US Army Corps of Engineers®

REGULATORY GUIDANCE LETTER

No. 05-04 Date: August 19, 2005

SUBJECT: Guidance on the Discharge of Sediments From or Through a Dam and the Breaching of Dams, for Purposes of Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899

1. Purpose and applicability

a. Purpose. The purpose of this document is to provide guidance to Corps Districts Engineers regarding which releases of sediments from or through dams require Department of the Army (DA) permits. Nothing in this guidance is intended to require a DA permit for routine high water flow dam operations that allow sediment-laden waters to flow from or through a dam; however deviations from normal dam operations resulting in the discharge of bottom sediment may require a DA permit.

b. Applicability. For purposes of Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act of 1899 (RHA), this guidance applies to the releases of water and water-carried sediment that may result in the transportation, reduction, or elimination of bottom sediment accumulations from or through dams. Dams, as used in this guidance include, but are not limited to, barriers that create impoundments of water. Depending on factors discussed below with regard to exempted maintenance activities and de minimis impacts, these releases may or may not result in a regulated discharge of dredged material. Regulated discharges may occur in association with the breaching of dams but do not include breaching that results solely from acts of nature.

2. Background

a. Sediment transportation in a stream or river is a natural process that helps to maintain the geomorphology of a stream channel. However, when a dam is constructed on a stream, it tends to interrupt the natural transportation of sediments, which build up behind the dam. This can result in sediment-starved sections of a stream downstream of a dam, leading the stream to down cut or erode away its bed and banks. Sediment accumulation behind a dam also reduces the capacity of a reservoir to store water, and can interfere with operation of the dam.

b. Sediment may be removed from a reservoir basin using many different mechanical methods, including draglines, bulldozers, or other equipment. Sediment that has been removed by such mechanical means can then be transported to a site above the Ordinary High Water Mark (OHWM) of the reservoir and stabilized. Under certain specific circumstances and when authorized by a DA permit, such sediments can be re-introduced into (i.e., discharged into) the river below the dam.

c. If a dam operator modifies or deviates from normal operation of the dam in such a manner that bottom sediment accumulated behind a dam could be removed and transported downstream through the dam, either deliberately or accidentally, that activity may require a DA permit pursuant to Section 404 and/or Section 10, as explained further below. (Note: CWA Section 404(f) exemptions from the permit requirement may apply in situations where only CWA jurisdictional waters are involved). DA permits may require special conditions minimizing the potential adverse effects on the downstream aquatic environment of releases of sediments subject to DA regulation. For example, the discharge of sediments through a dam that allows those sediments to be washed downstream may, in some circumstances, provide beneficial sediment material to sediment-starved sections of a stream below the dam. However, sediments proposed for discharge through a dam may also be of the wrong type to benefit a stream (e.g., mud or fines as opposed to gravel). Such fine sediments can seriously degrade important aquatic habitat, as when silt or mud sluiced through a dam covers up spawning areas for fish at critical times in their lifecycles, or fills in niches for invertebrates in large cobble bottom systems. Sediments proposed to be discharged through a dam may also be out of sync with the natural pre-dam sediment flow regime of that stream, which historically moved much of the sediment in the stream immediately before, during and after high flows such as spring run-off. The uncontrolled discharge of sediments may kill thousands of fish due to the impairment of their ability to process oxygen. The natural, pre-dam flow regime originally produced the stream channel geomorphology, so much of the stream biota is adapted to that historic pre-dam flow regime and sediment load and size.

d. One recent court case specifically addressed the need for a DA permit for sediment sluicing activities. The case of Greenfield Mills v. Macklin originated when employees of the Indiana Department of Natural Resources sluiced large quantities of accumulated sediments through a dam into the river below the dam without having first obtained a DA permit under CWA Section 404. Before deciding the case, the U.S. Court of Appeals for the Seventh Circuit asked the U.S. Department of Justice (DOJ) to provide the consensus views of the Federal Government (i.e., of the U.S. EPA and the Corps of Engineers) regarding whether the sluicing of sediments through the dam under consideration in that case required a DA permit. The DOJ provided an Amicus Curiae brief to the Circuit Court as requested, and the Court in large measure based its decision on the legal positions that the Federal Government presented in that brief. The Amicus brief may be found at http://www.usace.army.mil/inet/functions/cw/cecwo/reg/02-1863_005.pdf. Both the Federal Government's brief and the Court of Appeals decision clearly hold that the sluicing of sediments through the dam constituted hydraulic dredging and the discharge of dredged material from a point source (i.e., the dam), which occurred when the dam's lower gates were opened and the bottom sediments were sluiced downstream. The discharge of dredged material under those circumstances was an activity that required a DA permit pursuant to Section 404 of the CWA, unless that discharge was exempt from the Section 404 permit requirement under CWA Subsection 404(f).

e. These types of discharges of sediments may also be potentially regulated as fill material. Final revisions to the CWA Section 404 Regulatory Program definitions of ``fill material'' and ``discharge of fill material'' were issued in the final rule of May 9, 2002. That final rule defined ``fill material'' in both the Corps and EPA regulations as material placed in waters of the U.S. where the material has the effect of either replacing any portion of a water of the U.S. with dry land or changing the bottom elevation of any portion of a water. Based on this "effect" determination, DA permits are generally required for the discharge of sediments from dams when such activities would have the effect of raising the bottom elevation of the downstream waters to a discernible, substantial degree. For example, when accumulated sediments are discharged through a dam by opening the lower gate(s) of the dam to move substantial

quantities of sediments, that discharge could reasonably be expected to raise the bottom elevation of the downstream waters, thereby constituting the discharge of fill material into that water body.

3. Types of Discharges

a. Discharges that are not regulated. Even when using the upper or middle gates of a dam to release water, some sediment is always included in suspension in the water releases. However, the release of sediments that are incidental to normal dam operations (i.e., the release of water through the dam to provide irrigation water or drinking water, to provide water for downstream depth for navigation, to restore reservoir capacity to store spring run-off or potential flood waters from storm events, etc.) are considered de minimis discharges of dredged material. For purposes of the Corps regulatory program, these de minimis discharges of suspended bottom sediments generally do not trigger the need for a DA permit so long as they are consistent with those sediment loads entering the reservoir from the upstream waters.

b. Applicability of 404(f) Exemptions. The discharge of large quantities of sediment through a dam will rarely (if ever) qualify as exempt from CWA regulation under CWA Subsection 404(f), for the reasons explained at length in the Greenfield Mills decision. (Note: There are no statutory exemptions that apply to such large-quantity discharges of sediments for purposes of the Section 10 permit requirements in Section 10 waters.) In summary, CWA Subsection 404(f)(1) exempts from CWA regulation " . . .the discharge of dredged or fill material . . . for the purpose of maintenance, including emergency reconstruction of recently damaged parts, of currently serviceable structures, such as . . .dams . . . ." unless the discharge is "recaptured" under Subsection 404(f)(2) (emphasis added). Consequently, the discharge of sediments through a dam cannot be exempted from CWA regulation under Subsection 404(f)(1) unless those sediments must be released for the purpose of dam maintenance, and not for any other purpose such as maintenance of the reservoir pool. Moreover, as a general rule, the Subsection 404(f) exemptions are construed narrowly to avoid their misapplication as well as the resultant adverse environmental impacts, either site-specific or cumulative. As the Greenfield Mills decision explains, for the discharge of sediments to qualify for the Subsection 404(f) exemption for dam maintenance, such discharges of sediments through a dam would have to be both necessary to allow essential dam maintenance to occur, and would have to be proportional to the dam maintenance activities that necessitate the release of sediments. Given the fact that sediments that have accumulated behind a dam can usually be removed practicably and more precisely by mechanical means, with little or no serious adverse downstream environmental effects, it is rarely necessary to sluice substantial quantities of sediments through a dam in order to accomplish essential dam maintenance. The Subsection 404(f) exemption will rarely, if ever, be applicable to the discharge of large quantities of sediments through a dam.

c. Discharges requiring DA permits. As stated above, sediment frequently builds up behind a dam. At times, rather than remove such accumulated sediments by mechanical means, a dam operator may open the bottom gates of the dam, allowing water to flow at high velocity over the sediment and flush it downstream. This can result in significant amounts of accumulated bottom sediment from upstream of the structure being allowed to move downstream with a composition or at a time period that is inconsistent with the viability and health of the downstream system. Discharging large amounts of

sediments through a dam may not be planned, but may result when the sediment is mobilized due to

increased water releases through a dam when the reservoir pool is low. Similarly, when a dam is breached, it generally causes the sediment behind the dam to be eroded rapidly, usually in a discrete (single) event or a series of discrete events, which move the sediments downstream.

Regardless of whether the dam operators had the intent to discharge sediment through the dam and out of the water impoundment, the opening of the lower gates of the dam has the effect of allowing substantial quantities of sediment material to travel downstream, thereby constituting the discharge of dredged material (and possibly fill material, as well) from a point source, thereby requiring a DA permit.

4. **Analysis and Policy**

a. As a general rule, the discharge of substantial quantities of accumulated bottom sediment from or through a dam into downstream waters constitutes a discharge of dredged material (and possibly of fill material) that requires a CWA Section 404 permit. The discharge of substantial quantities of sediment through a dam will rarely, if ever, qualify as exempt under 404(f). Such activities may also require a DA Section 10 permit if they occur in “navigable waters of the United States”, and no statutory exemptions apply to Section 10 for such discharges into navigable waters. This policy includes the human-induced breaching of dams when sediment has accumulated in the reservoir basin and is released downstream.

b. Activities that are not usually considered regulated discharges of dredged material and do not require DA permits include actions such as the operation of continuously sluicing structures that mimic the natural increase and decrease of sediment in a stream (i.e., the amount of sediment discharging from or through a structure is comparable to the amount of material entering the reservoir from upstream); breaching or removal of a dam that results in the movement of only de minimis amounts of material or that results solely from an act of nature; releases during times of high water or flood stages for purposes of passing flood waters through the dam; and the lowering of lake or pond levels that results in the release of only de minimis amounts of sediment.

It should be noted that there is often high variability in the amount of sediment and water carried by rivers and streams over an annual cycle. Such high flows may occur as a result of storm runoff or seasonal runoff of melting snow pack. Larger amounts of sediment may be considered de minimis in relationship to location of the dam and the normal amount of erosion in the watershed, and thus may not require DA authorization. This guidance does not propose to set a specific amount of sediment that could be considered de minimis or "more than de minimis". When evaluating whether any discharge is de minimis, or may be exempt from the Section 404 permit requirement under CWA Section 404(f)(1) exemption for dam maintenance activities, District Engineers should consider whether the discharge of dredged or fill material through the dam is necessary for dam maintenance, and proportional to the proposed activity and the size of the facility (i.e., size of the dam/structure and the surface acres and storage volume of the resulting impoundment). Other factors in this consideration should include the time of year and normal seasonality of high volume flows, the size of incoming and outgoing stream/river and the intended release volume, the natural hydrograph of the system, the speed of the drawdown, the normal amount of sediment in the watershed, and the potential for environmental harm. These factors should be documented as part of the decision regarding whether a DA permit will be required for the proposed release of sediments through a dam or would have been required in after-the-fact evaluations.

c. On a case-by case basis, District Engineers may consider the need to reduce the level of the reservoir through one or more flood gates and the resultant discharge of dredged material downstream, to

avoid potential catastrophic dam failure, to be an emergency subject to the emergency permitting procedures found at 33 CFR 325.2(e)(1). Sluicing through a dam of less than 25 cubic yards of material may be authorized under Nationwide Permit 18, if all other conditions of that nationwide permit are met. Districts may also consider developing Regional General Permits for larger amounts of sediments to be released through a dam, if such Regional General Permits would include appropriate conditions to protect the environment and the overall public interest. Small impact releases of sediments might possibly be authorized under Nationwide Permit 23 if an agency has an approved Categorical Exclusion.

d. When discharging sediment from or through a dam or breaching a dam, reasonable measures should be implemented to reduce potential harm to downstream waters. Reasonable measures include, but are not limited to, prior dewatering by pumping or by releasing water from the upper control structures on a reservoir; mechanical dredging or excavation of sediments and appropriate disposal; timing releases to coincide with high water periods for better dilution; more frequent flushing to keep the discharges small; releasing a sediment amount that is dependent on the amount of water flow; and installing temporary barriers to prevent exposed sediments from being transported by runoff from subsequent storm events.

6. <u>Duration</u>

This guidance remains effective unless revised or rescinded.

FOR THE COMMANDER:

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