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**30 CFR Parts 816 and 817
Topsoil Redistribution and Revegetation
Success Standards; Final Rule**

DEPARTMENT OF THE INTERIOR**Office of Surface Mining Reclamation and Enforcement**

RIN 1029-AC02

30 CFR Parts 816 and 817**Topsoil Redistribution and Revegetation Success Standards**

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

ACTION: Final rule.

SUMMARY: We, the Office of Surface Mining Reclamation and Enforcement (OSM), are finalizing minor changes to our regulations to improve the quality and diversity of revegetation in the reclamation of coal mined lands. These revisions govern topsoil redistribution and revegetation success standards and will: Encourage species diversity on reclaimed lands by allowing replacement of soil in variable thicknesses; provide more flexibility to States in using new vegetative success standards and sampling techniques by removing the current requirement that such changes be included in the approved regulatory program; define success standards for lands with an undeveloped land postmining land use; remove shelter belts from the list of postmining land uses subject to success standards; provide more flexibility to operators when they demonstrate compliance with time-in-place requirements by allowing them to consider all trees and shrubs in place at bond release, including volunteer trees and shrubs, and not requiring them to verify the length of time that individual trees and shrubs have been in place—this change will remove a significant impediment to reforestation of mined lands; and make the timing of revegetation success measurements in areas receiving 26 inches of annual precipitation or less consistent with those in areas receiving more than 26 inches of annual precipitation.

DATES: *Effective Date:* September 29, 2006.

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SUPPLEMENTARY INFORMATION:

- I. Background Information on the Rulemaking
- II. Discussion of the Revisions and Our Response to the Comments Submitted
- III. Procedural Matters and Required Determinations for This Rule

I. Background Information on the Rulemaking*Why are we revising our regulations?*

On March 17, 2005, we published proposed revisions to our regulations that govern portions of the performance standards dealing with topsoil redistribution and evaluation of revegetation success. 70 FR 13076. The revisions contained in this final rule are the product of several outreach efforts by OSM to review and assess its revegetation regulations at §§ 816.111 through .116 and §§ 817.111 through .116. The first outreach effort occurred in 1999. As part of this revegetation initiative, we published a **Federal Register** notice on May 17, 1999 (64 FR 26773), announcing public meetings and soliciting comments, concerns, and new ideas regarding the regulatory performance standards that determine revegetation success. In the notice, we also announced the availability of an OSM concept paper that reviewed various longstanding revegetation issues. We held ten public meetings around the country between May 27 and August 25, 1999. In the spring of 2003, as a follow-up to the 1999 revegetation initiative, we conducted a survey of State regulatory authorities. This survey explored whether the statistical and/or production requirements of the current revegetation regulations at § 816.116 and § 817.116 adversely affect the establishment of a diverse plant community; whether there is a continuing need for inclusion of success standards and sampling techniques in a State's approved program; and whether there is a need for success standards for undeveloped postmining land.

In addition to the revegetation initiative and survey, we also established a reforestation outreach initiative that began with three workshops held between January 1999 and May 2002 involving Federal and State regulatory personnel, industry representatives, and landowners. As part of this second initiative, we raised the question whether specific OSM regulations act as a disincentive to the choice of forestry as a postmining land use.

Largely as a result of these revegetation and reforestation initiatives and the survey, we identified five minor revisions that we needed to make to the existing regulations. This rule revises the Federal regulations governing the topsoil redistribution standards at § 816.22(d)(1) and § 817.22(d)(1); the success standards and sampling techniques requirements at § 816.116(a)(1) and § 816.117(a)(1); the land use categories subject to the

success standards at § 816.116(b)(3) and § 817.116(b)(3); the revegetation success standards for trees and shrubs at § 816.116(b)(3)(i) and § 817.116(b)(3)(ii); and the timing of revegetation success measurements at § 816.116(c)(3)(i) and (ii) and § 817.116(c)(3)(i) and (ii).

These revisions will, respectively, encourage species diversity on reclaimed lands by allowing replacement of soil in variable thicknesses; provide more flexibility to States in using new vegetative success standards and sampling techniques by removing the current requirement that such changes be included in the approved regulatory program; define success standards for lands with an undeveloped land postmining land use; remove shelter belts from the list of postmining land uses subject to success standards; provide more flexibility to operators when they demonstrate compliance with time-in-place requirements by allowing them to consider all trees and shrubs in place at bond release, including volunteer trees and shrubs, and not requiring them to verify the length of time that individual trees and shrubs have been in place—this change will remove a significant impediment to reforestation of mined lands; and make the timing of revegetation success measurements in areas receiving 26 inches of annual precipitation or less consistent with those in areas receiving more than 26 inches of annual precipitation. Since the soil redistribution and revegetation success standards are identical for surface and underground mining activities, this preamble will discuss our revisions to part 816 with the understanding that the discussion also applies to our revisions to part 817.

In response to the **Federal Register** notice of our 2005 proposed rule, we received a total of 34 comments. We discuss the comments and our responses to those comments below. No one requested a public hearing.

II. Discussion of the Revisions and Our Response to the Comments Submitted*1. Section 816.22(d)(1)(i): Topsoil Redistribution*

What are the revisions to § 816.22(d)(1)(i)?

In order to improve the potential for establishing diverse plant communities consistent with the specific revegetation goals for an approved postmining land use, we are adopting, as generally proposed and further revised in response to comments received, topsoil redistribution provisions at § 816.22(d)(1)(i) that specify the manner

in which topsoil material removed under § 816.22(a) or (b) must be redistributed. Final § 816.22(d)(1)(i) will read as follows, with new language in italics:

(d) Redistribution. (1) Topsoil materials *and topsoil substitutes and supplements* removed under paragraphs (a) *and (b)* of this section shall be redistributed in a manner that—

(i) Achieves an approximately uniform, stable thickness *when* consistent with the approved postmining land use, contours, and surface-water drainage systems. *Soil thickness may also be varied to the extent such variations help meet the specific revegetation goals identified in the permit;*

Under the prior topsoil redistribution regulations at § 816.22(d)(1)(i), topsoil must be redistributed in a manner that “achieves an approximately uniform, stable thickness consistent with the approved postmining land use * * *.” This requirement that topsoil be redistributed (or “replaced”) to an approximately uniform thickness has proven to be particularly appropriate when the approved postmining land uses are, for example, commercial forestry or cropland, both of which may involve a single species of vegetative cover in a managed agricultural environment. However, when the approved postmining land uses are wildlife habitat or grazing land that require satisfaction of specified vegetative diversity standards for bond release, the requirement in § 816.22(d)(1)(i) that topsoil be replaced to an approximately uniform thickness may often work against the achievement of those vegetative diversity standards. This is because a plant community that will sustain itself without constant management input is, to a considerable degree, a function of the physical and chemical characteristics of the soil upon which it is growing. In turn, variable topsoil depth is one of the several physical characteristics that operators can use to encourage the desired species diversity.

As discussed in the preamble to the proposed rule, when we first promulgated our topsoil regulations over 20 years ago, we noted that two commenters had objected to the proposed uniform thickness requirement as being a design standard, not a performance standard. 48 FR 22092, May 16, 1983. These commenters warned that the rule’s uniform soil thickness requirement could lead to a monoculture vegetative community rather than a diverse native species community. We did not accept this comment, responding that topsoil thickness is but one of several factors

affecting plant growth and species diversification.

More recently, in response to our 1999 revegetation outreach effort, commenters again questioned the appropriateness of the § 816.22(d)(1)(i) provision, which they interpreted as requiring that topsoil always be redistributed to a uniform thickness. These commenters stated that uniform soil thickness tends to promote a limited number of species in the vegetative cover while variable soil thicknesses tend to promote a more diverse vegetative community. The truth of this proposition has been born out by the experience of OSM agronomists and is consistent with well-established principles of soil-plant relationships. As proposed, we have revised our regulations at § 816.22(d)(1)(i) by adding a sentence that expressly allows soil thickness to be varied to the extent such variations help to meet the specific revegetation goals identified in the permit. Also as proposed, we have inserted the word “when” between the words “thickness” and “consistent” in the existing language of § 816.22(d)(1)(i). This insertion should make clear that the uniform soil thickness provision is a function of the approved postmining land use, contours, and surface water drainage systems, and is not, in itself, an inflexible requirement.

While the prior uniform topsoil redistribution standard of § 816.22(d)(1)(i) has generally worked quite well, the new revisions to that standard are intended to provide the operator with another tool for encouraging the development of the diverse plant communities required of specific postmining land uses. For example, if the designated postmining land use is fish and wildlife habitat, and the desired plant communities are a mixture of grasslands with interspersed shrub and tree areas for wildlife cover, then the permit could describe the use of variable topsoil thickness to ensure the establishment of grasses on thicker soils and trees and shrubs on thinner soils. The fact that the permit applicant must clearly set forth the justification for any non-uniform redistribution of topsoil should largely protect against potential abuse. This revised rule will not affect existing topsoil salvage requirements.

In response to comments, we have further revised § 816.22(d)(1) to provide that topsoil materials *and topsoil substitutes and supplements* removed under paragraphs (a) *and (b)* must be redistributed in a manner that meets the requirements of subparagraphs (i)-(iii). (Emphasis added). This last revision should make clear that, under

appropriate circumstances, the variable thickness revision of § 816.116(d)(1)(i) applies to topsoil supplements and substitutes already allowed under § 816.22(a) and (b).

What were the comments submitted on our proposed revisions to § 816.22(d)(1)(i)?

Seventeen commenters supported our proposed revision to the topsoil redistribution requirements of § 816.22(d)(1)(i). Their comments focused on the potential to be gained from varying topsoil thickness in establishing diverse plant communities. The commenters noted that research supports our contention that topsoil thickness affects the types, number, and densities of plants established in a particular area. These commenters also generally supported our position that the use of variable topsoil thickness to meet specific revegetation goals identified in the permit will assist operators in establishing more diverse plant communities on areas where such diversity is appropriate to meet the postmining land use.

Four commenters proposed an additional revision to § 816.22(d)(1). They suggested that we further amend § 816.22(d)(1) to apply to topsoil and topsoil supplements and substitutes removed under paragraphs § 816.22 (a) and (b) of this section. The commenters indicated that the revision that we proposed inappropriately applies only to topsoil materials as defined at § 701.5, which states that “[t]opsoil means the A and E soil horizon layers of the four master soil horizons.” The commenters saw this as a problem because western coal mines are often located in areas where the native soils are poorly developed. At many of these mines, the A and E horizons are absent or insufficient in thickness to provide sufficient material for reclamation. Consequently, to meet their reclamation goals, operators must rely on the use of suitable unconsolidated materials immediately below the topsoil and on the use of selected overburden as topsoil supplements and/or substitutes. The commenters further noted that in other situations operators use very specific topsoil substitutes to establish specific or unique plant communities. For example, ongoing revegetation efforts have shown that substitute materials with high rock fragment content are best for reestablishing woody species in parts of the West. Accordingly, the commenters argued that we needed to broaden our proposed revision to § 816.22(d)(1) to expressly allow for removed material, be it topsoil, topsoil supplements, or topsoil substitutes, to

be replaced in variable thicknesses to meet specific revegetation goals. According to commenters this change would allow western surface coal mine operators to share in the benefits that our proposed rule was intended to achieve.

We believe that these commenters have raised a valid concern about the applicability of § 816.22(d)(1) to the replacement of topsoil supplements or to substitutes currently allowed under § 816.22(b). Many approved reclamation plans throughout the country already allow the use of topsoil supplements or substitutes. Regulatory authorities often permit use of such supplements or substitutes where there is insufficient topsoil, defined as A and E horizon material, to ensure the prescribed revegetation success. In other cases, they have approved topsoil substitutes when applicants have demonstrated that the existing topsoil is less suitable as plant growth material for the desired plant community than available subsoil or spoil material. For many years we have interpreted § 816.22(d)(1) as applying to both topsoil material removed under § 816.22(a) and to topsoil supplements or substitutes removed under § 816.22(b). Pursuant to this interpretation, once operators identify and remove approved topsoil supplements or substitutes, they may treat this material as topsoil material for the purposes of storage and redistribution. However, to eliminate any potential confusion as to whether, under appropriate circumstances, the variable thickness revision of § 816.22(d)(1)(i) applies to topsoil supplements and substitutes already allowed under § 816.22(a) and (b), we are accepting the comment and revising § 816.22(d)(1) as the commenters suggested. Accordingly, as set forth above, final § 816.22(d)(1) will provide that “(1) Topsoil materials and topsoil substitutes and supplements removed under paragraphs (a) and (b) of this section shall be redistributed in a manner that—” (Emphasis added). Hereafter, references to variable topsoil replacement also includes variable replacement of topsoil substitutes and supplements.

Two commenters suggested eliminating from § 816.22 (a) the requirement to remove, *i.e.*, salvage all topsoil. These commenters contend that, based on our proposal to allow replacement of topsoil at variable depths, we should be flexible and, at least in certain circumstances, also allow operators not to remove and replace all “available” topsoil. They argued that to require removal of all available topsoil would potentially

defeat the purpose in the proposed rule of allowing shallower topsoil depths. In addition, the commenters pointed out that, according to mine reclamation professionals, shallower topsoil depths increase plant community diversity and woody stem density, while deeper than average topsoil depths (that would compensate for the areas where topsoil is applied more shallowly than the uniform average) only encourage aggressive grass and forb species at the expense of diversity and woody stem density.

While the commenters are correct that shallower soils can increase plant diversity and woody stem density, we are not revising the regulations as they proposed. The existing regulations at § 816.22(a) will continue to require the removal of all topsoil, defined elsewhere as A and E horizon material. For several reasons we do not believe that these regulations pose the problem suggested by the commenters. Most importantly, section 515(b)(5) of the Surface Mining Control and Reclamation Act of 1977 (SMCRA or the Act), clearly requires the removal and replacement of all suitable topsoil. Furthermore, natural landscapes usually include areas with deep soils as well as shallower soils. This in turn results in multiple distinct plant communities across the landscape. When we require uniform soil thickness for reclamation, the result may be a single plant community but little plant community variability across the landscape. Conversely, when we require reclamation that includes areas with deep soils as well as shallower soils, the result is more likely the establishment of multiple diverse plant communities, including those that prefer deeper soils as well as those that prefer shallower soils. The purpose of the rule is not, as commenters characterize, to allow for shallower topsoil depths throughout the reclamation area. Instead, the rule requires removal of all topsoil to allow development of reclamation and revegetation plans that can maximize the use of that topsoil through the placement of variable topsoil depths and the reconstruction of a much more diverse landscape similar to that which may have existed prior to mining.

One commenter indicated that, if we allow variation in soil thickness (specifically reductions in soil thickness), we must also require the operator to demonstrate that an equal or greater chance for sustaining vegetation success will result. In addition, the commenter stated that the operator should have to demonstrate that the reconstructed soil has a root zone of

sufficient depth to support the approved postmining land use.

We generally agree with this comment but do not believe that any change in the revised regulation is necessary to ensure the desired variation of soil thickness. The revised language of § 816.22(d)(1)(i) allows operators to vary soil thickness to the extent necessary to meet the specific revegetation goals identified in the permit. In turn, these revegetation goals should support the approved postmining land use. The State and the public will have the opportunity to review the permit prior to approval and determine whether the permittee has justified the need for variable topsoil thicknesses in order to achieve the identified revegetation goals. If the permittee has failed to do so, the State can disapprove the use of variable topsoil thicknesses or require additional information to justify departure from the normal practice. On this basis, we do not believe that the demonstration proposed by the commenter is necessary.

One commenter opposed our proposed revision to the topsoil redistribution requirements of § 816.22(d)(1)(i). Instead of replacing all the soil that was lost to strip-mining, the commenter alleged that, under revised § 816.116(d)(1)(i), coal companies could replace only some of the removed soil. The commenter opposed the change to § 816.22(d)(1)(i) because, according to him, it could “let coal companies do even less to bring the land they’ve mined back to its original condition.”

This commenter seems to have misunderstood our proposal. It does not scrap the current standard. As before, the revised regulation will require operators to remove all topsoil from areas that are to be disturbed by mining. After mining, they must redistribute all removed topsoil on areas disturbed by mining. The proposed and final rules merely allow operators whose reclamation plan and postmining land use require the establishment of diverse plant communities as part of specific revegetation goals identified in the permit to redistribute topsoil at variable thicknesses rather than at approximate uniform thickness. For the reasons stated above, we believe that the revision to § 816.22(d)(1)(i) will result in improved and more diverse reclamation.

Another commenter observed that the proposed revision to § 816.22(d)(1)(i) will require better planning on the part of companies at the permitting stage, and that they must complete all vegetation planning prior to completion of rough grading and prior to topsoil replacement. The commenter, however, expressed concern that those who

thought that the proposal would make reforestation more successful may be disappointed.

We strongly agree that allowing variable topsoil thickness under the new provisions of § 816.22(d)(1)(i) will require appropriate planning by operators. As expressly stated in final § 816.22(d)(1)(i), operators can vary soil thickness only if they justify this variation based on specific revegetation goals identified in the permit. The permit would necessarily have to include a discussion of plans for variable topsoil thickness. Furthermore, an approved permit would have to be in place prior to implementation of any plan for regrading, topsoil redistribution, or revegetation. While there can be no guarantee as to how much the revision to § 816.22(d)(1)(i) will actually increase reforestation of reclaimed areas, we reasonably believe that the revision should encourage reforestation and species diversity.

Another commenter suggested that we should broaden the proposed revision to § 816.22(d)(1)(i) to allow variable replacement thicknesses for (1) suitable unconsolidated materials located immediately below the topsoil, and (2) selected overburden used as topsoil supplements and/or substitutes when the use of such materials would help to meet the reclamation goals identified in the permit. In the course of its own reclamation activities this commenter had found that selected overburden materials, including scoria of suitable fragment size range, are vitally important to creating diverse vegetation types such as open scrub, and highly conducive to establishing several shrub species in the genus *Artemisia*.

With regard to the commenter's first suggestion, we note that § 816.102(f) already addresses the thickness of the suitable unconsolidated material that is replaced below the topsoil. The regulation expressly requires that exposed coal seams, acid- and toxic-forming materials, and combustible materials exposed, used, or produced during mining must either be adequately covered with nontoxic and noncombustible material, or treated, to control the impact of the materials on surface and ground water in accordance with § 816.41, to prevent sustained combustion, and to minimize adverse effects on plant growth and the approved postmining land use. Section 816.102(f) does not specify the thickness of the layer of nontoxic material that must cover acid- and toxic-forming materials. The regulation thus permits variable redistribution thicknesses of suitable unconsolidated material that is found below the topsoil. As to the

commenter's second proposal, we have already stated that § 816.22(d)(1)(i) properly applies to topsoil supplements and substitutes and have revised the regulation to clarify this point. Accordingly, final § 816.22(d)(1) will apply to both topsoil removed under § 816.22(a) and topsoil supplements and substitutes used in accordance with § 816.22(b).

Another commenter indicated that the proposed revision to § 816.22(d)(1)(i) allowing for variable soil thickness was unnecessary for achievement of our stated purpose of encouraging greater plant diversity. This commenter asserted that the existing rules afford operators the flexibility to vary soil thicknesses in appropriate cases. The commenter stated that reclamation plans within a single permit area can be, and have been designed to accommodate the needs of croplands, grasslands, and woodland plants by varying soil thicknesses in the areas where each vegetation type will be planted. According to the commenter, several other factors have far more influence upon the diversity of the post-mining vegetative communities than do variable soil thicknesses. These factors include the particular vegetation that is to be planted after mining, the quality of the soil replaced, and the degree to which soil compaction is prevented. The commenter continued that the current regulation at § 816.22(d)(1)(i) requiring the replacement of an approximately uniform thickness of topsoil provides for the protection, use, and productivity of soil resources in a way that should restore the capability of the land to support a wide variety of vegetation types and land uses. In support of our retaining the longstanding provisions of § 816.22(d)(1), the commenter emphasized that the segregation and replacement of topsoil over entire reclaimed areas has been successful over the fifty-seven years of regulating the restoration of mined lands. This commenter further noted that the proposed revision to § 816.22(d)(1)(i) would not provide minimum thickness requirements for topsoil redistribution. The commenter cautioned that, while variable topsoil thickness may improve attainment of certain land use types, too thin a layer of topsoil could prove counterproductive to the attainment of ground cover, erosion protection, water quality protection, and restoration of productive capability of the land. The commenter concluded, therefore, that any provision allowing replacement of variable topsoil or topsoil-substitute thicknesses should also provide for a

minimum topsoil or soil-substitute thickness. This commenter also indicated that his experience is not consistent with the statement in our preamble that "[t]he fact that a permit applicant must clearly set forth the justification for any non-uniform redistribution of topsoil should largely protect against potential abuse." According to the commenter, it would be easier for a regulatory authority to sustain challenges to a finding of non-compliance with a specific performance standard, e.g., that operators must redistribute topsoil in a uniform thickness, than to sustain challenges to a finding that the operator has not adequately set forth the justification for non-uniform thicknesses.

We disagree with these comments and concerns. Most importantly, we do not consider that the revision to § 816.116(d)(1)(i) represents a reduction of the regulatory standards. As discussed in the preamble to our proposed rule and as reflected in the express language of that rule, we intend to allow variable topsoil thicknesses when necessary to further the specific revegetation goals identified in the permit. The fact that the permit application must clearly set forth the justification for variable topsoil thicknesses reasonably protects against potential abuse. If the regulatory authority finds that redistribution of topsoil in variable thicknesses is not necessary to meet the specific revegetation goals identified in the permit application, then the authority need not approve that aspect of the application. If, however, the regulatory authority finds that variable topsoil thicknesses is desirable, the permit application should specify the amount of variability allowable and the minimum acceptable topsoil thickness. Contrary to the commenter's experience, research in the West on the impact of topsoil depth on plant diversity has shown that plant diversity can be improved with redistribution of variable topsoil thicknesses. *Long-Term Plant Community Development In Response to Topsoil Replacement Depth On Mined Land In Wyoming*, C.K. Bowen, G. Schuman, and R.A. Olson, American Society of Mining and Reclamation, 2005. *Long-Term Effects of Cover Soil Depth On Plant Community Development for Reclaimed Mined Lands in New Mexico*, B. Buchanan, M. Owens, J. Mexal, T. Ramsey, and B. Musslewhite, American Society of Mining and Reclamation, 2005.

The same commenter also expressed concern both about the effect that proposed § 816.22(d)(1)(i) would have on the restoration of premine land

capability and the negative effect that the revised regulation would have on one of the basic missions of SMCRA—assuring that required reclamation accounts for the capability of the land prior to any mining to support a variety of uses. Simply stated, the commenter urged us not to stress vegetation diversity at the expense of the underlying land capabilities. The commenter also indicated that, in those areas of the country where valuable topsoil resources exist, regulatory authorities must take into account soil rooting zone reconstruction for the proper utilization of those soil resources. This reconstruction should be done in a way that would provide not only for tree productivity but also for use of the soil resources in a manner that would maximize the post-mining capability of the land. Furthermore, the commenter stated that it is not necessary to relocate, modify distribution, or eliminate topsoil resources in order to “encourage” reforestation as a postmining land use. The commenter concluded by characterizing our stated basis for revising § 816.22(d)(1)(i) as ignoring “the essential nature and role of topsoil resources in land use capability and suitability to support a variety of uses.”

We agree with the commenter that topsoil resources must be protected. The regulations at § 816.22(a) and (d) continue to require that all topsoil must be removed and that all removed topsoil must be redistributed. The revised regulation at § 816.22(d)(1)(i) simply provides the opportunity to allow redistribution of topsoil at variable thickness when such redistribution is appropriate to meet the revegetation goals identified in the permit’s approved postmining land use plan. Under the existing regulations in § 816.22(e), a regulatory authority can also require removal and redistribution of subsoil, if necessary, to comply with the revegetation requirement of the regulations. The proposed and final rules do not, therefore, ignore or negate the existing land use provisions of § 816.133(a), which require that all disturbed areas be restored in a timely manner to conditions that are capable of supporting the uses they were capable of supporting before mining, or higher or better uses. Under these rules, if the regulatory authority determines that the proposed redistribution of topsoil in varying thicknesses would adversely affect the restoration of the land use capability of an area, then the regulatory authority need not sanction such redistribution.

Another commenter noted that the revised regulation, which allows soil

thickness to be varied to the extent that such variation encourages the specific revegetation goals identified in the permit, needs to include a modification and verification provision that would assure that variation is not a *post hoc* effort by the operator to avoid proper redistribution of topsoil. The commenter also stated that the rule must clarify that operators may not vary topsoil and subsoil redistribution in those instances where removal and reconstruction of soils is necessary to restore mined farmland. The commenter next argued that the rule’s standard for justifying variation in topsoil replacement thickness should be more precise and measurable than merely providing that the variation “help meet” the specific revegetation goals identified in the permit. In this regard, the commenter stated that the permit should define the amount of variability in topsoil thickness and the chemical quality of the topsoil necessary to meet identified revegetation goals. Where uniform thickness is not to be the standard, the topsoil and subsoil redistribution plan should also provide appropriate literature citations supporting the proposition that the variation of soil thicknesses is consistent with, and necessary for, the success of particular species. Finally, this commenter asserted that, regardless of whether the soil thickness is intended to be relatively uniform or varied to support a particular species or mixture of vegetative cover on the reclaimed land, the State regulatory authority or OSM, acting under a Federal Program, should require the operator to demonstrate compliance with the soil redistribution requirements of § 816.22(d)(1)(i). Furthermore, the State regulatory authority or OSM should take sufficient soil thickness measurements to support a finding of compliance.

We believe that the current and revised regulations at § 816.22(d)(1)(i) adequately address the concerns underlying these comments. The new provisions of § 816.22(d)(1)(i) that soil thickness may be varied to the extent that such variations help meet the specific revegetation goals identified in the permit clearly implies the need for the operator to document how topsoil will be redistributed prior to such redistribution. This necessary documentation should ensure that the redistribution of topsoil at varied thicknesses is not a *post hoc* effort to avoid proper redistribution. For example, if the approved postmining land use is cropland, then redistribution of topsoil at varied thicknesses would not be appropriate and operators should

redistribute the topsoil in an approximately uniform thickness as is presently required. However, if the approved revegetation goals would best be met by varying topsoil thicknesses, then the operator must propose and the regulatory authority must approve these variations. While we believe that authoritative literature and/or test plots are appropriate sources of information for setting sideboards on the variation in topsoil thickness, we leave to the discretion of the regulatory authority whether to require inclusion of such literature or test plot data in the permit. Evaluation of the thickness of redistributed topsoil based on permit specifications can be done either as part of the ongoing inspection process or based on data submitted by the operator. In this regard, we anticipate that the regulatory authority will evaluate the redistribution of topsoil in varying thickness in the same manner that it currently evaluates the redistribution of topsoil in an approximately uniform thickness under prior § 816.22(d)(1)(i).

2. Section 816.116(a)(1): Federal Approval of Revegetation Success Standards

What are the revisions to § 816.116(a)(1)?

We have revised § 816.116(a)(1) to eliminate the requirement that revegetation success standards and statistically valid sampling techniques be included in the approved regulatory program (hereinafter “the approved program requirement”). The revised regulation continues to require that standards for success and sampling techniques for measuring success must be selected by the regulatory authority. Our proposed elimination of the approved program requirement was described in our 2005 **Federal Register** notice. As a result of comments received and discussed below, we are also adding a provision to § 816.116(a)(1) to clarify that the standards and techniques selected by the regulatory authority shall be described in writing and made available to the public. Later in this document we describe several acceptable means for making the standards and techniques available to the public. Final § 816.116(a)(1) will read as follows, with new language in italics:

(1) Standards for success and statistically valid sampling techniques for measuring success shall be selected by the regulatory authority, *described in writing, and made available to the public.*

Why are we changing our policy regarding review of State Program changes in success standards and sampling techniques?

As explained in more detail below, the requirement that State regulatory authorities include the initial or amended success standards and sampling techniques for revegetation as part of their approved program imposes a significant and unnecessary burden both on State regulatory authorities and OSM. Our regulations at § 816.116(a)(2) and (b), which will remain in effect, already specify minimum criteria for success standards and sampling techniques, and those criteria will ensure the achievement of SMCRA's goal of establishing a diverse, permanent, and effective vegetative cover. Section 816.116(a)(2) provides that the sampling techniques must use a 90-percent confidence interval (also known as a one-sided test with a 0.10 alpha error), which was discussed in the preamble to the proposed rule, and that the ground cover, production, or stocking must meet 90-percent of the success standard. Section 816.116(b) provides additional guidelines for particular types of ecosystems and post-mining land uses. These key nationwide minimum protections will remain in the regulations as amended, and all approved State programs must maintain counterparts to them.

In our judgment, it is not a good use of State and Federal resources to continue requiring State and OSM revegetation experts to spend valuable time on preparing or assessing new State program amendment proposals every time it is necessary to revise or improve revegetation success standards. A number of considerations support this conclusion. First, the amount of time and resources required to go through the State program amendment process is significant and we think discourages updating the success standards and sampling techniques. Our processing of program amendments takes an average of about four and a half months, ranging from two and a half to seven months, but one recent amendment took twenty months from proposal to final approval. The time and resources spent on the program amendment process, moreover, are in addition to those the States must devote to preparing proposed program amendments and to responding to any of our inquiries. Although we lack complete data on how great a burden this regulatory requirement imposes on the States, the example of North Dakota, which follows, shows that the cumulative costs in time and talent can be quite large. The present component

of the North Dakota State program for revegetation success standards and sampling techniques is now more than 100 pages long. North Dakota has repeatedly had to submit proposed amendments for our approval not only for substantive changes in standards but even for minor wording changes, such as the change in the name of a U.S. Department of Agriculture bureau from the "Soil Conservation Service" to the "Natural Resources Conservation Service." On this basis alone, we think that the current requirement may well be discouraging State regulatory authorities from developing or implementing the latest, most appropriate science and technologies. 70 FR 13076, March 17, 2005. This apparent obstacle to the timely development of new science and technologies also runs counter to one of the main concerns behind our 1983 rulemaking: That the States needed significant flexibility to tailor standards and sampling techniques to local conditions. *See* 47 FR 40140, September 2. We continue to want to encourage responsible innovation in this area. As we mentioned in the preamble to our 2005 proposed rule, we have been working with western States to develop new success standard resources, innovative statistical tools, and techniques using computers and satellite-based remote sensing technologies to better evaluate conditions of vegetative diversity and cover than is possible using traditional sampling methods, particularly in locations with naturally sparse vegetation. In the Appalachian Region, our agency is working with scholars and the State of West Virginia on the use of the plate method for evaluating herbaceous productivity on reclaimed lands. We believe that removal of the requirement in § 816.116(a)(1) for including these standards and techniques in the approved program will eliminate an unnecessary obstacle to appropriate and timely technological innovation.

Second, we recognize that, since the basic framework of the existing rule was first promulgated in 1983, the vast majority of State regulatory programs have matured. Our experience with the State regulatory authorities over the years has shown that they now have sufficient expertise to devise or modify their success standards and sampling techniques to incorporate new scientific, technological, or other information in a manner that assures proper revegetation of disturbed areas. In most instances, we have not had to engage in substantial re-writing of

changes to State revegetation success standards or sampling techniques during the Federal approval process. However, even though we will no longer be approving State program amendments on those issues, our revegetation experts will remain available to consult with the State regulatory authorities on issues including success standards and sampling techniques. Thus, our agency is not withdrawing resources that have been beneficial to the States as they pursue SMCRA's goal of successful revegetation.

Third, and perhaps most importantly, the removal of the approved program requirement from § 816.116(a)(1) leaves no regulatory void. As previously noted, the nationwide minimum requirements for revegetation success and sampling techniques will continue to apply to the State regulatory authorities and indirectly to the permits that those regulatory authorities issue. Thus, the revision to § 816.116(a)(1) will not cause greater divergence among the States that are already required to meet the minimum nationwide requirements of § 816.116(a)(2) and (b). Even in those States that by State law are not allowed to be more stringent than OSM's regulations, the minimum nationwide requirements of § 816.116(a)(2) and (b) continue to apply. While complying with those nationwide requirements, the State regulatory authorities will, under revised § 816.116(a)(1), also be able to respond to new or localized scientific, technical, and land use information in a timelier manner, without awaiting the formal process of OSM approval. Furthermore, there are avenues besides our approval of success standards and sampling techniques by which the public and we may assure compliance by the State regulatory authorities with nationwide revegetation requirements. The success standards and sampling techniques will have to be included in each permit issued by the State regulatory authorities. Thus, contrary to the assertions of one commenter, the removal of this requirement will not lead to compromises in the effective implementation of SMCRA's goal of proper revegetation. In addition, "any person with an interest which is or may be adversely affected may request a hearing" on any permit issued by a State regulatory authority. § 775.11(a). When a permittee applies for final bond release, the surface owner must be notified and given an opportunity to participate in the bond-release inspection. § 800.40(b)(1). Before final bond release, any person with a valid legal interest may file objections and

request a public hearing. § 800.40(f). The State's regulatory program must also provide for administrative hearings and judicial review. §§ 775.12(b) and 775.13(b). In addition, if, in conducting an oversight inspection, we were to find a surface coal mining operation in violation of the nationwide minimum requirements, we would take appropriate action. See § 842.11(a)(1), (b)(1)(iii)(A). If the State appears to be including success standards and sampling techniques in its permits that are not in compliance with the nationwide minimum requirements of § 816.116(a)(2) and (b), we can initiate proceedings that could ultimately lead to substitution of direct Federal enforcement of the revegetation requirements, or withdrawal of the Secretary's approval of the State program in whole or in part. § 733.12(a), (g). Thus, the public's interest in proper revegetation remains protected, and the State regulatory authorities have incentive to keep their success standards and sampling techniques in compliance with the nationwide minimum requirements that have applied since 1983.

A final reason for removing the requirement that revegetation success standards and sampling techniques be included in the approved program is that this requirement is inconsistent with the approach we have taken in other areas. States do not have to include in their approved programs all of the specific techniques and standards they use to assess whether other SMCRA requirements have been met. See § 780.22 (requiring submission of the geologic data and overburden characteristics), § 780.21(d) (requiring assessment of the probable hydrologic consequences of mining), and § 780.21(g) (requiring a cumulative hydrologic impact assessment showing, *inter alia*, that the operation has been designed to prevent material damage to the hydrologic balance outside the permit area but not defining the term "material damage"). Instead, the regulatory authorities, both States and OSM, have effectively addressed the standards to be used in these determinations or submissions by developing guidance documents that are not required to be in the approved regulatory programs. Moreover, we do not impose the requirement to promulgate success standards and sampling techniques upon ourselves when we act as a regulatory authority. None of the three Federal programs with active mining include specific vegetation sampling techniques. The Federal program for the State of

Washington and the Federal program for Indian lands do not include specific revegetation success standards; the only Federal program with active mining that includes such requirements is the regulatory program for Tennessee. §§ 942.816(f) and 942.817(e). We have no compelling justification for continuing such an inconsistent approach, particularly since there is no reason to believe that the different requirements of State and Federal programs have resulted in significant divergence of the actual success standards or sampling techniques in use, or in the actual success of revegetation on mined sites. There is thus no principled reason to believe that the States cannot effectively implement revegetation success standards and sampling techniques without having to go through the formal promulgation process imposed by the prior approved program requirement of § 816.116(a)(1).

What were the comments submitted on our proposed revisions to § 816.116(a)(1)?

In response to our proposed rule, we received comments from 16 commenters supporting removal of the approved program requirement from § 816.116(a)(1). Of the 16 commenters, five were State regulatory authorities, one was a State coal association, six were coal companies, and four were industry associations. In general, these commenters based their support on the reduced regulatory burden they affirmed would result from eliminating the (a)(1) requirement. They also stated that the proposal would result in increased flexibility and improve their ability to make use of potential new technologies that may become available. Specific comments stated that the current process provides little incentive to continue or expand research into new and innovative methods, often results in unnecessary delays in State implementation of changes to these policies that are based on a State's professional judgment, and flies in the face of State primacy. These commenters stated that the revised regulation will better enable States to stay abreast of technological advances and to tailor success standards to local conditions, will allow use of alternative parameters for revegetation success, such as measurement of a site index, without submitting program amendments. Furthermore, the revised regulations will still support strict revegetation standards while allowing States to respond to improvements in sampling methodologies and technological advances.

We agree with these commenters and are proceeding with the rulemaking as proposed. The revised regulation will give the States the flexibility they need to implement new technologies without having to go through the Federal rulemaking process of amending their approved programs. As discussed above, we are also adding a provision to § 816.116(a)(1) to clarify that the standards and techniques selected by the regulatory authority must be described in writing and made available to the public. This last provision will ensure that all interested parties can readily find out all the options available in their jurisdiction for evaluating revegetation success.

Four of the commenters that supported the proposed revision to § 816.116(a)(1) noted that the revision, and the regulation as a whole, does not reflect that standards of success and statistically valid sampling techniques for measuring success are actually developed jointly by the permit applicant and regulatory authority and incorporated as part of the reclamation plan approved as part of the permit. These commenters indicated that normally the operator proposes such standards and sampling techniques prior to conducting baseline vegetation studies. The commenters agreed that this is appropriate, as the operator is most familiar both with the plant communities that will be affected by the operation and with the sampling methods needed to accurately describe and measure these plant communities. The commenters indicated that the standards and sampling techniques will become subject to evaluation in the permitting process and will be ultimately codified in the permit or letters of concurrence from regulatory authorities. The commenters further noted that through this process sampling methods and success standards are not "selected" unilaterally by the regulatory authority. Accordingly, the commenters suggested that preamble language of the § 816.116(a)(1) revision be improved by emphasizing the current process by which a number of the State regulatory authorities and their permittees jointly develop success standards and sampling techniques.

We are retaining the current requirement of § 816.116(a)(1) that the regulatory authority select revegetation success standards and statistically valid sampling techniques. The selected success standards and sampling techniques will be put in writing and be available to the public and, as before, will be used by operators in developing their permit applications. The manner

in which a regulatory authority goes about selecting the success standards and statistically valid sampling techniques that it will allow operators to use in evaluating revegetation success is up to the regulatory authority. That authority can, as suggested by the commenters, select the success standards and sampling techniques in consultation with operators and/or with assistance from academia. However, selected success standards and sampling techniques must meet the requirements of § 816.116(a)(2) and (b) and they must be put in writing and made available to the public. It is from these identified success standards and sampling techniques that the operators must choose the specific standards and techniques included in their individual permit applications. This procedure will ensure no less consistent revegetation success evaluations than that afforded under the prior rule.

We received comments from five commenters opposed to the proposed revision deleting the approved program requirement from § 816.116(a)(1). A large percentage of these comments focused on the absence of any provision in the proposed rule that would provide for public review of the success standards and sampling techniques selected by the regulatory authority. More specifically, these comments raised concerns about loss of public review; lack of enforceable success standards; inability of the public to review permits if the success standards and sampling techniques are not part of the approved program; and potential conflict among States, operators, and landowners over acceptable standards and sampling techniques. Other commenter concerns focused on the lack of support for changing a regulation that had been in place since 1983 and the inability of Federal oversight to prevent problems. These commenters also stated that the burden of OSM's lengthy timeframes for processing State amendments is self-imposed, that flexibility already exists within the Federal regulations for States to develop success standards and sampling techniques to fit local conditions, that inconsistent application of success standards and sampling techniques will occur, and that the current process does not stifle evaluation or utilization of new technologies. The specific comments received and our responses are discussed below.

All five of the commenters opposing removal of the approved program requirement from § 816.116(a)(1) expressed concern with the loss of public review of selected success standards and statistically valid

sampling techniques if the standards and techniques were no longer included in the State approved program. These commenters declared that the removal of success standards and sampling techniques from the State approved programs would result in information not being available to the public. One of the commenters asserted that OSM, by adopting this change, was taking the attitude that the only parties at interest in these matters were the companies and the States. This commenter claimed that success standards for reclamation are an extremely important source of public information and that, under the proposed rule, it would be more difficult for the public to find the success standards approved for a given permit. The commenter indicated that the inclusion of important matters in "internal guidance documents" and "technical standards" alone is not satisfactory. The commenter further questioned how, under the proposed rule, the public would know if there was any internal consistency within and between States as to selected success standards or sampling techniques. Finally, the commenter asserted that under the proposed rule, as under the provisions for public review during permitting at § 773.6(a) and (b)(2), and as under the provisions for public involvement in bond release at § 800.40(b)(1) and (f), OSM and the States seemingly want the public to find the problems that OSM and the States have missed. The commenter concluded that it would be hard for the public to find these problems if the success standards and sampling techniques are not in the State regulations.

Two of these commenters further noted that removal of the approved program requirement from § 816.116(a)(1) eliminates the ability of the public to comment on the success standards and sampling techniques proposed by the States for inclusion in their approved programs.

In partial response to these commenters' concerns, we are adding the express requirement in final § 816.116(a)(1) that the standards and techniques selected by the States be in writing and made available to the public. We did not include this requirement in the 2005 proposed rule. Under the prior version of § 816.116(a)(1), States were required to include selected standards and techniques in their approved programs but were not required to include them in the rules of their approved programs. Rather, States had the option of including them in any element of their approved programs including guidelines, technical procedures, policy

materials, etc. States will continue to have the option of including selected success standards and sampling techniques in the same range of formats, but must ensure their public availability. For example, States could make this information available to the public at places where other documents such as permit applications are also made available for public review. Or the States could further make it available to all interested parties either by mail or through the agency's web site. As before, States will continue to have the option of including selected standards and techniques in their approved program regulations. Whatever the formats chosen by the States, final § 816.116(a)(1) ensures the public access to and, therefore, the ability to review the selected standards and techniques. Furthermore, there will continue to be ample opportunity on a permit-specific basis for public review of the proposed use of selected standards and sampling techniques both during the permitting process as well as at bond release. Because § 780.18(b)(5) requires each permit application to identify its proposed success standards and sampling techniques, this information is also available for public review. Parties who have an interest that may be adversely affected by a decision on the application may further comment on these standards and sampling techniques under § 773.6(a) and (b)(2). These provisions ensure that the public will continue to have the ability to review the success standards and sampling techniques for every mine before operations begin. In addition, any persons with valid legal interests can also object to bond release under § 800.40(f) should they believe the operator has not used the approved success standard or not followed the approved sampling techniques.

Three of the five commenters opposing removal of the approved program requirement from § 816.116(a)(1) warned against the disputes that they asserted would inevitably arise between States and permit applicants/operators and between operators and landowners over what constitutes appropriate success standards and/or sampling techniques. The first of these three commenters admitted that the proposed revision would provide flexibility to State programs and would allow both States and operators to take advantage of new technology, sample methods, and statistics. This commenter also conceded that the approved program requirement of § 816.116(a)(1) was unnecessarily burdensome in terms of

the time and resources required by the State program amendment process and that this burden discourages updating revegetation standards. Nonetheless, this commenter asserted that any flexibility gained by the proposed revision to 816.116(a)(1) would not offset the endless disputes that would inevitably arise between States and permit applicants over what constitute acceptable methods and statistics.

While we believe that this commenter overstates the potential for disputes between States and permit applicants under proposed § 816.116(a)(1), final § 816.116(a)(1) expressly requires that all State-selected standards and techniques be in writing and made available to the public. This new provision should minimize disputes between a State and applicants over the range of success standards and sampling techniques available within that State. As under the prior rule, the permit applicant will be able to choose only from among available success standards and sampling techniques previously selected by the State. As under the prior rule, moreover, an applicant's proposed use of a selected standard or technique will be subject to State approval. Importantly, the potential for disputes between the regulatory authority and permit applicant should not be any greater than under the prior rule.

Two of the five commenters expressed additional concerns over the potential conflict that might arise between landowners and operators as a result of the proposed revision to § 816.116(a)(1). One of these two commenters also declared that the deletion of the approved program requirement would potentially place the landowner and operator in conflict at the time of bond release due to the use of measurement standards that lack a robust scientific basis.

We do not believe that the deletion of the approved program requirement from § 816.116(a)(1) will materially raise the potential for conflict between the landowner and operator at the time of bond release. As stated earlier, the provisions of § 816.116(a)(2) and (b) will continue to establish clear criteria and requirements for the success standards and sampling techniques that may be selected by the States under § 816.116(a)(1). All approved programs have counterparts to § 816.116(a)(2) and (b). Accordingly, the success standards and statistically valid sampling techniques selected by a State under final § 816.116(a)(1) will, for the purposes of establishing revegetation success at bond release, have the same robust scientific basis as the standards

and techniques selected by the State under the prior rule.

One of the commenters opposing removal of the approved program requirement from § 816.116(a)(1) suggested that, without including success standards and measuring techniques in the approved State program, operators may simply choose not to comply with selected standards and techniques.

With regard to this concern, we note that all State approved programs have counterparts to § 780.18(b)(5) requiring that applications for a permit contain a plan for revegetation, including measures to determine the success of revegetation. Once approved by the regulatory authority, these and all other permit terms are binding and enforceable.

Still another commenter asserted that the reasons given by us for this removal do not support abrupt departure from more than two decades of regulatory policy.

We disagree. The reasons provided in both this and the proposed rulemaking more than adequately support the revision. It is our agency's continuing policy to examine existing regulations and to make changes that reduce the burden on State regulatory authorities, OSM, the industry, or the public while assuring the achievement of SMCRA's purposes and requirements. The current regulatory change is intended to reduce the burden on regulatory authorities and OSM without hindering the achievement of the SMCRA requirement that coal mining and reclamation operations establish a diverse, permanent, and effective vegetative cover on all affected lands. 30 U.S.C. 1265(b)(19) and 1266(b)(6). This provision says nothing about success standards, sampling techniques, or whether those details must be in a State program.

In our 1983 rulemaking we allowed use of only those revegetation success standards and measurement techniques that have been incorporated into the approved program. See 48 FR 40160, September 2. An agency's rules once adopted are, however, not frozen in place. An agency may alter its rules in light of its accumulated experience in administering them when it determines that a different approach would better implement the statutory scheme. As discussed above, our experience over the last twenty years indicates that the approved program requirement poses an unnecessary obstacle to technological innovation and adoption of new standards and sampling techniques. State programs have matured and can be relied upon to meet the requirements of

SMCRA in light of the nationwide minimum requirements at § 816.116(a)(2) and (b) that will remain in place and will serve as a regulatory floor. Moreover, the Fourth Circuit has admonished us that, "in contrast to other 'cooperative federalism' statutes, SMCRA exhibits extraordinary deference to the States." See *Bragg v. West Va. Coal Ass'n*, 248 F.3d 275, 293 (4th Cir. 2001). Thus, even if it might be permissible for us to continue to require that revegetation success standards and sampling techniques be approved as part of the State regulatory program, it is nonetheless reasonable and appropriate for us to allow the States to make changes to those details without our involvement, as long as each State meets and implements the minimum nationwide standards.

Three of the five commenters opposing the proposed rule took issue with the statement in our 2005 preamble that the "relatively cumbersome" nature of the State program amendment process may discourage States from utilizing ongoing research findings and technological advances to adopt new and improved success standards and sampling techniques. The first of these commenters admitted that its own regulatory review process is cumbersome, but stated that that is because, in many cases, OSM is trying to "dodge a political bullet," rather than working in a more expeditious manner. The second commenter indicated that the fact that the State program amendment process is cumbersome is the result of OSM's decision not to more timely process State program changes. The same commenter noted that there is nothing inherently cumbersome or slow about the State program amendment process. The commenter also stated that OSM should be able to timely review and approve a properly documented State program amendment without hampering State innovation. In closing, this commenter asserted that the "cumbersome" nature of the current State program amendment process is a result of Federal agency practice, since the commenter saw nothing inherent in that process that requires the sort of delay that has attended OSM's review of program amendments. The third commenter stated that maintaining the current State program provisions would not stifle evaluation or utilization of new techniques. This commenter suggested that, as an alternative to eliminating the requirement that success standards and sampling techniques be included in the approved program, OSM should rather streamline its own program amendment review process so

as to assure that when proposed program amendments are supported by technological advances, they are processed and approved in an expedited fashion.

We strongly disagree with the general conclusion of these comments that any delay in the State program amendment process is attributable to our failure to timely process State program amendments. We recognize that we can make incremental improvements to speed the processing of State program amendments at the Federal level. However, the requirement that we approve amendments to these programs requires steps that are inherently time consuming. Also, a State may be required to go through its own rulemaking process before proposing amendments to its approved program under § 732.17. This State rulemaking process can also be very time consuming and is a practice over which we have no control. Accordingly, the deletion of the approved program requirement from § 816.116(a)(1) should enable States to more quickly adopt improved success standards and sampling techniques.

Three of the five commenters opposing the proposed rule asserted that the proposed deletion of the approved program requirement from § 816.116(a)(1) would undermine the core requirement in the Act that the Secretary establish a comprehensive set of minimum Federal standards for approved programs. Commenters also alleged that continued OSM prior review and approval of selected standards and sampling techniques was needed to assure a level playing field among States.

We do not believe these concerns are well-founded. The change to final § 816.116(a)(1) does not delete any statutorily-prescribed minimum standards. Section 101(f) of SMCRA provides that "because of the diversity in terrain, climate, biologic, chemical, and other physical conditions in areas subject to mining operations, the primary governmental responsibility for developing, authorizing, issuing, and enforcing regulations for surface mining and reclamation operations subject to this Act should rest with the States." 30 U.S.C. 1201(f). In turn, section 515(b)(19) of SMCRA expressly provides that a State's performance standards shall require surface coal mining and reclamation operations as a minimum to "establish on the reg[r]aded 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 * * *." 30 U.S.C. 1265(b)(19).

In implementing these two statutory provisions, both our prior rule as well as our proposed and final rules at § 816.116(a)(1) require States to select revegetation success standards and sampling techniques subject to the general conditions of § 816.116(a)(2) and (b). In turn, § 816.116(a)(2) specifically requires that State-selected sampling techniques for measuring success use a 90-percent statistical confidence interval and § 816.116(a)(2) and (b) require that State-selected success standards accord with the vegetative cover or crop production of appropriate reference areas.

We see nothing in these statutory and regulatory authorities to support commenters' assertion that OSM's prior review of selected standards and techniques was needed to assure a level playing field among States. State compliance with the criteria of § 816.116(a)(2) and (b) will, however, continue to ensure that a relatively level playing field exists among States. None of the revisions in final § 816.116(a)(1) will jeopardize State compliance with the criteria of § 816.116(a)(2) and (b).

Two commenters expressed concern about the negative effect that the proposed rule would have on the adequacy of reclamation required for bond release. The first of these commenters warned that, if States are no longer obligated to identify and defend their choice of objective standards for determining revegetation success, those States might adopt standards that are not based on good science in order to facilitate bond release. The second of these commenters declared that the proposed rule would allow operators to apply whatever standards they desired and that lands that did not meet the longstanding reclamation requirements of the Act would be released from their reclamation bond.

In partial response to these concerns, the final rule requires that success standards and sampling techniques selected by the States be in writing and made available to the public. As previously noted, this requirement should substantially relieve commenters' concerns that operators could apply whatever standard they desire and should also allay much of commenters' fears as to inconsistent standards among individual States. As set forth in our 2005 proposed rule (70 FR 13076, 13081), we continue to believe that the criteria enunciated in § 816.116(a)(2) and (b) will preclude States from selecting inadequate success

standards or sampling techniques for which there is no sound scientific basis. For the same reasons, we continue to believe that appropriate reclamation will, as before, be required for bond release. The bond release and oversight protection provided at §§ 800.40(b)(1) and 733.12(a)(1) should also, as under the prior rule, further guard against faulty bond release. With the same general protections in place as before, final § 816.116(a)(1) will merely allow a State program to employ the latest and most appropriate standards and sampling techniques without first having to go through the time-consuming process of adding them to its approved regulatory program.

One commenter also asserted that, if every permit had its own revegetation standards and measurement techniques, it would be extremely difficult for even the most dedicated State regulator to keep track of the approved success standards and sampling techniques and to use them for evaluating revegetation success.

The new requirement of final § 816.116(a)(1) that the success standards and sampling techniques selected by the regulatory authority be in writing and be made available to the public should ensure that the number of new standards and sampling techniques that the State regulator must keep track of and use remain at a reasonably manageable number.

Two commenters alleged that our oversight of State programs would not be adequate to catch problems with success standards and sampling techniques. The first of these commenters challenged our statement in the 2005 preamble that the oversight process would directly address any major deficiency identified in the revegetation success standards and/or sampling techniques used by a State. The second of these commenters questioned whether OSM would be familiar enough with all the differences between possible success standards and sampling techniques to be able to determine which one was deficient.

We disagree with these concerns as to our oversight authority and capacity to identify and address major deficiencies in the success standards and/or sampling techniques selected by the States. The revision to final § 816.116(a)(1) does not restrict or in any way impair our continuing authority under § 733.12(a)(1) to annually evaluate the administration of individual approved programs. These evaluations address programmatic problems and are conducted in accordance with longstanding agency policies that focus on the on-the-ground

results of reclamation and revegetation activities. From our past experience, we are confident that there are sufficient numbers of knowledgeable OSM personnel, including inspectors, committed to evaluating each State's reclamation performance. If our field reviews identify problems with inappropriate State evaluations of revegetation success, we will then review the permits in question to determine whether the correct success standards and sampling techniques were used in those evaluations. This review could, if appropriate, also address whether the success standards and sampling techniques complied with the State counterparts to § 816.116(a)(2) and (b). If we find that they are not in compliance, then we will work with the State to correct deficiencies, ensuring that all success standards and sampling techniques comply with program requirements.

Three of the five commenters opposing the proposed rule also disagreed with our assertion that the approved program requirement of § 816.116(a)(1) in the previous regulation discourages the use of new technologies. One of these commenters stated that our call for use of the latest sampling techniques was inappropriate. This commenter indicated that we should instead seek the most accurate and reliable sampling techniques rather than the "latest thing" in new sampling techniques, which might not be the best for the particular circumstance. The commenter further indicated that we should provide a backstop against fads that can sweep a scientific community. The commenter questioned our agency's concern to have the "latest thing" in sampling techniques available when we showed so little interest in the latest scientific "thing" in blasting. The commenter observed that, according to our explanation for eliminating the approved program requirement of paragraph (a)(1), OSM and some of the States were experimenting with new, potentially useful methods, but that it would take time to determine their reliability. The commenter warned that, until we made that determination, we should not dump proven practices in favor of the latest technology.

We disagree with these concerns. The Federal regulations at § 816.116(a)(2) and their State counterparts clearly require that all statistically valid sampling techniques must use a 90-percent confidence interval. This requirement will ensure that, regardless of the individual technique selected by the regulatory authority, all selected techniques will require the same level of precision. Our experience has shown

that State personnel have both the expertise and experience to determine the reliability of new sampling techniques. Eliminating the approved program requirement from § 816.116(a)(1) will, therefore, enable regulatory authorities to more quickly adopt new and reliable techniques, but will not require States to make changes should they be satisfied with their existing techniques.

Another of the commenters stated that OSM's goal of allowing variance among legitimate methods of measuring revegetation success could still be met through the State program amendment process but cautioned that the standards for measuring success do not change so dramatically and rapidly as to necessitate "streamlining" State adoption of new measurement techniques by eliminating OSM and public review.

As we stated previously, the time involved in the program amendment process is substantial and does not allow expedited implementation of new measurement technologies in approved State programs. We have also explained that the final rule will not eliminate public access to information about new measurement techniques selected by the States, nor will it impair our oversight of State evaluations of revegetation success. While public involvement in such changes will be different than under the prior rule, as will be our involvement, we believe the changes will fully, and more efficiently implement the requirements of SMCRA. After considering the benefits and costs of removing the approved program requirement from § 816.116(a)(1), we have concluded that both the environment and good science would be appropriately served by its removal.

One commenter was concerned that, without the Federal requirement for including selected success standards and measuring techniques in States' approved programs, States that have a "no more stringent than" clause in their State law may feel constrained not to adopt such standards and techniques as a matter of State regulation.

We disagree with the commenter's concern that the existence of a "no more stringent than" clause in a State law will result in the State not adopting success standards and measuring techniques. Revised § 816.116(a)(1) does not change its requirement that a State must still select success standards and sampling techniques for use in its program. Furthermore, these selected standards and techniques must continue to be consistent with the Secretary's regulations, particularly with the requirements of § 816.116(a)(2) and (b).

A "no more stringent" clause in the State's approved program would not negate any of these requirements.

Two commenters stated that § 816.116(a)(1) does not need to be changed in order for a State's success standards to address the variability of environmental conditions found in that State. While we acknowledge the truth of this statement, the principal motivation for our changing § 816.116(a)(1) continues to be reducing the time that may be required before a State program may adopt the latest, scientifically responsible standards for revegetation success.

One commenter asserted that removal of the approved program requirement from § 816.116(a)(1) also removes the "force of rule" from the sampling techniques selected by the regulatory authority.

In response, we note that final § 816.116(a)(1) does not change the requirement for States to select the standards for success and statistically valid sampling techniques. Under the prior rule, however, the standards and techniques selected by a State were required to be included in the approved program but were not required to be in rule form. As discussed above, these standards and techniques could also have been included in a guideline or other statement of technical procedures. Under final § 816.116(a)(1), States will still have those options; but selected standards and techniques will have to be made available to the public.

Another commenter took issue with the statement in our 2005 proposed rule that the existing requirements of § 816.116(a)(2) and (b) should ensure that selected success standards and sampling techniques used in the various States will provide similar degrees of proof that adequate reclamation has been achieved. The commenter disagreed with this assessment, indicating that, while standards for success are specified in these sections, the only specification regarding sampling methods is that parameters must be evaluated using sampling techniques with a 90-percent statistical confidence interval. The commenter added that the application of a statistical confidence limit is merely the final step in a long process, with no requirements being established in the rule for the intermediate steps in this process. While the commenter observed that there are many ways to obtain a data set for evaluation that meets the requirement for sampling using a 90-percent confidence interval, he noted that many of these ways do not, for various reasons, constitute a representative sample of the target

population. In addition, there are many different types of statistical tests that might be applied to determine 90-percent confidence. The commenter further stated that inappropriate application of statistical tests would result in incorrect conclusions regarding eligibility of lands for bond release. The use of sampling methods and statistical tests with no rules on approved methods would inevitably result in incorrect decisions regarding bond release and inconsistent application of rules and standards. In conclusion, this commenter declared that the premise that a regulatory authority will be able to ensure appropriate use of sampling methods and statistics without those requirements being included in the approved program is entirely unrealistic.

The commenter is correct in its statement that there are many ways to obtain data satisfying the required 90-percent statistical confidence interval that may not constitute a representative sample of the target population. Similarly, there are many types of statistical tests that might be applied to determine the 90-percent statistical confidence interval. Inappropriate application of these statistical tests could, as the commenter suggested, result in incorrect conclusions regarding the eligibility of lands for bond release. The framing and the appropriate application of these sampling methods and statistical tests have always been two of the challenges facing the State regulatory authority under the prior rule. The same challenges will continue under the new rule. The only "rule," *i.e.*, regulatory prescription, that has ever governed the selection and application of sampling techniques and statistical tests is the 90-percent statistical confidence interval of § 816.116(a)(2). This requirement will not be affected by the revision to § 816.116(a)(1). Accordingly, we strongly question the commenter's broad declaration that without "rules" on approved methods, incorrect decisions regarding bond release and inconsistent application of rules would "inevitably result." As stated above, it furthermore has been our experience that States have the necessary technical expertise both to select statistically valid sampling techniques and statistical tests that would result in a representative sample of the target population and to ensure that the statistical tests are applied correctly. As before, we will be available to provide technical assistance to the States in any further development and application of statistically valid sampling techniques

and statistical tests. While not absolute guarantees in themselves, we reasonably believe that the current rules at § 816.116(a)(2) and the current level of State expertise will continue to provide for appropriate development and use of sampling methods and statistics.

Apparently in response to the statement in our 2005 preamble that our regulations allow technical standards to be included in technical guidance documents that are not part of the approved regulatory program, one commenter questioned whether any outside party had access to our "records" as the regulatory authority in Tennessee, Washington, and for the Indian Lands Programs. All permitting actions and bond releases in Tennessee, Washington and on Indian Lands are, in fact, available for public review. All reclamation plans, including revegetation success standards and sampling techniques, for permits in Tennessee and Washington and on Indian Lands are also available for public review. Arrangements may be made to review those records by contacting the appropriate OSM office.

3. Section 816.116(b)(3): Success Standards for Undeveloped Land

What are the revisions to § 816.116(b)(3)?

We have revised § 816.116(b)(3) to add undeveloped land as one of the land uses subject to that section's success standards. Revised § 816.116(b)(3) will read as follows, with new language in italics:

For areas to be developed for fish and wildlife habitat, recreation, *undeveloped land*, or forest products, success of vegetation shall be determined on the basis of tree and shrub stocking and vegetative ground cover.

This provision is identical to that proposed in our 2005 **Federal Register** notice.

The basis for our revision to § 816.116(b)(3) is set forth in detail in that notice. There we noted that several commenters responding to our 1999 outreach had suggested that current § 701.5 includes undeveloped land as a land use category and defines it as "land that is undeveloped or, if previously developed, land that has been allowed to return naturally to an undeveloped state or has been allowed to return to forest through natural succession." Therefore, without any change to the current regulations, undeveloped land can be approved as a postmining land use under the postmining land use provisions of § 816.133. However, unlike all the other land use categories listed in § 701.5, undeveloped land does not have success standards specified in

§ 816.116(b). Under this final rule, the inclusion of undeveloped land among the land uses subject to the revegetation success standards of § 816.116(b)(3) will mean that undeveloped land will be subject to cover and, if applicable, stocking requirements depending on the vegetation goals for each parcel of land. We consider the cover and stocking requirements of § 816.116(b)(3) to be particularly appropriate criteria for evaluating the revegetation success of an undeveloped land use area, as they can be used to ensure the establishment of the seral species, *i.e.*, a community of mixed grasses, forbs, shrubs and trees, necessary to facilitate natural plant succession.

What were the comments submitted on our proposed revision to § 816.116(b)(3)?

Eight commenters supported the proposed revision of § 816.116(b)(3) to add undeveloped land as one of the land uses subject to that section's success standards. These commenters were in general agreement that having undeveloped land available as a postmining land use could allow reclamation of areas that potentially provide higher ecological benefits and diversity (and reforestation) than the other land uses previously identified in the regulations at § 816.116(b).

One of these commenters asked whether the seral species on undeveloped land must be predominately native to the area or whether large swaths of introduced species, such as kudzu, could be acceptable in States such as Tennessee or Alabama.

As previously noted, undeveloped land is defined as "land that is undeveloped or, if previously developed, land that has been allowed to return naturally to an undeveloped state or has been allowed to return to forest through natural succession." Therefore, if an operator chooses undeveloped land as a postmining land use, we believe that the operator would have to reclaim the land with the revegetation goal of promoting natural succession. In this regard, the revegetation provisions of § 816.111 require the use of species native to the area, or of introduced species where desirable and necessary to achieve the approved postmining land use. The use of those introduced species must also be approved by the regulatory authority, and under § 816.111 those species must be capable of plant succession. Species like kudzu that are considered noxious weeds could not be introduced because of the prohibitions of State and Federal laws and regulations governing noxious

plant and introduced species. It would not be feasible or appropriate for us to establish national standards for seral species because of the vast differences in plant communities throughout the country. Planting and seeding plans for development of seral plant communities is best done at the local level by professionals most familiar with the local environment.

Another commenter noted that the Ohio approved program has established a postmining success standard for undeveloped lands. The intended purpose of that program regulation was to encourage the planting of trees and shrubs without the need to achieve an established standard for stems per acre, survival or plant productivity. The commenter observed that, in spite of this incentive, the Ohio regulation has not proven successful in encouraging additional tree and shrub plantings within mined areas. Based on this Ohio experience, the commenter stated that the proposed revision to include undeveloped land among the listed land uses of § 816.116(b)(3) is unnecessary as the inclusion is not likely to achieve its intended purpose of encouraging tree and shrub planting. Instead, the commenter recommended the establishment of a national standard requiring that a minimum of 80 percent of the acreage that is disturbed by mining and that supported a forest or shrub cover prior to mining must be reclaimed to forest and shrub cover following mining. The commenter based this recommendation on several States' interpretation of their existing rules. The commenter further stated that this restoration requirement for forest and shrub lands would necessitate the development and utilization of techniques necessary to ensure successful restoration of premine land use capabilities, including those of forestry or fish and wildlife habitat. Such a national requirement would also establish a consistent playing field for operators across the country.

We appreciate the commenter's concern as to whether the Ohio rules have been successful in encouraging tree and shrub planting on undeveloped land. Nonetheless, because undeveloped land is already available as a postmining land use, we believe that it is necessary both to establish revegetation success parameters for this land use and to require that operators, to obtain bond release, then demonstrate compliance with those parameters. Revising § 816.116(b)(3) to include undeveloped land among the numbered postmining land uses assures that all approved postmining land uses will have to meet prescribed revegetation success

standards. The commenter's proposal to require reclamation to premining cover type of 80 percent of the acreage that previously supported a forest or shrub cover goes beyond the requirements of SMCRA. Section 515(b)(2) of the Act addresses postmining land use and requires restoration of affected lands to a condition capable of supporting the uses which it was capable of supporting prior to any mining, or higher or better uses. The proposed establishment of national criteria requiring redistribution of a particular level of premine tree and shrub cover is therefore not authorized, because SMCRA allows landowners to choose higher or better postmining land uses.

Two commenters contended that OSM should do more than simply adding undeveloped land to the list of land uses subject to the requirements of § 816.116(b). They argued that, if OSM finalizes its proposal, the new rule would not foster one of our stated objectives which was to encourage reforestation. These commenters asserted that some permit applicants would choose not to select undeveloped land as their postmining land use and would propose not to plant trees if the revegetation standards for undeveloped land were unnecessarily burdensome. Moreover, these commenters noted that, in approving Ohio's success standards for undeveloped land, we stated that "undeveloped land is consistent with the Federal regulations which do not contain specific success standards for undeveloped land, and is in keeping with section 101(f) of SMCRA, which vests the States with the primary governmental responsibility for developing, authorizing, issuing, and enforcing regulations for surface coal mining and reclamation operations." 59 FR 22514, May 2, 1994.

The same two commenters indicated that, instead of treating the undeveloped land category like the other land uses in § 816.116(b)(3), OSM should recognize that the State regulatory authority may develop its own undeveloped land revegetation success standards on a program-wide or individual permit basis. Such State-specific revegetation success standards for undeveloped land would, of course, ensure that the land be allowed to return to its natural or undeveloped state, or to forest through natural succession. The commenters suggested using the Ohio approved program as a model for development of future Federal regulations. Under this approach, revegetation success for the undeveloped land use would be determined on the basis of ground cover and the proper planting of appropriate tree and shrub species specified in the

permittee's approved planting plan. In addition, these commenters suggested that revegetation on undeveloped land should be found successful for phase II bond release when the herbaceous ground cover species are established and provide sufficient ground cover to control erosion. For phase III, the bond should be released when the five-year period of responsibility has expired and acceptable species of trees and shrubs have been properly planted in accordance with the approved planting plan. The commenters indicated that survival of tree or shrub plantings should not be a requirement for phase III bond release, as long as the permittee demonstrates that the planting plan has been approved and followed and that trees and shrubs have been planted in approved numbers and locations. The commenters affirmed that this proposed regulatory approach to revegetation success for undeveloped land would encourage more reforestation than OSM's proposal to include undeveloped land among the land uses subject to the revegetation success standards of § 816.116(b)(3).

We do not agree with any aspect of the commenters' proposal. As noted in the preamble to the proposed rule, unlike all the other land use categories listed in § 701.5, undeveloped land does not have specified revegetation success standards in § 816.116(b). The inclusion of undeveloped land as one of the land uses subject to the success standards of § 816.116(b)(3) means that undeveloped land will, like all the other listed land uses, have specific revegetation success standards. Therefore, any area with an approved undeveloped land use will be subject to the cover and, if applicable, stocking requirements of § 816.116(b)(3) depending on the particular vegetation goals set for that parcel of land. These cover and stocking requirements are particularly appropriate criteria for evaluating the revegetation success of an undeveloped land use area as these requirements should ensure the establishment of the seral species, *i.e.*, a community of mixed grasses, forbs, shrubs and trees, necessary to facilitate natural plant succession. Upon promulgation of this final rule, if reforestation proves to be the desired goal of individual revegetation efforts, the approved land uses could be forest products (forestry), fish and wildlife habitat, or undeveloped land. For phase II bond release the operator must only demonstrate the establishment of the seeded or planted species. However, we maintain that in all cases, and for obvious reasons, the ultimate success of revegetation when it is evaluated at

phase III must be based on cover and the survival of the planted trees, not simply the planting of those trees. Under both the prior and final rule the specific success standards and criteria used to evaluate each of these land uses will be established by the regulatory authority. We note that, contrary to these latter commenters' assertions about the efficacy of the Ohio model in encouraging reforestation, Ohio has indicated that its approved provisions for evaluating revegetation success for undeveloped land, which do not require evaluation of survival, have not been successful in encouraging tree and shrub planting. We do not believe that including survival requirements for trees in the success standards for undeveloped land will adversely affect reforestation efforts. In sum, we find no meaningful basis for exempting the undeveloped land use from the success requirements common to all other land uses listed in § 816.116(b).

4. Section 816.116(b)(3): Shelter Belts

What are the revisions to § 816.116(b)(3)?

We are further revising the revegetation success provisions of § 816.116(b)(3) to eliminate the reference to shelter belts from listed land uses. This revision is identical to that in the 2005 proposed rule. We will address the use of shelter belts under the revegetation success provisions of § 816.116(c)(4), which governs normal husbandry practices.

As discussed in the preamble to that proposed rule, we have removed shelter belts from the land uses listed in § 816.116(b)(3) for three reasons: shelter belts have never been included among the land use categories listed in § 701.5; shelter belts are defined as conservation practices, not land uses, by the Natural Resources Conservation Service (NRCS); and the recognized purpose and ongoing maintenance requirements of shelter belts are consistent with the normal husbandry practices allowed by § 816.116(c)(4).

What were the comments submitted on our proposed revision to § 816.116(b)(3)?

Ten commenters supported removing shelter belts from the land uses listed in § 816.116(b)(3). All these commenters agreed with our position that shelter belts are conservation practices and should, therefore, be addressed as normal husbandry practices.

One commenter opposed the proposed revision, preferring that the reference to shelter belts be retained in our regulations at § 816.116(b)(3). This

commenter stated that the underlying idea behind the (b)(3) regulation has been that shelter belts would provide cover for game traveling between different kinds of postmining land uses and would aid in controlling wind and water erosion. The commenter indicated that we should retain the idea of providing cover for game and controlling erosion with tree and shrub plantings, even within areas reclaimed for residential, commercial, or industrial postmining land uses. The commenter contended that, if the idea of providing cover for game and controlling erosion with tree and shrub plantings is lost by removing shelter belts from among the listed land uses of § 816.116(b)(3), we would be bowing to the "barrenness" of those uses. While the commenter agreed that the NRCS definition of shelter belt" may be a husbandry practice, he noted that the shelter belt concept, as currently used in our regulations, involves more than a mere husbandry practice and should be retained in § 816.116(b)(3).

We agree that, to provide habitat for various wildlife species as well as to control wind and water erosion, we should encourage the use of shelter belts. However, the inclusion of shelter belts among listed land uses in § 816.116(b)(3) triggers a statistical evaluation of shelter belts under § 816.116(a)(2) for determining revegetation success at bond release. We believe that requiring such a statistical evaluation actually discourages the use of shelter belts on reclaimed lands because of the time and money necessary for sampling and preparing a bond release application. Not surprisingly, the current use of shelter belts is very limited. Redesignation of shelter belts as a normal husbandry practice should reasonably encourage their future use and proper maintenance.

In response to the commenter's concern about the value of shelter belts as wildlife cover, we note that the Federal regulations at § 816.97(a) continue to require that the operator must, to the extent possible and using the best technology currently available, minimize disturbances and adverse impacts on fish, wildlife, and related environmental values and must enhance such resources where practicable. Furthermore, § 816.97(h) continues to require that, where cropland is to be the postmining land use and where it is appropriate for wildlife- and crop-management practices, the operator must intersperse fields with trees, hedges, or fence rows throughout the harvested area to break up large blocks of monoculture and to diversify habitat

types for birds and other animals. Finally, § 816.97(i) requires that, where residential, public service, or industrial uses are to be the postmining land use, and, where it is consistent with the approved postmining land use, the operator shall intersperse reclaimed lands with greenbelts utilizing species of grass, shrubs, and trees useful as food and cover for wildlife. In answer to the commenter's general concerns, these cited regulations clearly provide for the use of vegetated areas similar to shelter belts for enhancing wildlife habitat, even with residential or industrial postmining land uses.

Another commenter supported the proposed changes, agreeing that shelter belts are not a land use but rather a conservation practice supporting approved land uses. Nonetheless, this commenter argued that any trees included in the shelter belt area should still be subject to the requirement at § 816.116(b)(3)(ii) that, at the time of bond release, at least 80 percent of the trees and shrubs used to determine such success shall have been in place for 60 percent of the applicable minimum period of responsibility and all shall have been in place for at least two years (the "80/60 rule"). Accordingly, the commenter suggested that language be included in the regulations to clarify that shelter belts are subject to the success standard of § 816.116(b)(3)(ii).

In response to this comment, we note that it would be logically inconsistent to treat shelter belts as normal husbandry practices, which allow for maintenance that could include dead tree or shrub replacement, irrigation, thinning, pruning, chemical application for disease and pests, protection from livestock and wildlife, and fertilization, but still require shelter belts to comply with the 80/60 rule, which places limits on tree and shrub replanting.

5. Section 816.116(b)(3)(ii): Tree and Shrub Stocking Standards

What are the revisions to § 816.116(b)(3)(ii)?

We have made three minor revisions to § 816.116(b)(3)(ii) to provide new ways in which operators may accurately satisfy the existing revegetation success standards of the 80/60 rule for areas developed for fish and wildlife habitat, recreation, undeveloped land, or forest product postmining land uses. Revised § 816.116(b)(3)(ii) will read as follows, with new language in italics:

(ii) Trees and shrubs that will be used in determining the success of stocking and the adequacy of the plant arrangement shall have utility for the approved postmining land use. Trees and shrubs counted in determining

such success shall be healthy and have been in place for not less than two growing seasons. At the time of bond release, at least 80 percent of the trees and shrubs used to determine such success shall have been in place for 60 percent of the applicable minimum period of responsibility. *The requirements of this section apply to trees and shrubs that have been seeded or transplanted and can be met when records of woody vegetation planted show that no woody plants were planted during the last two growing seasons of the responsibility period and, if any replanting of woody plants took place 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. Any replanting must be by means of transplants to allow for adequate accounting of plant stocking. This final accounting may include volunteer trees and shrubs of approved species. Volunteer trees and shrubs of approved species shall be deemed equivalent to planted specimens two years of age or older and can be counted towards success. Suckers on shrubby vegetation can be counted as volunteer plants when it is evident the shrub community is vigorous and expanding.*

The revised language is identical to that included in our 2005 proposed rule. As discussed in the preamble to that rule, many mine operators over the years have perceived the 80/60 rule as not only being complex and confusing but also subject to uncertain implementation by State regulatory authorities. Furthermore, operators often perceived as unnecessarily difficult, costly, and time-consuming the need under the 80/60 rule for determining the length of time that individual trees and shrubs have been in place. In response to these concerns, we have added five sentences to the end of the existing language of § 816.116(b)(3)(ii) to implement three minor revisions in the way operators may satisfy the 80/60 success standards.

The first revision to § 816.116(b)(3)(ii), represented by the first two new sentences added to the end of existing rule language, effectively eliminates the current potential need under the 80/60 rule for field verification of the time in place of individual plants. Under the prior rule, especially in areas of greater than 26 inches of average annual precipitation ("humid areas") where mined land could reasonably be reforested, the need for determining the time in place of trees has proven to be a significant disincentive to reforestation. Instead, operators have tended to choose grazing land or pastureland, not forestry, in order to avoid application of the tree-counting requirements of the 80/60 rule. With our first revision to § 816.116(b)(3)(ii), operators can now

document compliance with the 80/60 rule time-in-place requirements for individual plants by comparing records of initial planting (or "stocking") and replanting of transplants to the final field count of plants at bond release. The second sentence specifically requires the use of transplants rather than seeding for any replanting. We have added this requirement because the use of transplants or plant seedlings allows us to quantify easily the amount of replanting that has occurred and thereby ensure compliance with the 80/60 rule time-in-place requirements. By contrast, if an operator used seeding for replanting, because of the variability in seed germination it would be extremely difficult to quantify the number of trees and shrubs that would result from the supplemental seeding. This would make verification of compliance with the 80/60 rule time-in-place requirements extremely difficult, if not impossible.

The 80/60 rule time-in-place requirements can be met when the following easily documented facts are established: (1) The final field count of plants of approved species at bond release shows that the requisite number of plants are in place; (2) records show that no woody species have been planted in the last three years of a five-year responsibility period or six years of a ten-year responsibility period; (3) if replanting has occurred in the last 60 percent of the responsibility period, planting records show that the number of plants replanted is below 20 percent of the final plant count; and (4) no woody species have been planted during the last two years of the responsibility period. By establishing these facts, it will now be possible for an operator to make a numerical assessment of compliance with the 80/60 rule that is at least as accurate as could be obtained under the current laborious practice of having to determine the length of time that individual plants have been in place.

The second revision to § 816.116(b)(3)(ii), represented by the third and fourth sentences added to the end of existing rule language, will allow volunteer plants of approved species to be included in the 80/60 revegetation success count even when it cannot be verified that the volunteers are more than two years old. Operators and regulatory officials from both the humid and semi-arid precipitation areas have often questioned the wisdom of not being able to include volunteer plants of approved species in the 80/60 revegetation success count when it cannot be verified that the volunteer plants have been in place for not less than two growing seasons. We believe

the new provision permitting operators to count volunteer plants is consistent with section 515(b)(19) of the Act, which requires the operator to establish vegetation that is "capable of self-regeneration and plant succession at least equal in extent of cover to the natural vegetation of the area." The volunteer plants allowed under this revision represent either regeneration of species already present on the reclaimed area or invasion of native species from adjacent undisturbed areas, which is itself a strong indication of plant succession. Live volunteer plants are as likely to continue to grow and mature as transplants of the same species that may be little more than two years old. Therefore, counting the first products of plant regeneration or invasion is a clear and reasonable indicator of successful reclamation and an appropriate revision to the 80/60 rule.

The third revision to § 816.116(b)(3)(ii), represented by the fifth sentence added at the end of existing rule language, will allow individual suckers from shrubs to be counted as volunteer plants under the 80/60 rule when it is evident that the shrub community is vigorous and expanding. As discussed in our proposed rule, many of the planted or seeded shrub species in semi-arid areas undergo a continual process called "suckering" by which multiple new aboveground stems are generated from the initial plant. It is not possible, however, to document the time in place of these new suckers. Therefore, even though the sucker plant community may be vigorous and expanding, the individual suckers could not be counted under the prior rule for purposes of meeting the 80/60 revegetation success count. As is the case with other volunteer plants, we believe that allowing for the counting of individual suckers within a vigorous and expanding shrub community is also a reasonable indicator of successful reclamation and an appropriate revision to the 80/60 rule.

What were the comments submitted on proposed revisions to § 816.116(b)(3)(ii)?

Fourteen commenters supported the proposed revisions to § 816.116(b)(3)(ii) and the new ways operators may accurately establish compliance with the 80/60 revegetation requirements of that rule. These commenters echoed many of the same themes that we had set forth in our preamble to the proposed rule. The commenters affirmed that the new language added to § 816.116(b)(3)(ii) would reduce some of the sampling problems and unnecessary

burdens associated with proving reclamation success on woodland land uses. They viewed the new ability to include volunteer trees and shrubs, including suckers, in success determinations as encouraging greater use of woody species and the reforestation of mined lands. Finally, because the regenerative capabilities of a planting can greatly increase its prospects for long term success, they confirmed that volunteer plants would be no less valuable for determining revegetation success than original plantings.

One of the commenters supporting the proposed revisions provided much useful information for evaluating shrubs from different shrub populations and developing species-specific sampling techniques. We particularly appreciate this commenter's insight into evaluating shrubs. The provided information may well prove useful in the future for developing sampling techniques based on the particular species of shrubs to be sampled.

One commenter, however, objected to the revision of § 816.116(b)(3)(ii) on the grounds that it eliminated the continuing need under the 80/60 rule to make a plant count of trees and shrubs for establishing revegetation success. This commenter also expressed concern that one-year-old suckers in the West might be included in the final field count, even though such suckers are not viable. The commenter did not object to counting suckers if they are vigorous and expanding but observed that a competent horticulturist or agronomist familiar with an area should be able to determine if a sucker "is going into its second growing season."

We note that our revision of the methods by which trees and shrubs can be counted under the 80/60 rule does not change the requirement that, during the final year of the responsibility period, the operator must still demonstrate that the revegetation success standard has been achieved. This demonstration will require sampling, i.e., field counting, the individual trees and/or shrubs on the reclaimed area. The counting of one-year-old suckers should not be a concern because, since they receive nourishment from both the parent plant and their own root system, their continued survival and expansion beyond year one should be reasonably ensured. Evaluation of tree and shrub density in the last year of the responsibility period should also ensure that the stands are well established. Accordingly no changes are necessary to address this commenter's concern.

Still another commenter opposed the proposed revisions to the 80/60 rule because it feared these revisions would weaken the regulatory authority's ability to require success standards and sampling techniques that would ensure good and lasting reclamation. This commenter stated that under the proposed rule operators could essentially choose whatever sampling technique is least costly—whether the technique is valid or not—and apply reclamation performance standards as they see fit. The commenter further questioned how regulators and the public would be able to hold operators to a high and successful reclamation standard. The commenter suggested that, under the proposed rule, lands might be released from reclamation bonds even though they did not, in fact, "meet long lasting reclamation requirements or the intent of the SMCRA."

Contrary to this commenter's contention, our revisions to § 816.116(b)(3)(ii) will not weaken or otherwise adversely affect the regulatory authority's ability to require that, during the final year of the responsibility period, the operator must still demonstrate that the revegetation success standard has been achieved. As always, this demonstration under § 816.116(b)(3) will require sampling, i.e., field counting, the tree and/or shrub density on the reclaimed area and comparing those counts to records of original planting and replanting to determine if revegetation is successful. Under § 816.116(a)(1), the regulatory authority will continue to select the success standards and statistically valid sampling techniques that operators must use to demonstrate revegetation success. Accordingly, the new methodologies allowed under revised § 816.116(b)(3)(ii) for establishing compliance with the revegetation requirements of the 80/60 rule will not affect the quality of the reclamation required under the Act. These new methodologies will merely allow the operator to demonstrate achievement of the revegetation success standard without having to track the time in place of individual plants through the revegetation responsibility period.

6. Section 816.116(c)(3)(i) and (ii): Sampling Timeframes for Areas With Less Than 26 Inches of Precipitation

What are the revisions to § 816.116(c)(3)(i) and (ii)?

We have revised § 816.116(c)(3) to change the timeframes for sampling revegetated lands in areas receiving less than 26 inches of precipitation to

determine if they meet the appropriate success standards. Revised § 816.116(c)(3)(i) and (ii) will read as follows, with new language in italics:

- (i) Ten full years, except as provided in paragraph (c)(3)(ii) below. The vegetation parameters identified in paragraph (b) of this section *for grazing land, pasture land, or cropland* shall equal or exceed the approved success standard *during the growing season of any two years after year six of the responsibility period. Areas approved for the other uses identified in paragraph (b) of this section shall equal or exceed the applicable success standard during the growing season of the last year of the responsibility period.*
- (ii) Five full years for lands eligible for remining included in permits issued before September 30, 2004, or any renewals thereof. To the extent that the success standards are established by paragraph (b)(5) of this section, the lands shall equal or exceed the standards during the *growing season of the last year of the responsibility period.*

This revised language is identical to that included in the 2005 proposed rule.

We are changing our revegetation regulations at § 816.116(c)(3) to bring the timing of revegetation success measurements for areas of 26 inches or less of average annual precipitation ("semi-arid areas") into line with those for areas of greater than 26 inches of average annual precipitation ("humid areas") at § 816.116(c)(2). As discussed more fully in our 2005 proposed rule, our 1979 regulations provided for the timing of revegetation success measurements for semi-arid areas to be identical to that for humid areas. These regulations required that the revegetation success standards be equaled or exceeded for the last two consecutive years of the respective five- and ten-year responsibility periods. In 1983, we revised our humid area regulations, redesignated as § 816.116(c)(2)(i), to require that revegetation success standards be equaled or exceeded during the growing season of the last year of the five-year responsibility period, or, if required by the regulatory authority, during the growing season of the last two consecutive years of responsibility period. We did not, however, change the semi-arid area regulation at § 816.116(c)(3)(i), which continued to require that the revegetation success standard be equaled or exceeded for the last two consecutive years of the ten-year responsibility period. In 1985, the court remanded the 1983 revision to us because of the lack of supporting evidence.

On September 7, 1988, we promulgated the current rules at § 816.116(c)(2)(i) setting forth the periods for measuring revegetation success for humid areas with a five-year

responsibility period. 53 FR 34643. The new regulations required that revegetation success standards for grazing land, pasture land, or cropland postmining land uses be equalled or exceeded during any two years of the responsibility period, except the first. Prior to the 1988 revision to § 816.116(c)(2)(i), evaluation of revegetation success was required in the last two years of the responsibility period for these land uses, regardless of the precipitation regime. In support of this relaxation from the 1979 "last-two-consecutive-years-of-the-responsibility-period" standard, the 1988 preamble noted that the earlier 1983 preamble had cited the effect of year-to-year [climatic] variability on crop yields or other parameters that are highly sensitive to such conditions as justifying the requirement of two consecutive years of revegetation success. 48 FR 40156, September 2. Notwithstanding, we reasoned that, relative to grazing land, pasture land, and cropland postmining land uses in humid areas, "[m]easurement in nonconsecutive years avoids unduly penalizing the operator for the negative effects of climatic variability." The 1988 preamble continued, "OSM * * * believe[s] that measurement over two years is important to attenuate the influences of climatic variability, but now realizes that consecutiveness imposes an unnecessary degree of regulatory rigidity." Furthermore, we argued that to require measurement of crop or pasture yields in the last year of the responsibility period would be an unnecessarily rigid standard given the variability of weather conditions. 53 FR 34640.

The 1988 revision also provided that, for humid areas, the revegetation success standards for postmining land uses other than grazing land, pasture land, and cropland, e.g., forest products, fish and wildlife habitat, etc., must be equalled or exceeded during the growing season of the last year of the responsibility period. Supporting this relaxation of the 1979 "last-two-consecutive-years-of-the-responsibility-standard," we reasoned that within a forest ecosystem there exists a positive relationship between time and vegetative cover. Therefore, we concluded that, for forest-type ecosystems, the last year of the responsibility period would provide an accurate measurement of revegetation success. 53 FR 34641.

After reviewing the 1988 preamble rationale that supported relaxation of the last-two-consecutive-years requirement for humid areas with a five-year responsibility period, we have not

found any persuasive reason why the same rationale would not equally apply to semi-arid areas with a ten-year responsibility period. For example, for areas with postmining land uses other than grazing land, pasture land, or cropland, determining vegetation success requires measurement of vegetative parameters that are not sensitive to short-term weather variations. With each of these other postmining land uses, the vegetative measurements done for the last year of the responsibility period can be reasonably expected to represent the baseline for vegetative success in future years. Trees counted in the last year of the responsibility period for a forestry postmining land use should reasonably be expected to survive as a permanent vegetative cover. This holds true whether the other postmining land uses are located in humid or semi-arid areas. For all postmining land uses, we believe that it is the nature of the individual postmining land use and not the relative moisture of the area in which the land use is located that appropriately determines the number and spacing of the years for which vegetation success must be measured.

Accordingly, we have revised our regulations for semi-arid areas at § 816.116(c)(3)(i) to comport with our regulations for humid areas at § 816.116(c)(2)(i). The revised rules for semi-arid areas provide that the vegetation parameters identified in § 816.116(b) 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. For semi-arid areas approved for the other land uses identified in paragraph (b) of that section, vegetation must equal or exceed the applicable success standard during the growing season of the last year of the responsibility period.

Revising the revegetation rules in this manner makes the requirements of § 816.116(c)(3)(i) for areas receiving 26 inches or less of annual precipitation similar to those of § 816.116(c)(2)(i) for areas receiving more than 26 inches of annual precipitation. For the sake of further consistency, we are similarly revising the rules for lands in semi-arid areas at § 816.116(c)(3)(ii), which govern the timing of revegetation success measurement for lands eligible for remaining, to comport with the rules for similar lands in humid areas at § 816.116(c)(2)(ii). Both rules will then require that revegetation standards be met or exceeded during the growing season of the last year of responsibility period.

What were the comments submitted on proposed revision to § 816.116(c)(3)?

Nine commenters supported the proposed revision that would require revegetation success measurements for grazing land, pasture land, and cropland in semi-arid areas to equal or exceed the approved success standard during the growing season for any two years after year six of the ten-year responsibility period. Noting that our 1988 rulemaking had cited the climatic variability of humid areas as supporting the new two-year measurement schedule for grazing lands, pasture lands, and croplands, commenters added that the climatic variability in the semi-arid areas of the West can also be very extreme, particularly with regard to periods of drought. Because vegetation parameters may equal or exceed success standards in the years both before and following a drought, commenters concluded that flexibility was needed to allow the second year of sampling to be collected in a non-consecutive year. Accordingly, with regard to grazing lands, pasture lands, and croplands in semi-arid areas, commenters supported the proposed rule as allowing needed flexibility in the timing of revegetation success measurements without compromising the standard for that success.

We agree with this analysis. By allowing measurements for revegetation success in any two years after year six of the responsibility period, the new rule will provide semi-arid areas with the same flexibility for dealing with climatic variability presently afforded only in humid areas. At the same time both rules will ensure not only successful revegetation, but also timely bond release.

One commenter noted that if an operator is using a reference area as the success standard against which revegetated areas will be compared, the climatic variability discussed in the preamble would not pose substantial problems during bond release demonstrations because the reference area would be subject to the same climatic variability as the revegetated area.

We generally agree with this comment, noting that if reference areas are located in close proximity to revegetated areas, the amount of climatic variability between any two areas may not be substantial. However, as mines expand, the distances between long-established reference areas and newly reclaimed areas often increase. Given the localized nature of storms in the West, these increased distances can result in increased climatic variability

between the reference and revegetated areas. Therefore, we believe that it is particularly important to take into account the potential for climatic variability between reference and revegetated areas when the two are not in close proximity.

Another commenter opposed revising the measurement time frames for grazing land, pasture land, and cropland in semi-arid areas to comport with those in humid areas. Because the climate of the area determines the specific plants used to achieve approved postmining land uses, this commenter declared that it is entirely possible to plant for a specified land use and then, due to changed climatic conditions, fail to meet the revegetation standards in any year of the ten-year responsibility period. For example the commenter indicated that in May 1996, she had planted a dry land hay field of grass and legume mix on undisturbed soils. In the nine subsequent years, she harvested only one crop and that crop was only half a crop. Because climate determined the production on that hay field, not her intention to use the land as a hay field, she did not think that picking any two years out of the last four years of the ten-year responsibility period is either a conservative or safe way to determine the ultimate survivability of semi-arid western vegetation. She reasoned that, if the vegetation meets the standards for the last two years, then there would be a better probability that the reclaimed area would be able to meet the intended postmining land use. In this context, the commenter also stated that drought and wet cycles in the West alternate on much longer time frames than those in the East. The commenter further suggested that OSM could extrapolate the duration of the past drought cycles from available information, noting that some of these drought cycles were reputed to have lasted for extended periods. On this basis, the commenter concluded that OSM should err on the side of caution and retain the current rule.

We do not agree with many of the conclusions expressed by this commenter. Meeting the success standards for pasture land, grazing land or cropland in the last two years of the ten-year responsibility period is not necessarily a better indicator of revegetation success than meeting the same success standards in any two years after year six. For example, suppose an operator in a semi-arid area were to meet grassland production and cover success standards in year seven, but, because of drought, did not meet those same success standards in years eight and nine. Then, because precipitation

returned to normal in year ten, the operator met the grassland production and cover success standards in that year, thus satisfying the new standard of any two years of the responsibility period after year six. We believe that this any-two-year approach clearly demonstrates the permanence, resilience and effectiveness of the reclaimed plant community following a period of drought. Such a clear demonstration of the resilience of the reclaimed plant community would not, however, satisfy the evaluation time frames of the prior rule when the data could only be collected in the last two consecutive years of the responsibility period. In the commenter's personal example of the dry land hay field, the hay field would not have met either the prior standard supported by the commenter or the new standard finalized in this rulemaking. We note that, if there are concerns as to the adequacy of revegetation at the time of the bond release inspection, the regulatory authority should conduct additional vegetation investigations.

Another commenter had two other concerns with our proposed revisions to the time frames for measuring revegetation success in semi-arid areas with grazing land, pasture land, or cropland postmining land uses. First, he asserted that the proposed language would allow the first year of measurement for grazing land, pasture land, and cropland to be conducted in the seventh year after the last augmented seeding. The commenter found this fact particularly troubling as, in the semi-arid areas of the West, the reclaimed vegetation community in year seven is still undergoing significant changes in composition, cover, and production. The commenter's second concern was that the proposed rules would sometimes allow a demonstration of revegetation success many years before an operator requests formal bond release. More specifically, an operator could conceivably demonstrate that he had met revegetation success in years seven and eight but not apply for formal bond release until year twenty. Accordingly, the commenter suggested that we change the rules to require measurement of revegetation success in two out of the last three years of the responsibility period. The commenter viewed this suggested change as tying the demonstration of revegetation success to the formal bond release request while still allowing flexibility in addressing negative impacts to the reclamation caused by climatic variability.

We agree that reclaimed plant communities are dynamic and change

over time as the plants mature and composition responds to climatic variability and soil conditions. However, this change within plant communities will also continue long after the responsibility period is over. Therefore, OSM does not believe that the fact of continuing change within plant communities is sufficient reason to delay measurement of revegetation success on grazing land, until either the last two years of the responsibility period, as the rule formerly provided, or two out of the last three years of the responsibility period as this commenter suggested. Pasture land and cropland are not subject to significant change in composition, cover and/or production over time because of the nature of the plant species planted. Once established, cover and/or production on these land uses generally fluctuates only in response to climatic variability. For these reasons we revised the rule to allow measuring for revegetation success on grazing land, pasture land, and cropland in any two years after year six. We find it unlikely that an operator might measure revegetation success in years seven and eight but wait until year twenty to request bond release. Even so, § 800.40(c)(3) clearly requires that the operator must fully meet the requirements of the Act and the permit (including revegetation success standards) for a phase III bond release. Therefore, if, the regulatory authority is concerned that vegetation does not meet the revegetation success standards during the final bond release inspection, the regulatory authority can and should require additional investigation to determine whether those standards have been met. The regulatory authority may also set limitations on acceptable timeframes for sampling vegetation prior to submission of a bond release application. Accordingly, no change in the regulation is necessary to address the commenter's concern.

While five commenters agreed with the proposed revision to § 816.116(3)(c)(i) as it applied to pasture land, grazing land, and cropland in semi-arid areas, they did not agree with the revision as it applied to the semi-arid areas approved for the "other uses" identified in § 816.116(b)(3), (4) and (5). Under the proposed revision, identified vegetative parameters in semi-arid areas would have to meet or exceed the applicable success standard during the growing season of the last year of the responsibility period. These commenters asserted that this particular revision would be overly burdensome to operators who, in some situations, would have to conduct a total of three

separate samplings of the vegetation in a large tract with mixed land uses to qualify for bond release. In contrast, commenters asserted that the prior rule would only require two samplings of vegetation in same large tract to qualify for bond release. The commenters characterized the additional sampling required under the proposed rule as an unnecessary expenditure of time and money. To alleviate this problem the commenters proposed to allow revegetation sampling for the other land uses of § 816.116(b) in any one year after year six of the responsibility period. This proposed change would, for large tracts with mixed land uses, allow operators to reduce their sampling efforts to two years by sampling for the other uses in the same year as they sample for grazing land, pasture land, or cropland.

As a supporting example of the asserted sampling burden of our proposed rule, the commenters noted that many western surface coal mines reclaim mined lands to multiple land uses. Operators may reclaim large portions of a reclaimed area to a grazing land postmining land use dominated by forage plants, while other smaller portions of the same area may be reclaimed to a different postmining land use, such as fish and wildlife habitat dominated by woody plants. The resultant landscape would be a mosaic of grass-dominated plant communities, subject to the frequency of success determinations for grazing land, intermixed with shrub-dominated communities, and subject to the frequency of success determinations for fish and wildlife habitat. Commenters accurately noted that, to demonstrate revegetation success under the proposed rule, operators could choose to sample the grazing lands to demonstrate revegetation success in any two years of years seven, eight, nine, or ten of the responsibility period. However, operators would have to sample fish and wildlife habitat in year ten, the last year of the responsibility period. Thus, they concluded, sampling within the mosaic of a large reclaimed area would have to occur on three different occasions.

In further support of their proposal to allow revegetation sampling in any year after year six of the responsibility period, these commenters also indicated that operators must sample woody plant density on an interim, ongoing basis to assure that augmented plantings are made in a timely fashion. Otherwise operators would risk the restarting of their liability period because they might have waited too long before determining that a stand of woody plants would not meet the density standard applicable to

woody plants. While the commenters acknowledged that interim vegetation sampling could properly be used under their proposal to demonstrate achievement of the success standard without the need for augmented planting, the commenters stressed that operators would still have to resample the same stand in the last year of the responsibility period to demonstrate revegetation success under revised § 816.116(c)(3). Commenters stated that, in their experience, if interim vegetation monitoring confirms the operator has established appropriate woody plant density and has met the revegetation success standard prior to year ten, the woody plant density will be the same or better in year ten. The regulatory authority could also confirm the required woody plant density at the mandatory qualitative final field inspection for bond release.

Accordingly, the commenters proposed revising the language of § 816.116(c)(3)(i) to allow operators to sample revegetation for areas approved for other uses identified in § 816.116(b)(3), (4), and (5) in any one year after year six of the responsibility period. These commenters maintained that this suggested change would also encourage diversity of both species and land uses on reclaimed lands.

Still another commenter concluded that there was no benefit to delaying measurement of revegetation success for the other land uses identified in § 816.116(b)(3), (4) and (5) until the last year of the responsibility period. This commenter indicated that its conclusion was supported by the same rationale that OSM had used in its 2005 preamble to justify proposing reduction of the evaluation period for these other land uses from the last two years to the final year of the responsibility period. For example, the commenter reasoned that once woody plants are established, their density and cover is not highly variable from year to year as they are not sensitive to short-term weather variations. Forest-related ecosystems may therefore be expected to improve as they mature since a positive relationship exists between time and vegetative cover. Furthermore, whatever the year during which a land use involving woody plants meets its required success standards, the regulatory authority will have to inspect that land again at bond release to ensure that the land use is still functioning as intended. In addition to there being no perceived benefit to delaying the measurement of revegetation success required by § 816.116(c)(3) until the last year of the responsibility period, the

commenter stated that the inconsistent timing requirements for measuring the revegetation success of both grazing land, pasture land, cropland and other land uses may further cause an added and unnecessary burden for measuring vegetation in large areas. The other land uses identified in § 816.116(b)(3), (4), and (5) often constitute only a small proportion of larger surrounding tracts devoted to grazing, pasture or cropland. For example, grazing tracts often include interior wetlands and woodlands. While these grazing tracts could have been measured in any two years after year six of the responsibility period under OSM's proposed rule, wetlands and woodlands, as other land uses, could only be measured in the final year of the responsibility period. Therefore, to make the timing of success measurements consistent for all land uses, to reduce the burden of measuring in different years for several uses in the same inclusive bond release tract, and because of the lack of annual variability in woody plant cover, the commenter recommended that "the-growing-season-of-the-last-year" provision be struck from the proposed regulation. By this proposal, we understand the commenter to be also proposing that OSM amend § 816.116(c)(3)(i) to allow sampling of revegetation success on semi-arid areas with the other uses identified in § 816.116(b)(3), (4), and (5) in any year after year six of the responsibility period.

We do not accept these commenters' proposal. As discussed in our 2005 **Federal Register** notice, we proposed to amend § 816.116(c)(3)(i) to make the sampling timeframes for measurement of revegetation success in semi-arid areas consistent with the requirements of § 816.116(c)(2). Section 816.116(c)(2), governing humid areas, continues to require evaluation of revegetation success for land uses other than pasture land, grazing land or cropland in the last year of the responsibility period. The 1988 revision of § 816.116(c)(2) provided that, for humid areas, the revegetation success standards for postmining land uses other than grazing land, pasture land, and cropland be equaled or exceeded during the growing season of the last year of the responsibility period. Supporting this revision, which was a relaxation of the prior standard adopted in 1979 ("last two consecutive years of the responsibility period"), we reasoned that, in a forest ecosystem, a positive relationship exists between time and vegetative cover. Therefore, we concluded that, for forest ecosystems, the last year of the responsibility period

would provide an accurate measurement of revegetation success. 53 FR 34641. While forest ecosystems may develop at slower rates in semi-arid areas, in both humid and semi-arid areas a positive relationship exists between time and vegetative cover. And while we did not specifically discuss the matter in the 1988 preamble, the same positive relationship between time and vegetative cover exists for shrub land ecosystems in both humid and semi-arid areas. Consequently, for both areas, the last year of the responsibility period would be the best time to accurately measure revegetation success. For the reasons discussed above, we believe that the most appropriate time to evaluate revegetation success for forest and shrub lands in semi-arid areas is during the last year of the responsibility period. We are retaining the proposed changes to § 816.116(c)(3) in our final rule.

We further believe that the commenters who gave the example involving the measurement of revegetation success for a large tract with mixed land uses miscalculated the number of sampling events required of each land use for bond release under our prior rule. While that rule would have required the sampling of vegetation in the same two years for a large tract with mixed land uses, the total number of required sampling events for those two years would be a minimum of four—two sampling events for grazing land, etc., and two for any of the other land uses of § 816.116(b). Commenters were correct that our proposed revision to § 816.116(c)(3)(i) might require a total of three years of sampling for a large tract with mixed land uses. The proposed revision would, however, for these other land uses reduce the number of years that operators must measure revegetation success from two to one years. This constitutes a 50 percent reduction in the operators' sampling burden. This burden is not significant as is suggested by one comment stating that some operators voluntarily monitor woody plant stocking on an ongoing basis and do not consider the monitoring to be burdensome. And the commenters are incorrect in their suggestion that the only way they could limit their sampling effort to two years would be to sample in years nine and ten. Under the revised rule, an operator conducts the first sampling event in either years seven, eight, or nine for grazing land and then, in year ten, conducts the second sampling event for grazing land and the only sampling event for fish and wildlife habitat. Finally, commenters

provided no information supporting their assertion that allowing measurement of revegetation success during any year after year six would encourage both land use and species diversity on reclaimed lands. Nor do we have any reason to believe that our revision to § 816.116(c)(3) will adversely affect land use or species diversity, as our prior regulation at § 816.116(c)(3) also required sampling during the last year of the responsibility period.

In sum, we believe that the new requirement that operators must conduct evaluation of revegetation success for the other land uses identified in § 816.116(b) during the last year is not overly burdensome and will ensure national consistency in evaluating revegetation success for these other uses both in humid and semi-arid areas.

Other Comments

Although we did not propose any revisions to the timeframes of § 816.116(c)(2) that govern the sampling for revegetation success in humid areas, ten commenters proposed eliminating the current provision of § 816.116(c)(2)(i) that prohibits sampling in the first year of the responsibility period. These commenters based this proposal on their longstanding experience in evaluating revegetation efforts and their belief that such a change would allow operators in some States the opportunity to earlier achieve both phase II and phase III bond release. The commenters asserted that the past twenty years of SMCRA reclamation had resulted in a general consensus in the Midwest that the first year of reclamation is the most difficult in terms of successfully meeting required target yields. Citing their various discussions over the years with State and Federal regulatory personnel, academia, consultants and operators, the commenters knew no sound reason for not measuring revegetation success in the first year. These commenters did note that the preamble in the September 7, 1988, **Federal Register** suggests that a beneficial fertilization carryover effect from initial seeding may produce inaccurate results in the first year. However, the same preamble discussion also concludes that any carry-over effect from the initial fertilization would be insignificant when compared to normal annual fertilization practices. Accordingly, the commenters concluded that the first-year exception is unnecessary. They asserted that allowing the first year to be used for proof of productivity for pasture land, grazing land, and cropland would allow operators the opportunity in some States

to more quickly achieve both phase II and phase III bond release. In light of what they perceived as the current difficulty in obtaining surety bonds in the mining industry, the commenters suggested that earlier bond release would provide significant relief in obtaining surety bonds. Also, the commenters maintained that the opportunity for earlier proof of productivity and bond release would provide operators an incentive to improve their methods of handling soils.

We appreciate the interest expressed by these commenters in proposing that we revise the provision in § 816.116(c)(2)(i) that prohibits measuring vegetation in the first year of the responsibility period for humid areas. However, we did not consider this revision in our 2005 proposed rule, and it falls far beyond the scope of the current rulemaking. To include it in the current rulemaking would necessitate a reopening of the comment period on the proposed rule resulting in further delay in implementing its proposed changes. For this reason, we are not accepting the commenters' proposal at this time. We will, however, take the proposal under advisement and may include it in a future rulemaking.

Nonetheless, we would like to take this opportunity to address apparent confusion in some of the comments supporting this suggested change to § 816.116(c)(2)(i). Several of these comments suggested that revising § 816.116(c)(2)(i) to allow evaluation of revegetation success for pasture land, grazing land, and cropland in the first year would allow operators in some States to earlier achieve both phase II and Phase III bond release. In fact, allowing evaluation of revegetation success for pasture land, grazing land, and cropland in the first year would not affect when either phase II or III bond release could occur. The Federal regulations governing standards for success in § 816.116, including § 816.116(c)(2)(i), do not apply to phase II bond release. For the land uses covered by § 816.116(c)(2)(i), § 800.40(c)(2) allows phase II bond release to be granted when topsoil has been redistributed (if it is not included as part of a phase I bond release), and vegetation is established. There is no regulatory requirement to meet cover or production standards for a phase II bond release. Therefore, allowing measurement of cover and production in the first year has no effect on when a phase II bond release can occur. In turn, phase III bond release cannot be granted sooner than five years after the last augmented seeding or planting,

regardless of when measurement occurs. Under the current Federal regulations, the operator then has four years prior to the end of the five year responsibility period to conduct revegetation sampling and demonstrate revegetation success. Therefore, even if we did allow measurement of cover and production in the first year after the last augmented seeding as the commenters proposed, the period of responsibility for phase III bond release would still last five years from the last augmented seeding.

Two commenters also suggested that we develop incentives to use the five forestry reclamation techniques recommended by the Appalachian Regional Reforestation Initiative (ARRI) in its recent reforestation brochure. These commenters warned that we need additional initiatives to encourage reforestation efforts, and indicated that there has been extensive research conducted on how to better reforest reclaimed mined land. Contrasting the leading role that ARRI has taken in promoting enhanced reforestation techniques that are based on this research, the commenters emphasized that regulatory requirements have too often acted as a disincentive for operators' selecting forestry as a postmining land use.

In response to this comment, we recognize that forest fragmentation and the reduction of biodiversity are valid concerns and have endeavored to address them in several ways. The current revisions to the regulations governing topsoil replacement and revegetation would, among other things, encourage species diversity and remove an impediment to the reforestation of reclaimed land. In addition, our agency took the lead in establishing the ARRI for the purpose of restoring forests on lands disturbed by coal mining operations in the eastern United States. ARRI is a coalition of diverse groups comprised of OSM and State government agencies that regulate coal mining in Kentucky, Maryland, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia. It advocates a specific forestry reclamation approach that, when implemented properly, can provide significant cost savings to mine operators while providing for greater survival and productivity of planted trees, enhancing natural succession, and reducing erosion, sedimentation, and downstream flooding. The industry, the environmental community, landowners, academics, and other governmental agencies have recognized these benefits. At the present time, however, it is unclear what additional incentives might be appropriate to promote the reforestation of mined lands. Interested

parties can access information about ARRI on the Internet at <http://arri.osmre.gov/PDFs/ARRI.brochure.pdf>.

We received one final comment that questioned the appropriateness of using "ground cover," as defined in the Federal regulations at § 701.5, instead of using perennial vegetative cover for evaluating revegetation success under § 816.116(a)(2). The commenter further opposed including annual species and litter (dead plant material) in evaluations of ground cover, as is allowed under the current Federal definition of "ground cover," and contended that revegetation success evaluations should focus on the cover of perennial species.

We had not proposed revising the definition of "ground cover" because that definition was not identified as an issue either during prior revegetation outreach efforts or consultations with regulatory authorities. However, should a regulatory authority propose revising its definition of "ground cover" to include only vegetative cover or perennial cover and demonstrate that the new definition is no less effective than the Federal definition in implementing the requirements of SMCRA, we would approve the use of such a definition.

What effect will this rule have on approved State programs, on Federal programs, and on Indian lands?

Following publication of the final rule, we will evaluate the State programs approved under section 503 of SMCRA and 30 CFR part 732 to determine if any changes in those programs are necessary to maintain consistency with Federal requirements. When we determine that a State program should be amended, we will notify the State in accordance with the provisions of § 732.17(d).

We have made a preliminary determination to require that State programs with provisions authorizing undeveloped land as a postmining land use adopt success standards for undeveloped land as required by §§ 816.116(b)(3) and 817.116(b)(3). We have also made a preliminary determination that, with regard to the other provisions in the final rule, States may adopt similar provisions if they choose to, but will not be required to amend their programs.

Through cross-referencing, this final rule applies to all lands in States with Federal regulatory programs. States with Federal regulatory programs include Arizona, California, Georgia, Idaho, Massachusetts, Michigan, North Carolina, Oregon, Rhode Island, South Dakota, Tennessee and Washington.

Those programs are codified at 30 CFR parts 903, 905, 910, 912, 921, 922, 933, 937, 939, 941, 942, and 947, respectively.

The revisions to 30 CFR parts 816 and 817 apply to Indian lands as a result of the cross-referencing in § 750.16.

III. Procedural Matters and Required Determinations for This Rule

Executive Order 12866—Regulatory Planning and Review

This document is considered a significant rule and is subject to review by the Office of Management and Budget (OMB) under Executive Order 12866.

a. This rule will not have an effect of \$100 million or more on the economy. It will not adversely affect in a material way the economy, productivity, competition, jobs, the environment, public health or safety, or State, Tribal, or local governments or communities. The revisions to the regulations governing topsoil redistribution and revegetation success standards will not have an adverse economic impact on the coal industry or State regulatory authorities. During any given year, approximately 880 operators conduct vegetation sampling for bond release. The revisions may reduce operating expenses for coal operators by reducing the time needed to conduct revegetation evaluations and obtain bond release. The estimated reduction in costs is nonquantifiable.

We estimate that approximately two State regulatory authorities will modify their standards for revegetation success during a year, requiring approximately 100 hours to complete each modification. Under the rule, however, the estimated savings will be limited to the costs of submitting the proposed modification to OSM for approval as required by §§ 816.116(a)(1) and 817.116(a)(1) prior to revision. Those costs usually include the expense involved in preparing a transmittal letter and the costs of transmission to OSM.

The principal savings to the Federal government will result from the elimination of the need to draft, review, approve, and publish a proposed rule announcing receipt of, and seeking comment on the modification, and the need to draft, review, approve, and publish a final rule announcing OSM's decision on the State submitted modification. We estimate total annual savings of approximately \$10,000–\$12,000 per year. This estimate is based on the cost of drafting, reviewing, and approving two proposed and two final

rules and the publication cost of \$465 per page in the **Federal Register**.

b. This rule will not create a serious inconsistency or otherwise interfere with an action taken or planned by another agency.

c. This rule does not alter the budgetary effects of entitlements, grants, user fees, or loan programs or the rights or obligations of their recipients.

d. The proposed revisions to our topsoil redistribution and revegetation success standards may raise novel legal or policy issues, which is why the rule is considered significant by OMB under Executive Order 12866.

Executive Order 13211—Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use

This rule is not considered a significant energy action under Executive Order 13211. The proposed revisions to our regulations that govern topsoil redistribution and revegetation success standards notice will not have a significant affect on the supply, distribution, or use of energy.

Regulatory Flexibility Act

The Department of the Interior certifies that this rule will not have a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*). As previously discussed, some of the revisions may facilitate bond release resulting in a reduction in operating costs for coal operators. Further, the rule produces no adverse effects on competition, employment, investment, productivity, innovation, or the ability of United States enterprises to compete with foreign-based enterprises in domestic or export markets.

Small Business Regulatory Enforcement Fairness Act

This rule is not a major rule under 5 U.S.C. 804(2), the Small Business Regulatory Enforcement Fairness Act. For the reasons previously stated, this rule:

a. Does not have an annual effect on the economy of \$100 million or more.

b. Will not cause a major increase in costs or prices for consumers, individual industries, Federal, State, or local government agencies, or geographic regions.

c. Does not have significant adverse effects on competition, employment, investment, productivity, innovation, or the ability of U.S.-based enterprises to compete with foreign-based enterprises for the reasons stated above.

Unfunded Mandates Reform Act

This rule does not impose an unfunded mandate on State, Tribal, or local governments or the private sector of more than \$100 million per year. The rule does not have a significant or unique effect on State, Tribal, or local governments or the private sector. A statement containing the information required by the Unfunded Mandates Reform Act (2 U.S.C. 1531 *et seq.*) is not required.

Executive Order 12630—Takings

The revisions to the regulations governing topsoil redistribution and revegetation success standards do not have any significant takings implications under Executive Order 12630. Therefore, a takings implication assessment is not required.

Executive Order 13132—Federalism

In accordance with Executive Order 13132, the rule does not have significant Federalism implications to warrant the preparation of a Federalism Assessment for the reasons discussed above.

Executive Order 12988—Civil Justice Reform

In accordance with Executive Order 12988, the Office of the Solicitor has determined that this rule does not unduly burden the judicial system and meets the requirements of sections 3(a) and 3(b)(2) of the Order.

Executive Order 13175—Consultation and Coordination With Indian Tribal Governments

In accordance with Executive Order 13175, we have evaluated the potential effects of this rule on Federally recognized Indian Tribes and have determined that the proposed revisions to our regulations that govern topsoil redistribution and revegetation success standards will 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.

Paperwork Reduction Act

We have determined that this rule does not substantially alter the currently approved collections of information authorized by the Office of Management and Budget under 44 U.S.C. 3501 *et seq.* OMB has previously approved the collection activities and assigned clearance number 1029–0047 for 30 CFR parts 816 and 817.

National Environmental Policy Act

OSM has prepared an environmental assessment (EA) and has made a finding

that this rule will not significantly affect the quality of the human environment under section 102(2)(C) of the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. 4332(2)(C). The EA and finding of no significant impact are on file in the OSM Administrative Room, room 101, 1951 Constitution Avenue, NW., Washington, DC 20240.

List of Subjects

30 CFR Part 816

Environmental protection, Reporting and recordkeeping requirements, Surface mining.

30 CFR Part 817

Environmental protection, Reporting and recordkeeping requirements, Underground mining.

Dated: July 12, 2006.

R.M. “Johnnie” Burton,

Director, Minerals Management Service, Exercising the delegated authority of the Assistant Secretary, Land and Minerals Management.

■ Accordingly, we are amending 30 CFR parts 816 and 817 as set forth below.

PART 816—PERMANENT PROGRAM PERFORMANCE STANDARDS—SURFACE MINING ACTIVITIES

■ 1. The authority citation for part 816 continues to read as follows:

Authority: 30 U.S.C. 1201 *et seq.*; and sec. 115 of Public Law 98–146.

■ 2. In § 816.22, revise paragraphs (d)(1) introductory text and (i) to read as follows:

§ 816.22 Topsoil and subsoil.

* * * * *

(d) * * *

(1) Topsoil materials and topsoil substitutes and supplements removed under paragraphs (a) and (b) of this section shall be redistributed in a manner that—

(i) Achieves an approximately uniform, stable thickness when consistent with the approved postmining land use, contours, and surface-water drainage systems. Soil thickness may also be varied to the extent such variations help meet the specific revegetation goals identified in the permit;

* * * * *

■ 3. Amend § 816.116 as follows:

■ A. Revise paragraph (a)(1);

■ B. Revise the first sentence of paragraph (b)(3) introductory text;

■ C. Add five sentences to the end of paragraph (b)(3)(ii);

■ D. Revise paragraphs (c)(3)(i) and (ii).

The revisions read as follows:

§ 816.116 Revegetation: Standards for success.

(a) * * *
(1) Standards for success and statistically valid sampling techniques for measuring success shall be selected by the regulatory authority, described in writing, and made available to the public.

(b) * * *
* * * * *

(3) For areas to be developed for fish and wildlife habitat, recreation, undeveloped land, or forest products, success of vegetation shall be determined on the basis of tree and shrub stocking and vegetative ground cover. * * *

(i) * * *
(ii) * * * The requirements of this section apply to trees and shrubs that have been seeded or transplanted and can be met when records of woody vegetation planted show that no woody plants were planted during the last two growing seasons of the responsibility period and, if any replanting of woody plants took place 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. Any replanting must be by means of transplants to allow for adequate accounting of plant stocking. This final accounting may include volunteer trees and shrubs of approved species. Volunteer trees and shrubs of approved species shall be deemed equivalent to planted specimens two years of age or older and can be counted towards success. Suckers on shrubby vegetation can be counted as volunteer plants when it is evident the shrub community is vigorous and expanding.

* * * * *
(c) * * *
(3) * * *

(i) Ten full years, except as provided in paragraph (c)(3)(ii) in this section. The vegetation parameters identified in paragraph (b) of this section for grazing land, pasture land, or cropland shall equal or exceed the approved success standard during the growing season of any two years after year six of the responsibility period. Areas approved for the other uses identified in paragraph (b) of this section shall equal or exceed the applicable success standard during the growing season of the last year of the responsibility period.

(ii) Five full years for lands eligible for remining included in permits issued before September 30, 2004, or any renewals thereof. To the extent that the success standards are established by paragraph (b)(5) of this section, the lands shall equal or exceed the standards during the growing season of the last year of the responsibility period.
* * * * *

PART 817—PERMANENT PROGRAM PERFORMANCE STANDARDS—UNDERGROUND MINING ACTIVITIES

■ 4. The authority citation for part 817 continues to read as follows:

Authority: 30 U.S.C. 1201 *et seq.*

■ 5. In § 817.22, revise paragraphs (d)(1) introductory text and (d)(1)(i) to read as follows:

§ 817.22 Topsoil and subsoil.

* * * * *

(d) * * *
(1) Topsoil materials and topsoil substitutes and supplements removed under paragraphs (a) and (b) of this section shall be redistributed in a manner that—

(i) Achieves an approximately uniform, stable thickness when consistent with the approved postmining land use, contours, and surface-water drainage systems. Soil thickness may also be varied to the extent such variations help meet the specific revegetation goals identified in the permit;

* * * * *

- 6. Amend § 817.116 as follows:
- A. Revise paragraph (a)(1);
- B. Revise the first sentence of paragraph (b)(3) introductory text;
- C. Add five sentences to the end of paragraph (b)(3)(ii);
- D. Revise paragraphs (c)(3)(i) and (ii).
The revisions read as follows:

§ 817.116 Revegetation: Standards for success.

(a) * * *
(1) Standards for success and statistically valid sampling techniques for measuring success shall be selected by the regulatory authority, described in writing, and made available to the public.

* * * * *

(b) * * *
* * * * *

(3) For areas to be developed for fish and wildlife habitat, recreation,

undeveloped land, or forest products, success of vegetation shall be determined on the basis of tree and shrub stocking and vegetative ground cover. * * *

(i) * * *

(ii) * * * The requirements of this section apply to trees and shrubs that have been seeded or transplanted and can be met when records of woody vegetation planted show that no woody plants were planted during the last two growing seasons of the responsibility period and, if any replanting of woody plants took place 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. Any replanting must be by means of transplants to allow for adequate accounting of plant stocking. This final accounting may include volunteer trees and shrubs of approved species.

Volunteer trees and shrubs of approved species shall be deemed equivalent to planted specimens two years of age or older and can be counted towards success. Suckers on shrubby vegetation can be counted as volunteer plants when it is evident the shrub community is vigorous and expanding.

* * * * *

(c) * * *

(3) * * *

(i) Ten full years, except as provided in paragraph (c)(3)(ii) in this section. The vegetation parameters identified in paragraph (b) of this section for grazing land, pasture land, or cropland shall equal or exceed the approved success standard during the growing season of any two years after year six of the responsibility period. Areas approved for the other uses identified in paragraph (b) of this section shall equal or exceed the applicable success standard during the growing season of the last year of the responsibility period.

(ii) Five full years for lands eligible for remining included in permits issued before September 30, 2004, or any renewals thereof. To the extent that the success standards are established by paragraph (b)(5) of this section, the lands shall equal or exceed the standards during the growing season of the last year of the responsibility period.

* * * * *