, and other combustible materials generated during mining activities must be placed and stored in a controlled manner in a designated portion of the permit area.

(2) Placement and storage of noncoal wastes must ensure that leachate and surface runoff do not degrade surface water or groundwater, that fires are prevented, and that the area remains stable and suitable for reclamation and revegetation compatible with the natural surroundings.

(b)(1) Final disposal of noncoal mine wastes must be in a designated disposal site within the permit area or in a state-approved solid waste disposal area.

(2) Disposal sites within the permit area must meet the following requirements:

(i) The site must be designed and constructed to ensure that leachate and drainage from the noncoal mine waste area does not degrade surface water or groundwater.

(ii) Wastes must be routinely compacted and covered to prevent combustion and wind-borne waste.

(iii) When the disposal of noncoal wastes is completed, the site must be covered with a minimum of 2 feet of soil, slopes must be stabilized, and the site must be revegetated in accordance with §§ 817.111 through 817.116 of this part.

(iv) The disposal site must be operated in accordance with all local, state and federal requirements.

(c) At no time may any noncoal mine waste be deposited in a refuse pile or impounding structure, nor may an excavation for a noncoal mine waste disposal site be located within 8 feet of any coal outcrop or coal storage area.

§ 817.95 How must I protect surface areas from wind and water erosion?

(a) You must protect and stabilize all exposed surface areas to effectively control erosion and air pollution attendant to erosion.

(b)(1) You must fill, regrade, or otherwise stabilize rills and gullies that form in areas that have been regraded and upon which soil or soil substitute materials have been redistributed. This requirement applies only to rills and gullies that either—

(i) Disrupt the approved postmining land use or reestablishment of the vegetative cover; or

(ii) Cause or contribute to a violation of water quality standards for receiving waters.

(2) You must reapply soil materials to the filled or regraded rills and gullies when necessary to reestablish a vegetative cover. You must then replant those areas.

§ 817.97 How must I protect and enhance fish, wildlife, and related environmental values?

(a) *General requirements.* You, the permittee, must, to the extent possible using the best technology currently available, minimize disturbances and adverse impacts on fish, wildlife, and related environmental values and achieve enhancement of those resources where practicable, as described in detail in the fish and wildlife protection and enhancement plan approved in the permit in accordance with § 784.16 of this chapter.

(b) *Species listed or proposed for listing as threatened or endangered.* (1) *Federally-listed species.* (i) You may not conduct any underground mining activity that is likely to jeopardize the continued existence of threatened or endangered species listed by the Secretary or proposed for listing by the Secretary or that is likely to result in the destruction or adverse modification of designated critical habitat in violation of the Endangered Species Act of 1973, 16 U.S.C. 1531 *et seq.*

(ii) You must promptly report to the regulatory authority any federally-listed threatened or endangered species within the permit area or the adjacent area of which you become aware. This requirement applies regardless of whether the species was listed before or after permit issuance.

(iii)(A) Upon receipt of a notification under paragraph (b)(2)(ii) of this section, the regulatory authority will contact and coordinate with the appropriate state and federal fish and wildlife agencies.

(B) The regulatory authority, in coordination with the appropriate state and federal fish and wildlife agencies, will identify whether, and under what conditions, you may proceed. When necessary, the regulatory authority will issue an order under § 774.10(b) of this chapter requiring that you revise the permit.

(iv) You must comply with any species-specific protection measures required by the regulatory authority in coordination with the U.S. Fish and Wildlife Service.

(v) Nothing in this chapter authorizes the taking of a threatened or endangered species in violation of the Endangered Species Act of 1973, 16 U.S.C. 1531 *et seq.*

(2) *State-listed species.* (i) You must promptly report to the regulatory authority any state-listed threatened or endangered species within the permit area or the adjacent area of which you become aware. This requirement applies regardless of whether the species was listed before or after permit issuance.

(ii)(A) Upon receipt of a notification under paragraph (b)(2)(i) of this section, the regulatory authority will contact and coordinate with the appropriate state fish and wildlife agencies.

(B) The regulatory authority, in coordination with the appropriate state fish and wildlife agencies, will identify whether, and under what conditions, you may proceed. When necessary, the regulatory authority will issue an order under § 774.10(b) of this chapter requiring that you revise the permit.

(c) *Bald and golden eagles.* (1) You may not conduct any underground mining activity in a manner that would result in the unlawful taking of a bald or golden eagle, its nest, or any of its eggs.

(2) You must promptly report to the regulatory authority any golden or bald eagle nest within the permit area of which you become aware.

(3) Upon notification, the regulatory authority will contact and coordinate with the U.S. Fish and Wildlife Service and, when appropriate, the state fish and wildlife agency to identify whether, and under what conditions, you may proceed.

(4) Nothing in this chapter authorizes the taking of a bald or golden eagle, its nest, or any of its eggs in violation of the Bald and Golden Eagle Protection Act, 16 U.S.C. 668–668d.

(d) *Miscellaneous protective measures for other species of fish and wildlife.* To the extent possible, using the best technology currently available, you must—

(1) Ensure that electric power transmission lines and other transmission facilities used for, or incidental to, surface mining activities on the permit area are designed and constructed to minimize electrocution hazards to raptors and other avian species with large wingspans.

(2) Locate, construct, operate, and maintain haul and access roads and sedimentation control structures in a manner that avoids or minimizes impacts on important fish and wildlife

species or other species protected by state or federal law.

(3) Design fences, overland conveyors, and other potential barriers to permit passage for large mammals, except where the regulatory authority determines that such requirements are unnecessary.

(4) Fence, cover, or use other appropriate methods to exclude wildlife from ponds that contain hazardous concentrations of toxic or toxic-forming materials.

(5) Reclaim and reforest lands that were forested at the time of application and lands that would revert to forest under conditions of natural succession in a manner that enhances recovery of the native forest ecosystem as expeditiously as practicable.

(e) *Wetlands and habitat of unusually high value for fish and wildlife.* To the extent possible, you must avoid disturbances to, restore or replace, and, where practicable, enhance, wetlands, riparian vegetation along rivers and streams, lentic vegetation bordering ponds and lakes, and habitat of unusually high value for fish and wildlife.

(f) *Vegetation requirements for fish and wildlife habitat postmining land use.* Where fish and wildlife habitat is a postmining land use, you must select and arrange the plant species to be used for revegetation to maximize the benefits to fish and wildlife. Plant species must be native to the area and must be selected on the basis of the following criteria:

(1) Their proven nutritional value for fish or wildlife.

(2) Their value as cover for fish or wildlife.

(3) Their ability to support and enhance fish or wildlife habitat after the release of performance bonds.

(4) Their ability to sustain natural succession by allowing the establishment and spread of plant species across ecological gradients. You may not use invasive plant species that are known to inhibit natural succession.

(g) *Vegetation requirements for cropland postmining land use.* Where cropland is the postmining land use, and where appropriate for wildlife-management and crop-management practices, you must intersperse the crop fields with trees, hedges, or fence rows to break up large blocks of monoculture and to diversify habitat types for birds and other animals.

(h) *Vegetation requirements for forestry postmining land uses.* Where forestry, whether managed or unmanaged, is the postmining land use, you must plant native tree and understory species to the extent that doing so is not inconsistent with the type of forestry to be practiced as part of the postmining land use. In all cases, regardless of the type of forestry to be practiced as part of the postmining land use, you must intersperse plantings of commercial species with plantings of native trees and shrubs of high value to wildlife.

(i) *Vegetation requirements for other postmining land uses.* Where residential, public service, commercial, industrial, or intensive recreational uses are the postmining land use, you must establish—

(1) Greenbelts comprised of non-invasive native plants that provide food or cover for wildlife, unless greenbelts would be inconsistent with the approved postmining land use plan for that site.

(2)(i) A vegetated buffer at least 100 feet wide along each bank of all perennial and intermittent streams within the permit area. The width of the buffer must be measured horizontally on a line perpendicular to the stream beginning at the bankfull elevation or, if there are no discernible banks, the centerline of the active channel. The buffer must be planted with species native to the area, including species adapted to and suitable for planting in riparian zones within the buffer. The species planted must consist of native tree and understory species if the land was forested at the time of application or if it would revert to forest under conditions of natural succession.

(ii) Paragraph (i)(2)(i) of this section does not apply to situations in which a riparian buffer would be incompatible with an approved postmining land use that is implemented during the revegetation responsibility period before final bond release under § 800.42(d) of this chapter.

(j) *Planting arrangement requirements.* You must design and arrange plantings in a manner that optimizes benefits to wildlife to the extent practicable and consistent with the postmining land use.

§ 817.99 What measures must I take to prevent and remediate landslides?

(a) You must notify the regulatory authority by the fastest available means whenever a landslide occurs that has the potential to adversely affect public property, health, safety, or the environment.

(b) You must comply with any remedial measures that the regulatory authority requires in response to the notification provided in paragraph (a) of this section.

§ 817.100 What are the standards for conducting reclamation contemporaneously with mining?

(a) You must reclaim all areas disturbed by surface impacts incident to an underground coal mine as contemporaneously as practicable with the mining operations, except when the mining operations are conducted in accordance with a variance for concurrent surface and underground mining activities under § 785.18 of this chapter. Reclamation activities include, but are not limited to, backfilling, grading, soil replacement, revegetation, and stream restoration.

(b) The regulatory authority may establish schedules that define contemporaneous reclamation.

§ 817.102 How must I backfill surface excavations and grade and configure the land surface?

(a) You, the permittee or operator, must backfill all surface excavations and grade all disturbed areas in compliance with the plan approved in the permit in accordance with § 784.12(d) of this chapter to—

(1) Restore the approximate original contour as the final surface configuration, except in the following situations:

(i) Sites for which the regulatory authority has approved a variance under § 785.16 of this chapter.

(ii) Remining operations on previously mined areas, but only to the extent specified in § 817.106(b) of this part.

(iii) Excess spoil fills constructed in accordance with § 817.71 or § 817.74 of this part.

(iv) Refuse piles constructed in accordance with § 817.83 of this part.

(v) Permanent impoundments that meet the requirements of paragraph (a)(3)(ii) of this section and § 784.35(b)(4) of this chapter.

(vi) The placement, in accordance with § 784.35(b)(3) of this chapter, of what would otherwise be excess spoil on the mined-out area to heights in excess of the premining elevation when necessary to avoid or minimize construction of excess spoil fills on undisturbed land.

(vii) Regrading of settled and revegetated spoil storage sites at the conclusion of underground mining activities, provided the following conditions are met:

(A) The settled and revegetated storage sites are composed of spoil or non-acid-forming or non-toxic-forming underground development waste.

(B) The spoil or underground development waste is not located so as to be detrimental to the environment,

the health and safety of the public, or the approved postmining land use.

(C) You demonstrate, through standard geotechnical analysis, that the spoil or underground development waste has a 1.3 static safety factor for material placed on a solid bench and a 1.5 static safety factor for material not placed on a solid bench.

(D) The surface of the spoil or underground development waste is revegetated in accordance with §§ 817.111 and 817.116 of this part.

(E) Surface runoff is controlled in accordance with § 784.29 of this chapter and §§ 817.43 and 817.45 of this part.

(F) The regulatory authority determines that disturbance of the existing spoil or underground development waste would increase environmental harm or adversely affect the health or safety of the public.

(G) The spoil is not needed to eliminate the highwall or to meet other regulatory program requirements.

(2) Minimize the creation of uniform slopes and cut-and-fill terraces. The regulatory authority may approve cut-and-fill terraces only if—

(i) They are compatible with the approved postmining land use and are needed to conserve soil moisture, ensure stability, or control erosion on final-graded slopes; or

(ii) Specialized grading, foundation conditions, or roads are required for the approved postmining land use, in which case the final grading may include a terrace of adequate width to ensure the safety, stability, and erosion control necessary to implement the postmining land use.

(3) Eliminate all highwalls, spoil piles, impoundments, and depressions, except in the following situations:

(i) You may construct or retain small depressions if—

(A) They are needed to retain moisture, minimize erosion, create or enhance wildlife habitat, or assist revegetation;

(B) They are consistent with the hydrologic reclamation plan approved in the permit in accordance with § 784.22 of this chapter; and

(C) You demonstrate that they will not result in elevated levels of parameters of concern in discharges from the backfilled and graded area.

(ii) The regulatory authority may approve the retention of permanent impoundments if—

(A) They meet the requirements of §§ 817.49 and 817.56 of this part;

(B) They are suitable for the approved postmining land use; and

(C) You can demonstrate compliance with the future maintenance provisions of § 800.42(c)(5) of this chapter.

(D) You have obtained all necessary approvals and authorizations under section 404 of the Clean Water Act when the impoundment is located in waters of the United States.

(iii) You may retain highwalls on previously mined areas to the extent provided in § 817.106(b) of this part.

(iv) You may retain modified highwall segments to the extent necessary to replace similar natural landforms removed by the mining operation. The regulatory program must establish the conditions under which these highwall segments may be retained and the modifications that must be made to the highwall to ensure that the retained segment resembles similar premining landforms and restores the ecological niches that the premining landforms provided. Nothing in this paragraph authorizes the retention of modified highwall segments in excess of the number, length, and height needed to replace similar premining landforms.

(v) You may retain settled and revegetated spoil storage sites under the conditions specified in paragraph (a)(1)(vii) of this section.

(4) Achieve a postmining slope that does not exceed either the angle of repose or such lesser slope as is necessary to achieve a minimum long-term static safety factor of 1.3 and to prevent slides.

(5) Minimize erosion and water pollution, including discharges of parameters of concern for which no numerical effluent limitations or water quality standards have been established, both on and off the site.

(6) Support the approved postmining land use.

(b) You must return all spoil to the surface excavations from which the spoil was removed. This requirement does not apply to—

(1) Excess spoil disposed of in accordance with § 817.71 or § 817.74 of this part.

(2) Spoil placed outside surface excavations in non-steep slope areas to restore the approximate original contour by blending the spoil into the surrounding terrain, provided that you comply with the following requirements:

(i) You must remove all vegetation and other organic matter from the area upon which you intend to place spoil for blending purposes. You may not burn or bury these materials; you must store, redistribute, or use them in the manner specified in § 817.22(f) of this part.

(ii) You must remove, segregate, store, and redistribute topsoil, in accordance with § 817.22 of this part, from the area upon which you intend to place spoil for blending purposes.

(3) Settled and revegetated spoil storage sites under the conditions specified in paragraph (a)(1)(vii) of this section.

(c) You must compact spoil and waste materials when necessary to ensure stability or to prevent the formation of acid or toxic mine drainage, but, to the extent possible, you must avoid compacting spoil, soil, and other materials placed in what will be the root zone of the species planted under the revegetation plan approved in the permit in accordance with § 784.12(g) of this chapter.

(d)(1) You must cover all exposed coal seams with material that is noncombustible, nonacid-forming, and nontoxic-forming.

(2) You must handle and dispose of all other combustible materials exposed, used, or produced during mining in accordance with § 817.89 of this part in a manner that will prevent sustained combustion, as approved in the permit in accordance with § 784.12(j) of this chapter.

(3) You must handle all other acid-forming and toxic-forming materials—

(i) In compliance with the plan approved in the permit in accordance with § 784.12(d)(4) of this chapter;

(ii) In compliance with § 817.38 of this part;

(iii) In compliance with the hydrologic reclamation plan approved in the permit in accordance with § 784.22(a) of this chapter; and

(iv) In a manner that will minimize adverse effects on plant growth and the approved postmining land use.

(e) You must dispose of any coal mine waste placed in the surface excavation in accordance with §§ 817.81 and 817.83 of this part, except that a long-term static safety factor of 1.3 will apply instead of the 1.5 factor specified in § 817.81(d)(2) of this part.

(f) You must prepare final-graded surfaces in a manner that minimizes erosion and provides a surface for replacement of soil materials that will minimize slippage.

§ 817.106 What special provisions for backfilling, grading, and surface configuration apply to previously mined areas with a preexisting highwall?

(a) Remining operations on previously mined areas that contain a preexisting highwall must comply with the requirements of §§ 817.102 through 817.107 of this part, except as provided in this section.

(b) The highwall elimination requirements of § 817.102(a) of this part do not apply to remining operations for

which you demonstrate in writing, to the regulatory authority's satisfaction, that the volume of all reasonably available spoil is insufficient to completely backfill the reaffected or enlarged highwall. Instead, for those operations, you must eliminate the highwall to the maximum extent technically practical in accordance with the following criteria:

(1) You must use all spoil generated by the remining operation and any other reasonably available spoil to backfill the area. You must include reasonably available spoil in the immediate vicinity of the remining operation within the permit area.

(2) You must grade the backfilled area to a slope that is compatible with the approved postmining land use and that provides adequate drainage and long-term stability.

(3) Any highwall remnant must be stable and not pose a hazard to the public health and safety or to the environment. You must demonstrate, to the satisfaction of the regulatory authority, that the highwall remnant is stable.

(4) You must not disturb spoil placed on the outslope during previous mining operations if disturbance would cause instability of the remaining spoil or otherwise increase the hazard to the public health and safety or to the environment.

§ 817.107 What special provisions for backfilling, grading, and surface configuration apply to operations on steep slopes?

(a) Underground mining activities on steep slopes must comply with this section and the requirements of §§ 817.102 through 817.106 of this part.

(b) You may not place the following materials on the downslope:

(1) Spoil.

(2) Waste materials of any type.

(3) Debris, including debris from clearing and grubbing, except for woody materials used to enhance fish and wildlife habitat.

(4) Abandoned or disabled equipment.

(c) You may not disturb land above the highwall unless the regulatory authority finds that disturbance will facilitate compliance with the environmental protection standards of this subchapter and the disturbance is limited to that necessary to facilitate compliance.

(d) You must handle woody materials in accordance with § 817.22(f) of this part. You may not bury them in the backfill.

§ 817.111 How must I revegetate the area disturbed by mining?

(a) You, the permittee, must establish a diverse, effective, permanent vegetative cover on regraded areas and on all other disturbed areas except—

(1) Water areas approved as a postmining land use or in support of the postmining land use.

(2) The surfaces of roads approved for retention to support the postmining land use.

(3) Rock piles, water areas, and other non-vegetative features created to restore or enhance wildlife habitat under the fish and wildlife protection and enhancement plan approved in the permit in accordance with § 784.16 of this chapter.

(4) Any other impervious surface, such as a building or a parking lot, approved as part of or in support of the postmining land use. This provision applies only to structures and facilities constructed before expiration of the revegetation responsibility period.

(b) The reestablished vegetative cover must—

(1) Comply with the revegetation plan approved in the permit in accordance with § 784.12(g) of this chapter.

(2) Be consistent with the approved postmining land use and the plant communities described in § 783.19 of this chapter.

(3) Be at least equal in extent of cover to the natural vegetation of the area.

(4) Be capable of stabilizing the soil surface and, in the long term, preventing erosion in excess of what would have occurred naturally had the site not been disturbed.

(5) Not inhibit the establishment of trees and shrubs when the revegetation plan approved in the permit requires the use of woody plants.

(c) Volunteer plants of species that are desirable components of the plant communities described in the permit application under § 783.19 of this chapter and that are not inconsistent with the postmining land use may be considered in determining whether the requirements of §§ 817.111 and 817.116 have been met.

(d) You must stabilize all areas upon which you have distributed soil or soil substitute materials. You must use one or a combination of the following methods, unless the regulatory authority determines that neither method is necessary to stabilize the surface and control erosion—

(1) Establishing a temporary vegetative cover consisting of noncompetitive and non-invasive species, either native or domesticated or a combination thereof.

(2) Applying suitable mulch free of weed and noxious plant seeds. You must use native hay mulch to the extent that it is commercially available.

(e) You must plant all disturbed areas with the species needed to establish a permanent vegetative cover during the first normal period for favorable planting conditions after redistribution of the topsoil or other plant-growth medium. The normal period for favorable planting conditions is the generally accepted local planting time for the type of plant materials approved in the permit as part of the revegetation plan under § 784.12(g) of this chapter.

§ 817.113 [Reserved]

§ 817.114 [Reserved]

§ 817.115 How long am I responsible for revegetation after planting?

(a) *General provisions.* (1) The period of extended responsibility for successful revegetation will begin after the last year of augmented seeding, fertilizing, irrigation, or other work, excluding husbandry practices that are approved by the regulatory authority in accordance with paragraph (d) of this section.

(2) The initial planting of small areas that are regraded and planted as a result of the removal of sediment control structures and associated structures and facilities such as diversion ditches, disposal and storage areas for accumulated sediment and sediment pond embankment material, and ancillary roads used to access those structures need not be considered an augmented seeding necessitating an extended or separate revegetation responsibility period.

(b) *Areas of more than 26.0 inches of average annual precipitation.* In areas of more than 26.0 inches of annual average precipitation, the period of responsibility will continue for a period of not less than—

(1) Five full years, except as provided in paragraph (b)(2) of this section.

(i) The vegetation parameters for grazing land, pasture land, or cropland must equal or exceed the approved success standard during the growing season of any 2 years of the responsibility period, except the first year.

(ii) On all other areas, the parameters must equal or exceed the applicable success standard during the growing season of the last year of the responsibility period.

(2) Two full years for lands eligible for remining included in a permit approved under § 785.25 of this chapter. The lands must equal or exceed the applicable ground cover standard

during the growing season of the last year of the responsibility period.

(c) *Areas of 26.0 inches or less average annual precipitation.* In areas of 26.0 inches or less average annual precipitation, the period of responsibility will continue for a period of not less than:

(1) Ten full years, except as provided in paragraph (c)(2) of this section.

(i) The vegetation parameters for grazing land, pasture land, or cropland must equal or exceed the approved success standard during the growing season of any two years after year six of the responsibility period.

(ii) On all other areas, the parameters must equal or exceed the applicable success standard during the growing season of the last year of the responsibility period.

(2) Five full years for lands eligible for remining included in a permit approved under § 785.25 of this chapter. The lands must equal or exceed the applicable ground cover standard during the growing seasons of the last two consecutive years of the responsibility period.

(d) *Normal husbandry practices.* (1) The regulatory authority may approve selective husbandry practices, excluding augmented seeding, fertilization, or irrigation, provided it obtains prior approval from OSMRE in accordance with § 732.17 of this chapter that the practices are normal husbandry practices, without extending the period of responsibility for revegetation success and bond liability, if those practices can be expected to continue as part of the postmining land use or if discontinuance of the practices after the liability period expires will not reduce the probability of permanent revegetation success.

(2) Approved practices must be normal husbandry practices within the region for unmined lands having land uses similar to the approved postmining land use of the disturbed area, including such practices as disease, pest, and vermin control; and any pruning, reseeding, and transplanting specifically necessitated by such actions.

§ 817.116 What are the standards for determining revegetation success?

(a) The regulatory authority must select standards for revegetation success and statistically valid sampling techniques for measuring revegetation success. The standards and techniques must be made available to the public in written form.

(b) The standards for success applied to a specific permit must be adequate to demonstrate restoration of premining land use capability and must reflect the revegetation plan requirements of § 784.12(g) of this chapter. They must be based upon the following data—

(1) The plant community and vegetation information required under § 783.19 of this chapter.

(2) The soil type and productivity information required under § 783.21 of this chapter.

(3) The land use capability and productivity information required under § 783.22 of this chapter.

(4) The postmining land use approved under § 784.24 of this chapter, but only to the extent that the approved postmining land use actually will be implemented before expiration of the revegetation responsibility period. Otherwise, the site must be revegetated in a manner that will restore native plant communities and the revegetation success standards for the site must reflect that requirement.

(c) Except for the areas identified in § 817.111(a) of this part, standards for success must include—

(1) Species diversity.

(2) Areal distribution of species.

(3) Ground cover, except for land actually used for cropland after the completion of regrading and redistribution of soil materials.

(4) Production, for land used for cropland, pasture, or grazing land either before permit issuance or after the completion of regrading and redistribution of soil materials.

(5) Stocking, for areas revegetated with woody plants.

(d) The ground cover, production, or stocking of the revegetated area will be considered equal to the approved success standard for those parameters when the measured values are not less than 90 percent of the success standard, using a 90-percent statistical confidence interval (*i.e.,* a one-sided test with a 0.10 alpha error).

(e) For all areas revegetated with woody plants, regardless of the postmining land use), the regulatory authority must specify minimum stocking and planting arrangements on the basis of local and regional conditions and after coordination with and approval by the state agencies responsible for the administration of forestry and wildlife programs. Coordination and approval may occur on either a program-wide basis or a permit-specific basis.

(f)(1) Only those species of trees and shrubs approved in the permit as part of the revegetation plan under § 784.12(g) of this chapter or volunteer trees and shrubs of species that meet the requirements of § 817.111(c) of this part may be counted in determining whether stocking standards have been met.

(2)(i) At the time of final bond release under § 800.42(d) of this chapter, at least 80 percent of the trees and shrubs used to determine success must have been in place for 60 percent of the applicable minimum period of responsibility under § 817.115 of this part.

(ii) Trees and shrubs counted in determining revegetation success must be healthy and have been in place for not less than two growing seasons. Any replanting must be done by means of transplants to allow for proper accounting of plant stocking.

(iii)(A) For purposes of paragraph (f)(2)(ii) of this section, volunteer trees and shrubs of species that meet the requirements of § 817.111(c) of this part may be deemed equivalent to planted specimens two years of age or older.

(B) Suckers on shrubby vegetation can be counted as volunteer plants when it is evident the shrub community is vigorous and expanding.

(iv) The requirements of paragraphs (f)(2)(i) and (ii) of this section will be deemed met when records of woody vegetation planted show that—

(A) No woody plants were planted during the last two growing seasons of the responsibility period; and,

(B) If any replanting of woody plants took place earlier during the responsibility period, the total number planted during the last 60 percent of that period is less than 20 percent of the total number of woody plants required to meet the stocking standard.

(3) Vegetative ground cover on areas planted with trees or shrubs must be of a nature that allows for natural establishment and succession of native plants, including trees and shrubs.

(g) *Special provision for areas that are developed within the revegetation responsibility period.* Portions of the permit area that are developed for industrial, commercial, or residential use within the revegetation responsibility period need not meet production or stocking standards. For those areas, the vegetative ground cover must not be less than that required to control erosion.

(h) *Special provision for previously mined areas.* Previously mined areas need only meet a vegetative ground cover standard, unless the regulatory authority specifies otherwise. At a minimum, the cover on the revegetated previously mined area must not be less than the ground cover existing before redisturbance and must be adequate to control erosion.

(i) *Special provision for prime farmland.* For prime farmland, the revegetation success standard provisions of § 823.15 of this chapter

apply in lieu of the requirements of paragraphs (b) through (h) of this section.

§ 817.121 What measures must I take to prevent, control, or correct damage resulting from subsidence?

(a) *Measures to prevent or minimize damage.* (1) You, the permittee or operator, must either—

(i) Adopt measures consistent with known technology that prevent subsidence from causing material damage to the extent technologically and economically feasible, maximize mine stability, and maintain the value and reasonably foreseeable use of surface lands; or

(ii) Adopt mining technology that provides for planned subsidence in a predictable and controlled manner.

(2) If you employ mining technology that provides for planned subsidence in a predictable and controlled manner under paragraph (a)(1)(ii) of this section, you must take necessary and prudent measures, consistent with the mining method employed, to minimize material damage to the extent technologically and economically feasible to non-commercial buildings and occupied residential dwellings and structures related thereto unless—

(i) You have obtained the written consent of the owners of those structures; or

(ii) The costs of those measures would exceed the anticipated costs of repair. This exception does not apply if the anticipated damage would constitute a threat to health or safety.

(3) Nothing in this part prohibits the standard method of room-and-pillar mining.

(b) You must comply with all provisions of the subsidence control plan prepared pursuant to § 784.30 of this chapter and approved in the permit.

(c) *Repair of damage to surface lands.* To the extent technologically and economically feasible, you must correct any material damage resulting from subsidence caused to surface lands by restoring the land to a condition capable of maintaining the value and reasonably foreseeable uses that it was capable of supporting before subsidence damage occurred.

(d) *Repair or compensation for damage to non-commercial buildings and dwellings and related structures.* (1) You must promptly repair, or compensate the owner for, material damage resulting from subsidence caused to any non-commercial building or occupied residential dwelling or structure related thereto that existed at the time of mining.

(2) If you select the repair option, you must fully rehabilitate, restore, or replace the damaged structure.

(3) If you select the compensation option, you must compensate the owner of the damaged structure for the full amount of the decrease in value resulting from the subsidence-related damage. You may provide compensation by the purchase, before mining, of a non-cancelable, premium-prepaid insurance policy.

(4) The requirements of paragraph (d) of this section apply only to subsidence-related damage caused by underground mining activities conducted after October 24, 1992.

(e) *Repair or compensation for damage to other structures.* To the extent required under applicable provisions of state law, you must correct material damage resulting from subsidence caused to any structures or facilities not protected by paragraph (d) of this section by either repairing the damage or compensating the owner of the structures or facilities for the full amount of the decrease in value resulting from the subsidence. Repair of damage includes rehabilitation, restoration, or replacement of damaged structures or facilities. Compensation may be accomplished by the purchase before mining of a non-cancelable, premium-prepaid insurance policy.

(f) *Information to be considered in determination of causation.* The regulatory authority must consider all relevant and reasonably available information in determining whether damage to protected structures was caused by subsidence from underground mining.

(g) *Adjustment of bond amount for subsidence damage.* (1) When subsidence-related material damage to land, structures or facilities protected under paragraphs (c) through (e) of this section occurs, or when contamination, diminution, or interruption to a water supply protected under § 817.40 of this part occurs, the regulatory authority must require the permittee to post additional performance bond until the repair, compensation, or replacement is completed.

(2) The amount of additional bond required under paragraph (g)(1) of this section must equal the—

(i) Estimated cost of the repairs if the repair option is selected.

(ii) Decrease in value if the compensation option is selected.

(iii) Estimated cost to replace the protected water supply if the permittee will be replacing the water supply.

(3) The requirements of paragraph (g)(1) of this section do not apply if repair, compensation, or replacement is completed within 90 days of the occurrence of damage. The regulatory authority may extend the 90-day time frame, provided that the total time allowed does not exceed one year, if you demonstrate, and the regulatory authority finds in writing, that subsidence is not complete, that all probable subsidence-related material damage has not yet occurred, or that all reasonably anticipated changes that may affect the protected water supply have not yet occurred, and that therefore it would be unreasonable to complete the repair of the subsidence-related material damage to lands or protected structures or the replacement of the protected water supply within 90 days.

(h) *Prohibitions and limitations on underground mining.* (1) You may not conduct underground mining activities beneath or adjacent to—

(i) Public buildings and facilities.

(ii) Churches, schools, and hospitals.

(iii) Impoundments with a storage capacity of 20 acre-feet or more or bodies of water with a volume of 20 acre-feet or more.

(2) The prohibitions of paragraph (h)(1) of this section do not apply if the subsidence control plan demonstrates that subsidence will not cause material damage to, or reduce the reasonably foreseeable use of, the features or facilities listed in paragraphs (h)(1)(i) through (iii) of this section.

(3) The regulatory authority may limit the percentage of coal extracted under or adjacent to the features and facilities listed in paragraphs (h)(1)(i) through (iii) of this section if it determines that the limitation is necessary to minimize the potential for material damage to those features or facilities or to any aquifer or body of water that serves as a significant water source for any public water supply system.

(i) If subsidence causes material damage to any of the features or facilities listed in paragraphs (h)(1)(i) through (iii) of this section, the regulatory authority may suspend mining under or adjacent to those features or facilities until the subsidence control plan is modified to ensure prevention of further material damage to those features or facilities.

(j) The regulatory authority must suspend underground mining activities under urbanized areas, cities, towns, and communities, and adjacent to industrial or commercial buildings, major impoundments, or perennial streams, if it finds that the mining activities pose an imminent danger is found to inhabitants of the urbanized areas, cities, towns, or communities.

(k) You must submit a detailed plan of the underground workings of your

mine in accordance with a schedule approved by the regulatory authority. The detailed plan must include maps and descriptions, as appropriate, of significant features of the underground mine, including the size, configuration, and approximate location of pillars and entries, extraction ratios, measures taken to prevent or minimize subsidence and related damage, areas of full extraction, and other information required by the regulatory authority. The regulatory authority may hold the information submitted with the detailed plan as confidential, in accordance with § 773.6(d) of this chapter, upon your request.

§ 817.122 How and when must I provide notice of planned underground mining?

(a) At least 6 months prior to mining, or within that period if approved by the regulatory authority, you, the underground mine operator, must mail a notification to all owners and occupants of surface property and structures above the planned underground workings.

(b) The notification must include, at a minimum—

(1) Identification of specific areas in which mining will take place;

(2) Dates that specific areas will be undermined; and

(3) The location or locations where the subsidence control plan may be examined.

§ 817.131 What actions must I take when I temporarily cease mining operations?

(a)(1) Each person who temporarily ceases to conduct underground mining activities at a particular site must effectively support and maintain all surface access openings to underground operations and secure surface facilities in areas in which there are no current operations, but where operations are to be resumed under an approved permit.

(2) Temporary cessation does not relieve a person of his or her obligation to comply with any provisions of the approved permit.

(b)(1) You must submit a notice of intent to temporarily cease operations to the regulatory authority before ceasing mining and reclamation operations for 30 or more days, or as soon as you know that a temporary cessation will extend beyond 30 days.

(2) The notice of temporary cessation must include a statement of the—

(i) Exact number of surface acres disturbed within the permit area prior to temporary cessation;

(ii) Extent and kind of reclamation accomplished before temporary cessation; and

(iii) Backfilling, regrading, revegetation, environmental monitoring, underground opening closures, and water treatment activities that will continue during temporary cessation.

§ 817.132 What actions must I take when I permanently cease mining operations?

(a) Persons who permanently cease conducting underground mining activities at a particular site must close, backfill, or otherwise permanently reclaim all disturbed areas in accordance with this chapter and the permit approved by the regulatory authority.

(b) All underground openings, surface equipment, surface structures, or other surface facilities must be removed and the affected land reclaimed, unless the regulatory authority approves retention of those features because they are suitable for the postmining land use or environmental monitoring.

§ 817.133 What provisions concerning postmining land use apply to my operation?

Except as provided in § 784.24(c) of this chapter, you, the permittee, must restore all disturbed areas in a timely manner to conditions that are capable of supporting—

(a) The uses they were capable of supporting before any mining; as described under § 783.22 of this chapter; or

(b) Higher or better uses approved under § 784.24(b) of this chapter.

§ 817.150 What are the general standards for haul and access roads?

(a) *Road classification system.* (1) Each road meeting the definition of that term in § 701.5 of this chapter must be classified as either a primary road or an ancillary road.

(2) A primary road is any road that is—

(i) Used for transporting coal or spoil;

(ii) Frequently used for access or other purposes for a period in excess of 6 months; or

(iii) To be retained for an approved postmining land use.

(3) An ancillary road is any road not classified as a primary road.

(b) *Performance standards.* Each road must be located, designed, constructed, reconstructed, used, maintained, and reclaimed so as to—

(1) Control or prevent erosion, siltation, and air pollution attendant to erosion, including road dust and dust occurring on other exposed surfaces, by measures such as vegetating, watering, using chemical or other dust suppressants, or otherwise stabilizing all exposed surfaces in accordance with current, prudent engineering practices.

(2) Control or prevent damage to fish, wildlife, or their habitat and related environmental values.

(3) Control or prevent additional contributions of suspended solids to streamflow or runoff outside the permit area.

(4) Neither cause nor contribute to, directly or indirectly, the violation of water quality standards applicable to receiving waters.

(5) Refrain from seriously altering the normal flow of water in streambeds or drainage channels.

(6) Prevent or control damage to public or private property, including the prevention or mitigation of adverse effects on lands within the boundaries of units of the National Park System, the National Wildlife Refuge System, the National System of Trails, the National Wilderness Preservation System, the Wild and Scenic Rivers System, including designated study rivers, and National Recreation Areas designated by Act of Congress.

(7) Use nonacid- and nontoxic-forming substances in road surfacing.

(c) *Design and construction limits and establishment of design criteria.* To ensure environmental protection appropriate for their planned duration and use, including consideration of the type and size of equipment used, the design and construction or reconstruction of roads must include appropriate limits for grade, width, surface materials, surface drainage control, culvert placement, and culvert size, in accordance with current, prudent engineering practices, and any necessary design criteria established by the regulatory authority.

(d) *Location.* (1) No part of any road may be located in the channel of an intermittent or perennial stream unless specifically approved by the regulatory authority in accordance with § 784.28 of this chapter and § 817.57 of this part.

(2) Roads must be located to minimize downstream sedimentation and flooding.

(e) *Maintenance.* (1) A road must be maintained to meet the performance standards of this part and any additional criteria specified by the regulatory authority;

(2) A road damaged by a catastrophic event, such as a flood or earthquake, must be repaired as soon as is practicable after the damage has occurred.

(f) *Reclamation.* A road not to be retained as part of an approved postmining land use must be reclaimed in accordance with the approved reclamation plan as soon as practicable after it is no longer needed for mining and reclamation operations. Reclamation must include—

(1) Closing the road to traffic.

(2) Removing all bridges and culverts unless approved as part of the postmining land use.

(3) Removing or otherwise disposing of road-surfacing materials that are incompatible with the postmining land use and revegetation requirements.

(4) Reshaping the slopes of road cuts and fills as necessary to be compatible with the postmining land use and to complement the natural drainage pattern of the surrounding terrain.

(5) Protecting the natural drainage patterns by installing dikes or cross-drains as necessary to control surface runoff and erosion.

(6) Scarifying or ripping the roadbed, replacing topsoil or substitute material in accordance with § 817.22 of this part, and revegetating disturbed surfaces in accordance with §§ 817.111, 817.115, and 817.116 of this chapter.

§ 817.151 What additional standards apply to primary roads?

(a) Primary roads must meet the requirements of § 817.150 of this part and the additional requirements of this section.

(b) *Certification.* The construction or reconstruction of primary roads must be certified in a report to the regulatory authority by a qualified registered professional engineer, or in any state that authorizes land surveyors to certify the construction or reconstruction of primary roads, a qualified registered professional land surveyor, with experience in the design and construction of roads. The report must indicate that the primary road has been constructed or reconstructed as designed and in accordance with the approved plan.

(c) *Safety factor.* Each primary road embankment must have a minimum static factor of 1.3 or meet the requirements established under § 784.37(c) of this chapter.

(d) *Location.* (1) To minimize erosion, a primary road must be located, insofar as is practicable, on the most stable available surface.

(2) Fords of perennial or intermittent streams are prohibited unless they are specifically approved by the regulatory authority as temporary routes during periods of road construction.

(e) *Drainage control.* In accordance with the approved plan—

(1) Each primary road must be constructed (or reconstructed) and maintained to have adequate drainage control, using structures such as, but not limited to bridges, ditches, cross drains, and ditch relief drains. The drainage control system must be designed to safely pass the peak runoff from the 10-year, 6-hour precipitation event, or any greater event specified by the regulatory authority.

(2) Drainage pipes and culverts must be installed as designed, and maintained in a free and operating condition and to prevent or control erosion at inlets and outlets.

(3) Drainage ditches must be constructed and maintained to prevent uncontrolled drainage over the road surface and embankment.

(4) Culverts must be installed and maintained to sustain the vertical soil pressure, the passive resistance of the foundation, and the weight of vehicles using the road.

(5) Natural stream channels must not be altered or relocated without the prior approval of the regulatory authority in accordance with § 784.28 of this chapter and § 817.57 of this part.

(6) Except as provided in paragraph (d)(2) of this section, structures for perennial or intermittent stream channel crossings must be made using bridges, culverts, low-water crossings, or other structures designed, constructed, and maintained using current prudent engineering practices. The regulatory authority must ensure that low-water crossings are designed, constructed, and maintained to prevent erosion of the structure or streambed and additional contributions of suspended solids to streamflow.

(f) *Surfacing.* Primary roads must be surfaced with material approved by the regulatory authority as being sufficiently durable for the anticipated volume of traffic and the weight and speed of vehicles using the road.

§ 817.180 To what extent must I protect utility installations?

You must conduct all underground coal mining operations in a manner that minimizes damage, destruction, or disruption of services provided by oil, gas, and water wells; oil, gas, and coal-slurry pipelines; railroads; electric and telephone lines; and water and sewage lines that pass over, under, or through the permit area, unless otherwise approved by the owner of those facilities and the regulatory authority.

§ 817.181 What requirements apply to support facilities?

(a) You must operate each support facility in accordance with the permit issued for the mine or coal preparation plant to which the facility is incident or from which its operation results.

(b) In addition to the other provisions of this part, you must locate, maintain, and use support facilities in a manner that—

(1) Prevents or controls erosion and siltation, water pollution, and damage to public or private property; and

(2) To the extent possible using the best technology currently available—

(i) Minimizes damage to fish, wildlife, and related environmental values; and

(ii) Minimizes additional contributions of suspended solids to streamflow or runoff outside the permit area. Any such contributions may not be in excess of limitations of state or federal law.

§ 817.200 [Reserved]

PART 824—SPECIAL PERMANENT PROGRAM PERFORMANCE STANDARDS—MOUNTAINTOP REMOVAL MINING OPERATIONS

■ 34. Revise the authority citation for part 824 to read as follows:

Authority: 30 U.S.C. 1201 *et seq.*

■ 35. Revise the heading for part 824 to read as set forth above.

■ 36. Revise § 824.11 to read as follows:

§ 824.11 What special performance standards apply to mountaintop removal mining operations?

(a) *Applicability.* This section applies to all operations for which the regulatory authority has approved a permit under § 785.14 of this chapter.

(b) *Performance standards.* (1) You, the permittee, must comply with all applicable requirements of this subchapter and the regulatory program, other than the approximate original contour restoration requirements of § 816.102(a)(1) of this chapter and the thick overburden requirements of § 816.105 of this chapter.

(2)(i) You must retain an outcrop barrier, consisting of the toe of the lowest coal seam and its associated overburden, of sufficient width to prevent slides and erosion. You must construct drains through the barrier to the extent necessary to prevent saturation of the backfill.

(ii) The outcrop barrier requirement in paragraph (b)(2)(i) of this section does not apply if the proposed mine site was mined prior to May 3, 1978, and the toe of the lowest coal seam has already been removed.

(iii) You may remove a coal barrier adjacent to a head-of-hollow fill after the elevation of the fill attains the elevation of the coal barrier if the head-of-hollow fill provides the stability otherwise ensured by the retention of a coal barrier.

(iv) The regulatory authority may allow removal of the outcrop barrier required by paragraph (b)(2)(i) of this section if the regulatory program establishes standards for and requires construction of a barrier comprised of alternative materials that will provide equivalent stability.

(3) The final graded slopes must be less than 1v:5h, so as to create a level plateau or gently rolling configuration. The outslopes of the plateau may not exceed 1v:2h except where engineering data substantiate, and the regulatory authority finds in writing and includes in the permit under § 785.14 of this chapter that an alternative configuration will achieve a minimum static safety factor of 1.5.

(4) You must grade the plateau or gently rolling contour to drain inward from the outslope, except at specified points where it drains over the outslope in stable and protected channels.

(5) You must place sufficient spoil on the mountaintop bench to achieve the approved postmining land use. You must place all spoil material not retained on the mountaintop bench in accordance with the excess spoil disposal requirements of § 816.71 or § 816.74 of this chapter.

PART 827—SPECIAL PERMANENT PROGRAM PERFORMANCE STANDARDS—COAL PREPARATION PLANTS NOT LOCATED WITHIN THE PERMIT AREA OF A MINE

■ 37. The authority citation for part 827 continues to read as follows:

Authority: 30 U.S.C. 1201 *et seq.*

■ 38. Revise § 827.12 to read as follows:

§ 827.12 What performance standards apply to coal preparation plants?

Except as provided in § 827.13 of this part, construction, operation, maintenance, modification, reclamation, and removal activities at coal preparation plants must comply with the following provisions of part 816 of this chapter: §§ 816.11, 816.22, 816.34 through 816.57, 816.71, 816.74, 816.79, 816.81 through 816.97, 816.100, 816.102, 816.104, 816.106, 816.111 through 816.116, 816.131 through 816.133, 816.150, 816.151, and 816.181.

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