

**HUDSON RIVER PCB REASSESSMENT
COMMUNITY INTERACTION PROGRAM**

SCIENTIFIC AND TECHNICAL COMMITTEE

THURSDAY, JULY 11, 1991

1:00 PM

LATHAM, NEW YORK

MINUTES

On July 11, 1991, a meeting of the Hudson River Scientific and Technical Committee (STC) was held at 1:00 PM at the Holiday Inn in Latham, New York. The purpose of the meeting was to inform the committee members on the major aspects of the proposed Phase 2A sampling program and to provide a forum for discussion of the program. The following committee members attended the meeting:

D. Abramowicz	General Electric
D. Aulenbach	R.P.I. (retired)
J. Bonner	TAMU, College Station, TX
R. Bopp	NYSDEC
B. Bush	NYSDOH
K. Darmer	Hydrologist, Delmar, NY
J. Davis	N.Y. Attorney General's Office
N. Kim	NYSDOH
T. Maddry	Office of Rep. G. Solomon
R. Montione	NYSDOH
G. Putman	SUNY-Albany
G. Raggio	Simultec
G-Y. Rhee	NYSDOH

In addition, the following persons attended the meeting as observers or presenters:

A. DiBernardo	TAMS Consultants
R. Flood	Marine Sciences Research Center, SUNY-Stony Brook
E. Garvey	TAMS Consultants
J. Haggard	General Electric
N. Shifrin	Gradient Corp.
D. Tomchuk	US EPA

The meeting was begun by Dr. Abramowicz who introduced Mr. DiBernardo. Mr. DiBernardo explained the purpose of the meeting and the presentations. He emphasized that the presentation was designed to permit a free exchange of information concerning the

Phase 2A sampling program between the committee members, the USEPA and its contractor. He also indicated that the sampling program to be presented did not represent the entire sampling effort. The tasks selected for Phase 2A were those whose time requirements for completion were such that they must begin as soon as possible in order to complete the RI/FS process in a timely fashion. The remaining sampling tasks proposed by TAMS/Gradient and their consultants as well as others which might be suggested by the Scientific and Technical Committee would be included in the Phase 2B sampling program. The format for the meeting was to consist of presentations by Dr. E. Garvey and Dr. R. Flood. Throughout the discussion, appropriate breaks for questions and discussions would be permitted.

The presentation by Dr. Garvey covered the major aspects of the Phase 2A Sampling Plan, including a discussion of the sampling program tasks and the issues they were designed to address. The following tasks were proposed for the Phase 2A sampling program. Each task title is followed by a short description.

Task 1. Remote sensing geophysical surveys of the river sediments in the Upper and Lower Hudson. Geophysical surveys of the river bottom will be made to classify large areas as to their sediment textures, potential for scour and potential for PCB contamination using side-scan sonar for surface features and sub-bottom profiling techniques for sediment depth information. The task is designed to provide a "base map" for the site while also providing data to be used in conjunction with that from tasks 3 and 4.

Task 2. High resolution sediment coring in the Upper and Lower Hudson. This task entails the collection of cores from high deposition rate areas of the Upper and Lower Hudson. These cores will be sliced into thin sections (2 to 4 cm thick) to obtain sediment layers representing 1 to 2 years of sediment accumulation. The results from analysis of these slices for PCBs and other parameters will be used to evaluate variations in riverine PCB transport and PCB congener patterns over time.

Task 3. Low resolution sediment coring for "hot spot" assessment. This task entails the resampling of 5 previously defined "hot spots", based on the previous sampling efforts by the NYSDEC. The final selection of the hot spots to be surveyed will depend upon the results of the geophysical surveys, in order to define the most sedimentologically stable hot spot areas. Three hot spot surveys are planned for the Thompson Island Pool and two are planned for the area below the pool. In addition to these surveys, an additional survey is planned for the area behind the Bakers Falls dam, an area which has not been well studied. The surveys themselves will consist of sediment cores collected on a 100 ft. grid, comparable to the sampling density used by the NYSDEC in 1984. The cores will be sectioned into relatively thick intervals of about 5 inches (13 cm) and analyzed for PCBs and other parameters.

Task 4. Exploratory low resolution sediment coring in the Upper Hudson. This sampling effort is designed to closely support the geophysical surveys by providing information on

sediment textures and PCB contamination levels. The exact locations for these samples will be determined based on the various sedimentological regimes defined by the geophysical surveys. In this manner, the nature of a sediment sample and the area of river bottom it represents can be better defined. This task entails the collection of cores from areas of the Upper Hudson which will subsequently be analyzed in an identical fashion to cores collected for the "hot spot" assessment.

Task 5. Water column monitoring in the Upper Hudson. This task will address current water column PCB levels in the Upper Hudson between Glens Falls and Waterford, N.Y. under low flow and high flow conditions. Seven sampling events are planned, 4 to occur under low flow conditions (< 8000 cfs) and three under high flow conditions (> 8000 cfs). Each sampling event will consist of samples from 9 river locations between Glens Falls and Waterford and one additional location on the Hoosic River near its confluence with the Hudson. Each sample will be separated into aqueous and suspended matter fractions which will be analyzed for total PCB levels on a congener specific basis as well as for several other parameters. These samples will be used to examine current riverine PCB levels and to help determine those region(s) of the river responsible for the PCB load under various conditions.

In addition to these five Phase 2A tasks, four tasks which may be proposed in Phase 2B, listed below, were also discussed:

1. Analysis of archived sediment samples from historic high resolution sediment cores.
2. Analysis of archived surface water samples.
3. Shoreline sediments and soils sampling.
4. Air monitoring.

In the subsequent discussions, Dr. Garvey indicated how each of these tasks would be used separately or in combination to address various issues concerning Hudson River PCB contamination.

Dr. Garvey's presentation on the proposed tasks was followed by a presentation by Dr. Flood on the technical aspects of the proposed geophysical surveys. Dr. Flood presented the results of the technique demonstration done in the Thompson Island pool in May, 1991. He also explained the basic process in obtaining information on river bottom topography, sediment textures and sediment thicknesses using the side-scan sonar and sub-bottom profiling systems. As an example, Dr. Flood presented a map of the sedimentological structures of a region on the Pacific Ocean to demonstrate how these techniques can be used to create a map or "aerial photograph" of the river bottom.

Dr. Flood's presentation was followed by a presentation by Dr. Garvey on the technical details of tasks 2 through 4. The types of measurements for each sample class as well as the proposed sampling locations were presented and discussed. Due to the time limitations of the meeting, the details of task 5, water column sampling, were not discussed.

Throughout the presentations by Drs. Garvey and Flood, the committee members raised questions and suggested additional ideas and measurements for consideration. These discussions and suggestions are summarized below:

- o Redox potential should be measured in the sediment cores collected since there is evidence of its correlation with the rate of biologically mediated dechlorination.
- o Radionuclide measurements are not needed for every section of a low resolution core but instead should be determined for the bottom 1 inch layer of a core. This would be sufficient to determine whether a core had penetrated to pre-1950 sediments.
- o PCB volatilization from tidal flats and other exposed river sediments should be considered as a potential pathway for human exposures. Additional measurements to assess this pathway should be considered as well.
- o Chlorophyll-a measurements should be considered for sediments and water samples as an indicator of biological activity in these media. PCB geochemistry has been shown to be influenced by biological activity in some settings.
- o Measurements of sediment response to shear stress should be used in conjunction with the other geophysical tasks to address the issue of potential resuspension of sediments.
- o Data needs required by ATSDR for risk assessment should be considered with additional measurements added as needed.
- o Determination of the grain size distribution for sediment samples should not be done using standard sieve techniques. Because of the expected association of PCBs with the smallest grain size fractions, an electronic determination of the grain size distribution on the wet sample should be done instead, dividing the standard < 64 um fraction into several fractions.
- o Additional data on fish consumption should be sought. A creel survey or a literature review for an existing survey should be done for an area similar to the Upper Hudson but without a fishing ban to better determine fish consumption.
- o Care should be exercised in calibrating the signals from the side-scan sonar survey. Since the technique only provides a measure of relative reflectivity, it is important

to obtain sufficient bottom samples to correlate the reflectivity signal to actual sediment textures.

- o Measurements of excess lead-210 in sediment cores should be considered to augment the cesium-137 and beryllium-7 measurements for determination of the sediment accumulation rate and the dating of individual sediment layers.
- o The density of the proposed sediment sampling may not be sufficient due to the small scale heterogeneities of the river bottom. To the extent possible, previously collected data should be used to help understand this heterogeneity, perhaps in conjunction with the results from the geophysical surveys. Analysis of sediment sample composites should be considered as a possible solution to this concern.

Before the close of the meeting, the members set a tentative schedule for responding in writing to the issues discussed at the meeting. The next meeting was scheduled for August 12th. To address some questions concerning the purpose of the committee, Mr. Tomchuk stated that EPA would prepare a statement explaining the purpose of the committee and the role of the members and the chair/co-chair.

The meeting was adjourned at about 5:30 PM.