MEETING SUMMARY

of the

HEALTH AND RESEARCH SUBCOMMITTEE

of the

NATIONAL ENVIRONMENTAL JUSTICE ADVISORY COUNCIL

December 5, 2001
Seattle, Washington

Meeting Summary Accepted By:

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J ane S ahl
Vice-Chair

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CHAPTER FOUR
MEETING
OF THE
HEALTH AND RESEARCH SUBCOMMITTEE

1.0 INTRODUCTION

The Health and Research Subcommittee of the National Environmental Justice Advisory Council (NEJAC) conducted a one-day meeting on Wednesday, December 5, 2001, during a four-day meeting of the NEJAC in Seattle, Washington. Ms. Jane Stahl, Connecticut Department of Environmental Protection, continues to serve as vice-chair of the subcommittee. Ms. Brenda Washington, Office of Research and Development, U.S. Environmental Protection Agency (EPA), and Aretha Brockett, EPA Office of Pollution Prevention and Toxics, continue to serve as the co-Designated Federal Officers (DFO) for the subcommittee. Exhibit 4-1 presents a list of the members who attended the meeting and identifies those members who were unable to attend.

This chapter, which provides a summary of the deliberations of the Health and Research Subcommittee, is organized in five sections, including this *Introduction*. Section 2.0, *Remarks*, summarizes the opening remarks of the vice-chair and the co-DFO. Section 3.0, *Presentations and Reports,* presents an overview of each presentation and report, as well as a summary of relevant questions and comments offered by the members of the subcommittee and the speakers. Section 4.0, *Summary of Public Dialogue*, summarizes discussions that took place during the public dialogue period provided by the subcommittee. Section 5.0, *Action Items*, summarizes the action items agreed upon by the members of the subcommittee.

2.0 REMARKS

Ms. Jane Stahl, vice-chair of the Health and Research Subcommittee, opened the subcommittee meeting by welcoming the members present and Ms. Brenda Washington, the co-DFO. She encouraged the speakers and members of the audience to introduce themselves, and they did so. Mr. Martin Halper, Senior Science Advisor, EPA Office of Environmental Justice, also was present and participated extensively in the discussions.

Continuing, Ms. Stahl provided background information about the NEJAC and the function of the Health and Research Subcommittee. She stated that the issue of fish consumption currently is the principal concern of the subcommittee. She then identified four aspects of the issue:

Exhibit 4-2

Exhibit 4-

DEFINITIONS
OF CO-RISK AND CUMULATIVE RISK

Co-Risk: Risk associated with an individual's responses to environmental contaminants, not specifically related to toxic exposure, such as, but not limited to, underlying health status, baseline quality of diet, genetics, and socioeconomic status.

Cumulative Risk: Risk associated with multiple pollutants by multiple pathways that cumulatively may cause a variety of adverse effects on humans, plants, or animals or even effects on ecological systems and their processes and functions.

HEALTH AND RESEARCH SUBCOMMITTEE

Members Who Attended the Meeting
December 5, 2001

Ms. Jane Stahl, **Vice-Chair**
Ms. Brenda Washington, **co-DFO**

Ms. Pamela Kingfisher
Mr. Richard Gragg, III

Members
Who Were Unable To Attend

Ms. Rose Marie Augustine, **Chair**
Mr. Lawrence Dark
Mr. Carlos Porras
Mr. Philip Lewis
Ms. Aretha Brockett, **co-DFO**

- What is known
- What is not known
- What knowledge must be gathered
- Whether the current risk assessment strategy adequately addresses issues of environmental justice issues related to the issue.

Ms. Stahl stated that the goal for the subcommittee meeting was to develop a better understanding of research on fish consumption, so that the subcommittee will be able to comment more knowledgeably on the recommendations currently before the NEJAC Executive Council or develop new recommendations that include a "specific bent" on health and research needs.

3.0 PRESENTATIONS AND REPORTS

This section summarizes the presentations made to the Health and Research Subcommittee.

3.1 Presentation on the Status of Research

Mr. Patrick West, Emeritus Faculty, Environmental Sociology, School of Natural Resources and Environment, University of Michigan, presented an overview about the status of research on the

consumption of fish. Mr. West made three major points. First, he said, the need for research should not be a barrier to action. Continuing, Mr. West stated that there is no area in which perfect research has been completed; however, he said, there often has been sufficient data collected to support action. He stated that strong recommendations related to point source discharges could be made on the basis of the results of studies that have identified consumption limits based on comparative grams per day (gpd). Strong recommendations for remediation of point source and non-point source discharges can be made when human consumption is 60 to 90 gpd, continued Mr. West. The studies, he said, provide a scientific basis for taking action related to a sensitive group when the gpd consumption in that community is known, even when no specific study of that community has been performed.

Second, said Mr. West, a concerted effort should be made to investigate existing research so that the scientific community can expand its knowledge base. Information exchange is weak, he noted, especially in the area of fish consumption; such exchange of information should be strengthened, he suggested. Mr. West then noted that a number of useful studies have been conducted by local communities, but are unknown to the greater scientific community. He added that a great deal of information has been gathered through studies of other subjects that may be helpful in the area of environmental justice. For example, he said, a study may have considered race as a factor, but may not have considered the amounts of fish consumed by race. Such data can be reassessed for correlations with race without requiring significant additional effort, Mr. West pointed out.

Finally, Mr. West identified the issues of co-risk and cumulative risk as areas in which additional research is needed. Exhibit 4-2 presents definitions of those two concepts. Mr. West pinpointed co-risk and cumulative risk as the most important topics of discussion. Exposure to toxic contaminants in fish can pose increased risk when an individual also is subject to such co-risk factors as the adverse health effects associated with low-income status, he said. Therefore, co-risk factors are an essential part of accurate risk assessment, he declared. On the other hand, he pointed out, many of the studies that have evaluated co-risk have attributed poor health after exposure to contaminants only to co-risk factors, rather than to the toxicity of the contaminants. He said that such attribution to co-risk factors is incorrect. Such findings, he said, are a means of "getting toxins off the hook" as a cause of adverse health effects. Such adverse effects, he concluded, instead are caused by the interaction of co-risk factors and toxicity.

Mr. Halper then clarified Mr. West's definition of co-risk by classifying biological effects in terms of susceptibility and non-biological effects in terms of vulnerability. The non-biological effects or vulnerability would be co-risk factors, he said. Examples of vulnerability, continued Mr. Halper, would include asthma in children and effects associated with religious practices. For example, Mr. Halper described a scenario under which increased vulnerability as a result of asthma may lead to a greater susceptibility to the toxicity of certain contaminants. Mr. Halper then discussed religious and cultural practices that require the eating of fish. The psychological effects associated with not eating the fish or eating fish that are contaminated increase the susceptibility of the individual and the culture to the effects of toxins, said Mr. Halper. Mr. West then expressed agreement with Mr. Halper's comments.

Cultural health is a co-risk factor, stated Mr. West. The study of co-risk factors has led the scientific community to reconsider the definition of what health is -- whether it is only physical or whether it is cultural, as well. Mr. West described loss of culture as a loss of individual identity that can lead to a number of physiological ailments, such as substance abuse, homicide, and suicide. Such physiological effects in turn are related directly to human health.

Most of the research available, said Mr. West, consists of testimonials from affected groups about such factors as peak exposure and consumption of all parts of the fish. However, he continued, to obtain useful information about co-risk factors, he stated, "systematic qualitative" and "systematic testimonial" research must be done. The research, he continued, should meet a number of requirements. First, it should focus equally on sensitive groups, rather than favoring one group over another, he explained. Currently, most studies of co-risk factors focus on Native Americans and ignore other sensitive groups, he said. For example, continued Mr. West, African-American fishermen along the Detroit River who eat large amounts of contaminated fish for subsistence are one group that has not been studied. Further, he continued, the work should not equate low–income populations with minority populations because many low-income communities at risk are not minority communities. He pointed to low-income communities in Minnesota of which the residents overwhelmingly are white.

Research, said Mr. West, should be conducted in a manner that fosters partnerships between

communities and experts by inviting communities to complete their own research with the guidance of experts. Finally, he added, the results should be presented in a manner that is readily communicable to the community. Often, he said in conclusion, members of communities do not understand such terms as "grams per day," and fish advisories therefore are ignored.

3.2 Presentation on Risk Assessment and Methodology

Ms. Tala Henry, EPA National Health and Environmental Effects Laboratory, made a presentation that included comments related to Mr. West's remarks, as well as information about her work in hazardous waste risk assessment. She expressed agreement with Mr. West that the lack of perfect data should not be an impediment to action. Continuing, she stated that EPA ORD often encounters that problem when the agency creates rules and completes risk assessments for pesticide registrations and hazardous waste sites. The approach EPA ORD has taken is to quantify risk as accurately as possible, she said, and to carefully describe the assumptions made in developing the results, as well as the uncertainties associated with those results.

Ms. Henry also stated agreement that co-risk is an area in which research is needed and that it is a very intangible area to define. She noted that EPA currently is working to define cumulative risk more clearly. That effort, she noted, takes an ecosystem-based approach that considers both human and ecological health. Continuing, she discussed susceptibility and vulnerability, stating that "within susceptibility lies exposure and effect."

EPA has created default values and methods for risk assessment; however, there is no definitive rule for the conduct of assessment, said Ms. Henry. It is typical and acceptable to adjust default values to reflect site-specific circumstances, she continued. She explained that such adjustments typically are made for sites that affect sensitive groups, such as members of tribes who consume larger than average amounts of fish, Superfund sites, and sites addressed under the provisions of the Resource Conservation and Recovery Act (RCRA). In addition, she noted, many scenarios use a variety of values for parameters, thereby increasing the accuracy of the risk assessment.

Ms. Pamela Kingfisher, Indigenous Women's Network, asked for clarification of the phrase "move off the default values," which Ms. Henry had used in her discussion of adjustments to values used in risk assessment. Ms. Henry replied that certain numerical values are considered typical for parameters in risk assessment equations. Such values include weight, duration of exposure, and exposure rates, she continued. Choosing different values for the parameters that apply to a specific site or group would constitute "moving off the default," she explained.

Participants in the meeting engaged in much discussion related to Ms. Henry's presentation. Mr. Wardner G. Penberthy, EPA Chemical Control Division, commented that, to increase the accuracy of risk assessment, a broader variety of tissues of animals used as subsistence foods must be evaluated. Ms. Henry added that experts should be aware of new chemicals that may be present and that may have adverse health effects. Mr. West suggested that both prevention and remediation of contamination should be instituted after risk has been quantified. Ms. Stahl agreed that remediation is not effective if the source of contamination is not removed.

The participants conducted much discussion of the various presentations that had been made. Ms. Kingfisher pointed out that Hawaiians, people in the Caribbean, and those inhabitants of other island groups had been omitted from consideration in evaluations of fish consumption. She recommended that those groups be included in such efforts. Mr. Halper recommended that other subsistence food not eaten by the broader population be included in risk assessment models. Ms. Kingfisher then stated that cultural and spiritual aspects had not been included to the extent desirable in consideration of the risk assessment issue. To encompass more cultural aspects, it is necessary to include other pathways in addition to food when assessing exposure to sensitive communities, added Mr. Halper, noting that such pathways might include religious practices and dermal exposure.

3.3 Presentation on the Toxic Substances Control Act and EPA's High Production Volume Challenge Program

Mr. Penberthy presented both an overview of Section 4 of the Toxic Substances Control Act (TSCA) and information about EPA's High Production Volume (HPV) Challenge program. He distributed a handout that described both programs. Mr. Penberthy stated that TSCA had become effective on January 1, 1977. The legislation does not supersede the Clean Water Act, the Clean Air Act, or Superfund, he added. Its original purpose, he explained, was to fill gaps in previous legislation.

TSCA gives EPA the authority to gather information about exposures that affect health and safety and to require testing and control exposures related to "new" and "existing" industrial chemicals. An "existing" chemical is defined as one that is listed on TSCA's 1977 inventory of chemicals in the United States market and "new" chemicals as those not included on that list. Currently, he continued, 74,000 chemicals in use in that market are recorded in the inventory. Substances that are not covered by TSCA include pesticides, tobacco, tobacco products, firearms, ammunition, nuclear materials (source, special, or byproducts), foods, food additives, drugs, medical devices, and cosmetics, he continued.

Exhibit 4-3

HIGH PRODUCTION VOLUME CHALLENGE PROGRAM

The U.S. Environmental Protection Agency's (EPA) High Production Volume (HPV) Challenge Program is a program through which chemical companies voluntarily provide basic information about the toxicity of their HPV chemicals. HPV chemicals are those chemicals that are produced in or imported to the United States amounts that exceed one million pounds per year. The program uses the standard tests, procedures, and formatting of results used in the Screening Information Data Set (SIDS) program, a cooperative, international effort to secure basic toxicity information on HPV chemicals worldwide.

Detailed Information about EPA's HPV Challenge Program can be found on the Internet at: <*http://www.hpvchallenge.com*>, as well as at <*http://www.epa.gov/chemrtk*>.

Mr. Penberthy then stated that Section 4 of TSCA addresses chemical testing. The policy, he explained, states that adequate data on the health effects of chemicals is to be the responsibility of those entities that manufacture and process the chemicals. To ensure that such responsibility is met, EPA constructed test rules and negotiated testing agreements and enforceable consent agreements. Creation of an enforceable consent agreement is a great deal cheaper, easier, and less time-consuming than creating new regulations, he observed.

Four findings must be made about a chemical before a rule governing it can be developed, Mr. Penberthy continued. They are: a hazard or "A" finding, an exposure or "B" finding, a "data adequacy" finding, and a "testing is necessary" finding. An "A" finding is made when existing data show that the chemical presents an unreasonable risk to human health or the environment and that there is a probability of exposure, he explained. A "B" finding is made when a chemical is produced or imported in large quantities and is released into the environment or causes significant or substantial human exposure. A "data adequacy" finding indicates that current data are inadequate to support the conduct of a risk assessment. Finally, he said, a "testing is necessary" finding indicates that testing is required to conduct a risk assessment.

Ms. Stahl then asked Mr. Penberthy to define the term "unreasonable risk" as he had used that term. She also asked how a finding can be made if the data available are not adequate, especially, she noted, in the case of an "A" finding. Mr. Penberthy replied that an "A" finding is the most difficult finding to make. A "B" finding is much easier to make, he continued; for such a finding, four items are necessary. A substantial production or importation is defined as one million pounds or more per year. Next, there must be a substantial release of the chemical that at least 1 million pounds or 10 percent of the volume, continued Mr. Penberthy. Third, substantial exposure is defined as exposure of 1,000 workers, 10,000 consumers, or 100,000 members of the general population. For a "B" finding, the first item and one of the three other items must be applicable, he said. Finally, human exposure must be significant, he added.

Mr. Penberthy then discussed EPA's new voluntary testing program, the High Production Volume Challenge program, more commonly known as the HPV Challenge. The purpose of the HPV Challenge program is to make available to the public by 2005 a baseline set of data on health and environmental effects for approximately 2,800 HPV chemicals. The program is necessary, said Mr. Penberthy because there are no publicly available studies on 43 percent of HPV chemicals in use in the United States. Further, he added, for seven percent of such chemicals, there are no full sets of publicly available studies. Exhibit 4-3 presents information about the HPV Challenge program.

Data being developed for the effort include information about solubility in water, vapor pressure, biodegradation, acute toxicity, toxicity of repeated doses, genetic toxicity, and reproductive toxicity, said Mr. Penberthy. Concepts that are stressed under the program, he continued, include public involvement in each step of the process and consideration of animal welfare.

In response to the question of a member of the audience about whether the program considers the

cumulative and synergistic effects of chemicals, Mr. Penberthy stated that the HPV program provides information about individual chemicals only. Continuing, he noted that the program would allow experts to more accurately identify those chemicals that require more detailed study to address such issues as cumulative and synergistic effects.
Mr. Penberthy stated that the testing program had produced the following results for 470 companies participating: 120 chemicals covered by test rules; 70 chemicals covered by negotiated testing agreements and enforceable testing agreements; 400 chemicals covered by voluntary testing agreements; 2,155 chemicals being secured for basic hazard data by the HPV Challenge; and 250 chemicals covered by formal decisions not to test.

In response to a question posed by Ms. Kingfisher, Mr. Penberthy stated that the health information about the chemicals studied would be available to the public through the Internet. Additional methods of disseminating the information would be created by each state and could include such methods as fact sheets, he added.

Mr. Penberthy then stated that companies had begun to submit plans that set forth their methods and timetables for obtaining health information about the chemicals they manufacture and providing that information to EPA. Those plans will be published on the Internet and will be made available for public comment. In addition, EPA will attempt to fill data gaps left by companies that have not volunteered to provide information about the chemicals they produce, he said.

The participants discussed Mr. Penberthy's presentation at length. All members of the subcommittee and speakers agreed that it is both helpful and necessary to have baseline health information on a broad range of chemicals. However, there was some debate about how financially feasible the task of developing such information might be. Mr. Halper stated that the cost of analytical testing for chemicals in fish could be hundreds of thousands of dollars for each chemical. Such tests would be used to develop parameters for risk assessment, he noted. Ms. Henry then suggested that, on the other hand, current knowledge of chemical fate, lipid content, and bioaccumulation would allow performance of some of the analyses mathematically.

Ms. Kingfisher stated that she would find it difficult to trust chemical companies to do their own reporting, adding that the program involves a great deal of trust in the chemical companies on the part of EPA and that tribal communities are not shown such trust in the case of work that they have done or are willing to do. Mr. Penberthy replied that the standard protocol for assessing basic health data for the chemicals ensure some safeguard against falsification and increase accuracy on a technical level. In support of Mr. Penberthy's position, Mr. Halper added that the EPA Office of Enforcement investigates, in detail, the record keeping of the laboratories that perform the analyses. Problems identified have resulted in prosecution, added Mr. Halper.

3.4 Presentation on the Structure of the Subcommittees of the NEJAC

Mr. Jeffrey Morris, EPA ORD, Office of Science Policy, recommended a change in the structure of the subcommittees of the NEJAC. He distributed a handout that outlined the evolution of the Health and Research Subcommittee and the changes that his agency was proposing. The handout stated that EPA ORD and EPA Office of Prevention, Pesticides, and Toxic Substances (OPPTS) had been providing financial and administrative support to the NEJAC since 1993. Recently, it continued, the director of the Office of Environmental Justice (OEJ) had begun to develop a new vision of the structure and function of the NEJAC and its subcommittees. OEJ had asked ORD and OPPTS to discuss changes in the NEJAC and in the Health and Research Subcommittee that would enhance their interaction with EPA and their ability to provide sound advice and recommendations that are appropriate in light of EPA's priorities.

Mr. Morris then discussed the outcome of that discussion. The proposal that was developed, he continued, is that each subcommittee of the NEJAC align itself with EPA's goals related to the Government Performance and Results Act (GPRA). The purpose of the GPRA is to improve public confidence in the performance of federal agencies by holding each agency responsible for achieving the goals of its programs, he continued. EPA has 10 goals, Mr. Morris explained, stating that they relate to air, water, safe food, safe communities, hazardous waste, enforcement, information, sound science, and effective management.

The NEJAC Air and Water subcommittee addresses the first two goals, he continued. Health and research issues related to environmental justice cross the boundaries among subcommittees, he said; therefore, specific issues should be handled by the applicable subcommittee, rather than by a separate subcommittee Mr. Morris added that the other eight goals could be considered by the NEJAC as a whole. He then stated that the Health and Research Subcommittee should be redefined to

address the goal of safe communities and should work with ORD and OPPTS; those two offices, he noted, already have focused on that goal as issues of environmental justice affect it. Other sources of assistance might include the Interagency Working Group on Environmental Justice (IWG), EPA's new Tribal Science Council, and regional science councils, suggested Mr. Morris. He added that much of the work on cumulative risk could be based on the Superfund program.

Ms. Stahl then referred to questions about reworking the NEJAC that had been raised recently. She stated that the NEJAC meeting in August 2001 was an effort on the part of the NEJAC to "save itself." The NEJAC sought to determine whether the council was meeting its goals and whether it was worth the resources devoted to it, she continued. Ms. Stahl said that only subcommittees, such as the Air and Water Subcommittee, which address issues related to media, were producing tangible results. She stated that the Health and Research Subcommittee played a supporting role in the NEJAC. The products the subcommittee produced were valuable in and of themselves, she observed, but were not aligned with the strategic goals of the NEJAC. She then stated her belief that the fate of the subcommittee should be brought up first by the Health and Research Subcommittee itself. The position of ORD and OPPTS should be considered, said Ms. Stahl, but it should not be the only factor considered in the evaluation. Mr. Morris responded that ORD and OPPTS intended the proposal to facilitate discussion of possible changes in the NEJAC.

4.0 SUMMARY OF PUBLIC DIALOGUE

Ms. Stahl encouraged public dialogue on topics that had been discussed by the members of the subcommittee during its meeting. This section summarizes dialogue among members of the subcommittee, speakers, and other individuals. In addition, two written comments on topics discussed during the meeting that were submitted by members of the audience are included in the summary below.

4.1 Mr. Walter Redmon, U.S. Environmental Protection Agency Region 5

Mr. Walter Redmon, EPA Region 5, discussed contaminants in fish as they are related to his work on the Great Lakes. He recalled that mercury first was found in sediments of the Saint Clair River in 1969 and 1970. Before that time, he continued, it had been assumed that mercury would not bioaccumulate because it was inert and that it therefore would not create a problem. Next, continued Mr. Redmon, DDT was found in the river. Monitoring of the lakes began at that time, he said, adding that levels of contaminants were tracked in lake trout approximately 7 to 8 pounds in size. The monitoring has continued since 1970 and has provided a trend line of contaminants in fish that is more thorough than any other currently available, he stated.

Mr. Redmon explained that the trend-monitoring program, which was designed by a statistician, required the collection of 100 fish, equaling 10 fish composites. The large sample number allows sensitivity to small changes in contaminant levels in fish tissue, he pointed out. The trend line identified through the monitoring effort has shown that levels of every pollutant except mercury have declined dramatically, by more than 90 percent, over the time frame of the sampling, stated Mr. Redmon.

Mr. Redmon then referred to another study conducted by EPA in the 1980s under which various species of fish from throughout the United States were sampled. The study considered 65 contaminants, one of which was dioxin, which had not been considered in any prior study, he stated. Technology had advanced to a point that made it possible to detect dioxin at the levels being observed in fish he added. Mr. Redmon then explained that the results showed approximately the levels of contaminants predicted, except in the case of mercury. Mercury was found in areas where it was not expected to be. Mercury, he declared, is tied to certain circumstances, such as air pollution, which are present over a wide range of areas. For several years, the Great Lakes had been thought to be the only area where mercury would be found, he continued, because that region was the only one for which data were available. However, elevated levels of mercury were identified in other regions, as well, although those regions had not been evaluated previously, said Mr. Redmon. Therefore, he stated in conclusion, it is not appropriate to assume that there are no elevated levels of contaminants in a certain area simply because that area has not been evaluated.

Currently, Mr. Redmon continued, there is a new study on contaminants in fish tissue that also is statistically designed and that uses randomly selected sampling sites. The list of contaminants being considered has been expanded further to include previously unevaluated chemicals, such as new pesticides. The Great Lakes was excluded from the study because there is a great deal of sample data on that region, he noted. Mr. Redmon then stated that he expects to find the same

contaminants that were found in the previous Great Lakes study because he has found conditions to be similar throughout the country, except in areas in the immediate vicinity of sources.

Mr. Redmon then described another study conducted by EPA Region 5 from 1970 through 1980. That study, he explained, had evaluated streams as a collection system for contaminants. The study analyzed whole fish collected at 80 to 90 sites in the five-state region that were in the downstream sections of larger basins. The agency conducted scans of the contaminants present in the fish, reported Mr. Redmon, adding that the results of the study had been published in 1980.

4.2 Ms. Heather Halsey, State of California Governor's Office of Planning and Research

Ms. Heather Halsey, State of California Governor's Office of Planning and Research, first commented on Mr. Penberthy's presentation. She clarified the difference between rules and statutes, stating that the NEJAC can make recommendations to EPA about rulemaking, but that only Congress can enact statutes. Ms. Halsey refuted the notion that EPA merely implement statutes enacted by Congress. She referred to the first slide Mr. Penberthy's presentation that read TSCA "gives EPA broad authority to gather information on health/safety and exposure for, require testing of, and control exposure to 'new' and 'existing' industrial chemicals." That statement, said Ms. Halsey, seems to suggest that EPA has the authority to create its own rules in fulfilling its purpose. Turning to the subject of parameters for risk assessment, Ms. Halsey stated that it is important to include small numbers as significant. For example, she explained, there may be a tribe that has only a small number of members; however, if each of the members is experiencing adverse effects caused by contaminants in fish, that fact should be considered significant.

4.3 Written Comment Submitted by Ms. Kendra Zamzow, Alaska Community Action on Toxics

Ms. Kendra Zamzow, Alaska Community Action on Toxics, submitted written comments on several issues discussed by the members of the subcommittee. Discussing the issue of risk assessment, Ms. Zamzow suggested that analysis of risk to fetuses, infants, and pregnant women, rather than determination of site-specific or culture-specific risk would be more cost effective and useful. She noted that such an approach would cross cultural and national boundaries and address all groups. In addition, she stated, action would be taken more quickly if policymakers were to consider risk that affects their children. In her statement, Ms. Zamzow recommended that the subcommittee and the NEJAC address biomagnification. In many Alaskan communities, she wrote, "a fish is eaten by a seal, which is eaten by a walrus, which is eaten by a human." Therefore, she concluded, a level of a contaminant that is safe in a fish may be unsafe level once it has biomagnified through the food chain and eaten by a human.

Turning to the topic of research, Ms. Zamzow's statement expressed her belief that the conduct of research on previously completed studies would be productive. In addition, she suggested, literature from other countries, such as Canada and European nations, should be researched, as well. Ms. Zamzow cited the Arctic Monitoring and Assessment Program as a good resource for information about bio-accumulative and persistent organic chemicals.

Ms. Zamzow also endorsed the fostering of partnerships between tribes and scientists. She mentioned in particular Mr. Ron Serudato of the State University of New York. She stated that Mr. Serudato had worked successfully with the Mohawk Nation to resolve issues related to water quality. He currently is working with the Village of Savoonga and Alaska Community Action on Toxics to raise issues of environmental justice related to contamination at an abandoned military site, she wrote. The Alaska Sea Otter and Sea Lion Commission is working with a research group from the University of Alaska to provide Alaskan communities the knowledge necessary to conduct a broad range of monitoring, she continued. Ms. Zamzow suggested that local listening groups could serve as links with local communities and scientists to bring recommendations to EPA.

In her written statement, Ms. Zamzow then questioned why companies still are permitted to manufacture chlorinated hydrocarbons. She wrote that it is "insane" to allow the chemical industry to be responsible for its own research.

4.4 Written Comment Submitted by Mr. Wilbur Slockish, Jr., Columbia River Education and Economic Development

Ms. Zamzow presented the written comments of Mr. Wilbur Slockish, Jr., Columbia River Education and Economic Development, related to the activities of the Health and Research Subcommittee. In his statement, Mr. Slockish stated his belief that the scientific method of risk assessment is wrong; he

expressed his objection to the inclusion of his culture in risk assessment. Risk assessment is based substantially on the physiology and physical characteristics of white populations, he wrote. Mr. Slockish stated that the physiology of his people differs from that of white people; his people therefore interact with chemicals in ways that differs from the way in which white people interact with such substances, he wrote. In his statement, he pointed out as illustration that it was highly probable that several of the white men present in the subcommittee meeting were bald or balding, but that no man in his tribe had ever lost his hair.

Continuing, Mr. Slockish expressed in his statement his belief that the NEJAC and EPA had not dealt appropriately with the problem of risks posed by the consumption of fish. He stated that EPA should stop the release of chemicals into the environment, rather than determine what levels of chemicals are safe. He then stated that such an approach to contamination could be accomplished only through a change in mind set and in the consumer lifestyle of the American culture.

5.0 ACTION ITEMS

This section summarizes the action items adopted by the subcommittee. Those action items are:

- Request that EPA OPPTS identify HPV chemicals that are potentially toxic and that can enter into the aquatic environment. Further, request that EPA OW work with OPPTS to identify a higher level of testing for HPV chemicals in fish. Request that additional testing and rulemaking be expedited when a pathway is identified.

- Request collaboration between and among federal agencies in sharing data about contaminant levels identified in fish and other aquatic resources. EPA should determine whether the Interagency Working Group on Environmental Justice should be assigned responsibility for the issue.