Region 2: NJ, NY, PR, VI • 290 Broadway, New York, NY 10007

Hudson River
PCBs SUPERFUND SITE

Engineering Performance Standards
General Overview

Spring 2010 Update

Highlights

This fact sheet describes the objectives and intended use of engineering performance standards for the Hudson River PCBs Superfund site. These standards were released to the public for review and comment. Additional information can be found in individual fact sheets and in more detailed documents on dredging-related resuspension, dredging residuals, and dredging productivity.

Background

In February 2002, EPA issued a Record of Decision (ROD) for the Hudson River PCBs Superfund site that calls for targeted environmental dredging of approximately 2.65 million cubic yards of PCB-contaminated sediment from the Upper Hudson River.

The Hudson River cleanup will achieve five objectives:

- Reduce cancer risks and non-cancer health hazards to people who eat fish from the Hudson River by reducing the concentration of PCBs in fish,
- Lower the risks to fish and wildlife by reducing the concentration of PCBs in fish,
- Diminish PCB levels in sediments in order to reduce PCB concentrations in river water that are above water quality standards,
- Reduce the quantity (mass) of PCBs in sediments that may be consumed by fish and wildlife, and
- Minimize the long-term movement of PCBs down river.

Dredging began in May 2009 and will take place in two phases:

Phase 1 - dredging at a reduced scale with extensive monitoring to ensure that it is done safely, and

Phase 2 - dredging at full production to remove the remainder of the contaminated river sediments.

What are Engineering Performance Standards?

Engineering performance standards are technical requirements to help ensure that the cleanup meets the objectives for protecting peoples health and the environment set forth in the ROD and does not cause adverse health or environmental impacts. They have been developed to make sure the dredging is done safely and stays on schedule. The ROD required the development of the following engineering performance standards:

- Dredging-related resuspension;
- Dredging residuals; and
- Dredging productivity.

Dredging-related Resuspension

The resuspension standard is designed to protect water intakes down river of the dredging operations and to limit the down river transport of PCB-contaminated dredged material. This will promote the recovery of the river ecosystem after dredging. A water quality-monitoring program is in place to show that the objectives of the resuspension standard have been met during dredging. Sampling results will be used to determine whether additional measures are needed to ensure protection of public health and the environment. If necessary, these measures could include expanding the monitoring program, implementing operational or engineering improvements to reduce resuspension levels or temporarily halting the dredging.

The ROD does not specify applicable water quality thresholds for this standard. EPA used extensive modeling, environmental dredging case study data, and federal and state water quality standards to develop a series of tiered action levels for the standard.

Computer models were used to simulate PCB concentrations in water, sediment and fish tissue that could result from dredging resuspension. The modeling efforts examined the impact of allowing dredging operations to proceed at various action levels specified in the resuspension standard. The conclusion was that operating at low resuspension rates resulted in negligible impacts on PCB levels in fish tissue. Higher resuspension rates could increase fish tissue concentrations during dredging, but these were not found to be significant after dredging was completed.

The resuspension standard and action levels will be used to control PCB concentrations in the river downstream of the dredging to protect public water intakes and to minimize the impact of dredging-related releases on the recovery of the Hudson River ecosystem.

Dredging Residuals

The residuals standard is designed to detect and manage small amounts of contaminated sediments that may remain on the river bottom after dredging in the Upper Hudson River. These "residuals" may consist of contaminated sediments that were disturbed but escaped capture by the dredge, resuspended sediments that were redeposited or that settled, and/or contaminated sediments remaining below the dredging cut lines because they were not detected by the sediment sampling program.

The residuals standard first requires post-dredging sampling and analysis to detect and characterize PCB concentrations in the residual sediments. The level of PCBs in the sediment samples is then evaluated against a level of approximately 1 part per million (ppm)- the sediment cleanup objective for the project - and a series of statistical action levels. If the sampling results do not meet the action levels, the appropriate management approach to the residual sediments, such as capping or redredging, will be selected from a predetermined menu to achieve the cleanup goals while maintaining dredging productivity.

Dredging Productivity

The productivity standard is designed to keep the dredging work on track to meet the goal of completing the project within a six-year period. The productivity standard defines the total project sediment volumes to be dredged by the end of each project phase and dredging season, based on the current estimate of cubic yards of sediment to be removed. Maintaining an appropriate dredging production rate will help to clean up the river within a reasonable time frame and simultaneously limit the duration of construction-related impacts.

How were the standards developed?

The engineering performance standards were developed to provide public accountability and assurances that the dredging will be protective of peoples health and the environment. These standards will be used to measure the progress of the dredging and its effect on the river system. They will ensure that:

- Action levels established in the resuspension standard protect peoples health and the river ecosystem and maintain the total amount of PCBs in the river during dredging operations at a level similar to the existing baseline range,
- PCB amounts and concentrations allowed by the resuspension standard are set at levels that do not cause additional serious long-term impacts on PCB levels in fish in the river,
- Removal of PCB-contaminated sediments with an anticipated residual of approximately 1 ppm prior to backfilling is achievable on an area-wide average basis, and
- The cleanup can be accomplished in six years without compromising the other engineering performance standards.

For More Information

Visit, call, or write to the Hudson River Field Office at the address below or log on to **www.epa.gov/hudson.**

EPA Contact

Community Involvement Coordinator
Hudson River Field Office
421 Lower Main Street
Hudson Falls, NY 12839
(518) 747-4389 or (866) 615-6490 Toll-Free
hrfo@roadrunner.com

The Field Office hours are Monday – Friday 8:00 am – 4:30 pm, with evening hours by appointment.

EPA Superfund Ombudsman

EPA Region 2 has designated an ombudsman as a point-of-contact for community concerns and questions about the federal Superfund program in New York, New Jersey, Puerto Rico, and the U.S. Virgin Islands. To support this effort, the Agency has established a 24-hour, toll-free number that the public can call to request information, express concerns, or register complaints about Superfund. The ombudsman for EPA's Region 2 office is: George H. Zachos, U.S. EPA, Region 2, 2890 Woodbridge Avenue MS-211, Edison, New Jersey 08837, (732) 321-6621,Toll-free (888) 283-7626.