

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

Signed December 13, 2002

MEMORANDUM

SUBJECT: CSTAG Recommendations on the Housatonic Rest of River Contaminated Sediment Superfund Site

FROM: Stephen J. Ells /s/ **Stephen J. Ells**
Judith McCulley, Co-chairs /s/ **Judith R. McCulley**
Contaminated Sediments Technical Advisory Group (CSTAG)

TO: Susan Svirsky, Site Project Manager
Region 1

Background

OSWER Directive 9285.6-08, *Principles for Managing Contaminated Sediment Risks at Hazardous Waste Sites* (Feb. 12, 2002), established the CSTAG as a technical advisory group “that will monitor the progress of and provide advice regarding a small number of large, complex, or controversial contaminated sediment Superfund sites.” The main purpose of the CSTAG is to help Regional site project managers of selected large, complex, or controversial sediment sites appropriately manage their sites throughout the Superfund process in accordance with the 11 risk management principles set forth in the OSWER Directive. CSTAG membership consists of one representative per Region, two from the Office of Research and Development, one from the Office of Water, and two from the Office of Emergency and Remedial Response.

Brief Description of the Site

The Housatonic River is located in a predominantly rural area of western Massachusetts and Connecticut. General Electric (GE) began its operations in its present location in Pittsfield, MA in 1903. The 254-acre GE facility was the major handler of polychlorinated biphenyls (PCBs) in western Massachusetts and is the only known source of PCBs found in the Housatonic River sediments and flood plain soils in Massachusetts. Although GE performed many functions at the Pittsfield facility throughout the years, the construction and repair of electrical transformers using dielectric fluids, some of which contained PCBs (primarily Aroclors 1260, and to a lesser extent, 1254), was the likely source of PCB contamination. According to GE's reports from 1932 through 1977, releases of PCBs reached the waste and storm water systems associated with the facility and were subsequently conveyed to the East Branch of the Housatonic River and to Silver Lake, a 25-acre lake adjacent to the GE facility.

During the 1940s, efforts to straighten the Pittsfield reach of the Housatonic River by the City of Pittsfield and the U.S. Army Corps of Engineers (USACE) resulted in 11 former river

oxbows being isolated from the river channel. The oxbows were filled with material that was later discovered to contain PCBs and other hazardous substances.

The river has been split up into three separate response actions, or reaches. The first ½ Mile Reach is located adjacent to the GE facility. GE completed a time critical removal action on this section of river in September of 2002. This removal action included the removal of over 18,000 cubic yards of sediments and bank soils and the placement of a cap over the remaining sediments and bank soils. Upon GE's completion of the ½ Mile Reach, EPA began a non-time critical removal action on a second 1 ½ Mile Reach. EPA expects to remove approximately 100,000 cubic yards of sediments and bank soils from this reach. EPA is conducting an investigation of the third reach, which includes the remaining sections of river in both Massachusetts and Connecticut. It is referred to as the Rest of River and is the subject of the CSTAG review.

The river flows approximately 140 miles below the facility, emptying into Long Island Sound. Fish consumption advisories exist for both Massachusetts and Connecticut due to the PCB contamination. The Massachusetts advisory was recently amended to include restrictions on eating frogs, turtles, and waterfowl.

While the two miles downstream from the facility have historically been channelized, the river's course is relatively unaffected (with the exception of the numerous dams downstream) in areas south of Pittsfield. The river and associated flood plain below the confluence of the East and West Branches of the Housatonic to Woods Pond in Lenox is the Primary Study Area (PSA). The PSA contains the greatest contamination in the Rest of River, and is where a great deal of site characterization work has been done. The PSA is approximately 10.5 miles long, ranges from 45 to 100 feet in width, is bordered by extensive flood plains up to 3,000 feet wide, and has a meandering pattern with numerous oxbows and backwaters. Woods Pond, the first impoundment below the GE facility, is a shallow 56-acre impoundment which was formed by the construction of a dam in the early 1900s.

The uses of the flood plain include residential, agricultural, and recreational uses (such as canoeing, fishing, and hunting). This area also includes wildlife management areas and parks.

The primary contaminants of concern are PCBs. PCBs have been found in river and pond sediments, in flood plain soils, and in biota. A total of 473,000 pounds of PCBs are estimated to be present in the Rest of River reach based upon measured concentrations and preliminary GIS computational techniques. This estimate suggests that approximately 90% of the PCB mass released to the river is within the PSA.

EPA is conducting its investigations under a RCRA Corrective Action Permit. The investigations include an extensive river modeling study, a human health risk assessment and an ecological risk assessment. The risk assessments are nearing completion and will be externally peer reviewed during the summer of 2003. The modeling framework has already undergone peer review, and the model calibration and validation will undergo peer review in 2003 and 2004, respectively. Following completion of these studies, a RCRA Facility Investigation Report (the RCRA equivalent to an RI), the selection of Interim Media Protections Goals, and a corrective measures study (feasibility study) will be developed. The Region's final cleanup decision is expected late in 2005.

The CSTAG visited the site and met with the site team from October 28 to 30, 2002. Five of the invited stakeholders made short presentations to the CSTAG. The five presenters included: the Housatonic Environmental Action League, the Schaghticoke Indian tribe, the Housatonic River Initiative, the Connecticut Department of Environmental Protection, and the

General Electric Company. The Massachusetts Department of Environmental Protection and the U.S. Fish and Wildlife Service also attended as observers.

CSTAG Recommendations

Based upon our site visit, a review of the site information provided to us, and the presentations made by several stakeholders, the CSTAG offers the following recommendations in order to more fully address the 11 principles. The CSTAG expects that the site project manager will consider these recommendations as the investigations continue, as the conceptual site model is refined, and as remedial alternatives are developed and evaluated. The site project manager should send a short written response to these recommendations to the CSTAG co-chairs within 60 days.

Principle #1, Control Sources Early

- Continue to evaluate and monitor all potential upstream sources of PCBs, including upland soils, former oxbows, and Unkamet Brook, to the Rest of River and to the remediated sediment areas.
- Continue to evaluate and quantify the mass loading of PCBs to the water column upstream of the ½ mile reach to more fully characterize background conditions that might be a continuing source to the Rest of River.

Principle #2, Involve the Community Early and Often

- Continue to engage the community and local interested groups in discussions about the investigations and upcoming studies. Overall, the project team has encouraged early and meaningful community involvement and such practices should continue, especially with regard to decision criteria and potential remedial technologies. Should active cleanup be warranted, consider providing information to the community about available and emerging treatment/remedial technologies and their suitability for use at this site.
- Document how community input has been incorporated into EPA's plans and actions.
- Continue to maintain and encourage public use of the EPA website as a source of up-to-date information about site investigations and progress.

Principle #3, Coordinate with States, Local Governments, Tribes, and Natural Resource Trustees

- Continue to share information with EPA and State water programs for use in TMDL development.
- Continue to involve States, Trustees, and affected Native American tribes in the investigation and evaluation of potential cleanup alternatives should they be necessary.

Principle #4, Develop and Refine a Conceptual Site Model that Considers Sediment Stability

- Due to the high contaminant concentrations, large size, and complex nature of the site, the CSTAG commends the Region for its efforts in developing state-of-the-art models for assessing sediment stability and site risks. These models will also be useful in evaluating potential risk management options for the site.
- The CSTAG encourages that the lessons learned (*i.e.*, data requirements for calibration/validation, model linkage issues) in the modeling effort be shared with other regions.
- The CSTAG concurs with the Region's plans to monitor an extreme storm event should one occur during the investigation period.

Principle #5, Use an Iterative Approach in a Risk-Based Framework

- The CSTAG supports the general approach of starting upstream and moving downstream, and incorporating lessons learned as remedial actions progress. The CSTAG agrees with the iterative approach that the Region is taking to address the first two miles and Unkamet Brook, concurrent with performing the investigations and evaluating any necessary response actions for the Rest of River. This approach will allow the current schedule to be maintained, resulting in expeditious implementation of any necessary actions in the Rest of River.
- Any lessons learned from evaluating the monitoring data from the upstream removal actions should be considered in the decision-making process for the Rest of River.

Principle #6, Carefully Evaluate the Assumptions and Uncertainties Associated with Site Characterization Data and Site Models

- Due to the complexity of this site and the large amount of data collected, the CSTAG supports the team's rigorous analysis of the uncertainty associated with site data.
- It is important that the site team document the degree of uncertainty associated with key studies and data and explain how the uncertainties will be incorporated in future site decisions.

Principle #7, Select Site-specific, Project-specific, and Sediment-specific Risk Management Approaches that will Achieve Risk-based Goals

- Consider performing pilot tests or treatability studies of proven/available innovative treatment technologies that could be used if remedial action for the Rest of River is necessary.

Principle #8, Ensure that Sediment Cleanup Levels are Clearly Tied to Risk Management Goals

- Should the risk assessments demonstrate unacceptable risks, the baseline risk assessment data should also be used to develop a range of protective sediment clean-up goals for the human health and/or ecological assessment endpoints that are driving the need for a response. If a cleanup is warranted, the relationship between the PCB sediment and/or flood plain soil actions levels, the final sediment and flood plain cleanup levels and residual contaminant concentrations, and the risk-based goals (e.g., safe fish tissue concentrations) should be clearly explained.

Principle #9, Maximize the Effectiveness of Institutional Controls and Recognize their Limitations

- Where institutional controls are not in-place to maintain dams, consider the appropriateness of establishing ICs to ensure that sediment does not migrate and/or cause unacceptable risks in the event of dam failure, or to ensure it is managed appropriately in the case of dam removal or maintenance.
- If the human health risk assessment indicates unacceptable risks from fish consumption, evaluate the effectiveness of the fish advisory signs in the Connecticut portion of the river. Consider additional outreach activities to ensure the public is aware of and understands the advisories.

Principle #10, Design Remedies to Minimize Short-term Risks while Achieving Long-term Protection The CSTAG recognizes that site investigations are still on-going, that data are still being evaluated, and that the Region is not ready to propose a remedy for the site. If a dredging

and/or capping remedy is proposed, however, careful consideration should be given to evaluating the adverse impacts to biota and habitat that might result and to incorporating methods to mitigate and/or replace habitat that may be affected.

Principle #11, Monitor During and After Sediment Remediation to Assess and Document Remedy Effectiveness The CSTAG recognizes that the Region will not be developing a long-term monitoring program for this site for some time, and has no recommendations at this time.

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