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The Office of Surface Mining's Stream Protection Rule: An Overview

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Summary

On July 16, 2015, the Office of Surface Mining Reclamation and Enforcement (OSM) of the Department of the Interior proposed a Stream Protection Rule that would revise regulations implementing Title V of the Surface Mining Control and Reclamation Act (SMCRA). Revised rules are intended to avoid or minimize adverse impacts of coal mining on surface water, groundwater, fish, wildlife, and other natural resources by limiting the mining of coal in or through streams, placement of waste in streams, and the generation of mining waste. Some of the existing regulations that would be replaced by the proposed rule were promulgated more than 30 years ago. OSM asserts that updated rules, which have been under development since 2009, are needed to reflect current science, technology, and modern mining practices.

The proposal retained the core of existing rules in many respects, including the stream buffer zone rule. It requires that land within 100 feet of a perennial or intermittent stream shall not be disturbed by surface mining activities, including the dumping of mining waste, unless the regulatory authority grants a variance that specifically authorizes surface mining activities closer to or through such a stream. The 2015 proposed rule, called the Stream Protection Rule, also included new requirements for baseline data collection to determine the impacts of proposed mining operations, more specificity on reclamation plans, and more specificity on measures to protect fish and wildlife.

OSM estimated that the coal industry would incur annual compliance costs of \$52 million under the proposal. These costs would be above baseline costs that would be incurred in the absence of the rule. Costs of the proposed rule were expected to consist of \$45 million annually for surface coal mining operations and \$7 million annually for underground mining operations. Nearly 46% of the expected compliance costs reflect new regulatory requirements on coal mining operations in Appalachian states. Of the increased costs in those states, OSM estimated that 72% are for costs to surface mining operations there—or, 33% of the total cost of the rule. Other regions also are expected to experience operational costs, but impacts are anticipated to vary across mine type (e.g., surface or underground) and region. Because of data limitations, OSM could not quantify benefits of the proposal, but qualitatively, the agency said that the rule is expected to reduce the adverse impacts of coal mining on water resources and aquatic habitat.

To stakeholders, OSM's Stream Protection Rule raised a number of questions, including whether new regulations are needed; if so, whether benefits of the proposed rule justify the projected compliance and associated costs; and whether an alternative regulatory approach with greater benefits but also increased costs would better achieve SMCRA's purposes.

Concern that OSM's efforts to develop a new rule would be costly and burdensome to the coal industry has led to strong congressional interest for some time. Oversight hearings have been held, and legislation was introduced in the 114th Congress to halt or redirect OSM's initiatives, including H.R. 1644 (passed by the House January 12, 2016), S. 1458, and a provision of H.R. 2822. Mining industry groups were very critical of the costs of the proposal, while environmental groups that have generally supported strengthening SMCRA regulations contended that the rule should be stronger to provide more protection to streams. A number of states say that the rule would undermine state authority and that OSM failed to consult adequately with states during development of the rule.

OSM issued the final revised Stream Protection Rule on December 19, 2016. Opposition by coal industry groups and some Members of Congress was immediate, and legislation to overturn the rule was introduced, including H.J.Res. 11 and H.J.Res. 16 in the 115th Congress. If the final rule

were overturned by legislative or presidential action, the existing rules (i.e., the 1983 stream buffer zone rule) would remain in place, unless or until new rules or guidance were issued.

This report briefly describes SMCRA and the context for the 2015 proposed rule. It discusses major elements of the proposal and OSM's estimates of its costs and benefits. It describes congressional activity concerning the proposed rule and highlights key elements of the final rule, which was released on December 19, 2016.

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Introduction

On July 16, 2015, the Office of Surface Mining Reclamation and Enforcement (OSM) of the Department of the Interior proposed a Stream Protection Rule. It would revise regulations that implement Title V of the Surface Mining Control and Reclamation Act (SMCRA), the law that governs the permitting of coal mining operations.¹ Portions of the existing rules were promulgated more than 30 years ago.² OSM asserts that updated rules, which have been under development for more than five years, are needed to reflect current science, technology, and modern mining practices. The proposed revisions were based on several needs for federal regulatory action identified by OSM.³

- A need for regulatory changes to improve implementation of SMCRA provisions related to stream protection.
- A need for adequate data to evaluate the impacts of coal mining operations and ensure implementation of SMCRA's requirements.
- A need for adequate objective standards to effectively evaluate compliance and limit or prevent adverse impacts, as appropriate.
- A need to apply current information, technology, and methods to incorporate advances in scientific knowledge that have occurred since the SMCRA regulations were adopted.

To stakeholders, the proposed rule raised a number of issues, including whether new federal rules are needed and, in particular, whether OSM's proposed approach will improve and strengthen implementation of the law. The rule has been controversial since OSM began developing it in 2009. Critics in the coal mining industry and some Members of Congress have argued that revisions of existing rules are not needed and will impose costs that will greatly affect the viability of the coal mining industry in the United States. The new rules are part of a "war on coal" by the Obama Administration, some say.⁴ At the same time, some environmental advocacy groups that have generally supported OSM's efforts to strengthen regulation of coal mining operations now contended that the proposed rule was not strong enough. Thus, a related issue is whether an alternative regulatory approach with greater benefits but also increased costs would better achieve SMCRA's purposes.

This report is intended to assist consideration of issues raised by the Stream Protection Rule. The report briefly describes SMCRA and the context for the 2015 proposed rule. It discusses major elements of the 2015 proposal and OSM's estimates of its impacts (costs and benefits). The report describes reactions to the proposed rule by stakeholders and legislation and oversight in Congress. Finally, it highlights key elements of the final rule, which was released by OSM on December 19, 2016.⁵

¹ 30 U.S.C. §§1201-1328.

² In this report, "existing rules" refers to SMCRA regulations in effect prior to the Stream Protection Rule rulemaking.

³ U.S. Department of the Interior, Office of Surface Mining Reclamation and Enforcement, *Draft Stream Protection Rule Environmental Impact Statement*, July 2015, pp. 1-11-1-16. Hereinafter, Draft EIS.

⁴ For example, Senate Majority Leader McConnell has been quoted as saying, "I'm going to keep vigorously fighting against the Obama administration's continued war on coal jobs." *The Hill*, June 3, 2014, <http://thehill.com/blogs/floor-action/senate/208031-mcconnell-vows-to-fight-obamas-war-on-coal>.

⁵ U.S. Department of the Interior, Office of Surface Mining Reclamation and Enforcement, "Stream Protection Rule, Final rule," 81 *Federal Register* 93066-93445, November 20, 2016.

Background

Congress enacted SMCRA in 1977 (P.L. 95-87). The statute established OSM within the Department of the Interior and charged the Secretary of the Interior with the responsibility to carry out the requirements in the act both directly and by promulgating regulations.

Section 102 of the statute specifies a number of purposes, beginning with to “establish a nationwide program to protect society and the environment from the adverse effects of surface coal mining operations.”⁶ Another stated purpose acknowledges that the statute reflects a need 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.”⁷ Regarding the statute as a whole, it has been observed that “[e]xcept for the laws governing the handling and disposal of hazardous waste, the complexity of the SMCRA program is unsurpassed in environmental law.”⁸

Congress identified stream protection as a fundamental purpose of SMCRA, as reflected in one of the congressional findings in the statute.⁹

[M]any surface mining operations result in disturbances of surface areas that burden and adversely affect commerce and the public welfare by destroying or diminishing the utility of land for commercial, industrial, residential, recreational, agricultural, and forestry purposes, by causing erosion and landslides, by contributing to floods, by polluting the water, by destroying fish and wildlife habitats, by impairing natural beauty, by damaging the property of citizens, by creating hazards dangerous to life and property, by degrading the quality of life in local communities, and by counteracting governmental programs and efforts to conserve soil, water, and other natural resources;

Section 515 of the act details minimum performance standards for environmental protection and public health and safety, which apply to surface coal mining and reclamation operations, surface effects of underground coal mining operations, and surface coal mining in special areas or in special circumstances (such as mountaintop removal mining¹⁰ and steep slope mining).¹¹ It generally requires that land be restored after mining to its approximate original contour (AOC), that it be revegetated, that acid mine drainage be prevented, that subsided lands be restored, that erosion be controlled, and that certain other measures be taken to reclaim affected lands and waters.

Section 506 of SMCRA requires a mining operator to obtain a permit from the regulatory authority prior to the commencement of mining operations.¹² The scope of the permit encompasses the life-cycle of the mining operations from the siting of the mining area through

⁶ 30 U.S.C. §1202(a).

⁷ 30 U.S.C. §1202(f).

⁸ James M. McElfish Jr. and Ann E. Beier, *Environmental Regulation of Coal Mining: SMCRA's Second Decade* (Environmental Law Institute, 1990), p. 5. Hereinafter, McElfish.

⁹ 30 U.S.C. §1201(c).

¹⁰ SMCRA Section 515(c)(2) defines mountaintop removal mining as “surface mining of coal where the mining operation will 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” (30 U.S.C. §1265(c)(2)). Policy issues concerning the practice of mountaintop removal mining are discussed in CRS Report RS21421, *Mountaintop Removal Mining: Background on Recent Controversies*, by Claudia Copeland.

¹¹ SMCRA Section 515(d)(4) defines steep slope mining as “any slope above twenty degrees or such lesser slope as may be defined by the regulatory authority after consideration of soil, climate, and other characteristics of a region or State” (30 U.S.C. §1265(d)(4)).

¹² 30 U.S.C. §1256.

the extraction of coal and related activities, the management and disposal of mining wastes, and the reclamation of affected lands and waters once extraction is complete.¹³ Commencing mining operations without an approved permit issued by the regulatory authority is unlawful under SMCRA, and is subject to enforcement actions. In applying for a permit, the applicant must submit its proposal for mining operations to the regulatory authority and specify the measures that would be taken to ensure compliance with the requirements and criteria of SMCRA and the implementing regulations. Prior to the issuance of the permit by the regulatory authority, Section 509 of SMCRA also requires the applicant to obtain a performance bond to demonstrate its financial capability to fulfill permit obligations through reclamation after mining ceases.¹⁴

Section 503 of SMCRA provides that any state may obtain primary jurisdiction over regulating surface coal mining and reclamation operations on non-federal and non-Indian lands through submission of a program for approval by OSM.¹⁵ Once a state's program is approved, the state has the primary responsibility for achieving the purposes of the act. A primacy state is the sole issuer of permits, and OSM maintains a limited role in a state with an approved program. It evaluates each state's performance in carrying out its approved program, and it provides backup enforcement against violating operators in the event of default by the state.¹⁶ States are required to submit amendments to their programs (e.g., changes to state statutes or regulations) to OSM for determining consistency with the federal program.

According to OSM, coal mining is currently occurring in 26 states. To date, all but two of those states (Tennessee and Washington) have achieved program primacy; OSM directly regulates surface coal mining and reclamation activities in those two states. At present, no tribes have primacy.¹⁷

The permit is the heart of the SMCRA program, enabling regulatory authorities to determine whether mining may occur and to establish the terms for mining. The permit requirement is designed to protect the public health, safety, and the environment by conditioning permit issuance on the applicant's demonstration that mining and reclamation can be successfully accomplished. The permit requires the mine operator to plan the operation in detail to identify and avoid adverse environmental impacts and to facilitate site reclamation after mining is complete. Some have noted that it also gives the regulatory authority significant enforcement powers over the mining operation, including a basis for evaluating the feasibility of reclamation and risk, if any, to water supplies, land surfaces, public facilities, and other resources.¹⁸ Permits generally are issued for five-year terms. A valid permit carries the right of successive renewal, unless the regulatory authority finds that present mining and reclamation operations are not in compliance with

¹³ Specific aspects of a mining operation also may be subject to various other federal, state, or local permitting requirements, in addition to a SMCRA permit covering the life-cycle operations more broadly.

¹⁴ 30 U.S.C. §1259. For additional discussion, see U.S. Government Accountability Office, *Surface Coal Mining, Financial Assurances for, and Long-Term Oversight of, Mines with Valley Fills in Four Appalachian States*, GAO-10-206, January 2010.

¹⁵ 30 U.S.C. §1253.

¹⁶ 30 U.S.C. §§1267, 1271.

¹⁷ U.S. Department of the Interior, Office of Surface Mining Reclamation and Enforcement, "OSMRE Regulating Coal Mines," <http://www.osmre.gov/programs/RCM.shtm>. OSM also is the primary permitting authority for coal mining on federal public lands, in coordination with the Bureau of Land Management. Fourteen primacy states participate in permitting on federal public lands under cooperative agreements with OSM.

¹⁸ See McElfish, Chapter 2.

SMCRA and its regulations, or for other reasons, such as the operator has not provided adequate performance bonding.¹⁹

Relationship Between SMCRA and the Clean Water Act

The goal of the Clean Water Act (CWA) is to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”²⁰ To do so, Section 301 prohibits the discharge of pollutants from point sources into waters of the United States unless consistent with the requirements of the act.²¹ The CWA authorizes the discharge of pollutants under two different permit programs, both of which are likely to apply to coal mining activities. Section 404 authorizes discharges of dredged or fill materials into waters of the United States,²² while Section 402 governs discharges of pollutants other than dredged or fill material.²³ Permits issued under Section 402, known as NPDES permits, restrict the amount of specified pollutants that may be discharged. Section 404 permits are issued by the U.S. Army Corps of Engineers (except in New Jersey and Michigan, which are not coal mining states), while Section 402 permits are generally issued by states, including all current coal mining states. The Environmental Protection Agency (EPA) has developed technology-based wastewater effluent limitations for surface coal mining and reclamation operations, which are codified in 40 C.F.R. Part 434. These technology-based effluent limits and any more stringent water quality-based limits necessary to meet applicable state water quality requirements must be incorporated in NPDES permits. In addition, Section 401 of the CWA requires that each applicant for a federal license or permit submit a certification from the state in which the discharge originates that the discharge will comply with federal and state water quality requirements.²⁴

Although both SMCRA and the CWA are concerned with environmental impacts of regulated activities, they provide for separate regulatory programs with different purposes and permitting requirements and procedures. The CWA focuses primarily on regulating discharges of pollutants into waters of the United States from coal mining and a wide range of other sources, whereas SMCRA regulates environmental and other impacts of surface coal mining and reclamation operations. The requirements of the CWA have independent force and effect, regardless of the terms of the SMCRA permit, as is recognized in Section 702(a) of SMCRA, which provides that “Nothing in this Act shall be construed as superseding, amending, modifying, or repealing the [Clean Water Act], the State laws enacted pursuant thereto, or other Federal laws relating to the preservation of water quality.”²⁵ Further, Section 508 of SMCRA requires that each permit application include “the steps taken to comply with applicable air and water quality laws and regulations and any applicable health and safety standards.”²⁶

OSM points out that SMCRA, unlike the CWA, provides for the regulation of the environmental impacts, including the hydrologic impacts, of all phases of mining operations—design, operation, and reclamation. Concerning coal mining, the CWA’s regulatory scope is more limited than

¹⁹ 30 C.F.R. §774.15.

²⁰ 33 U.S.C. §1251(a).

²¹ 33 U.S.C. §1311.

²² 33 U.S.C. §1344.

²³ 33 U.S.C. §1342.

²⁴ 33 U.S.C. §1341.

²⁵ 30 U.S.C. §1292(a); citations omitted.

²⁶ 30 U.S.C. §1259(a)(9).

SMCRA's. The legislative history of SMCRA notes the limitations of the CWA concerning environmental impacts of coal mining activities.

The [CWA] does not contain the statutory authority for the establishment of standards and regulations requiring comprehensive preplanning and designing for appropriate mine operating and reclamation procedures to ensure protection of public health and safety and to prevent the variety of other damages to the land, the soil, the wildlife, and the aesthetic and recreational values that can result from coal mining.²⁷

The Stream Buffer Zone Rule and Revisions

In 1979 OSM promulgated permanent program performance standards to implement SMCRA, including the stream buffer zone rule, for surface and underground mining operations. The stream buffer zone rule provided that no surface area within 100 feet of a perennial stream (a stream having flowing water year-round during a typical year) or a non-perennial stream with a biological community may be disturbed by surface operations or facilities unless the regulatory authority finds that the original stream channel would be restored and that, during and after mining, the activities would not adversely affect the quantity and quality of the stream segment within 100 feet of those activities. Stream-channel diversions done to mine coal beneath a streambed were excluded from these rules.²⁸

In 1983, OSM revised the stream buffer zone and related rules to protect perennial streams and intermittent streams (streams that have flowing water during certain times of the year, when groundwater provides stream flow) from disturbance by coal mining activities. In order to protect streams from sedimentation and channel disturbance, the 1983 buffer zone rules provided that no land within 100 feet of a perennial or intermittent stream shall be disturbed by surface mining activities, including the dumping of mining waste, unless the regulatory authority grants a variance that specifically authorizes surface mining activities closer to or through such a stream. To grant such a variance, the regulatory authority must find that the proposed mining activity will not cause or contribute to a violation of applicable water quality standards²⁹ and will not adversely affect water quantity and quality or other environmental resources of the stream. The 1983 rules deleted the requirements in the 1979 rules that the original stream channel be restored and replaced the biological community criterion for determining which non-perennial streams must be protected with a requirement for protecting all intermittent streams.

In partial settlement of litigation over coal mining practices in West Virginia, OSM, the Army Corps of Engineers, and EPA developed a draft Programmatic Environmental Impact Statement (PEIS) on the effects of mountaintop removal mining in 2003. The settlement called for OSM to make changes to its stream buffer zone rule to improve consistency with the Clean Water Act. OSM proposed changes to the rules in 2004, but it subsequently decided to prepare a new PEIS and to draft revised rules and did not finalize the 2004 proposal. Both the PEIS and draft rules were released in 2007.

²⁷ H.Rept. 94-1445 at 90-91 (1976).

²⁸ Draft EIS, p. 1-4.

²⁹ Pursuant to the Clean Water Act, states adopt water quality standards for waters within their jurisdiction. The standards consist of designated uses (e.g., drinking water supply or recreation) and water quality criteria necessary to attain and maintain the designated uses. Water quality standards, together with technology-based performance standards, serve as the basis for permit limits that are established for sources that discharge pollutants into waterbodies. Coal mining operations are likely to be subject to one or more Clean Water Act permit requirements; see CRS Report RS21421, *Mountaintop Removal Mining: Background on Recent Controversies*, by Claudia Copeland.

OSM issued final revised buffer zone rules in December 2008.³⁰ As described by OSM, the final rules required that surface coal mining operations be designed to minimize the amount of spoil placed outside the mined-out area, thus minimizing the amount of land disturbed. The rules also required that, to the extent possible, surface coal mining and reclamation operations be designed to avoid disturbance of perennial or intermittent streams and the surface of lands within 100 feet of those streams. If avoidance is not reasonably possible, the rules required that the permit applicant develop and analyze a range of reasonably possible alternatives; the regulatory authority would select the one that would have the least overall adverse impact on fish, wildlife, and related environmental values. According to OSM, the final rules did not mandate avoiding placement of coal mine waste³¹ in or within 100 feet of perennial or intermittent streams in all cases, because “there is sometimes no viable alternative to the construction of coal mine waste disposal facilities in perennial or intermittent streams and their buffer zones, in which case avoidance is not reasonably possible.”³² Restoration of stream ecological functions would not be required.

The 2008 revised rules eliminated the provision in the 1983 stream buffer zone rule that had required a finding that the proposed activity would not cause or contribute to a violation of water quality standards. In doing so, OSM said that the previous language more closely resembled the Clean Water Act than the underlying provisions of SMCRA. The 2008 rules replaced the finding requirements in the 1983 rules with requirements for a finding that avoiding disturbance of the stream is not reasonably possible and 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 SMCRA regulatory program. Because the SMCRA rules would not substitute for or supersede the Clean Water Act, mine operators still would have to comply with the requirements of that law, OSM said.

Both industry and environmental groups said that the final rules did little to change the existing practice of disposing excess spoil into valleys and streams.³³ In fact, OSM stated that a key purpose of the 2008 rules was to reduce confusion about the 1983 rule and to conform the regulations to historic practice of federal and state authorities. Environmental groups said that the final rules would actually reduce environmental protection for streams by making it easier for coal mine operators to obtain exemptions from the stream buffer zone requirement, thus increasing destructive mining activities in and around streams. Environmental groups challenged the 2008 rules in federal court.

Obama Administration Activities

The Obama Administration has broadly focused attention on the environmental impacts of coal mining operations through a number of regulatory and administrative initiatives. In 2009, the Administration requested that the federal court hearing environmentalists’ challenge to the 2008

³⁰ Department of the Interior, Office of Surface Mining Reclamation and Enforcement, “Excess Spoil, Coal Mine Waste, and Buffers for Perennial and Intermittent Streams; Final Rule,” *73 Federal Register* 75814-75885, December 12, 2008, p. 75875. Hereinafter, 2008 Rule.

³¹ “Coal mine waste” refers to earth materials, which are combustible, physically unstable, or acid-forming or toxic-forming that are wasted or otherwise separated from the coal product. 30 C.F.R. 701.5.

³² 2008 Rule, p. 75833.

³³ “Excess spoil” refers to coal mine waste material that is generated during mining operations, such as rock that is removed to get at coal between layers of rock and dirt and that, after being disturbed, is too large in volume to be put back into the area from which it was originally taken. Valley fills are composed of excess spoil that is disposed of by placing it in a valley. Because many valleys in mountainous coal regions contain streams, valley fills are generally placed in streams or streambeds. See 30 C.F.R. 701.5.

stream buffer zone rules vacate the rules and remand to OSM. The Administration was seeking to return immediately to the more stringent 1983 rule until replacement rules could be adopted. The Administration argued that the 2008 rules do not adequately protect water quality and stream habitat. The court rejected the Administration's request, leaving the 2008 rules in place.³⁴ However, litigation over the rules continued. In February 2014, the same federal court ruled that the 2008 rules had been issued without necessary consultation with federal wildlife agencies (under the Endangered Species Act).³⁵ The court vacated the 2008 rules and reinstated the rules that had been in effect previously (the 1983 stream buffer zone rule). In December 2014, OSM formally withdrew the 2008 rules.³⁶ Withdrawal of the rules was expected to have little impact, because most states had not implemented them due to the litigation. Further, as discussed next, in the interim, OSM had begun efforts to develop new rules.

The 2009 MOU on Appalachian Surface Coal Mining

In June 2009, officials of EPA, the Army Corps of Engineers, and the Department of the Interior signed a Memorandum of Understanding (MOU) implementing an interagency plan intended to reduce the harmful environmental impacts of surface coal mining in Appalachian states. The plan included a series of near-term and longer-term administrative actions.³⁷

One of the actions addressed in the MOU was revision of the 2008 stream buffer zone rule. In November 2009, OSM identified a broad set of regulatory options that it was considering for revisions to the 2008 rules, ranging from formally reinstating the 1983 rule with small conforming changes, to requiring stricter buffer zone requirements for mountaintop removal mining operations on steep slopes.³⁸ OSM officials subsequently began working on a new rule and an accompanying draft Environmental Impact Statement (EIS), which would apply nationwide, not just in Appalachia. OSM's efforts to revise the rule were criticized, based on concerns about potential economic impacts of the rule and the quality of work on its EIS. However, OSM officials and environmental advocacy groups contended that a new rule was needed to protect waterways from surface mining operations.

OSM missed several self-imposed dates for releasing draft revised rules and an EIS, but eventually announced both on July 16, 2015. As indicated since 2009, the proposal—now called the Stream Protection Rule—would apply to coal mining activities nationwide, not just Appalachia. It is broader in scope than the existing stream buffer zone rule, because it deals with the whole mine permit area and outside the permit area, not just the stream buffer zone. A Notice of the Draft EIS was published in the *Federal Register* on July 17, 2015.³⁹ The proposed rule was published in the *Federal Register* on July 27, 2015,⁴⁰ as was a Notice of Availability of a draft

³⁴ Nat'l Parks Conservation Ass'n v. Salazar, 660 F. Supp. 2d 3 (D.D.C. 2009).

³⁵ Nat'l Parks Conservation Ass'n v. Jewell, D.D.C., No. 1:09-cv-00115, February 20, 2014.

³⁶ Department of the Interior, Office of Surface Mining Reclamation and Enforcement, "Excess Spoil, Coal Mine Waste, Diversions, and Buffer Zones for Perennial and Intermittent Streams," 79 *Federal Register* 76227-76233, December 22, 2014.

³⁷ For additional information on these Administration actions, see <http://water.epa.gov/lawsregs/guidance/wetlands/mining.cfm>.

³⁸ Department of the Interior, Office of Surface Mining Reclamation and Enforcement, "Stream Buffer Zone and Related Rules," 74 *Federal Register* 62664-62668, November 30, 2009.

³⁹ Department of the Interior, Office of Surface Mining Reclamation and Enforcement, "Stream Protection Rule; Draft Environmental Impact Statement," 80 *Federal Register* 42535-42536, July 17, 2015.

⁴⁰ Department of the Interior, Office of Surface Mining Reclamation and Enforcement, "Stream Protection Rule: Proposed Rule," 80 *Federal Register* 44436-44698, July 27, 2015.

Regulatory Impact Analysis (RIA) for the proposed rule.⁴¹ In response to requests for more time to review and comment on the documents, on September 10, 2015, OSM extended the original 60-day comment period until October 26, 2015, allowing more than 100 days in total for comments.⁴²

Major Features of the 2015 Proposed Stream Protection Rule

The 2015 proposed rule was long—262 pages in the *Federal Register*, consisting of 150 pages of explanatory Preamble and 112 pages of regulatory text—and complex. This section of this report describes major features of the proposal, compared with existing regulations in 30 C.F.R. Chapter VII, drawing in part from descriptions in the Draft EIS. In addition to proposing new stream protection regulatory requirements, the rule would revise and reorganize much of the existing SMCRA implementing rules in the Code of Federal Regulations for clarity purposes, such as making “plain English” revisions to the text.

In the Draft EIS, OSM described its position on the need for regulatory improvements: “Despite the enactment of SMCRA and the promulgation of federal regulations implementing the statute, surface coal mining operations continued to have negative effects on streams, fish, and wildlife.”⁴³ Documented problems cited in literature surveys and studies, as well as direct observations of impacts of coal mining operations, prompted OSM to consider a different approach to implementing the provisions of the statute.⁴⁴ OSM concluded that evidence indicated that existing regulations were inadequate to meet SMCRA’s mandate to “establish a nationwide program to protect society and the environment from the adverse effects of surface coal mining operations.”⁴⁵

To develop the proposed rule, OSM considered nine regulatory alternatives, including retaining existing rules intact (the No Action Alternative), reinstating the now-vacated 2008 rules, and seven other options with various combinations of regulatory changes intended to be more environmentally protective than existing rules.⁴⁶ The preferred alternative (i.e., the proposed rule) retained the basic elements of the 1983 stream buffer zone rule and many other portions of the existing rules. The preferred alternative was not the most environmentally stringent of all of the options evaluated by OSM. However, it included elements from several of the other alternatives considered by OSM that would be more stringent than existing rules, such as new requirements for baseline data collection to determine the impacts of proposed mining operations, more

⁴¹ Department of the Interior, Office of Surface Mining and Reclamation Enforcement, “Notice of Availability; Draft Regulatory Impact Analysis,” 80 *Federal Register* 44700, July 27, 2015.

⁴² Department of the Interior, Office of Surface Mining Reclamation and Enforcement, “Notice, extension of comment period,” 80 *Federal Register* 54590-54951, September 10, 2015.

⁴³ Draft EIS, p. 1-11.

⁴⁴ *Ibid.*

⁴⁵ 30 U.S.C. §1202(a).

⁴⁶ Details of each of the nine regulatory options are discussed in the draft Regulatory Impact Analysis for the proposed rule. Industrial Economics, Inc., *Draft Regulatory Impact Analysis of the Stream Protection Rule*, prepared for the U.S. Department of the Interior, Office of Surface Mining Reclamation and Enforcement, July 2015. Hereinafter, Draft RIA. <http://www.osmre.gov/programs/rcm/streamprotectionrule.shtm>. The regulatory alternatives also are discussed in Chapter Two of the Draft EIS.

specificity on reclamation plans, and more specificity on measures to protect fish and wildlife from adverse impacts of mining.⁴⁷

Baseline Data Collection

Under existing rules, the applicant for a SMCRA permit is required to submit certain baseline information: data for existing wells, springs, and other groundwater resources within or adjacent to the proposed permit area; information on surface water quality and quantity sufficient to demonstrate seasonal variation and water usage; and a description of the geology of the proposed permit area and the adjacent area.

The proposed rule would have established minimum sample collection intervals and expanded the suite of parameters for which permittees must analyze all water samples. Baseline data would be required on all intermittent and perennial streams and a representative number of ephemeral streams (an ephemeral stream typically has flowing water only during and for a short time after precipitation events). Twelve evenly spaced samples would be required from a consecutive 12-month period. The proposal also would have added a requirement to document the biological condition of perennial and intermittent streams and the sediment load of the watershed, as well as precipitation.

Monitoring During Mining and Reclamation

Existing rules in effect since 1983 require limited monitoring of the quantity and quality of surface water and groundwater. At a minimum, certain parameters (e.g., pH, total dissolved solids) must be monitored every three months after reclamation is complete until final bond release. The regulatory authority may modify or waive the monitoring requirements at any time if the permittee makes certain demonstrations, including that the operation has minimized disturbance to the hydrologic balance within the permit area and prevented material damage to the hydrologic balance outside the permit area.

Under the proposed rule, monitoring of surface water and groundwater during mining and reclamation would have to occur at least quarterly. The permittee would be required to analyze each sample for the same parameters measured during baseline sampling. Monitoring sites are to be designated in the permit. The permittee would have to monitor the biological condition of streams annually until the data demonstrate full restoration of the pre-mining biological condition of the stream. The permittee would be required to review all monitoring data annually to identify adverse trends and collect on-site precipitation measurements using self-recording rain gages. The plan for designing and monitoring surface water runoff control structures would require an inspection following each storm event with a two-year or greater recurrence-interval.

⁴⁷ In evaluating the nine regulatory alternatives, the No Action Alternative provides the baseline for considering changes to existing rules under the other options, but there is no indication that OSM considered this alternative of retaining existing rules without change. Also, OSM rejected the option of reinstating the 2008 stream buffer zone rule, as the Obama Administration's position since 2009 has been that those rules do not sufficiently protect water quality. In the Draft RIA, OSM says that reinstating the 2008 rules would not differ significantly from the No Action Alternative, because current Clean Water Act requirements and policies and state policies under SMCRA "have effectively achieved implementation of this Alternative in Central Appalachia, which is the region in which the 2008 Stream Buffer Zone rule would have its greatest impact if it had remained in effect." Draft RIA, p. ES-31.

Definition of “Material Damage to the Hydrologic Balance Outside the Permit Area”

Section 510(b)(3) of SMCRA provides that the regulatory authority may not approve a permit for surface coal mining operations unless it first finds that the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area. However, neither SMCRA nor existing rules define “material damage to the hydrologic balance outside the permit area.” OSM’s position, reflected in the existing rules, has been that it would be difficult to establish fixed criteria, because the means for measuring material damage may vary from area to area and from operation to operation.

The proposed rule altered the agency’s views on defining the term. The proposal defined “material damage to the hydrologic balance outside the permit area” as 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 attainment or continuance of any designated surface water use under the Clean Water Act, or any existing or reasonably foreseeable use of surface water or groundwater outside the permit area. The proposed definition was not limited to impacts from surface mining activities or impacts of activities conducted on the surface of the land, but also applied to underground coal mines, such as adverse impacts from subsidence resulting from underground coal mining operations or release of toxic mine discharge to nearby surface waters.

Mining Activities In or Near Streams (Including Excess Spoil Fills and Coal Mine Waste Disposal Facilities)

Mining in or near streams refers to activities such as construction of sedimentation ponds or coal mine waste disposal facilities that take place within a stream or buffer zone. The activities may sometimes cover the stream. SMCRA rules have long provided that mining activities may not disturb land within 100 feet of a perennial or an intermittent stream unless the regulatory authority specifically authorizes activities closer to, or through, such a stream. The regulatory authority may authorize such activities only after finding that doing so would not cause or contribute to a violation of applicable water quality standards under the Clean Water Act and would not adversely affect the water quantity and quality or other environmental resources of the stream. Although not specifically mentioned in the rules, construction of excess spoil fills, refuse piles, slurry impoundments, and sedimentation ponds in all types of streams and their buffer zones has been allowed by OSM and most state regulatory authorities. Excess spoil minimization is not expressly required by rule, but in practice, most states have adopted policies intended to minimize the generation of excess spoil, as well as Clean Water Act policies to reduce both the number of excess spoil fills and the length of streams covered by those fills.

The 1983 SMCRA rules contained no specific protections for ephemeral streams. The preamble to the 1983 rules stated that “[i]t is impossible to conduct surface mining without disturbing a number of minor natural streams, including some which contain biota” and that “the primary objective of the rule is to provide protection for the hydrological balance and related values of perennial and intermittent streams,” as they are “streams with more significant environmental-resource value.”⁴⁸ However, in the preamble to the 2015 proposed rule, OSM described scientific studies completed since the enactment of SMCRA and adoption of existing rules that have documented the importance of headwater streams, including ephemeral streams, in maintaining

⁴⁸ 48 *Federal Register* 30312-30313 (June 30, 1983).

the ecological health and function of streams located downstream from headwaters and says that OSM no longer concurs with the previous characterization of the significance of ephemeral streams. Thus, the proposed rule included some protections for ephemeral streams.⁴⁹

The proposed rule would have prohibited mining activities in or through perennial and intermittent streams or on the surface of land within 100 feet of those streams unless the applicant makes certain demonstrations and the regulatory authority makes specified findings. The regulatory authority must find that the proposed activities would not (1) prevent attainment or maintenance of applicable Clean Water Act designated uses or water quality standards; (2) result in conversion of the stream segment from intermittent to ephemeral, from perennial to intermittent, or from perennial to ephemeral; or (3) cause material damage to the hydrologic balance outside the permit area. These requirements would apply to all mining activities, including excess spoil fills and coal mine waste disposal facilities that extend into the buffer zone, except the construction of excess spoil fills and coal mine waste disposal facilities that cover perennial or intermittent streams. The permittee must establish a 100-foot-wide or wider riparian corridor on each side of every perennial, intermittent, and ephemeral stream following the completion of mining activities. The corridor must be comprised of native trees and shrubs, including species with riparian characteristics.

The proposed rule required the applicant to make certain demonstrations to the regulatory authority to construct excess spoil fills and coal mine waste disposal facilities that would encroach upon any part of perennial or intermittent streams. The applicant must demonstrate that there is no practicable alternative that would avoid placement of excess spoil or coal mine waste in the stream; that the location will have the least adverse impact on fish, wildlife, and related environmental values; and that the fish and wildlife enhancement plan would fully and permanently offset any long-term adverse impacts on fish, wildlife, and related environmental values within the footprint of the fill, refuse pile, or impoundments.

The existing 1983 rules are intended to ensure that excess spoil fills are stable and safe, while the proposed rule would add requirements to promote environmental protection, including minimizing the adverse effects of fill construction in perennial and intermittent streams. The applicant also is required to demonstrate that the excess spoil or coal mine waste disposal facility has been designed so as to not cause or contribute to violating water quality standards or result in formation of toxic mine drainage and that the revegetation plan allows for reforestation of the completed excess spoil fill. The permittee must first obtain all necessary Clean Water Act authorizations and permits before conducting any activity requiring such authorization, and the SMCRA regulatory authority must take enforcement action if the permittee does not get all permits before beginning work.

The proposed rule would have prohibited construction of durable rock fills, which has been allowed under existing rules. Durable rock fills use end-dumping as a means of spoil placement. With end-dumping, operators push or dump rock overburden over the side of the mountain into the valley below, with larger rocks rolling to the bottom of the valley, which can create structural instability of the fill and impair good drainage. While end-dumping or other techniques that are not conducive to compaction would be prohibited, other types of fills, such as valley fills, head-of-hollow fills, or sidehill fills, would be allowed.

⁴⁹ 80 *Federal Register* 44451 (July 27, 2015).

Mining Through Streams

Mining through streams refers to activities that take place when, because coal is located beneath a streambed, operators divert the stream channel during mining and remove the streambed to extract the coal. The original stream location may or may not be reconstructed after mining. Under the rules in effect since 1983, the regulatory authority could approve diversion of perennial or intermittent streams within the permit area to allow mining through only after making a finding that the diversion would not adversely affect the water quantity and quality and related environmental resources of the stream. The design for restored stream channels for perennial and intermittent streams (or permanent diversion channels for those streams) must restore or approximate the pre-mining characteristics of the original stream channel, including the natural riparian vegetation.

The proposed rule would have allowed mining through any type of stream (perennial, intermittent, or ephemeral), provided that the applicant demonstrates to the regulatory authority that there is no reasonable alternative that would avoid mining through or diverting the stream; the operational design would minimize the extent of stream mined through or diverted; and the hydrological form of perennial, intermittent, and ephemeral streams and the ecological function of perennial and intermittent streams could and would be restored using techniques in the proposed reclamation plan. Designs for permanent stream-channel diversions, temporary diversions that would remain in use for two or more years, and stream channels to be restored after completion of mining must adhere to design techniques that would restore or approximate the pre-mining characteristics of the original stream channel. Permittees would not be required to reestablish the pre-mining biological condition of a stream, but it must be adequate to support pre-mining designated uses.

The permittee must establish a 100-foot-wide or wider riparian corridor on each side of every perennial, intermittent, and ephemeral stream following the completion of mining activities. The corridor must be comprised of native trees and shrubs, including species with riparian characteristics.

Approximate Original Contour (AOC) and AOC Variances

Section 515(b) of SMCRA generally requires that mine spoil be returned to the mined-out area and land be restored to its approximate original contour (AOC) after mining.⁵⁰ Restoring AOC means that rock that is removed during coal mining is replaced in an effort to achieve the original contour, or surface topography, of the mined area (i.e., a level plateau or gently rolling contour). However, the statute recognizes that for some types of coal mining operations, meeting this requirement can be difficult. During mountaintop removal mining and steep slope mining, in particular, rock that is taken from its natural state and broken up “swells” by as much as 15%-25%, and thus cannot be fully returned to the mountain or mine area. The remaining material, called overburden, often is retained in nearby valleys, thus creating valley fills that may bury stream segments. Section 515(c)(2) of SMCRA allows an exception from the AOC requirement for mountaintop removal mining operations.⁵¹

Under existing rules, mountaintop removal mining operations may be exempt from AOC restoration requirements if the post-mining land use and post-mining surface topography requirements of SMCRA are met. To obtain a permit for mountaintop removal mining operations,

⁵⁰ 30 U.S.C. §1265(b).

⁵¹ 30 U.S.C. §1265(c)(2).

the proposed post-mining land use must be a commercial, industrial, residential, agricultural, or public facility land use. The regulatory authority must find that the proposed post-mining land use meets all requirements for alternative post-mining land uses and is an equal or better economic or public use of the land compared to its pre-mining use.

The proposed rule was generally similar to existing rules in allowing mountaintop removal mining operations to be exempt from the law's AOC requirement. The proposed rule would have required that applicants for AOC variances for mountaintop removal operations demonstrate that no damage would result to natural watercourses within the watershed(s) of the proposed permit and adjacent area. The applicant would have to demonstrate that there would be no adverse changes in parameters of concern in discharges to surface water and groundwater and that no change would occur in the size or frequency of peak flows, as compared to the peak flows that would occur if the permittee restored the site to AOC. The permittee would have to reforest the site with native species, if the site was forested before submission of the permit application, unless reforestation would be inconsistent with the post-mining land use.

Section 515(d) of SMCRA also allows surface coal mining operations in steep slope areas to apply for and receive a variance from the law's AOC requirement, in exchange for creation of specific post-mining land use that is compliant with the statute and regulations.⁵² Under existing rules, AOC variances for steep slope mining operations are allowed. The proposed post-mining land use must be of an industrial, commercial, residential, or public (including recreational facilities) nature. The post-mining use must be an equal or better economic or public use. The applicant must demonstrate that the proposed operation will improve the watershed when compared to either pre-mining conditions or the conditions that would exist if the applicant restored the area to AOC after mining.

Under the proposed rule, requirements allowing steep slope operations to seek AOC variances were generally similar to those under existing rules. Under the proposal, for approval of steep slope variances, permit applicants would have to demonstrate that certain criteria are met. The criteria would include

- the operation will result in fewer adverse impacts to the aquatic ecology of the impact area than would occur if the site were mined and restored to AOC;
- surface water flow in the watershed would be improved over both pre-mining conditions and conditions that would exist if the area were mined and restored to AOC;
- the variance would not result in construction of an excess spoil fill in an intermittent or perennial stream; and
- any deviations from the pre-mining surface configuration are necessary, appropriate, and no larger than needed to achieve the post-mining land use.

Revegetation, Reforestation, and Topsoil Management

Under existing rules, the permittee must restore all disturbed areas to a condition in which they are capable of supporting the uses that they were capable of supporting before any mining or higher or better uses. The permittee must salvage and redistribute all topsoil, unless alternative overburden materials are approved as being equal to or better than the existing available topsoil to support vegetation. Revegetation success standards must be based on the effectiveness of the

⁵² 30 U.S.C. §1265(d).

vegetation to support the approved post-mining land use and general requirements, such as a diverse and permanent vegetative cover.

The proposed rule was similar to existing rules, but with greater emphasis on restoration of the site's ability to support the uses it supported before any mining, regardless of the approved post-mining land use. The proposal also placed greater emphasis on construction of a growing medium with an adequate root zone for deep-rooted species and on revegetation with native tree and plant species. It would have required salvage and redistribution of all organic matter (e.g., vegetative materials such as treetops and small logs) from native species in accordance with an approved plan developed by a qualified ecologist or similar expert. Burning and burial of debris from native vegetation would be prohibited, and the operator would have to use materials not otherwise used in the reclamation plan to construct fish and wildlife enhancement measures.

Fish and Wildlife Protection and Enhancement

Under the existing 1983 rules, in addition to including fish and wildlife resource information for the proposed permit area and adjacent area, each permit application must also include a fish and wildlife protection and enhancement plan. The mine operator must, to the extent possible using best technology currently available (BTCA), minimize disturbances and adverse impacts to fish, wildlife, and related environmental values and enhance such resources where practicable. Surface mining activities must not jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of designated critical habitats of such species in violation of the Endangered Species Act. The permittee must avoid disturbances to wetlands and riparian vegetation along rivers and streams and must avoid disturbances to habitats of unusually high value for fish and wildlife. These resources must be restored or enhanced, where practicable. Where fish and wildlife habitat is to be a post-mining land use, existing rules require that plant species on reclaimed areas be selected based upon their proven nutritional value for fish or wildlife, their use as cover for fish or wildlife, and their ability to support and enhance fish or wildlife habitat after bond release.

The proposed rule was similar to existing rules regarding protection of threatened and endangered species, but it also would have codified dispute resolution provisions between OSM and the U.S. Fish and Wildlife Service that have been utilized since 1996 but are not included in existing rules. Likewise, the proposal was similar to existing rules regarding the fish and wildlife resource information and protection and enhancement plan required in the permit application. It further would have required the permittee to establish a 100-foot-wide or wider permanent riparian corridor on each side of every perennial, intermittent, and ephemeral stream following the completion of mining activities. The corridor would have to be comprised of native trees and shrubs, using appropriate species of woody plants if the land would naturally revert to forest under natural succession. Fish and wildlife enhancement measures would be mandatory whenever the proposed operation would result in long-term loss of native forest, loss of other native plant communities, or filling of a segment of an intermittent stream. The proposed rule would have allowed the regulatory authority to prohibit mining of high-value habitats within the proposed permit area.

Implementation Schedule

According to the Draft RIA, a final Stream Protection Rule, when promulgated, would take effect in states with federal programs (currently Tennessee and Washington) and on Indian lands 60

days after publication in the *Federal Register*.⁵³ Generally, permit applications approved after that date must comply with the rule, and existing mining operations must comply with provisions of the rule no later than the time of permit renewal (within five years).

The Draft RIA estimated that in primacy states with approved regulatory programs, implementation may take up to 42 months, as these states develop regulations and policies consistent with a new federal rule (generally taking about 18 months), OSM reviews and approves state program amendments (generally about 7 months), and states implement the approved program amendments (within one year from OSM approval). Primacy states would not lose authority over their programs during this period, which could extend beyond the estimated 42 months. Existing mining operations must comply with provisions of the rule no later than the time of their permit renewal (within five years).

Impacts of the Proposed Rule

The Draft RIA report presented OSM's estimates of costs and benefits of the proposed rule, and it also described uncertainties associated with the analyses.

Costs⁵⁴

OSM estimated that the coal industry will incur annual compliance costs of \$52 million under the proposed rule, above baseline costs that would be incurred in the absence of the rule. Forecast compliance costs vary significantly by mine type and between regions. The \$52 million total consists of \$45 million annually for surface coal mining operations and \$7 million annually for underground mining operations.⁵⁵ Nearly 46% of the expected compliance costs reflect new regulatory requirements on coal mining operations in the Appalachia region. Of the increased costs for operations in Appalachia, OSM estimated that 72% are for costs to surface mining operations there—or, 33% of the total cost of the rule. Surface mines in the Illinois Basin and Western Interior regions are expected to experience cost increases of \$0.60 per ton as a result of the proposed rule, while underground mines in those regions are expected to experience no increase in operational costs. In Appalachia, the average compliance cost for surface mines was estimated to increase operational costs by \$0.40 per ton, while compliance costs for underground mines in Appalachia are expected to increase \$0.01 per ton.⁵⁶

OSM also estimated administrative costs of the proposed rule for industry and government, representing primarily monitoring and permitting activities. In most cases, according to the agency, added administrative costs resulting from the rule are expected to be small for industry, adding on average about \$0.01 per ton of coal mined. Costs in Appalachia will be slightly higher: \$0.03 per ton for surface mining operations and \$0.04 per ton for underground mines. Additional administrative costs for government entities are estimated to range from \$1,830 per mine for underground mining regulating agencies in the Illinois Basin and the Western Interior, to \$2,546 per mine for surface area mining regulating agencies in Central Appalachia and in the Northwest. In total, OSM estimated that government administrative costs will average \$46,000 annually, with

⁵³ Draft RIA, pp. 1-11—1-12.

⁵⁴ See Draft RIA Chapters 4 and 6.

⁵⁵ Costs described here are 2014 dollars discounted at a rate of 7%. The Draft RIA also includes separate estimates of costs discounted at a rate of 3%.

⁵⁶ Draft RIA, p. 4-24.

the highest annual costs experienced by regulating agencies in the Northern Rocky Mountains and Great Plains region (\$24,200 total annualized costs).

OSM estimated that 382 mines operated by small entities (i.e., mines with fewer than 500 employees, which is the Small Business Administration's definition of small entity) would be affected by the proposed rule. Of the total, 91% of such mines are located in Appalachia. OSM also estimated that 76% of the mines in Appalachia owned by small entities would experience compliance and administrative costs of less than 5% as a share of their revenues. However, nearly 11% of such mines in Appalachia would incur costs of 10% or more. In the Draft RIA, OSM notes that SMCRA Section 507(c) establishes a small operator assistance program and says that, if appropriations for it are made available, this program could assist some small operators with training and financial assistance in preparing elements of permit applications. OSM estimated that compliance costs for SBA small entities would range between zero and 3.6% of gross annual revenues, depending on the mining region. In Appalachia, compliance costs are estimated to average 4.7% of gross annual revenues for surface mines and 2.5% of gross annual revenues for underground mines.⁵⁷

OSM estimated that the total aggregate annual compliance and related costs associated with the proposed rule would not exceed \$60 million. Because the projected costs would not have an annual effect on the economy of \$100 million or more, the rule is not considered an economically significant rule by the Office of Management and Budget, nor is it a major rule under the Small Business Regulatory Enforcement Fairness Act (5 U.S.C. §804.2).

Absent the proposed rule, OSM's forecast for U.S. coal production showed a decrease of 162 million tons between 2020 and 2040, representing a 15% decrease during that period. The proposed rule was expected to affect coal production and consumption patterns across the United States over and above baseline conditions. OSM recognized that the proposed rule would increase the cost of producing coal, which may lead to an aggregate reduction in coal production. The agency estimates that under the proposed rule, coal production will decrease in aggregate by about 1.9 million tons annually, or approximately 0.2% compared with production expected under the baseline. OSM stated that the reduction largely reflects substitution of natural gas for coal among U.S. power plants, due to the increase in coal prices expected under the proposed rule.⁵⁸ These changes in coal production would not be uniform and were expected to occur primarily in Appalachia (coal production is expected to decrease by 17.9 million tons between 2020 and 2040, or 0.4% of baseline production in the region), the Illinois Basin (an expected decrease of 6.4 million tons, or 0.2% of the region's baseline), and the Northern Rocky Mountain region (expected decrease of 14.7 million tons, or 0.1% of the region's baseline coal production).

One measure of the proposed rule's effects could include reduction in coal reserve values associated with the rule, i.e., if coal reserves are "stranded." However, OSM's analysis indicated that there will be no increase in stranded reserves under the proposal (or any of the other alternatives that the agency evaluated to develop the proposal). That is, OSM's engineering analyses determined that the same volume of coal could be mined under the proposed rule as under existing rules.⁵⁹

⁵⁷ To comply with requirements of the Regulatory Flexibility Act, as amended by the Small Business Regulatory Enforcement Fairness Act of 1996, in order to describe the effect of the rule on small entities, OSM prepared an Initial Regulatory Flexibility Analysis, which is an appendix to the Draft RIA.

⁵⁸ Draft RIA, p. ES-19.

⁵⁹ OSM defines stranded reserves as those that are technically and economically minable, but unavailable for production given new requirements and restrictions included in the proposed rule. *Ibid.*, p. 5-6.

Coal industry employment was projected to decrease by over 15,000 full-time equivalents (FTEs, i.e., one full-time worker employed for one year) between 2020 and 2040, even absent the proposed rule, compared with 90,000 persons employed in 2012. OSM estimated that changes in coal industry employment resulting from the proposed rule will combine with these ongoing trends. Production-related reductions in annual employment demand were anticipated to range from 41 to 590 jobs below baseline projections, but they would be partially offset by annual employment demand increases ranging from 210 to 270 jobs above baseline projections. Some of the expected increased demand for coal-related labor would be for new highly skilled jobs (e.g., engineers and biologists), while others are expected to require similar skills as currently used by the industry (e.g., bulldozer operations). Overall, the proposed rule was expected to reduce coal-related employment by 260 jobs on average each year due to decreased coal mined, while an additional 250 jobs will be created from increased compliance activity on average each year.

Severance tax revenue for a state is directly related to coal mining activity.⁶⁰ Although the details of individual states' coal severance tax systems vary, regulatory changes that reduce production in a given region will result in reduced tax revenue. Changes in coal production under the proposed rule also were expected to result in changes in coal severance tax revenue to states. In total, OSM forecast an annualized decline in severance tax revenues of \$2.5 million, across all coal-producing states. That estimate compares with over \$1.1 billion in coal severance tax revenues collected by states in 2012. The anticipated decline would primarily be experienced in West Virginia and Kentucky, which OSM estimated will bear over 80% of the lost severance tax revenues.⁶¹

Environmental and Human Health Benefits⁶²

Overall, OSM asserted that changes in mining practices resulting from the Stream Protection Rule will likely reduce adverse impacts on the environment and human health. For some categories of impacts, OSM was able to quantify benefits in terms of biophysical changes. For example, the agency projected that the proposed rule would improve water quality because fewer stream miles will be adversely affected (i.e., 4 stream miles will not be filled annually, 29 stream miles will be restored annually; 1 downstream stream mile that does not experience adverse water quality impacts will be preserved annually; and 292 downstream stream miles will be improved annually). Similarly, stream restoration and reforestation provisions of the proposal were estimated to result in 2,811 acres of forest improved annually and 20 acres of forest preserved annually.

However, because of data limitations, OSM was unable to quantify most categories of benefits or to reliably monetize any of benefits. Qualitatively, the agency projected that the proposed rule would have several types of benefits.

- Improved aesthetics may improve property values and the quality of recreational opportunities.
- Reforestation requirements and fill design changes will increase carbon storage and reduce emissions, thus reducing human health risks and climate-change related risks.

⁶⁰ A severance tax is imposed by a state on the extraction of non-renewable natural resources, such as coal, oil or gas.

⁶¹ Draft RIA, pp. 6-18–6-19. A decline in coal production also would reduce receipts from reclamation fees collected on coal production that finance the Abandoned Mine Reclamation Fund. This would have an impact on federal grants to states for reclamation of abandoned coal mines.

⁶² See Draft RIA, Chapter 7.

- Stream restoration and reforestation requirements will reduce human exposure to contaminants in drinking water and probability of adverse health effects.
- Improvements to water quality and forest and biological resources will result in potential for increased recreational opportunities.

Uncertainties in the Analyses

OSM acknowledged that there were a number of important caveats and limitations in its analyses of impacts of the proposed rule.⁶³ For example, compliance costs and changes in industry practice that would be associated with the rule are not known with certainty and are likely to vary by mine type and location in ways that cannot be completely captured in OSM's analyses. Also, future coal supply and demand are not known with certainty. Whether the proposed rule will result in permitting delays is unknown, and future regulatory initiatives that could impact the industry are not known or accounted for (e.g., existing and potential environmental regulations beyond the proposed Stream Protection Rule). Finally, OSM's estimates of administrative costs may prove to differ from actual expenses, depending on the accuracy of OSM's assumptions, and the agency is asking for public comment on these costs.

Regarding benefits, OSM acknowledged that limitations include the inability to accurately and reliably monetize quantified benefits that are associated with water quality and biological resource improvements, as well as the inability to quantify benefits from the proposed rule accruing to public health, air quality, and recreation. These limitations make it difficult to weigh economic impacts against environmental and public health benefits.⁶⁴

Reactions to the Proposed Rule, Congressional Interest, and Next Steps

Soon after release of the proposed rule, the president of the National Mining Association (NMA) issued a statement criticizing the rule, saying "This is a rule in search of a problem." He called on Congress to block the rule. According to NMA, OSM has produced no evidence to justify more regulations, and the rule will needlessly interfere with state agencies' mining and water quality laws.⁶⁵ A statement by the West Virginia Coal Association was similarly critical. "OSM's estimate that 'only' 200 mining jobs would be lost due to the implementation of this plan has about as much validity [as] a carnival sideshow palm reading."⁶⁶ In October 2015, NMA released a report that estimated that the proposed rule would eliminate from 40,000-78,000 coal mining jobs. Job losses in coal-related industries could total 281,000, the report said.⁶⁷ In response, OSM officials said that they disagreed with some of the mining association study's base assumptions regarding,

⁶³ Draft RIA, pp. 4-30, 5-29, 6-26.

⁶⁴ Ibid., p. 7-29.

⁶⁵ National Mining Association, "National Mining Association Calls on Congress to Block OSM's Costly, Unnecessary Stream Rule," press release, July 16, 2015, <http://nma.org/index.php/press-releases-2013/2237-national-mining-association-calls-on-congress-to-block-osm-s-costly-unnecessary-stream-rule>.

⁶⁶ West Virginia Coal Association, "WVCA Responds to OSM's Stream Buffer Zone Rule," press release, July 17, 2015, <http://www.wvcoal.com/latest/wvca-responds-to-osm-s-stream-buffer-zone-rule.html>.

⁶⁷ Rambol Environ, *Economic Analysis of Proposed Stream Protection Rule, Final Report*, prepared for the National Mining Association, October 2015, <http://www.nma.org/pdf/Final-SPR-Economic-Impact-Report-NMA.pdf>.

for example, industry's ability to continue longwall mining, and that those assumptions would mean greatly increased costs.⁶⁸

Press reports indicate that state regulators have concerns about the proposed rule, in terms of changes in practices, policies, and state rules that new federal rules would require. Some contend that the proposal would usurp state primacy under SMCRA. States also say that OSM has underestimated administrative costs to regulators that could result from the rule.⁶⁹

Some states and mining industry groups have focused particular criticism on OSM for, in their view, failing to adequately consult with affected states during development of the proposed rule. States cooperated, or worked with, OSM in the initial stages of developing the proposed rule, but most dropped out of that process after 2010, reportedly out of concern with the substance of the rule and lack of access to relevant documents. The states' concerns led Congress in December 2015 to direct OSM to provide states with documents, data, drafts, and other material and to re-engage with states prior to finalizing the rule.⁷⁰ OSM officials and states disagree about whether the agency has been fully responsive to this congressional directive.

Environmental advocacy groups have supported OSM's efforts to develop a more environmentally protective rule, but many are now critical of the proposed rule. Some say that it is long-overdue, but that it does not do enough to protect streams. Press reports indicate that some contend that a rule to prohibit mining activities entirely within the buffer zone would be preferable, in their view.⁷¹ Some advocates fault OSM for not proposing the most environmentally stringent regulatory alternative among those that the agency considered. Regulatory Alternative 2, which OSM did not select, would have prohibited all mining activities in or within 100 feet of perennial streams and would have prohibited the placement of excess spoil in both perennial and intermittent streams. It would have allowed no exceptions from the requirement to restore mined lands to their approximate original contour. These changes would require an amendment to SMCRA, because the law currently allows exceptions to the AOC requirement for mountaintop removal mining and steep slope mining operations. According to OSM, this alternative would have greater benefits than the proposed rule (e.g., 8 stream miles not filled annually, compared with 4 stream miles under the proposal, and 57 stream miles restored annually, compared with 29 stream miles under the proposal), but also nearly twice the compliance costs and twice the reduction in coal production.⁷² Environmental groups have expressed concern that, no matter how protective a rule is adopted, enforcement should be strengthened.

⁶⁸ Rachel Leven, "Economic, Legal Issues of Proposed Stream Rule Scrutinized," *Bloomberg BNA Daily Environment Report*, October 28, 2015, p. A-16.

⁶⁹ Manuel Quinones, "Coal: State Regulators Wary of Stream Rule's 'Sheer Massive Nature'" *Energy and Environment News*, July 17, 2015.

⁷⁰ In report language included in the Explanatory Statement accompanying H.R. 2029, the bill that was enacted as P.L. 114-113, the FY2016 Consolidated Appropriations Act, the appropriations committees indicated concern about OSM's work on developing the SPR. The Explanatory Statement language directed OSM to provide states with documents and data related to the proposed rule and to meet with any primacy state, at the request of the state. *Congressional Record*, daily edition, vol. 161, part 3 (December 17, 2015), p. H10217.

⁷¹ Nicholas Fandos, "U.S. Proposes New Rules to Protect Streams From Coal Pollution," *New York Times*, July 16, 2015, online edition, <http://www.nytimes.com/2015/07/17/us/us-proposes-new-rules-to-protect-streams-from-coal-pollution.html>.

⁷² Draft RIA, pp. 7-2, 8-8, 8-12—8-21.

Congressional Interest

Congressional interest in OSM's efforts to develop new SMCRA implementing rules has been strong for some time. Senate and House authorizing and appropriations committees have held hearings to examine the proposed rule, raising many issues of concern to policymakers, including transparency of the rule development process, sufficiency of coordination between OSM and state regulators, and potential economic impacts and job loss resulting from the rules.

Legislation was introduced in the 114th Congress to halt or redirect OSM's activities concerning the Stream Protection Rule. One such bill, the Supporting Transparent Regulatory and Environmental Actions in Mining Act (STREAM Act, H.R. 1644), was passed by the House January 12, 2016. The bill would have amended SMCRA to authorize OSM, in cooperation with the Interstate Mining Compact Commission and its member states, to enter into an agreement with the National Academy of Sciences (NAS) to conduct a study on the regulatory effectiveness of the 1983 Stream Buffer Zone rule in order to determine the need for an update of the rule. It also would have required the Secretary of the Interior to make scientific data and information used by OSM to develop any rule, policy, or guidance publicly available. A similar Senate bill, S. 1458, also titled the STREAM Act, would have amended SMCRA to require the Secretary to make scientific data and information used to develop any rule publicly available, but it did not include a provision for a study by the NAS.

A bill reported by the House Appropriations Committee in 2015, making FY2016 appropriations for the Department of Interior, Environment and Related Agencies (H.R. 2822), included provisions to prevent OSM from expending FY2016 appropriated funds to develop, carry out, or implement any guidance, policy, or directive to change the 1983 stream buffer zone rule in FY2016. The House debated this bill in July 2015, but did not take final action on it. The FY2016 appropriations act (Division G of P.L. 114-113), enacted in December 2015, did not include provisions to halt OSM's development of the rule. The restriction in H.R. 2822, had it been enacted, would not have prohibited OSM from utilizing unexpired unobligated balances in the OSM Regulation and Technology Account that could still be available for the rulemaking.⁷³

The Final Rule

OSM released the final Stream Protection Rule on December 19, 2016, to be effective on January 19, 2017. The rule was published in the *Federal Register* on December 20.⁷⁴

The final rule closely resembles the 2015 proposed rule but also reflects a number of revisions.

- Requirements for baseline water quality monitoring data are revised to reduce required frequency and minimum parameters (see "Baseline Data Collection").
- Stream definitions and classifications (e.g., ephemeral, intermittent, and perennial) in the rule are revised for consistency with U.S. Army Corps of Engineers definitions by limiting the scope to conveyances with channels that have a bed-and-bank configuration and an ordinary high water mark.

⁷³ OSM had available an estimated \$26 million in unexpired unobligated balances in FY2015. See Office of Management and Budget, *Fiscal Year 2016, Budget of the U.S. Government, Appendix*, pp. 642-643. The unexpired unobligated balances available to OSM in FY2016 were an estimated \$30 million. See Office of Management and Budget, *Fiscal Year 2017, Budget of the U.S. Government, Appendix*, p. 660.

⁷⁴ U.S. Department of the Interior, Office of Surface Mining Reclamation and Enforcement, "Stream Protection Rule, Final rule," 81 *Federal Register* 93066-93445, December 20, 2016.

- The definition of “material damage to the hydrologic balance outside the permit area” is revised by removing all proposed criteria and instead providing a list of factors that the regulatory authority, in consultation with the Clean Water Act authority, must identify in identifying material damage thresholds (see “Definition of “Material Damage to the Hydrologic Balance Outside the Permit Area”).
- Post-mining requirements for mountaintop removal mining operations are revised. For example, permit applicants will be required to have substantially, but not fully, implemented approved post-mining land use prior to final bond release, and applicants will not be required to post additional bond sufficient to ensure that lands approved for an AOC variance can be returned to AOC if the proposed post-mining land use is not implemented (see “Approximate Original Contour (AOC) and AOC Variances”).
- OSM provided clarification in response to industry criticism that the rule would effectively prohibit underground mining using longwall technology. The final rule states that it does not prohibit temporary impacts to streams and other water resources as a result of longwall mining as long as those impacts do not rise to the level of material damage to the hydrologic balance outside the permit area.
- The final Stream Protection Rule clarifies that streamside vegetative corridors, or riparian corridors, which are required to be adjacent to streams that are mined through, are to be at least 100 feet wide on each side of a restored stream, not 50 feet on either side of a stream.

OSM prepared a Final Regulatory Impact Analysis (RIA) for the final rule that forecasts lower baseline coal production and increased industry compliance costs, compared with the draft RIA. A number of aspects of OSM’s analysis changed as a result of regulatory changes reflected in the final rule, revised estimates based on public comments, and other factors. For example, OSM revised its baseline coal demand estimates because of continuing decline of the coal industry, largely due to substitution of natural gas for coal among U.S. power plants.⁷⁵ As a result of reduced demand, the Stream Protection Rule, and other developments, OSM forecast a 10% decrease in national coal production (84 million tons, or 10%) between 2020 and 2040, compared with its previous estimates.

Overall, the total compliance costs of the rule increased from the draft to the final rule. The Final RIA concludes that the coal industry will incur annual compliance costs of \$81.5 million under the final rule (or 0.1% or less of aggregate annual industry revenues), compared with \$52 million under the proposal (see “Impacts of the Proposed Rule”). This was caused by increases in forecasts for total industry and regulatory costs due to the rule, particularly with regard to bonding costs, industry administrative costs such as monitoring, and regulatory authority administrative costs.⁷⁶ Despite the higher compliance cost forecast, OSM estimates that employment impacts will be minimal: coal employment will be reduced by 124 coal jobs on average each year due to decreased coal mined, while an additional 280 jobs will be created from increased compliance activity on average each year, for a net employment gain of 156 fulltime

⁷⁵ Industrial Economics, Incorporated, *Final Regulatory Impact Analysis of the Stream Protection Rule*, prepared for: U.S. Department of the Interior, Office of Surface Mining Reclamation and Enforcement, November 2016, pp. ES-17 - ES-20.

⁷⁶ *Ibid.*, pp. ES-56 – ES-59.

equivalents. Industry critics dispute OSM's estimates of compliance costs and employment impacts, and they argue that adverse effects on coal production will be greater than OSM states.

The final rule does not reflect more stringent regulatory approaches favored by some advocacy groups. In the Final Environmental Impact Statement for the rule, OSM stated that it continues to believe (as it stated when the rule was proposed in 2015) that approaches such as absolutely prohibiting all surface coal mining and reclamation activities in or within 100 feet of all streams would result in an unacceptable impact on the nation's energy production via coal.⁷⁷

Opposition to the final revised rule by coal industry groups and some Members of Congress was immediate after its release, and legislation to overturn the rule was soon introduced, including H.J.Res. 11 and H.J.Res. 16 in the 115th Congress. These bills would overturn the rule under procedures of the Congressional Review Act (CRA), which established a special parliamentary mechanism whereby Congress can disapprove a final rule promulgated by a federal agency.⁷⁸ At least one legal challenge to the final rule was filed in federal court. If the final rule were overturned by legislative or presidential action in the 115th Congress or by a court, existing rules (i.e., the 1983 stream buffer zone rule) would remain in place, unless or until new rules or guidance were issued.

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⁷⁷ U.S. Department of the Interior, Office of Surface Mining Reclamation and Enforcement, *Final Stream Protection Rule Environmental Impact Statement*, November 2016, <http://www.osmre.gov/programs/rcm/streamprotectionrule.shtm>, p. ES-40.

⁷⁸ For information on the CRA, see CRS Insight IN10437, *Agency Final Rules Submitted on or After June 13, 2016, May Be Subject to Disapproval by the 115th Congress*, by Christopher M. Davis and Richard S. Beth.