

Sediment Management Work Group
Comments on the Proposed Clean Up Plan for Nyanza Chemical Waste Dump

U.S. EPA Region 1
August 25, 2010

I. Introduction

The Sediment Management Work Group (SMWG)¹ is pleased to provide comments to the United States Environmental Protection Agency (EPA) on the proposed remedy for impacts to the Sudbury River sediment from the Nyanza Chemical Waste Dump Superfund site (“Site”) in Ashland, Massachusetts.

II. Executive Summary

On June 1, 2010, the EPA proposed a Remedy for a 26-mile stretch of the Sudbury River, which has been defined as “Operable Unit 4” (OU-4). The Remedial Proposed Plan for OU-4 (the “Proposed Cleanup Plan”) addresses mercury contamination released to the Sudbury River from the Site. The Proposed Cleanup Plan summarizes parts of the Draft Feasibility Study (FS) Operable Unit 4, which evaluated 11 cleanup alternatives for mercury and methylmercury in OU-4.

The Proposed Cleanup Plan embodies EPA’s national policy on contaminated sediment, as reflected in the *Contaminated Sediment Remediation Guidance for Hazardous Waste Sites, December 2005* (“Sediment Guidance”). In particular, the Proposed Cleanup Plan focuses on overall risk reduction, as well as the specific net risk reduction that realistically can be achieved by the available remedial alternatives. The Proposed Cleanup Plan appropriately took into consideration the limitations of dredging when selecting Alternative 3B as the final remedy for OU-4.

¹ The Sediment Management Work Group is an ad hoc group of industry and government parties actively involved in the evaluation and management of contaminated sediments. (See Exhibit “A” for a list of its Members.) The Group is dedicated to the use of sound science and risk-based evaluation of contaminated sediment management options. The SMWG recognizes that the management of sites involving contaminated sediments frequently involves unique and complex scientific and technical issues, including assessment methodologies and evaluation of risk and risk reduction options. As an active participant in the national discussions on sediment management issues, the SMWG welcomes the opportunity to offer observations and comments on the Proposed Cleanup Plan for the Nyanza Chemical Waste Dump Superfund site.

Consistent with the Guidance's emphasis on risk reduction, the Proposed Cleanup Plan will achieve the Remedial Action Objectives (RAOs) in a shorter time frame than the other alternatives, is more protective of human health and the environment, and is cost-effective. EPA's Sediment Guidance supports the implementation of remedies that are more effective in the short-term, more implementable, more cost-effective, and that can be completed earlier. Thus, the Proposed Cleanup Plan should be approved.

III. EPA's National Contaminated Sediment Policy

In December 2005, EPA issued the *Contaminated Sediment Remediation Guidance for Hazardous Waste Sites*. This Guidance embodies national policy on contaminated sediment and should be followed at all contaminated sediment sites. The Sediment Guidance provides a risk management decision-making framework to assist with selecting appropriate remedies. There are six key principles in the Sediment Guidance. First, the focus of remediation should be on risk reduction, not simply on contaminant removal or on the number of cubic yards of dredged sediment (*Sediment Guidance*, p. 7-1, 7-16). The Sediment Guidance reinforces the focus on risk reduction by stating that contaminated sediment that is not bioavailable or bioaccessible and that is reasonably stable, meaning that the contaminants are unlikely to be released from the sediment in concentrations which will pose an unacceptable risk to human health and the environment, does not necessarily contribute to site risks (*Sediment Guidance*, p. 7-3).

Second, a realistic, site-specific evaluation of the potential effectiveness of each sediment management option, including dredging, capping, and monitored natural recovery, should be incorporated into the selection of remedies at a site (*Sediment Guidance*, p. 7-3).

Third, as part of the remedy selection process, an appropriate evaluation of the comparative net risk reduction potential of the various sediment management options, including a realistic evaluation of their respective advantages and site-specific limitations should be conducted (*Sediment Guidance*, p. 7-13, 7-14). This evaluation includes the risks introduced by implementing the remedial alternatives (*Sediment Guidance*, p. 7-14). For example, the risks associated with implementing a dredging remedy include contaminant resuspension and releases during sediment removal, transport, and disposal, continued exposure to contaminants during the construction and implementation phases, residual contamination, disruption of the benthic

community, destruction of habitat, worker risk during sediment removal and handling, and community impacts including accidents, truck traffic volume, noise, lights, residential and/or commercial disruption (*Sediment Guidance*, p. 7-14).

Fourth, at large and/or complex sites, consideration of the use of combinations of remedies may be appropriate (*Sediment Guidance*, p. 7-3).

Fifth, adaptive management concepts, which recognize the need for reconsideration of the original remedy chosen where new data and/or results of pilots suggest the appropriateness of revising the original approach, should be applied (*Sediment Guidance*, p. 2-22, 3-1, 7-16).

Sixth, comparing and contrasting the costs and benefits of the various remedies is part of the risk management decision-making framework (*Sediment Guidance*, p. 7-1). These six principles, if applied appropriately, will lead to protective remedies that are also cost effective as required by CERCLA.

IV. Site-Specific Factors Demonstrating Consistency of the Proposed Cleanup Plan With the Sediment Guidance

The following site characteristics support the Proposed Cleanup Plan are consistent with the Sediment Guidance:

The Proposed Cleanup Plan appropriately recognizes that Alternative 3B, which would involve placement of a 6-inch layer of sand on the areas of Reach 3 where the total mercury in surface sediment uniformly exceeds 10 ppm (Segment 5 of Reach 3 has an average of 27.8 ppm), is the most protective, implementable and cost-effective remedy. The affected area (84 acres) (Reach 3) is the only part of OU-4 (other than Reach 8) “where natural process alone are not expected to be adequate over a reasonable period of time to eliminate unacceptable risks from consuming fish.” In contrast, Alternative 3C contemplates placement of a sand cover over areas of OU-4 that have mercury concentrations greater than 2 ppm (this includes Reach 3 and portions of Reaches 4 and 6) at a cost of \$20.8 million. The additional sand cover is not

necessary because MNR alone for Reaches 4 and 6 was determined by the Agency to be more than adequate to address the mercury in sediment. U.S. EPA anticipates that “fish tissue contamination is projected to continue to attenuate such that the target fish concentration of mercury (which should allow for unlimited recreational angling) should be achieved in a reasonable amount of time (i.e., less than 30 years).” In addition to being cost-effective, the smaller area of sand cover in Alternative 3B will have fewer short-term impacts than Alternative 3C. The larger area of sand cover also would be more difficult to implement, would have a more adverse impact on wetlands, and would offer only a negligible improvement in fish tissue concentrations. Therefore, Alternative 3B clearly represents the alternative most consistent with CERCLA, the National Contingency Plan and the Sediment Guidance.

V. The Proposed Cleanup Plan Is Consistent With the Principles of EPA’s December 2005 Contaminated Sediment Remediation Guidance for Hazardous Waste Sites.

The Proposed Cleanup Plan appropriately focuses on risk reduction and the comparative net risk potential of each alternative. Four examples of this focus on risk reduction and comparative net risk follow.

- Sand Cover v. Dredging: The Proposed Cleanup Plan recognizes that due to the limitations of dredging, removal of areas with contaminated sediment exceeding mercury concentrations of 10 ppm in an 84-acre area, defined as Reach 3, will not provide a net environmental benefit. Rather, Enhanced Natural Recovery (“ENR”), defined as the installation of a 6-inch sand cover, will more effectively reduce risk than attempting to dredge these areas.
- Engineered Capping v. Dredging: The Proposed Cleanup Plan recognizes that, due to the limitations of dredging (e.g., resuspension, residuals and shoreline stability), and the lower risk posed by buried stable contaminants, engineered capping also would be more effective and feasible (i.e., implementable) than dredging.

- Use of Dredging/Capping Combination: The Proposed Cleanup Plan correctly recognizes that sediment removal via dredging or even a combination of dredging and capping would likely result in the resuspension of contaminated sediment and releases to the water column during dredging, and would be likely to generate post-dredging residuals. This would decrease the short-term effectiveness of alternatives involving dredging. Thus, the Proposed Cleanup Plan provides better risk reduction and is more protective of human health and the environment than any of the alternatives with a dredging component.
- Reduced Implementation Time: Implementation of Alternative 3B is expected to take 3 years, which is 1-2 years earlier than other alternatives involving the installation of an in-situ barrier and/or dredging. The Proposed Cleanup Plan's earlier completion, in turn, should reduce water and fish tissue concentrations faster than the other alternatives, which involve no action, limited action, only Monitored Natural Recovery (MNR), or some combination of dredging and/or in-situ containment. In addition, the selection of Alternative 3B is expected to result in earlier lifting of the fish consumption advisories.

By applying the Sediment Guidance's principles and risk management framework to the substantial technical information developed during the investigation of OU-4, the Proposed Cleanup Plan appropriately evaluates the limitations of dredging and the benefits of ENR and MNR. The Proposed Cleanup Plan is consistent with the Sediment Guidance because it utilizes ENR in combination with MNR in order to maximize overall risk reduction. In addition, with the Proposed Cleanup Plan, post-dredging residuals will not be generated, implementation time will be decreased and RAOs will be achieved sooner. Thus, the Proposed Cleanup Plan is protective of human health and the environment and should be approved.

VI. Comments on a Potential Dry Excavation Remedy

The SMWG understands from media reports that a dry excavation remedy may be considered in addition to the eleven remedial options previously formally evaluated in the Feasibility Study. If true, U.S. EPA should not proceed with a remedy selection until an opportunity to comment on an entirely new remedial option is provided. Nevertheless, Alternative 3B would still be the preferred alternative for a variety of reasons.

Dry excavation itself has been fraught with implementability issues at many of the sites where it has been attempted. In particular, dewatering can be very difficult, and there is rarely ever a completely “dry” excavation. In addition, achieving RAOs has been an issue. For example, the Ruck Pond, Wisconsin dry excavation failed to achieve RAOs in some areas of the project despite repeated passes, including an extraordinary effort using vac trucks to attempt to remove residuals. Dry excavating projects are often quite costly, and at OU-4, it is unlikely that dry excavation would be as cost-effective as Alternative 3B. In the absence of any detail, based on experience gained at other sites, dry excavation is likely to be less protective, less implementable, less reliable and less cost-effective than Alternative 3B.

VII. SMWG Support for the Proposed Cleanup Plan.

The Proposed Cleanup Plan embodies EPA’s national policy on contaminated sediment, as reflected in the Sediment Guidance, by focusing on risk reduction and appropriately evaluating the comparative net risk reduction of remedial options by realistically considering the limitations of dredging in designing an appropriate and effective remedial plan. The Proposed Cleanup Plan’s expected realistic ability to achieve RAOs compared to the other alternatives and by doing so in a shorter time frame would make Alternative 3B protective of human health and the environment. The Proposed Cleanup Plan also would be more cost effective than the dredging and/or in-situ containment alternatives (\$8.5 million (Proposed Cleanup Plan) v. a minimum of \$24.3 million (for in-situ containment alone)). The dredging alternatives have been estimated to cost between \$59.7 million and \$213.5 million. The Sediment Guidance supports implementation of remedies that are more effective in the short-term, more implementable, more cost-effective, and that can be completed earlier. Thus, the Proposed Cleanup Plan, which is more consistent with the Sediment Guidance than the other alternatives under consideration, should be approved.

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The SMWG would be pleased to answer any questions about its comments on the Proposed Cleanup Plan for OU-4. For further information, please feel free to contact the SMWG’s Coordinating Director, Steven C. Nadeau, c/o Honigman Miller Schwartz and Cohn

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Respectfully submitted,

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EXHIBIT A
MEMBERSHIP IN THE SEDIMENT MANAGEMENT WORK GROUP

ALCOA, Inc.
Atlantic Richfield (a BP company)
BASF Corporation
Beazer East, Inc.
Boeing Company, The
CBS Corporation
Chevron Energy Technology Company
Consumers Energy
Dow Chemical Company
DTE Energy
E.I. duPont de Nemours and Company
El Paso Corporation
ExxonMobil
General Electric Company
General Motors Corporation
Georgia-Pacific Corporation
Glenn Springs Holdings, Inc.
Honeywell International, Inc.
Monsanto Company
NW Natural
Phelps Dodge Corporation
PPG Industries, Inc.
Rohm and Haas Company
Sherwin Williams Co.
Tierra Solutions, Inc.
U.S. Steel Group
WE Energies
WTM I
American Chemistry Council (ACC)
American Forest & Paper Association
American Gas Association
American Petroleum Institute
Centre for Advanced Analytical Chemistry
Council of Great Lakes Industries (CGLI)
EPRI
International Lead Zinc Research Organization
National Council of Paper Industry for Air & Stream Improvement
Norwegian Institute for Water
U.S. Army Corps of Engineers, Waterways Experiment Station
U.S. Navy Space and Naval Warfare Systems Center, San Diego
U.S. Navy Naval Facilities Eng. Command
Utility Solid Waste Activities Group