



July 30, 2010



MEMORANDUM FOR U.S. Army Corps of Engineers Headquarters, Directorate of Civil Works, Districts and Divisions, and U.S. Environmental Protection Agency Regional Offices

SUBJECT: Assessment of Stream Ecosystem Structure and Function under Clean Water Act Section 404 Associated with Review of Permits for Appalachian Surface Coal Mining¹

The U.S. Environmental Protection Agency (“EPA”) and the U.S. Army Corps of Engineers (“Corps”) continue to collaborate, together with our Federal, state and local partners, seeking ways to enhance the review of proposed surface coal mining projects under the Clean Water Act (CWA). Our shared goal is to reduce environmental, water quality, and public health adverse effects associated with surface coal mining and to ensure the effectiveness of mitigation for unavoidable impacts. Key to this effort, in our judgment, is improved availability of science-based tools to determine the ecological functions of high gradient streams.

This document clarifies the agencies’ interpretation of current regulatory requirements at 40 CFR 230.11(e) for determining “the nature and degree of effect that the proposed discharge will have...on the structure and function of the aquatic ecosystem and organisms.”

As discussed below, this document clarifies two significant regulatory provisions:

- First, a determination should be made concerning the nature and degree of effect the proposed discharge of dredged or fill material will have on both the aquatic ecosystem structure and ecosystem function,² and
- Second, compensatory mitigation requirements must be commensurate with this determination.³

This document also emphasizes that scientifically sound and consistent evaluation of high-gradient streams in the coalfields of Central Appalachia is a priority for making permit decisions.

¹ “Appalachian surface coal mining” refers to coal mining techniques requiring permits under both the Surface Mining Control and Reclamation Act (SMCRA) and Section 404 of the Clean Water Act (CWA), in the states of Kentucky, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia. See Memorandum of Understanding among the U.S. Department of the Army, U.S. Department of the Interior, and the U.S. Environmental Protection Agency Implementing the Interagency Action Plan on Appalachian Surface Coal Mining (June 11, 2009) (Interagency MOU).

² 40 C.F.R. Part 230 *et seq.* (including 40 C.F.R. § 230.11(e)).

³ 40 C.F.R. § 230.93(a).

I. Purpose and Background

Pursuant to Section 404(a) of the Clean Water Act,⁴ the Department of the Army is authorized to issue permits for discharges of dredged or fill material into waters of the United States. As authorized by Section 404(b) of the Clean Water Act,⁵ EPA – in conjunction with the Corps – promulgates the 404(b)(1) Guidelines,⁶ which establish the substantive environmental standards applied in the review of proposed discharges of dredged or fill material into waters of the United States. These regulations are complemented by the Corps' permitting regulations at 33 C.F.R. §§ 320-332, which lay out the permitting procedures to be utilized by District Engineers for the review of permit applications under Section 404.

Consistent with the Guidelines, potential impacts from the placement of dredged or fill material into waters of the United States must be avoided and minimized to the extent appropriate and practicable. Compensatory mitigation may be required to ensure that the authorized activity complies with the 404(b)(1) Guidelines.⁷ To improve the effectiveness of compensatory mitigation for authorized impacts to wetlands, streams, and other waters of the United States under Section 404, EPA and the Corps published a joint Compensatory Mitigation Rule in April 2008. This Rule provides standards for mitigation projects under the Clean Water Act while improving aquatic resource restoration and protection policies.

II. The Section 404(b)(1) Guidelines

The Section 404(b)(1) Guidelines require the permitting authority to make certain factual determinations addressing the potential short-term or long-term effects of a proposed discharge of dredged or fill material on the physical, chemical, and biological components of the aquatic environment. See, 40 C.F.R. § 230.11. Among the factual determinations required of the permitting authority is the following:

(e) Aquatic ecosystem and organism determinations. Determine the nature and degree of effect that the proposed discharge will have, both individually and cumulatively, on the structure and function of the aquatic ecosystem and organisms. Consideration shall be given to the effect at the proposed disposal site of potential changes in substrate characteristics and elevation, water or substrate chemistry, nutrients, currents, circulation, fluctuation, and salinity, on the recolonization and existence of indigenous aquatic organisms or communities.... (Emphasis added.)⁸

⁴ 33 U.S.C. § 1344(a).

⁵ 33 U.S.C. § 1344(b).

⁶ 40 C.F.R. Part 230 et seq. (initially promulgated at 45 Fed. Reg. 85,336 (Dec. 24, 1980)).

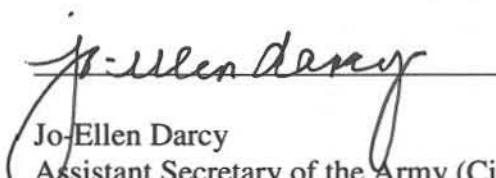
⁷ 40 C.F.R. § 230.91.

⁸ 40 C.F.R. § 230.11(e).

This provision of the Guidelines requires the permitting authority to determine the nature and degree of effect that the proposed discharge will have on both the structure and function of the aquatic ecosystem and organisms. In conducting future determinations under the Guidelines associated with high-gradient streams in Appalachia, the permitting authority should initiate an evaluation of ecosystem functions and structure using available, scientifically-valid direct indicia, including an effects-based assessment of the short- and long-term functions of the stream. The permitting authority may also use scientifically-valid indirect indicia of structure and function in the watershed, but will not rely exclusively on an evaluation of structure in place of function when making a determination under this provision of the Guidelines.⁹



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⁹ 40 C.F.R. §§ 230.4 -.5.