



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION II

JACOB K. JAVITS FEDERAL BUILDING

NEW YORK, NEW YORK 10278

HUDSON RIVER PCBs REASSESSMENT RI/FS
COMMUNITY INTERACTION PROGRAM

PHASE 2 WORK PLAN MEETING
COLUMBIA GREENE COMMUNITY COLLEGE, HUDSON, NEW YORK

THURSDAY, JUNE 18, 1992

M I N U T E S

The purpose of the meeting was to present EPA's Work Plan for Phase 2 of the Reassessment Remedial Investigation/Feasibility Study that is being performed for the Hudson River PCBs Superfund site. Presentations were made by:

William McCabe -	Deputy Director, Superfund
Doug Tomchuk -	Remedial Project Manager, Superfund
Ann Rychlenski -	Community Relations Coordinator, External Programs Division

Also in attendance for U.S. EPA were Paul Simon, Office of Regional Counsel; Mel Hauptman, Chief, Eastern NY Superfund Section; and Carole Petersen, Chief, Superfund Branch II. The meeting was convened by Ms. Rychlenski at approximately 7:45 p.m.. Ms. Rychlenski introduced the EPA representatives present and briefly went over the agenda items for the meeting. In addition, she announced to the assembled that the August issue of "River Voices" would be accepting contributed articles through July 24th, and that the public comment period for the Phase 2 Work Plan would run through July 10, 1992. Ms. Rychlenski then turned the meeting over to Bill McCabe for a few brief remarks.

Mr. McCabe: Mr. McCabe discussed the location of the Phase 2 Work Plan meeting (Hudson, NY), stating that EPA was aware of the considerable controversy that surrounded the location of the meeting, particularly from the up river constituency for whom travel time was close to two hours. He stated that EPA had reviewed the past history of meeting locations, (12 in the Albany area or north of that location, as opposed to only 5 south of Albany, NY) as well as a recent upsurge in site interest by down river communities. In addition, EPA had to take into

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consideration the 200 mile length of the superfund site and find a location that was centrally located within that span.

Mr. McCabe also mentioned the schedule for the Reassessment as follows:

projected date for issuance of Phase 2 Report - summer/1993
(dependent upon comments received, quality assurance/quality control and validation of data).

Phase 3 Report (Feasibility Study) - December 1993

Proposed Plan and Record of Decision - no specific dates,
but sometime in early to mid-1994

Mr. McCabe then turned the meeting over to Doug Tomchuk for the presentation of the Phase 2 Work Plan (Mr. Tomchuk's presentation is attached).

Just before Mr. Tomchuk's presentation began, Paul McDowell of the NY Farm Bureau requested that copies of this meeting's minutes be sent out to all the members of the Liaison Groups. Ms. Rychlenski assured Mr. McDowell that the meeting minutes would be sent out to the membership during the week of June 22, 1992.

A brief synopsis of Mr. Tomchuk's presentation is as follows:

Mr. Tomchuk outlined the three-phase approach to the Reassessment: Phase 1 being the evaluation of existing data and its compilation into one data base, Phase 2 will be to conduct additional sampling to characterize the site, and Phase 3 to evaluate alternatives to address contamination in the Feasibility Study.

In addition, Mr. Tomchuk mentioned that the Responsiveness Summary to the Phase 1 Report would be sent out some time during the first week in July, 1992.

Mr. Tomchuk then proceeded to the bulk of the presentation on the Phase 2 Work Plan which explains the data collection and analyses that will take place during this portion of the Reassessment. It includes a more detailed explanation of the Phase 2A sampling objectives, explains the sampling for 2B and how the data will be analyzed.

The Phase 2 Workplan incorporates as appropriate comments made previously that have been addressed in the Responsiveness Summary. We plan to issue a revised workplan rather than a Responsiveness Summary due to time constraints, and we will continue with Phase 2A sampling in the meantime.

For the Phase 2 Work Plan the site has been broken into four (4) study areas: Study Area A (upriver, north of Baker's Falls); Study Area B (Baker's Falls to the Troy Dam, which is generally considered the area for remediation); Study Area C (in the lower river in the estuary, from below the Troy Dam to Cornwall which is the fresh water portion of the estuary); Study Area D (from the salt front to the Battery).

Four major data collection tasks as follows:

- . congener specific analysis of PCBs
- . water column sampling
- . sediment coring
- . geophysical survey

Congener Specific Analysis of PCBs

Because environmental samples often differ from the original mixture, congener specific analysis is being performed to identify the 209 different individual chemicals classified as PCBs.

Water Column Sampling

This consists of Transect sampling - which follows a parcel of water along seven (7) locations along the Hudson. It will be done during four (4) low flow conditions and three (3) high flow conditions. Its purpose is to designate where the PCB load is derived from and how the load is transferred to the lower Hudson.

The Equilibrium Study determines the effect of equilibrium distribution of PCB congeners between the dissolved and suspended matter phases.

Flow average sampling - composite sampling method that gives us long term averages. It's proportional to flow over any given day and can give a lot of information by analyzing relatively few number of samples.

Historic Water Sampling - the analysis of archived water samples which will give congener mixtures which were historically carried by the Hudson River.

Sediment Coring

High Resolution Coring - will be taken at 23 locations, most of which are in a high deposition area - many of which have been defined before in previous works. High Resolution refers to the slice of the core thickness. These are very fine slices approximately 2 centimeters at the upper portions and four centimeters thick in the lower portions. By slicing these thinly and using radionuclide dating, radioactive time markers, we can

tell when these sediments were deposited in each section of the river.

Low Resolution Coring - is fairly conventional coring, used in conjunction with the geophysical data and statistical analyses (kriging) to obtain estimates of PCB sediment mass. We can compare some of these results to DEC sampling events from 1984 in the Thompson Island Pool.

Archive High Resolution Samples - To compare new data and archived data from well defined time horizons by the radionuclide dating techniques and can also examine the effects of in-situ biodegradation on the rate of decay.

Geophysical Surveys - Data collection is completed. EPA is currently reviewing and interpreting the data. It describes the bathymetry or depth of the river, sediment morphology or the surface features of the river bottom, sediment texture and fine grain sediment thickness. This sampling effort is described in the Phase 2A Sampling Plan. The data gathering is completed and we are currently analyzing/interpreting the data.

This section of the Phase 2 Work Plan is fairly complex because of the interaction between sediment, water and biota.

We will be doing a PCB mass balance analysis to predict PCB levels in sediment and water on a seasonal or annual timescale. We will also be doing a correlation analysis. This will predict annual response of fish populations to environmental PCB levels in the water column and sediments. It incorporates a bioaccumulation factor so water to fish concentrations and also accounts for disequilibrium between the sediment and the water column.

We will also be doing an erodibility analysis and this will assess the potential for flood scour of buried contaminated sediments. This can also act as a guide as to which areas of contaminated sediments might require remediation based on potential for scour.

EPA will be refining our preliminary baseline human health risk assessment. We will also be conducting an ecological risk assessment, which will be conducted from river mile 75 to river mile 195. We are not conducting an ecological risk assessment for the areas in the transition or the salt water zones of the lower Hudson because of complications from tidal flux with the salt front. The ecological risk assessment will identify exposure pathways, ecological receptors, and end points of concern.

After this work is done, EPA will issue a Phase 2 Report. Also included in the Phase 2 Report will be some Feasibility Study work such as the screening of alternatives. However, the actual Feasibility Study in which we evaluate alternatives and the effects of those alternatives will be in the Phase 3 Feasibility Study. There will be a public comment period and Responsiveness Summary after the Proposed Plan. Mr. Tomchuk then concluded his presentation and moved on to take questions from the public.

Question & Answer Period

Cara Lee of Scenic Hudson commented on the extraordinary amount of technical work involved in Phase 2 and asked how it will be accomplished with EPA's limited resources and whether EPA will use the same consultants (TAMS) during Phase 2 as during Phase 1.

Mr. McCabe conceded that the schedule of work for Phase 2 is indeed, ambitious, but that EPA feels that it can be accomplished, and that the agency will use the same consultants as during Phase 1.

A question was asked as to why Mr. Tomchuk defined Area B as Baker's Falls to the Federal Dam, when above Baker's Falls is one of the major inputs to the Hudson? In addition, is EPA going to do any sediment sampling behind the dam?

Mr. Tomchuk responded that he did indeed, misspeak and that the area should be defined as Hudson Falls as opposed to Baker's Falls. As to sampling behind the dam, Mr. Tomchuk stated that the geophysical work is currently being reviewed, upon which the low resolution coring will be based. A plan for the low resolution coring will be released in the form of a short addendum type of document, and added that the area behind the dam is possibly one of the areas to be studied.

Cara Lee asked in terms of high or low resolution coring, where will these activities take place, what were the criteria for the sites (high deposition or low deposition areas)? How is an area of high deposition determined and what data is that determination based on?

Mr. Tomchuk responded that high resolution coring will be done throughout the entire river at various intervals, in high deposition areas that have been sampled for this technique before and cores taken from those previously sampled areas are known to give a good radionuclide chronology. The criteria for selection of these sampling sites is that they are known high deposition areas. We judge whether a site is a high deposition area by the amount of sediment deposited there in a year, generally around 1-2 centimeters a year deposition.

As to Ms. Lee's question regarding the data on which the deposition rates are based, this was answered by Ed Garvey of TAMS (EPA's consultants): Mr. Garvey explained that high resolution core locations are based on prior work done by Lamont-Dougherty Geological Observatory which has collected cores from these locations that showed that a radionuclide chronology could be obtained from those cores.

Celia Murray asked if there is a sampling point around Waterford, NY, and if that is for high or low resolution coring.

Mr. Tomchuk responded that there is a site for high resolution sampling near Waterford. All low resolution cores will be taken in study area B, from the Fenimore Bridge to the Federal Dam. They will be used to confirm the presence of hot spots and in correlation with the geophysical data to determine the mass of PCBs in the river.

Pete Lanahan of General Electric: Made reference to copies of G.E.'s Preliminary Comments to EPA's Phase 2 Workplan that G.E. made available to the public at this meeting. G.E. is pleased that EPA is doing a lot of congener specific analysis, and would like to see that done with fish as well as the rest of the work. Concern that the Work Plan is just an outline, would like to see more details, particularly on the sampling plan. Have concerns about coring as a questionable technique and about the conclusions that EPA will make based on this technique. How does it work, how has it been used in the past, is it an accepted methodology? Concerns about chain of custody of previous cores referred to, their age, conditions of storage, etc.

G.E. questioned the ability of EPA to go back to areas already sampled and take cores from exactly the same spot previously sampled for accurate comparative readings. G.E. would like a clear statement from EPA on the objectives and mechanics of the coring. G.E. proposed a series of working meetings between EPA, G.E. and all interested parties done on a monthly basis. Meetings would be to give regular updates on progress of work, and give everyone a chance to raise questions and give comment along the way.

Mr. McCabe responded to Mr. Lanahan as follows: Regarding proposal for monthly meetings - EPA will take the idea back to the Region, however, that within the CIP there is opportunity for regular meetings via the Steering Committee, Liaison Groups or HROC. Mr. McCabe stated that monthly meetings may not be appropriate given the schedule of deliverables - sampling events, etc.

Mr. Lanahan stated that monthly meetings would be helpful since the schedule for work is an ambitious one, work will be happening at a very rapid pace, and in order to maximize participation and give people who are interested a chance to contribute.

Mr. Tomchuk added to Mr. McCabe's response: Just a few points - as far as the data collection is concerned, there is a lot of scientific interpretation to be done from the data, and we feel that our consultants have that type of capability, or we would not have authorized them to do the work in the first place. As for community involvement, including G.E., we will take your comments as appropriate, and as far as other meetings are concerned, I think that is something that may fall into the scope of the Scientific & Technical Committee.

As far as the chain or custody in the historic core analysis - obviously that is not the same data quality objective level as in our other samples, which will have a full chain of custody. I think that is laid out in the attached Sampling Plan. As for the Work Plan, it is just that and not an outline. It is a Work Plan, it is not a Quality Assurance Plan, it does not give specifics of how we are going to do the analyses on the different chemicals. That is a different document in the Superfund process.

Bridget Barclay of Sloop Clearwater asked for a more detailed explanation of the human health risk assessment as relating to Phase 1 and how it differs in each study area.

Mr. Tomchuk explained that in Phase 1 EPA performed an interim human health risk assessment for area B on the exposure and consumption of fish within the upper Hudson region. I believe that we mentioned that we are thinking of doing a risk assessment from the concentration in the Poughkeepsie water supply, since some concerns have been voiced there. I do not believe that we are looking at exposure through fish consumption in the lower river at this point. Basically the concentrations in the fish in the upper river are higher, so it is a worst case scenario.

Sharon Ruggi of the Citizens Liaison Group and C.E.A.S.E. commented that while the Phase 2 Work Plan appears comprehensive, it would be more easily understood if the Responsiveness Summary were available. She also inquired whether the NYSDEC fish data from 1991 would be congener specific?

Mr. Tomchuk responded that fish analysis has already been done and that it is not congener specific.

Ms. Ruggi also inquired as to the role of the Scientific & Technical Committee during Phase 2.

Mr. Tomchuk responded that EPA consults with the STC on many matters, including the Phase 2 Work Plan. EPA will probably have a meeting with the STC on the Phase 2 Work Plan in the near future.

Sharon Ruggi expressed a concern that Dr. Richard Bopp would be involved with some of the analyses, since he is a former NYSDEC employee and vocal dredge advocate, and also inquired as to how much of the work Dr. Bopp would be responsible for.

Mr. Tomchuk replied that Dr. Bopp will be performing work on water column samples under a sub-contract to Lamont-Dougherty. Mr. Tomchuk then introduced Paul Simon of EPA's Office of Regional Counsel for further clarification of Dr. Bopp's role.

Mr. Simon stated that Dr. Bopp is not in a decision-making role on the project and even his interpretations are subject to the review of TAMS and EPA.

Pete Lanahan of G.E. inquired as to Dr. Bopp's role in the development of the methodology of the Work Plan; and voiced concern about the techniques outlined in the Work Plan.

Mr. Tomchuk replied that TAMS has developed the methodology and recommended the techniques to be used. Although there have been contacts with Dr. Bopp at the NYSDEC, TAMS developed the Work Plan.

Ed Garvey of TAMS addressed the question raised about the technique of radionuclide dating by stating that radionuclide dating for sediment cores was not developed by Dr. Bopp; that this technique has been used by a number of geological institutions, Lamont-Dougherty being one of many. Radionuclide dating has been used in many lake and estuary studies.

John Claussen of G.E. raised the concern that he sees a problem in using high resolution coring and radionuclide dating in a flowing river as opposed to a lake. He also reiterated the need for a "work group" as suggested by Pete Lanahan.

Ed Garvey responded that is why the sites for high resolution coring in high deposition areas have been so carefully chosen. He added that high resolution coring is very distinct and it is really a reflection of what is in the water column over any given year. It is not a reflection of the PCBs in the sediment in any given year. We are using high resolution coring in the river not to look at river sediments, but to see what has gone past this point in the water column over time.

George McGowan of the Warren County SWCD and the Agricultural Liaison Group mentioned a 1981 NIOSH epidemiological study of workers exposed to PCBs that came up with an overall rate of cancer that was less than the national average. Is EPA looking at that study? Is there any evidence of human health problems because of PCB exposure (specifically fish ingestion).

Mr. Tomchuk responded that epidemiological studies have a large degree of uncertainty, but that this particular study will be looked at during Phase 2 for the risk assessment. He added that more than just epidemiological studies go into a risk assessment. Mr. Tomchuk also mentioned recent studies that cite developmental effects in young children exposed to PCBs.

A question came from the audience as to whether Poughkeepsie is the only water supply that is going to be looked at in the risk assessment for Phase 2.

Mr. Tomchuk responded that we are still looking at whether we will do a risk assessment on the Poughkeepsie water supply, and added that the Waterford water supply has had a risk assessment done in 1990 by NYSDEC and the intakes of that water supply met EPA, DEC and DOH applicable standards for drinking water.

John Haggard of G.E. raised a number of issues: high-resolution coring - EPA seems to be studying the water column and assumes that the cores will provide historical data. Since the upper river appears to be the focus, why look at the entire river? In addition, have any cores taken by Lamont-Dougherty in the upper river ever shown constant deposition? What's the objective?

Mr. Tomchuk responded that there are multiple objectives in the data sampling. As to the lower river, the effects of contamination in the upper river on the lower river are part of this study. The movement of PCBs into the lower river biota, into the food chain is very much a concern. EPA does not have much water column data in the lower river, historically. However, we can integrate that data with the fish data if we have the cores from the lower river. Mr. Tomchuk then deferred to Ed Garvey of TAMS regarding the upper river cores.

Mr. Garvey stated that radionuclide interpretation of up river cores show clear deposition rates of approximately 1 centimeter per year over 20 years. The most recent water column data that EPA has, other than that G.E. has collected is largely non detect data. We do not have water column data for what was happening, particularly congener mixes, in the river during the 1980's. We need to know if what is happening in the river now is what has happened in its past. The problem with water column data is that it is really a snapshot and you don't know how to extrapolate it over time. Sediments on the other hand, are time-integrated samples, they represent a whole year, or two or three years in a

single sample. So, we must counter balance the two and not use any one single piece of information by itself.

High resolution coring in addition to historic water column sampling in addition to current water column measurements will all be integrated together in an interpretation of what is currently occurring in the river and what remediation would be necessary to remediate the problem.

Another reason for high resolution coring in the upper Hudson is that it provides archive cores versus recent cores and a way to look at in-situ degradation.

Celia Murray asked if studies that are being submitted by G.E. subject to peer review in the process.

Mr. Tomchuk stated that the peer process for G.E.'s studies is a separate scientific process, and not part of the EPA Reassessment.

Ed Garvey of TAMS gave comment regarding questions about the archived cores and their analyses. He stated that the extracts of the archived cores will be analyzed, utilizing congener-specific analysis and also on the comparable layer from the recent cores.

John Haggard of G.E. raised a concern that congener specific analysis is not being used on fish. Since it is being done on cores and water column samples, why not in the media of concern (i.e., fish)?

Mr. Tomchuk referred this point to Ron Sloan of NYSDEC for response.

Mr. Sloan responded that this process is very costly and time consuming.

Mr. Tomchuk added that this process may not be reliable because of the preferential uptake of congeners in fish and also because of bioaccumulation rates.

Mr. Sloan also made mention of the fact that G.E. may be asking for this type of analysis in fish since it is so complex and could be used as a delay tactic.

John Claussen of G.E. reiterated that it is G.E.'s feeling that congener specific analysis of fish is extremely important.

Mr. Tomchuk reminded Mr. Claussen that G.E. could take this up in their comments to the Phase 2 Work Plan and also stated that this issue was being answered by Mr. Sloan of NYSDEC, and that NYSDEC's feelings may or may not be shared by EPA.

Bill Ports of NYSDEC raised a question on whether EPA will be studying depositional areas within Study Area B.

Mr. Tomchuk responded that EPA can determine where sediments are deposited and depths of fine grain sediments through the geophysical efforts and confirmatory sampling.

Celia Murray inquired as to whether there will be a health risk assessment of breakdown products during Phase 2.

Mr. Tomchuk responded that there are no plans to do a health risk assessment on breakdown products during Phase 2.

Bridget Barclay had a question about how EPA will gather information on fish consumption, cooking practices, etc. Will a survey be done as opposed to examining the existing literature?

Mr. Tomchuk referred to the meeting held in February on risk assessment, during which these points came up. He stated that EPA will be examining the existing literature and will not be doing any surveys.

John Haggard of G.E. made note of the considerable amount of geophysical and sediment data that will be generated during Phase 2 and inquired as to how that data will be made available to the public.

Mr. Tomchuk responded that EPA can not release unvalidated data. Mr. McCabe reiterated that whatever data can be released will be released via the mechanism of the CIP.

A concerned citizen requested to know the costs of Phase 1 and wanted to know what kind of budget constraints EPA is operating under.

Mr. McCabe responded that he would have to check to see how that kind of information is released.

Judy Dean, Chairperson of the Citizens Liaison Group stated that she was concerned as were many of her neighbors about the fact that this meeting was being held in a location that is not convenient to those who would be most affected by whatever remedy EPA decides upon for the river.

Ann Rychlenski responded that since budget limitations were a problem, only one meeting could be held and since the site is defined as the 200 mile stretch of river, a central location was necessary.

George McGowan added that in consideration of these upriver interests, perhaps another meeting could be held.

Celia Murray asked that EPA do meetings throughout the river area when we get to the FS and Proposed Plan so that all constituencies who are affected differently could all participate fully.

Ms. Murray's comment was agreed upon by the representatives from EPA and the assembled. EPA is planning to hold public meetings at both up and down river locations after the Phase 2 Report and the Phase 3 report/Proposed Plan are issued.

The meeting was concluded at approximately 10:00 p.m.