UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

[signed October 1, 2002]

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

MEMORANDUM

SUBJECT: National Remedy Review Board Recommendations for the Milltown Reservoir Operable Unit of the Milltown Reservoir / Clark Fork River Superfund Site

FROM: Bruce K. Means, Chair ***/s/ B. K. Means***
National Remedy Review Board

TO: Max Dodson, Assistant Regional Administrator
Ecosystems Protection and Remediation
EPA Region 8

Purpose

The National Remedy Review Board (NRRB) has completed its review of the proposed cleanup action for the Milltown Reservoir Operable Unit of the Milltown Reservoir / Clark Fork River Superfund Site near Missoula, MT. This memorandum documents the NRRB's advisory recommendations.

Context for NRRB Review

The Administrator announced the NRRB as one of the October 1995 Superfund Administrative Reforms to help control response costs and promote consistent and cost-effective decisions. The NRRB furthers these goals by providing a cross-regional, management-level, "real time" review of high cost proposed response actions prior to their being issued for public comment. The board reviews all proposed cleanup actions that exceed its cost-based review criteria.

The NRRB review evaluates the proposed actions for consistency with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) and relevant Superfund policy and guidance. It focuses on the nature and complexity of the site; health and environmental risks; the range of alternatives that address site risks; the quality and reasonableness of the cost estimates for alternatives; regional, state/tribal, and other stakeholder opinions on the proposed actions, and any other relevant factors.

Generally, the NRRB makes advisory recommendations to the appropriate regional decision maker. The region will then include these recommendations in the administrative

record for the site, typically before it issues the proposed response action for public comment. While the region is expected to give the board's recommendations substantial weight, other important factors, such as subsequent public comment or technical analyses of response options, may influence the final regional decision. The board expects the regional decision maker to respond in writing to its recommendations within a reasonable period of time, noting in particular how the recommendations influenced the proposed cleanup decision, including any effect on the estimated cost of the action. It is important to remember that the NRRB does not change the Agency's current delegations or alter in any way the public's role in site decisions.

Overview of the Proposed Action

The Clark Fork Basin Superfund Complex is located in southwestern Montana and is made up of four contiguous Superfund Sites which are further broken up into operable units for easier management. This action addresses two of the three operable units at the Milltown Reservoir Sediments/Clark Fork River Superfund Site: Milltown Reservoir Sediments and Milltown Water Supply. The third operable unit, the Clark Fork River Operable Unit, was reviewed by the National Remedy Review Board in 2001. The Milltown Dam was built in 1907 at the confluence of the Clark Fork and Blackfoot rivers just east of Missoula, Montana. During the past century, extensive upstream mining wastes from Butte and Anaconda have washed downstream and totally filled the reservoir with more than six million cubic yards of contaminated sediments and created a large plume of arsenic-contaminated ground water. While the dam produces a small amount of hydro power, it blocks fish passage and needs significant upgrading to meet required safety standards. The reservoir sediments are contaminated with numerous heavy metals and arsenic which erode and cause downstream adverse impacts to the fishery and which continue to serve as a source of ground water contamination. The region's initial preferred remedy includes removal of the most heavily contaminated sediments from the Milltown Reservoir and then removal of the Milltown Dam.

NRRB Advisory Recommendations

The NRRB reviewed the informational package (dated July 2002) for this proposal and discussed related issues on August 28, 2002 with EPA Region 8, Montana Department of Environmental Quality (DEQ), and Confederated Salish and Kootenai Tribe personnel. Meeting participants included: Russ Forba (EPA Remedial Project Manager), Bob Fox (EPA Montana Office Superfund Manager), John Wardell (EPA Montana Office Director), Diana Hammer (EPA Community Involvement Coordinator), Henry Elsen (EPA Site Attorney), Sandi Olsen (Administrator, Remediation Division, DEQ), and, Phil Tourangeau (Tribal Representative). Based on this review and discussion, the board offers the following comments:

- The board's information package presented data clearly indicating potential for human health risk from ingestion of arsenic contaminated ground water. Thus, the board recommends that the region's preferred alternative emphasize the importance of addressing the contaminated ground water threat, including the need for source removal of Area 1 arsenic contaminated sediments to promote natural attenuation of contaminated ground water. However, the information presented to the board supporting ecological risks appeared less well defined. The board notes that the ecological risk concerns are based in part on ice scour events that may occur at an estimated five to 10 year frequency (an exposure scenario not often evaluated at

Superfund sites). The board acknowledges the difficulties involved in collecting field data that might document actual impacts on downstream receptors following such an event. However, since this exposure pathway is believed to be an important one for the site, the board recommends that the region more fully explain the bases for this pathway assessment, its key assumptions, related uncertainties, and receptor-specific findings in site decision documents.

- The board notes that Alternative 2A was not fully developed in the materials presented, particularly in the areas of ecological risk, ground water restoration potential, and cost.

  – The board notes that the package did not characterize downstream impacts in the event that the dam is removed (as a result of either a catastrophic failure or other circumstance) without prior removal of contaminated sediment. Since the dam has been determined to be a high hazard dam and serious safety and stability questions have been raised which may lead to costly upgrading, its failure or removal are potential scenarios which bear consideration. The downstream risks from such circumstances may be significant and should be explicitly considered in evaluating Alternative 2A and other alternatives which leave the dam in place.

  – The board notes that Alternative 2A as presented in the board's package does not address completely the NCP's expectation "to return usable ground waters to their beneficial uses wherever practicable...." While 2A discusses the use of institutional controls to protect local populations from exposure to contaminated ground water, it relies on "natural attenuation" to restore the contaminated ground water plume to its beneficial use (drinking water) without detailed analysis of site-specific mechanisms and timeframe for attenuation. Given that the plume appears to be relatively stable (or expanding slightly), it is unclear how restoration is to be achieved without action to address source material (e.g., Area 1 contaminated sediment). Further, the component of Alternative 2A that reduces the downstream ecological risk, i.e., installation of a pneumatic crest to maintain a higher pool elevation during potential ice scour events, may actually increase the driving mechanism for arsenic flux to ground water. The board recommends that the region clarify the approach being proposed in Alternative 2A to restore contaminated ground water at the site. If restoration is not expected in a "timeframe comparable to that which could be achieved through active restoration" (NCP Preamble at 8734, Federal Register Volume 55, No. 46, March 8, 1990), Alternative 2A should clarify which additional ground water management choices must be made in selecting this alternative (e.g., use of technical impracticability ARAR waivers, use of alternate concentration limits, etc.).

  – The board notes that the cost estimate for Alternative 2A (20 million dollars) did not include some costs that may be required to safely upgrade and maintain the dam. The region suggested that these additional requirements may add from 30 million to 50 million dollars to the cost of a "dam in place" alternative. The board recommends that the region further detail activities and costs associated with reliable implementation of Alternative 2A. The board suggests that the

region present a range of costs for any alternative where the cost is less certain than is typical.

- The preferred alternative for ground water utilizes source removal and natural attenuation with related dissipation unique to this site to restore contaminated ground water to the arsenic MCL of 10 ppb. However, the package did not adequately document site-specific mechanisms for attenuation that would justify the estimated restoration time frame of approximately 10 to 20 years. If natural attenuation processes (including related dissipation) are significantly uncertain, the board recommends that the region consider a contingency remedy of active ground water restoration (See OSWER Directive 9200-4.17P, pp. 24-25).

- The board recognizes that the region is pursuing a comprehensive management approach to address the problems associated with the Milltown Reservoir sediments. Certain aspects of this approach involve remediation, typically a Superfund responsibility, while other aspects include restoration and community redevelopment activities. The board encourages the region to continue to work with other parties and programs to obtain the necessary support for the non-Superfund components of the overall plan. The decision documents should clarify, to the extent possible, what actions will be carried out pursuant to CERCLA and what actions may be carried out under other authorities.

The NRRB appreciates the region's efforts in working together with the potentially responsible parties, state, natural resource trustees, native American tribes and community groups at this site. We encourage Region 8 management and staff to work with their regional NRRB representative and the Region 3/8 Accelerated Response Center in the Office of Emergency and Remedial Response to discuss any appropriate followup action.

Thank you for your support and the support of your managers and staff in preparing for this review. Please call me at 703-603-8815 should you have any questions.

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