Roadmap to Peconic River Cleanup

The U.S. Department of Energy is conducting an environmental cleanup under an Interagency Agreement between the Department, the New York State Department of Environmental Conservation, and the U.S. Environmental Protection Agency. The cleanup of sediment in the Peconic River is part of that effort. This fact sheet describes the roadmap, or decision process, leading to that cleanup.

After listening to the Laboratory's environmental regulators and community members, the U.S. Department of Energy and Brookhaven National Laboratory developed a process to reach a decision on how to clean up Peconic River sediment.

One stretch of the Peconic slated for cleanup.

Process Defined

The process calls for small-scale testing of several promising technologies in the areas of the river where they are likely to succeed. The technologies to be tested are ones with the potential to minimize damage to the wetlands during the cleanup.

First, technologies will be screened to determine their potential to work. Next, the technologies will be tested in a pilot study or demonstration project in the Peconic River on the Lab's site to further refine the evaluation. If a technology is successful, it will become part of an established cleanup "toolbox" (see figure, "Getting to Cleanup," page 3).

The areas requiring cleanup have varied habitats that need to be evaluated on an individual basis. The Laboratory plans to match specific toolbox technologies with areas in which each is expected to be most successful. The technologies ultimately selected will need to satisfy regulatory criteria, as well as community expectations.

A cleanup plan is expected to be available for public review and comment late in 2002. More information on the cleanup technologies being considered is available at http://www.bnl.gov/erd/ou5doc.html.

Background

Since 1948, the Lab has operated a sewage treatment plant in the eastern portion of the site. Treated effluent is discharged into the Peconic River.

Over the years, regulations guiding these discharges have changed. The plant has been upgraded several times to maintain compliance with these regulations.

Discharges from the plant are now regulated by the New York State Department of Environmental Conservation and are regularly monitored by the Laboratory for compliance.

As the result of past operations, contaminants have accumulated in river sediment on the Lab site and in some downstream areas. As previously reported, extensive sampling found heavy metals (such as mercury, silver, and copper), organic chemicals (such as polychlorinated biphenyls, or PCBs), small amounts of

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pesticides (such as DDD, a product of DDT degradation), and radionuclides, principally cesium-137. The levels of mercury, silver, and copper were previously proposed for cleanup to address an ecological risk. Co-located PCBs, DDD, and radionuclides will be addressed along with the heavy metals. The areas identified for cleanup, and the risk assessment influenced by the contaminants may be further modified as a result of additional fish and sediment sampling data, that is just now coming in.

Community Identifies Alternative Technologies

In the spring of 2000, the Department of Energy and the Laboratory proposed a cleanup plan that called for the removal of contaminated Peconic River sediment by excavation. Excavation is a disruptive process that requires wetlands reconstruction. While excavation and reconstruction can be accomplished, community members asked the Department to consider less-disruptive alternatives.

In December, 2000, the Department and the Laboratory responded by hosting a two-day public workshop that brought together community members, regulators, and remediation firms from around the country. Participants identified four technologies other than excavation that showed promise for cleaning up Peconic River sediment. The alternative cleanup technologies included native species phytoremediation, electrochemical remediation, constructed wetlands, and vacuum dredging.

So far, constructed wetlands and vacuum dredging have been screened to determine their effectiveness. Phytoremediation and electrochemical remediation are undergoing further screening.

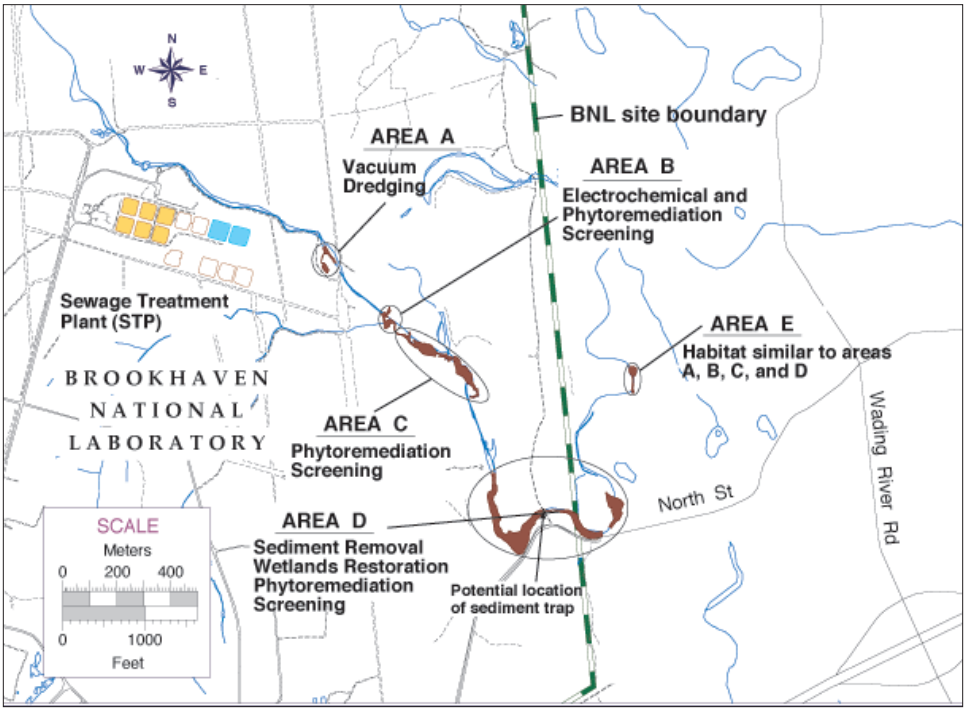
What's Next

Following the screening process, a series of pilot studies to test the cleanup technologies under Peconic River conditions will be done on Lab property. In addition, a silt trap will be installed in the river near the site boundary to prevent/minimize contaminated sediment from moving off site.

Technologies that are successfully piloted will be considered for incorporation into a cleanup plan. If the alternative technologies do not meet all of the needs for cleanup, then excavation may still need to be done in some areas. The cleanup plan will be reviewed for acceptance by the Lab's regulatory agencies and then reviewed with the community. The regulatory agencies include the U.S. Environmental Protection Agency, New York State Department of Environmental Conservation, and New York State Department of Health. The Suffolk County Department of Health Services also participates.

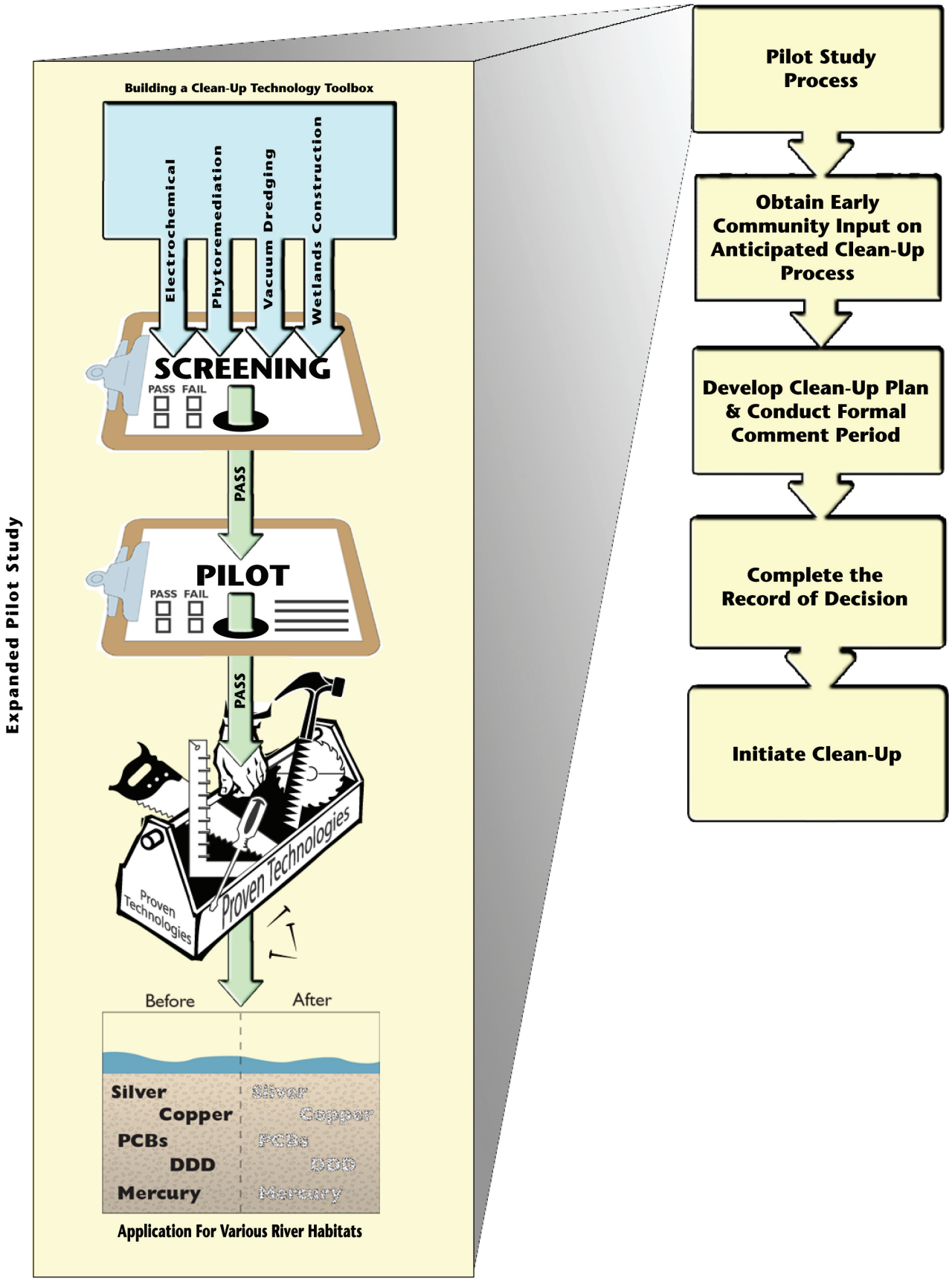
Acknowledgement

The Lab acknowledges and thanks the many community members and regulatory agency staff who have contributed to the development of this process. The result is a roadmap to cleanup, and a process that has regulatory support and addresses community concerns.



This map shows the Laboratory site boundary and the five areas originally proposed for cleanup. Four of these areas will now host pilot studies, and the areas originally identified for cleanup may be modified based on new sediment and fish sampling data.

Decision Process: Getting to Cleanup



For more information, contact:

• **Ken White**
Community Relations
Brookhaven National Laboratory
(631) 344-4423
kwwhite@bnl.gov

• **John Carter**
Director, Community Affairs
DOE Brookhaven Area Office
(631) 344-5195
jcarter@bnl.gov