MEETING SUMMARY

of the

JOINT SESSION OF THE HEALTH AND RESEARCH AND THE WASTE AND FACILITY SITING SUBCOMMITTEES

of the

NATIONAL ENVIRONMENTAL JUSTICE ADVISORY COUNCIL

May 25, 2000
ATLANTA, GEORGIA

Meeting Summary Accepted By:

Vernice Miller-Travis
Chair of Waste and Facility Siting Subcommittee

Kent Benjamin
Office of Solid Waste and Emergency Response
U.S. Environmental Protection Agency
Designated Federal Official

Marinelle Payton
Chair of Health and Research Subcommittee

CHAPTER NINE
SUMMARY OF THE JOINT SESSION OF THE HEALTH AND RESEARCH AND THE WASTE AND FACILITY SITING SUBCOMMITTEES

1.0 INTRODUCTION

The Health and Research Subcommittee and the Waste and Facility Siting Subcommittee of the NEJAC met in a joint session on the afternoon of Thursday, May 25, 2000, to discuss the exposure investigation of Mossville, Calcasieu Parish, Louisiana, conducted by the Agency for Toxic Substances and Disease Registry (ATSDR) in November 1999. Invited guests (stakeholders) participating in the joint session included representatives of Mossville Environmental Action Now (M.E.A.N.), GreenPeace International, the Louisiana Department of Health and Hospitals (LDHH), the Louisiana Department of Environmental Quality (LDEQ), the Louisiana Chemical Association (LCA), U.S. Environmental Protection Agency (EPA) Region 6, and ATSDR. Exhibit 9-1 presents a list of the stakeholders who attended the meeting and participated in the discussion.

This chapter, which provides a summary of the deliberations of the joint session is organized in four sections, including this *Introduction*. Section 2.0, *Remarks*, presents summaries of the remarks offered by various speakers. Section 3.0, *Presentations*, summarizes the presentations on Mossville. Section 4.0, *Question and Answer Period*, summarizes the questions by the members of the subcommittee and the responses received.

Exhibit 9-1

JOINT SESSION OF THE HEALTH AND RESEARCH AND THE WASTE AND FACILITY SITING SUBCOMMITTEES

Stakeholders
Who Attended the Joint Session
May 25, 2000

Mr. Edgar Mouton and Ms. Dorothy Felix
Mossville Environmental Action Now

Dr. Pat Costner and Mr. Damu Smith
GreenPeace International

Mr. Jerry Clifford and Mr. Gregg Cooke
U.S. Environmental Protection Agency Region 6

Dr. Henry Falk, Dr. Ken Orloff, and Dr. Reuben Warren
Agency for Toxic Substances and Disease Registry

Dr. Joseph Sejud and Ms. Dianne Dugas
Louisiana Department of Health and Hospitals

Mr. Edward Flynn
Louisiana Chemical Association

2.0 REMARKS

Mr. Barry Hill, Director, EPA Office of Environmental Justice (OEJ), and Mr. Kent Benjamin, Environmental Justice Coordinator, EPA Outreach and Special Projects Staff (OSPS), Office of Solid Waste and Emergency Response (OSWER) and Designated Federal Official (DFO) of the Waste and Facility Siting Subcommittee of the NEJAC, served as facilitators for the joint session. Mr. Benjamin served as the DFO.

Mr. Hill opened the joint session by explaining that the purpose of the session was to allow the members of the subcommittee to gather from stakeholders information about the Mossville exposure investigation report so that the NEJAC would be able to identify a meaningful approach to addressing the environmental justice issues related to the investigation and make appropriate recommendations to EPA.

Mr. Benjamin reviewed the agenda of the joint session and urged participants to adhere to the time schedule set forth in the agenda. He told the audience that the joint session would unfold as a discussion between the NEJAC and the panelists that had been invited to address the subcommittees. He reminded the audience that the public was invited to observe the proceedings, but that observers would not be permitted to participate in the discussion.

Dr. Marinelle Payton, Environmental-Occupational Medicine, School of Public Health, Harvard University Medical School and chair of the Health and Research Subcommittee of the NEJAC, welcomed the stakeholders to the joint session. She noted that the joint session had been organized in response to a request by Mr. Damu Smith, Campaigner, GreenPeace International, that the Health and Research Subcommittee review and consider the Mossville exposure investigation. Dr. Payton reiterated that the purpose of the joint session was to allow the members of the two subcommittees and the stakeholders the opportunity to discuss the Mossville exposure investigation report.

Ms. Vernice Miller-Travis, Executive Director, Partnership for Sustainable Brownfields Redevelopment and chair of the Waste and Facility Siting Subcommittee of the NEJAC, noted that, since 1996, the Waste and Facility Siting Subcommittee had had discussions with representatives of M.E.A.N. and residents of Lake Charles and Calcasieu Parish, Louisiana that are formally on the record through public comment periods of the NEJAC. Continuing, she stated that the members of the community had asked the subcommittee for support and intervention. She emphasized that the Waste and Facility Siting Subcommittee viewed the joint session as a major step forward in the effort of the subcommittee to respond proactively on behalf of the NEJAC to the environmental justice issues that have been brought to that body's attention by members of the affected communities over the past four years.

Mr. Jerry Clifford, Deputy Regional Administrator, EPA Region 6, began the presentations by providing a geographical description and background of the community of Mossville. Mossville, he reported, is located in Calcasieu Parish in the southwest corner of Louisiana. He explained that, in 1997, the population of Calcasieu Parish was approximately 180,000, according to records of the Bureau of the Census, and that the parish is some 1,000 square miles in area. The community of Mossville, he continued, has a population of approximately 900 to 1,000. Mr. Clifford noted that Mossville is an unincorporated portion of Calcasieu Parish and is located between the communities of Westlake and Sulphur, Louisiana.

Mr. Clifford explained that there are more than 800 regulated facilities in Calcasieu Parish, noting that some 200 of those facilities are relatively large industrial operations. He stated that the industries in the area include refineries; petrochemical facilities that produce industrial organic chemicals; and chemical preparation facilities.

Mr. Clifford stated that, according to Toxics Release Inventory (TRI) data released by EPA in March 1999, roughly 13,000 tons of volatile organic compounds (VOC) are emitted each year by industrial facilities in the Mossville area. More than 13 million tons of hazardous waste are generated in Calcasieu Parish. According to EPA's Emergency Response Notification System, accidental releases from industrial facilities result in the discharge of more than 500,000 pounds per year of hazardous waste into the environment, Mr. Clifford stated.

Mr. Clifford stated that significant chemical contamination of the Calcasieu Estuary has occurred. The most extensive release to the estuary, he continued, was a five- to six-million-gallon spill of ethylene dichloride into the estuary between Lake Charles and Prien Lake, located south of Mossville. Mr. Clifford stated that fish advisories have been issued for the Calcasieu Estuary because of health considerations related to human ingestion of bioaccumulated contaminants in fish and shellfish harvested by local and commercial fishermen in the estuary and waterways connected to it.

Mr. Clifford then stated that seven facilities regulated under the Resource Conservation and Recovery Act (RCRA) are subject to corrective action. He noted that there was groundwater contamination at each of those seven facilities. He added that a private party had just begun cleanup at North Ryan Superfund Site, a former coal gassification facility located in the community of North Ryan. He stated that coal tar was the primary contaminant of concern at the North Ryan site.

3.0 PRESENTATIONS

This section summarizes presentations on Mossville.

3.1 Review of Findings Presented in the Exposure Investigation: Calcasieu Estuary (Mossville), Louisiana

Mr. Edgar Mouton, President, M.E.A.N., expressed his appreciation to the members of the two subcommittees for the opportunity to represent his community by voicing the environmental problems and needs of his community. He introduced Dr. Pat Costner, Senior Scientist, GreenPeace International, who provided a brief overview of her interpretation of the findings in the Mossville exposure investigation, which identified the presence of contamination with dioxins and polychlorinated biphenyls (PCB) in the community of Mossville.

Dr. Costner stated that the information collected by ATSDR during the exposure investigation supported the following conclusions:

- The average concentration of dioxins and PCBs found in the blood of 28 residents of Mossville is more than three times higher than the average background level in the general population, as represented by ATSDR's comparison group.

- On the basis of EPA's recent estimate of cancer risks caused by background dioxin exposure of the general population at 1 in 100 persons to 1

in 1,000 persons, the cancer risks of Mossville residents may average more than three times higher than the risk among the general population.

- The dioxin levels detected in blood samples from residents of Mossville indicate that the body burdens of the residents are at levels consistent with the occurrence of adverse health effects, such as increased susceptibility to viral disease and decreased sperm count. The adverse health effects have been documented in studies of several species of laboratory animals.

- The profile of relative concentrations of the seventeen most toxic dioxin congeners in blood samples from residents of Mossville differed substantially from that for ATSDR's comparison group, suggesting that one or more local sources of dioxin are contributing to the elevated blood dioxin levels in residents of Mossville.

- The blood levels of PCB congeners in residents of Mossville are an average of 2.8 times higher than the average levels found in ATSDR's comparison group. Further, in a manner similar to that for unique dioxin profile detected in blood samples, the unique profile of the congener types and concentrations of PCBs suggests that one or more local sources of PCBs are contributing to the elevated blood PCB levels in residents of Mossville.

- The total concentrations of dioxin and the total concentrations of PCBs detected in blood samples of the residents of Mossville appear to be independent of one another, suggesting that the chemicals may be released by different sources.

- Only one breast milk sample was collected and analyzed for dioxin and PCBs. The total concentration of dioxins and the concentrations of PCB congeners detected in the breast milk sample were 30 percent higher than the average concentration in the general population of nursing mothers in the United States from 1995 to 1997. That result supports the conclusion that some infants living in Mossville may experience higher prenatal and postnatal exposure to dioxins than the average infant in the United States.

- Two eggs from chickens raised by residents of Mossville carried concentrations of dioxins that were some 50 percent higher than concentrations measured in a supermarket egg and 23 percent higher than concentrations found in eggs collected in an uncontaminated area in the state of California.

- Concentrations of dioxins detected in soil samples from the yards of three residences in Mossville were an average of 17 times higher than concentrations detected in rural soil samples and an average of 1.5 times higher than concentrations detected in urban soils from various locations in the United States and Canada.

Dr. Costner stated that, in general, GreenPeace supports the recommendations made by ATSDR as presented in the ATSDR exposure investigation report, with the added provision that PCBs and other dioxin-like chemicals be included in future investigation activities. Exhibit 9-2 presents recommendations set forth by ATSDR in the exposure investigation report.

Dr. Costner further requested that ATSDR, EPA, LDEQ, and other relevant entities take the following actions, either working with the Mossville Environmental Justice Work Group (coordinated by ATSDR) or as a separate initiative, such as a collaborative, interagency emergency effort taken in consultation with the residents of Mossville. The additional actions recommended, she stated, are:

- Identify and eliminate local sources of dioxin and dioxin-like contaminants that are detected in the blood and breast milk of residents of Mossville, in the soils at their residences, and in their common food sources.

- As sources of dioxins and dioxin-like contaminants are identified and eliminated, conduct all appropriate actions to reduce exposure from any remaining reservoir sources, such as soils and sediment. Appropriate actions include full remediation of reservoir sources to provide protection and preservation of the local cultural and historical practices of home gardening, animal husbandry, hunting, and fishing.

- Relocate all residents who desire to move to areas that are free of significant threats of contamination by toxic substances.

- Issue a moratorium on new permits for activities or enterprises that release dioxins, dioxin-like chemicals, and other toxic chemicals into the environment in or near Mossville.

Exhibit 9-2

RECOMMENDATIONS PRESENTED BY THE AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY IN THE 1999 EXPOSURE INVESTIGATION: CALCASIEU ESTUARY

In November 1999, the Agency for Toxic Substances and Disease Registry (ATSDR) released a report on the investigation of dioxin contamination in Mossville, Calcasieu Parish, Louisiana. The purpose of the investigation was to determine whether there was sufficient evidence of increased exposure to dioxins among the residents of Mossville.

In the report, ATSDR set forth the following recommendations:

- Evaluate potential pathways for human exposure from environmental and dietary sources.
- Reduce human exposures to dioxin from the significant exposure pathways identified.
- Further characterize the extent of dioxin exposure in the community.
- Evaluate strategies to assess past exposures to dioxin.
- Examine indicators of health status for the community including statistics on the incidence of cancer.

Source: U.S. Department of Health and Human Services, ATSDR. 1999. Health Consultation (Exposure Investigation): Calcasieu Estuary (AKA Mossville), Lake Charles, Calcasieu Parish, Louisiana. CERCLIS No. LA002368173.

In closing, Dr. Costner stated that the elimination of dioxins and dioxin-like chemicals, such as PCBs, will result in both positive and negative economic effects in Mossville and nearby communities. She urged that Federal and state agencies mitigate the potentially negative economic effects by including transition planning processes as an integral component of any dioxin elimination strategy.

Mr. Mouton communicated the frustration felt by the residents of Mossville that little action has been taken to mitigate the environmental crisis taking place in their community. He requested that the residents of Mossville receive a relocation package and asked that a health center be established in the community to provide health consultation and treatment. Mr. Mouton stated that the members of M.E.A.N. believed that existing evidence is sufficient to justify more aggressive action by the Federal and state agencies on behalf of his community.

Ms. Dorothy Felix, Vice President, M.E.A.N., also communicated her frustration with the lack of progress by Federal and state agencies in actively addressing environmental health issues affecting Mossville. She then described for the members of the subcommittees a pattern of stall tactics, accusations, and insults directed at her organization by the Federal and state agencies they had approached for assistance.

Referring to the issue raised in the Mossville exposure investigation report related to whether the elevated levels of dioxins found in residents of Mossville are the result of past or current exposures, Ms. Felix stated, "We all know that it is both. My grandparents were contaminated, and so were my parents. I am still being contaminated, and so are my children and my grandchildren."

Ms. Felix urged that Federal and state agencies stop all insults, insinuations, and stall tactics and take an active role in the cleanup of Mossville.

Ms. Felix identified the following requests that M.E.A.N. wished to make of Federal and state agencies:

- Request that LDEQ and EPA assist the residents of Mossville in securing a relocation action.
- Request that ATSDR continue the Mossville Environmental Justice Work Group process.
- Request that ATSDR and LDHH establish an environmental health clinic and provide health services in Mossville.
- Request that LDEQ and EPA deny all new permits to facilities that have been proven to be the worst polluters of the community of Mossville until the facilities have installed the appropriate equipment to prevent accidental releases.
- Request that LDEQ and EPA require that polluting facilities install real-time air pollution monitors.
- Request that all agencies advise M.E.A.N. as soon as possible of their plans for addressing the specific issues outlined by M.E.A.N. (Ms. Felix added that such communications should take place in personal meetings, rather than by telephone conference calls.)

In closing, Ms. Felix stated that M.E.A.N. will continue asking for help until the organization achieves environmental justice and respect for the civil rights of the people of Mossville.

3.2 Report on the Activities of the U.S. Environmental Protection Agency Region 6 in the Calcasieu Estuary

Mr. Clifford reviewed the resources and activities of EPA Region 6 that are focused on addressing various environmental and health issues in the Calcasieu Estuary, including activities performed in conjunction with other agencies. He stated that, as a result of presentations made by residents of Calcasieu Parish at the December 1997 meeting of the NEJAC held in Durham, North Carolina, Mr. Sam Coleman, Director, Compliance Assurance and Enforcement Division, EPA Region 6, had increased EPA's enforcement activities in the Calcasieu Estuary area. Mr. Clifford stated that EPA had significantly increased the number of inspections it performed at facilities in Calcasieu Parish each year. He noted that many of the EPA inspections are multimedia inspections that include air, soil, and water sampling. He pointed out that several enforcement actions have resulted from the identification of violations during the EPA inspections. Mr. Clifford stated that LDEQ also had increased the number of state inspections performed each year, as well as the number of enforcement activities.

Mr. Clifford stated that he had attended the May 1998 meeting of the NEJAC in Oakland, California, where he listened to a presentation made to the Waste and Facility Siting Subcommittee by residents of Calcasieu Parish about flaring and accidental releases by industrial facilities in their community. He stated that the presentation had prompted him to reevaluate the resources and activities that EPA Region 6 directed at Calcasieu Parish. As a result, EPA Region 6 stepped up its activities considerably, he stated. He then listed activities EPA had implemented since the May 1998 meeting of the NEJAC, including:

- Quarterly meetings are held between EPA and residents and community groups in the area to discuss issues brought to the attention of EPA by the community. ATSDR and LDEQ often participate in the quarterly meetings with the community.

- The quality of the drinking water provided by the Mossville Public Water System was evaluated. Samples of the drinking water were analyzed for dioxin and VOCs. No contaminants were detected at concentrations above maximum contaminant levels (MCL) established under the Safe Drinking Water Act (SDWA).

- EPA and LDHH performed a comprehensive performance evaluation (CPE) of the Mossville Public Water System, the first CPE of a groundwater system in the country. Although the water system was found to be in compliance with SWDA standards, the CPE identified some factors that limit performance. The operator of the water system immediately began to correct the limiting factors.

- A remedial investigation and feasibility study (RI/FS) of the Calcasieu Estuary was performed. Working closely with LDEQ; the Louisiana Department of Natural Resources (LDNR); the U.S. Geological Survey (USGS) of the U.S. Department of the Interior (DOI); and the National Oceanic and Atmospheric Administration (NOAA) of the U.S. Department of Commerce (DOC); EPA is conducting an investigation of contamination of sediments in the estuary and the potential for adverse effects on human health and the environment resulting from contamination. Sampling and analysis for dioxin in fish tissue will be added to the investigation in the future. The estimated cost of the RI/FS of Calcasieu Estuary is $6 million.

- Air quality monitoring has been increased. EPA's Enforcement Division has implemented periodic trace atmospheric gas analyzer (TAGA) mobile air monitoring to evaluate the presence and concentrations of selected hazardous and carcinogenic chemicals in Calcasieu Parish. LDEQ has established two additional air toxics monitoring sites at locations determined through examination of air quality information collected during the TAGA monitoring.

In addition, Mr. Clifford stated, EPA submitted to ATSDR blood dioxin data that had been presented to EPA at a public meeting in 1998. EPA urged ATSDR to conduct its own evaluation of exposure to dioxins, resulting in the conduct of the Mossville exposure investigation by ATSDR in 1999.

3.3 Report on the Exposure Investigation: Calcasieu Estuary (Mossville), Louisiana

Dr. Henry Falk, Assistant Administrator, ATSDR, thanked the representatives of M.E.A.N. and GreenPeace for their comments and acknowledged their requests. Dr. Falk asked Dr. Ken Orloff,

ATSDR, to present an overview of the Mossville exposure investigation and comment on the results of the investigation. He explained that Dr. Orloff is a senior toxicologist at ATSDR and was involved in the Mossville study.

Dr. Orloff stated that EPA Region 6 had presented blood dioxin data to ATSDR in the fall of 1998. He explained that the blood dioxin data, which had been collected by a law firm located in the Mossville area, consisted of results of laboratory analyses of blood samples collected from 11 residents of Mossville. He stated that ATSDR evaluated those results and determined that dioxin levels were elevated in three of the blood samples. ATSDR determined that the situation warranted further investigation, he said.

Continuing, Dr. Orloff stated that representatives of ATSDR and LDHH traveled to Mossville to meet with representatives of M.E.A.N., the Calcasieu League for Environmental Action Now (C.L.E.A.N.), other residents of Mossville, and other representatives of community groups in Calcasieu Parish. He said that the representatives of ATSDR and LDHH met with the individuals whose blood dioxin results had been high and with their families. As a result of those discussions, ATSDR decided that there was sufficient evidence to warrant an exposure investigation, he said.

Dr. Orloff stated that ATSDR focused the exposure investigation on the community of Mossville because Mossville is a relatively small, geographically defined area, attributes helpful in constructing a quantitative study or investigation. The person whom the dioxin tests determined had the highest blood dioxin level among the individuals tested was a resident of Mossville, he said.

ATSDR solicited the participation of residents of Mossville and asked for their assistance in selecting appropriate individuals to participate in the study, continued Dr. Orloff. He said that the criteria applied in selecting participants were that the participants be adults and long-term residents of Mossville. ATSDR also asked that the community screen out residents who might have experienced occupational exposure, he added. Dr. Orloff stated that the residents of Mossville submitted a list of 28 individuals, all of whom subsequently were included in the study.

Continuing, Dr. Orloff explained that the blood samples were collected and delivered to the National Center for Environmental Health Laboratory, the Centers for Disease Control and Prevention's (CDCP) laboratory in Atlanta, Georgia. When ATSDR received the laboratory results, representatives of ATSDR returned to Mossville, where they conducted one-on-one consultations with all the participants in the exposure investigation, he said. He stated that representatives of ATSDR explained the results to the participants and answered their questions. At that time, ATSDR also extended to each participant an opportunity to meet with an independent board-certified physician from the Association of Occupational and Environmental Health Clinics to review the participant's medical records and provide medical consultation, he continued. The medical consultations were conducted in the summer of 1999, he said.

Dr. Orloff explained that, at the time ATSDR released the results to the exposure investigation participants, the agency also issued a draft exposure investigation report for a 60-day public comment period. All public comments that were received by ATDSR were addressed individually and appropriate changes were incorporated into the final report in response to those comments. The final report was released in November 1999, he said.

Dr. Orloff then summarized the salient findings of the report, stating that ATSDR agrees with many of the remarks offered by Ms. Costner in her review of the results. Specifically, ATSDR considered 17 of the 28 participants in the study to have significantly elevated blood dioxin levels. The term "significantly elevated" means that the blood dioxin levels of the individuals exceeded a ninety-fifth percentile prediction level, compared with ATSDR's comparison population, Dr. Orloff explained.

Dr. Orloff then stated that ATSDR also agrees that the profiles of dioxin congeners in the individuals tested were different than those in the ATSDR's comparison population. Therefore, there are qualitative, as well as quantitative, differences in the dioxin levels in certain individuals in the Mossville community, he noted.

Regarding future activities in Mossville, Dr. Orloff commented that the primary issue for ATSDR is to determine whether exposure to contaminants is ongoing. Commenting on data from the Mossville exposure investigation, he stated that one significant finding of the investigation was that all the individuals exhibiting the highest blood dioxin levels were 47 years of age or older. That finding, he said, could suggest that exposure of those individuals to dioxins occurred in the past rather than recently. Continuing, he stated that it is important to conduct further testing to determine whether sources of dioxin contamination remain present. Dr. Orloff noted again that LDEQ currently was conducting

additional testing for dioxin in various environmental media to determine whether there are current sources of dioxin contamination in Mossville and nearby communities.

In closing, Dr. Orloff commented that ATSDR had made recommendations for addressing the health concerns of the community. He informed the participants that the recommendations were included in the Mossville exposure investigation report.

After thanking Dr. Orloff, Dr. Falk stressed to the participants that the Mossville exposure investigation was a concrete step on the path to identifying and defining the nature and extent of environmental health issues in Mossville. He acknowledged, however, that the exposure investigation was a limited study because the investigation was based on a small test population (28 persons) and a limited number of samples directed at determining pathways of dioxin exposure, such as breast milk or homegrown food sources like vegetables and eggs.

Dr. Falk stated that further sampling should be conducted in order to determine (1) whether other residents of Calcasieu Parish have elevated blood dioxin levels, (2) whether ongoing exposures to dioxin are occurring, and (3) what are the pathways for exposure to dioxin. He acknowledged that the next steps should be designed in consultation with the residents of Mossville. He also noted that ATSDR is interested in linking its efforts with the efforts of EPA.

In closing, Dr. Falk stated that he also looked forward to improvements in the communication and consultation processes between ATSDR and the residents of Mossville and other community groups in Calcasieu Parish. ATSDR welcomes the suggestions for improving those processes, he said.

3.4 Report from the Louisiana Department of Health and Hospitals

Dr. Joseph Sejud, Medical Consultant, Office of Public Health, LDHH, explained that the role of LDHH in responding to environmental data, such as the data presented in the Mossville exposure investigation, is (1) to determine what the findings suggest about public health and (2) to identify the appropriate public health response.

Dr. Sejud stated that, throughout the progress of the Mossville case, LDHH had grappled with the problem of decision making under conditions of uncertainty and dealing with scientific issues that are at the forefront of environmental science and toxicology. When attempting to assess the meaning of the findings presented in the exposure investigation, he explained, LDHH was responsible for considering, with great prudence, the following questions and issues related to the validity of the exposure investigation results:

- The sample size considered in the exposure investigation was limited; therefore, do the data presented in the exposure investigation report represent Mossville or Calcasieu Parish at large?

- Are health benchmarks established in scientific literature comparable to the dioxin data presented in the exposure investigation report? Dr. Sejud explained that LDHH had attempted to compare the values in the exposure investigation with established health benchmark values for dioxin. However, dioxin levels in humans increase with age because of their bioaccumulative nature, he explained, and there are age differences between the 28 individuals sampled in Mossville and the comparison population. Further, he said, the benchmarks were based largely on animal research. He stated that it is not the prerogative of LDHH to act solely on the basis of animal research.

- Are the exposures to dioxin ongoing or historical, or both?

Dr. Sejud stated that LDHH had been trying to navigate through the uncertainty to plan its response to the environmental health issues in Mossville and Calcasieu Parish. He added that he also shared the frustration voiced by other stakeholders with the "glacial pace" of process thus far. He then expressed his hope that the presence of LDHH at the joint session would effect some change in that regard.

Dr. Sejud stated that LDHH had planned a public health response to the issues set forth in the Mossville exposure investigation, adding that some activities already were underway. He stated that LDHH was responding through the following actions:

- Conducting a review of health statistics for cancer and other health outcomes in Calcasieu Parish.

- Performing a community health needs assessment in the Mossville community.

- Identifying a process for facilitating access to health care in Mossville and the Calcasieu area under the Children's Health Insurance Program (CHIP) and the Medicaid Match Program in Louisiana.

Referring to the request of Mr. Mouton, Ms. Felix, and Ms. Costner for the establishment of a health clinic in the Mossville community, Dr. Sejud stated that no state funds were available to support the establishment of a new health center. He explained that the state of Louisiana was projecting a $3 million deficit for the next fiscal year. Continuing, Dr. Sejud stated that LDHH was the largest contributor to the budget deficit and further that the largest cost to LDHH was that for the provision of health care services through the department's Medicaid Match Program and the CHIP program.

3.5 Communication from the Louisiana Department of Environmental Quality

Ms. Miller-Travis read aloud a letter from Mr. J. Dale Givens, Secretary, LDEQ. The letter was dated May 25, 2000, and read as follows:

"Dear Ms. Miller-Travis: On behalf of the Louisiana Department of Environmental Quality I wish to offer our regrets for not being able to attend this conference. The Louisiana legislature is currently in session and there are numerous matters that require that we be present during this session.

I would like to note that we have been and are currently working with our state and Federal counterparts, as well as all of the stakeholders, to address the environmental and health concerns expressed by the communities in Calcasieu Parish.

We hope that you have a successful conference and look forward to working with you in the future. Sincerely, J. Dale Givens, Secretary, State of Louisiana Department of Environmental Quality."

3.6 Report from the Louisiana Chemical Association

Mr. Edward Flynn, Director, Health and Safety Affairs, LCA, thanked the members of the two subcommittees and the stakeholders for the opportunity to represent the chemical manufacturers of Louisiana at the session. Mr. Flynn explained that LCA is a nonprofit corporation that represents 70 chemical manufacturers operating at 105 sites throughout the state of Louisiana. He added that he was attending the joint session specifically on behalf of the Lake Charles Area Industry Alliance (LCAIA), an alliance of 22 LCA companies that operate in Calcasieu Parish.

Mr. Flynn commented that the LCA, as well as the Chlorine Chemistry Council, had submitted to ATSDR comments on the findings presented in the exposure investigation report. Those comments, he said, included:

- The Mossville exposure investigation did not conclude that blood dioxin levels identified through the exposure investigation indeed were elevated, relative to the national reference ranges.

- The Mossville exposure investigation did not address possible historical or ongoing sources of exposure to dioxin.

- The blood dioxin levels of residents of Mossville did not appear to be unusual, with some dioxin results falling above and some below the ATSDR reference values. Further, he said, the dioxin results set forth in the exposure investigation report displayed a normal profile of dioxin congeners. He noted that the profiles for dioxin congeners normally observed in the production of vinyl chloride and polyvinyl chloride (PVC) and in PVC combustion are dissimilar from the profile exhibited in the blood samples tested for the Mossville exposure investigation.

- Although the findings were based on a limited number of samples, the failure of the egg or the soil samples to show significant levels of dioxin suggests that current exposures to dioxins are not elevated.

- Extensive environmental sampling of food sources and media in the area and in nearby areas should be conducted.

Mr. Flynn stated that additional sampling activities should be focused first on determining whether blood dioxin levels in residents of Mossville actually are elevated.

Continuing, Mr. Flynn stated that representative reference values for the population of the United States, including age-dependent reference values for dioxin levels, are not available. Therefore, all stakeholders should support the efforts of the CDCP to collect dioxin serum samples as part of the National Health and Nutrition Examination Study (NHANES). He informed the participants that such data were expected to be available in fall 2000 and

stated that they should provide baseline reference values appropriate for comparison with the Mossville data.

Mr. Flynn then suggested that future sampling should include samples of air, soil, and food sources to complement the blood dioxin measurements. Further, he continued, the congener profiles displayed in all samples should be compared with those identified through the EPA and U.S. Department of Agriculture (USDA) surveys of beef, pork, poultry, and fish and with the profiles displayed in industrial emissions.

Mr. Flynn also suggested that additional information about the health and lifestyles of the individuals tested should be collected and evaluated further. Such information should include job and residential history so that other potential sources of exposure to dioxin can be identified.

In closing, Mr. Flynn stated that the chemical industry in Louisiana does hope to expand in the future, but only with the support of the public. He noted that the members of LCA are not "foreign, faceless entities" but are Louisiana men and women who live in Addis, Romeville, Convent, Plaquemine, Sulphur, and Westlake, Louisiana. He stressed that LCA has a genuine desire to improve conditions throughout the state.

3.7 Additional Comments of Representatives of GreenPeace, Mossville Environmental Action Now, and the Calcasieu League for Environmental Action Now

Mr. Damu Smith, GreenPeace International, argued that Federal and state agencies repeatedly have undermined and ignored the efforts and requests of M.E.A.N. and other community groups in Calcasieu Parish. As an example, he stated, ATSDR repeatedly has ignored the requests made by M.E.A.N. that the process for establishing and conducting the work of the Mossville Environmental Justice Working Group, a working group established by ATSDR, be developed in consultation with representatives of M.E.A.N. and residents of Mossville and that members of affected communities be included as members of the working group.

Referring to statements made by Mr. Clifford about the quality of drinking water in Mossville, Ms. Pat Hartman, M.E.A.N., said that the Mossville Public Water System, the public water system evaluated by EPA, was established only after it was determined that the well water the residents had been drinking was contaminated.

Ms. Monique Harden, Attorney/Community Liaison Director, Earthjustice Legal Defense Fund, stated that Dr. Falk had failed to repeat a statement in his presentation that he had made previously in a community meeting in Mossville. She said that Dr. Falk had acknowledged at the community meeting that the response of the agencies to the Mossville community had been very poor. Ms. Harden also said that Dr. Sejud had neglected to mention that budget shortfalls at LDHH did not prevent that department from writing letters to the local press in which the department criticized the community of Mossville and attacked a consultant to ATSDR who concluded that local sources likely are responsible for the high blood dioxin levels observed in residents of Mossville.

Continuing, Ms. Harden stated that the representatives of the agencies also had failed to mention in their individual presentations a health survey performed by Dr. Marvin Legator, Director, Toxics Assistance Project, University of Texas Medical Branch, Galveston, Texas. She stated that the health survey had identified numerous illnesses that are consistent with environmental exposure to toxic chemicals among members of the Mossville community. She added that the study suggests that dioxin blood levels in residents of Mossville are elevated.

4.0 QUESTION AND ANSWER PERIOD

After the presentations by stakeholders, Mr. Hill initiated a question-and-answer period to allow the members of the subcommittees to question the stakeholders. Mr. Hill suggested that the members of the subcommittees begin with questions related to the requests made by Dr. Costner about the future investigation of exposure to dioxin.

Mr. Hill began the question-and-answer period by asking Mr. Clifford what role EPA would play in addressing Dr. Costner's requests. Addressing the first three requests made by Dr. Costner, Mr. Clifford stated that next steps to be taken by EPA, ATSDR, LDEQ, and LDHH should be to work collaboratively, in consultation with M.E.A.N. and C.L.E.A.N. and other residents of Mossville and Calcaseiu Parish, to establish a comprehensive environmental sampling plan to determine whether there are ongoing sources of exposure to dioxins and dioxin-like chemicals in Mossville and, if so, to expeditiously identify the primary sources of the exposures. Continuing, he stated that, if sources of exposure were identified, the third step would be to develop a plan for eliminating those sources. Dr. Falk stated that he concurred with the general plan recommended by

Mr. Clifford. He then expressed willingness on behalf of ATSDR to contribute to that process. He also stressed that the community of Mossville will be involved in the development of any plans to address the issues of concern. Mr. Hill then asked if Mr. Smith would be able to work with ATSDR and EPA to develop a strategy to address Dr. Costner's requests. Mr. Smith responded that he would work with the agencies; however, he requested that protocols be established to monitor how the agencies would coordinate their responses among themselves and how the agencies will communicate with the local communities. He stressed that protocols related to public participation will be fundamental to proceeding on these issues. Dr. Costner also wish to emphasize that it is important to make the distinction between sources of dioxin and pathways of exposure. For example, the results of fish sampling will suggest whether or not the ingestion of fish is an exposure pathway, but will not identify the source of such exposure, she said.

Mr. Melvin "Kip" Holden, Representative, Louisiana Legislature and member of the Waste and Facility Siting Subcommittee, asked why LDHH does not accept a correlation between test results of the effects of toxics on animals to effects of toxics on humans. Dr. Sejud explained that there is an interspecies variability in the toxicity of dioxin. He explained that LDHH does find correlations between the results of animal studies and toxicology in human species; however, the correlation related to dioxins is not complete.

Dr. Payton asked whether there was a plan for follow-up studies of the 28 persons included in the initial study. Dr. Falk responded that ATSDR had arranged to meet with each of the individuals who participated in the study to discuss the results. ATSDR also had arranged to provide medical consultation for each of the individuals, he said. He stated that ATSDR had not yet determined whether further tests would be performed on the same test individuals. He stressed that the issue should be discussed during the development of a strategy for further investigation. Dr. Payton commented that the questions of validity that affect the results presented in the initial study could be eliminated by performing a follow-up study of the same individuals.

Dr. Payton asked whether the ages of the persons included in the Mossville exposure investigation were age-adjusted for comparison with the average of the U.S. population. She commented that, if the dioxin levels presented in the exposure investigation report were age-adjusted, there should be no question of whether the higher dioxin levels in older test individuals were a result of bioaccumulation with age. Dr. Payton also asked why children were not included in the initial study, stating that dioxin data from children could eliminate the question of whether the results indicated past or current exposures.

Addressing Dr. Payton's first question, Dr. Falk responded that there is no established national average of dioxin blood levels for the United States. He explained that the comparison values used in the exposure investigation were derived from a series of studies of comparison populations in the United States over the past few years and did not represent a national average. He added that those were simply the best data available for comparison. On the question of the testing of children to determine whether there are current sources of exposure to dioxin, Dr. Falk stated that he was not sure whether comparison data for children are available. He stressed that the issue should be discussed as a possibility during planning for future investigations.

Ms. Jane Stahl, Deputy Assistant Commissioner, Connecticut Department of Environmental Protection and member of the Health and Research Subcommittee of the NEJAC, asked the stakeholders whether there was an expected date for the establishment of a dioxin standard or action level. Mr. Clifford referred her question to Dr. Dwain Winters, EPA Region 6, who responded that EPA does not have plans to establish an ambient standard or action level for dioxin. He explained that the principal pathway of exposure is ingestion of food sources, rather than inhalation of ambient air or ingestion of water. Therefore, he continued, the establishment of a standard or action level is not the mechanism by which EPA usually would begin to address that type of pollutant.

Ms. Denise Feiber, Environmental Science and Engineering, Incorporated and member of the Waste and Facility Siting Subcommittee of the NEJAC, asked whether the communities involved could participate in the development of a sampling strategy and, if so, how such consultation could be managed efficiently. Dr. Falk responded that ATSDR would consult with the community in developing a sampling plan. Mr. Clifford referred the question to Ms. Pam Phillips, Deputy Director, Superfund Division, EPA Region 6, who stated that EPA had been actively involving the various communities in Calcasieu Parish in the development of the Agency's sampling plans. She explained that, before EPA conducted sediment sampling in the Calcasieu Estuary, the Agency held several community meetings and open houses. During those events, she continued, representatives of EPA discussed the draft approach

and considered comments from residents and community groups. Ms. Phillips stated that EPA pilot-tested the posting of the draft scope of work on EPA's Web site so that interested parties could download the document and provide EPA with comments. She stated that EPA plans to conduct a similar review process for the draft scope of work for ecological sampling that will begin in summer 2000. Ms. Phillips also stated that EPA plans to post the raw data from sampling on the EPA web site and to provide the data in electronic format on CD-ROM, upon request.

Ms. Miller-Travis stated that participants in the joint session had made many suggestions about actions that must be taken to address the environmental health issues in the Mossville area, but, she observed, the stakeholders still lacked a concise plan. She suggested that the stakeholders use the remaining time to formulate, at the least, a "skeleton" of a course of action to be taken after the meeting. Concurring, Mr. Hill asked Mr. Smith whether he and the representatives of M.E.A.N. and C.L.E.A.N. would be willing to remain after joint session to discuss the next steps directly with the Federal stakeholders. Mr. Smith, Dr. Costner, and the representatives of M.E.A.N. and C.L.E.A.N. also agreed to remain after the joint session.

Mr. Neftali Garcia Martinez, Environmental Scientist, Scientific and Technical Services and member of the Waste and Facility Siting Subcommittee of the NEJAC, asked whether any sampling of environmental media (air, water, and soil) in the Calcasieu Estuary had been completed. Mr. Clifford responded that sampling to evaluate sediments in Calcasieu Estuary began in December 1999. He explained that EPA expected the results to be available in mid-summer 2000. In addition, results of the first analyses of fish tissue should be available in July 2000, he said.

Mr. Martinez asked Mr. Clifford whether air sampling for dioxin had been performed. He also asked whether a study of the types of industries in the area and the types of raw materials used in their chemical processes, including combustion of hazardous wastes, was being performed. He suggested that such an inventory could identify possible sources of exposure to dioxin. Mr. Clifford responded that EPA currently was working with the state of Louisiana to install new toxic air monitors specifically to monitor dioxin in the Calcasieu Estuary. He noted that he expected the new monitors to be in place by the end of summer 2000. To the question about an inventory of types of facilities and raw materials used by facilities in the area, he responded that EPA collects and maintains data on the types of chemicals emitted from permitted facilities in Calcasieu Parish.

Ms. Stahl asked Mr. Clifford whether EPA or LDEQ had assessed penalties for exceedances of the ambient air quality standards (AAQS) and, if so, whether the sums collected under those penalties had been directed back to the community. Mr. Clifford answered that the AAQS are state standards. Therefore, he said, EPA has no authority to assess penalties for violations of those standards, he said. He added that he was unaware whether LDEQ had assessed penalties for violations of AAQS by facilities in Calcasieu Parish, or whether LDEQ had directed sums collected under such penalties back to the communities. Continuing, Mr. Clifford stated that penalties had been assessed as part of enforcement actions taken by EPA and LDEQ. He commented that he expected that EPA and LDEQ would assess more penalties in the future, in light of the increased enforcement activity in the Calcasieu Estuary.

Mr. Clifford also stated that EPA has a supplemental environmental project (SEP) policy that allows EPA the flexibility to offset a portion of a penalty assessed against a facility if the facility chooses to contribute that portion at the local level, whether at the facility or in the community, to address a particular issue that has a nexus to the particular violation. Mr. Clifford noted that EPA had received some SEP proposals related to the penalties assessed in Louisiana. He added that EPA Region 6 had established an internal work group on SEPs to work with communities to identify a number of potential SEPs that could be presented to companies during such enforcement and settlement discussions.

Continuing, Mr. Clifford commented that the SEP policy was not as broad as he would like it to be, so that it would be helpful in addressing the situation in Mossville. For example, he said, to use penalty money to establish a health clinic would probably be "a larger stretch" under EPA's SEP policy. Mr. Clifford then asked Mr. Coleman whether, to Mr. Coleman's knowledge, LDEQ had a similar SEP policy. Mr. Coleman responded that LDEQ did have a SEP policy and stated that the policy essentially provided the same flexibility as EPA's SEP policy. Mr. Coleman explained that LDEQ also had the authority to establish environmental trust funds through which funds provided by penalized facilities could be drawn out by nonprofit organizations or other organizations to support projects. Mr. Coleman stated that LDEQ was pursuing SEP projects in the Lake Charles area. Referring to the use of LDEQ's SEP funds to fund a health clinic in

Mossville, Mr. Coleman stated that he thought such use was possible and suggested that the matter should be discussed with LDEQ, LDHH, ATSDR, and the residents of Mossville and nearby communities.

Referring to Mr. Flynn's recommendation that future sampling should include extensive sampling of air, soil, and food sources to complement the blood dioxin measurements, Ms. Miller-Travis stated that she was troubled by the suggestion that such an extensive and costly assessment must be performed to accurately assess whether the residents in Mossville are affected adversely. She asked Mr. Flynn whether the LCA would be willing to provide some of the funds necessary to complete such an assessment. Mr. Flynn pledged to present her suggestion to the management and board of directors of LCA.

Ms. Peggy Shepard, Executive Director, West Harlem Environmental Action, Incorporated and member of the Health and Research Subcommittee of the NEJAC, commented on the ethical considerations raised when a health agency such as LDHH is presented with data that indicate that specific individuals have been exposed to a toxic chemical, yet that agency takes no action. Ms. Dianne Dugas, Chief Epidemologist, LDHH, responded that the state health officer in Louisiana had directed LDHH to provide an inventory of medical resources available in the area of the Calcasieu Estuary. She said that LDHH had estimated that there are some 300 physicians located in that area. Continuing, she stated that LDHH hoped to perform a community health needs assessment, so that accessibility of health care to residents can be established. However, she continued, the state health officer had informed LDHH that no funds are available to support the establishment of a clinic for the specific treatment of exposure to dioxin.

Dr. Sejud added that there is no particular treatment for exposure to dioxin. Once dioxin is in the human body, he said, it cannot be removed. Therefore, on a public health level, treatment is prevention of future exposures, he said. Dr. Sejud stated that it is simply not known whether exposure to dioxin in Mossville is linked to other health outcomes. On the issue of access to health care, he said, LDHH is committed to maximizing access to health care for all residents of Louisiana. The community health needs assessment that Ms. Dugas had mentioned is part of that process, he said.

Referring to Ms. Shepard's comments about the ethical obligations of LDHH, Ms. Veronica Eady, Executive Office of Environmental Affairs, Massachusetts Office of the Governor and member of the Waste and Facility Siting Subcommittee of the NEJAC, asked the representatives of LDHH to discuss their ethical obligation to follow-up and act when they are presented with data such as the exposure to dioxin. Ms. Eady also asked the representatives of LDHH what steps they had taken since learning of the findings presented in the Mossville exposure investigation.

Dr. Sejud acknowleged that the data presented in the Mossville exposure investigation suggest that the people in Mossville apparently have been exposed to higher than average levels of dioxin. However, the health implications of that finding are unknown, he stated again. Therefore, he explained, the ethical obligation of LDHH is to consider what the health implications might be and to act accordingly.

Commenting on Dr. Sejud's response that the health implications of the findings of the Mossville exposure investigation are unknown, Dr. Payton stated that many health outcomes have been linked to exposure to dioxin, from neurological, dermatological, and respiratory effects to all types of cancer. Continuing, she stated that, in populations for which data indicate that persons have been exposed to some level of dioxin, it can be expected that there is great potential for such health outcomes. Therefore, she declared, there is an ethical consideration in that regard. Dr. Sejud responded that current scientific literature does not provide sufficient proof of the health effects of exposure to dioxin at levels lower than 300 to 400 parts per trillion. Ms. Miller-Travis responded to Dr. Sejud's statement by observing that, regardless of whether conclusive scientific evidence exists, LDHH cannot wait until hundreds of people are sick or dying before the agency takes action. She reiterated that the issue is an ethical one.

In closing remarks, Ms. Miller-Travis suggested, on behalf of the NEJAC, that a working group of the NEJAC, made up of members of the Health and Research Subcommittee, the Waste and Facility Siting Subcommittee, and the Air and Water Subcommittee, be formed to discuss the environmental justice and health issues affecting the community of Mossville and to provide technical assistance and expertise. She expressed her hope that the community had felt "somewhat affirmed" in the day's session. She added that there is much work to be done and that the NEJAC must make a commitment to working with the stakeholders to resolve the issues before it.

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