Community Advisory Panel Meeting Summary
Memorial Park Building
Tittabawassee Township
September 3, 2003
4:30 pm

Attendees: Ruth Averill, Mary Jo Bean, Len Ballosh, R. Drummond Black, Pat Bradt, Susan Carrington, Vince Castellanos, Natasha Coulouris, Robert Cowling, Betty Damore, Garret Geer, David Gustafson, Rick Hayes, Gary Henry, Kathy Henry, Michelle Hurd Riddick, Robert Johns, Terri Johnson, Michael Kelly, Brian M. Kischnick, Mary Kay Knoerr, C. Michael Krecek, Sandy Mannion, Kathie Marchlewski, Bill McQuillan, Sarah Opperman, Betty Owen, Rob St. Mary, John Taylor, and Melissa Whitney.

Department of Environmental Quality (DEQ) staff in attendance: Brenda Brouillet, George Bruchmann, Steve Buda, Cheryl Howe, Ginny Himich, Deb MacKenzie-Taylor, Trisha Peters, Liane Shekter Smith, Al Taylor, and Terry Walkington.

Department of Community Health (DCH) staff in attendance: Brendan Boyle, Linda Dykema and Kory Groetsch.

Opening Remarks and Introductions

George Bruchmann, the DEQ Waste and Hazardous Materials Division (WHMD) Chief, welcomed everyone to the second meeting of the Community Advisory Panel (CAP). Mr. Bruchmann reminded attendees that the CAP was formed to provide input to the WHMD on corrective action activities for contamination beyond the facility boundary of The Dow Chemical Company, Michigan Operations, Midland Plant required under Dow's hazardous waste facility operating license, not to function as a decision-making body. Attendees introduced themselves.

Recap of Meeting Ground Rules

Steve Buda, Chief of the Hazardous Waste Management Unit, WHMD, walked the group through the ground rules established at the July 31, 2003 meeting for the operation of the CAP. After this, Mr. Buda asked whether there were any revisions or additions. None were suggested.

Approval of July 31, 2003 CAP Meeting Summary

Cheryl Howe asked whether there were any comments on or revisions to the draft summary for the July 31, 2003 CAP meeting. None were raised. Ms. Howe reported that she had received a comment by e-mail that the meeting summary should have indicated that dioxin information is also available at web sites such as ~~www.trwnews.org~~ www.trwnews.net and www.ecocenter.org in addition to the DEQ's and Dow's web sites. This revision was made to the meeting summary. In addition, Ms. Howe indicated that she had done some follow-up on a panel member's request to look into setting up a listserv for the use of the CAP. After investigation into this, it was determined that the DEQ can set up a one-way listserv, but cannot set up an interactive listserv for the use of all of the CAP members. Ms. Howe suggested that CAP members could either use the "reply to" function in response to a note that was sent out or they could establish their own e-mail distribution list based on the listing of e-mail addresses contained in a note they receive.

Overview of Scopes of Work (SOW) for Conducting Remedial Investigations

Susan Carrington, Sustainable Development Director for Dow, presented an overview of the Tittabawassee River Sediments and Flood Plain SOW, the Midland Area Soils SOW, and Interim Actions. Ms. Carrington then asked for the individual CAP members' specific suggestions on how to make the SOWs better by going around the room in a "round robin" fashion. Sarah Opperman of Dow recorded the suggestions on flip charts (compiled below) . Copies of the Powerpoint slide handouts were passed out after the presentation.

- Not necessary to do additional testing.
- Would like to see people tested before wildlife.
- Provide dust masks for park mowing.
- Question effectiveness of handwashing.
- Dow and DEQ need to propose recommendations on how to disrupt exposure routes.
- Opening day of Walleye season – get samples to understand levels.
- Saginaw Township newsletter 2 times per year could include dioxin information.
- Get human exposure sampling done.
- Do (human) testing of anyone who wants it.
- Information on how dermal study would be done.
- Advertise turkey/deer testing
    - With where to deliver them
    - Do we need fat only
- Create task force to develop materials for Information Centers.
- Common sense facts about how to reduce exposures.
- Support exposure study.
- Use hunting licenses to inform about testing and for education.
- Do mapping in Midland, too (airborne exposures).
- Community education through schools, township newsletters.
- Stop pushing health assessment and delays.
- Get activities going.
- Close down Festival Park until exposure pathways are eliminated.
- Move Bark Park and rope off sections of Imerman Park.
- Expand beyond deer/turkey to mice, rabbits, etc.
- Groundcovers in parks and other potential areas (also wildlife habitat improvement).
- Signage in Midland parks.
- Softball fields (Waterworks Park) closed until testing is done, then decide what to do with park.
- Where has everything been buried in Midland - publish.
- Ask health department directors not to use the information on sources of dioxin intake being quoted currently.
- Separate health & environmental activities to move more quickly on environmental issues.
- Consider township offices for information centers.
- Focus on elimination of contamination
    - areas above 90 ppt that require some level of action.
- Create barriers in areas of parks that are high.
- Implement those areas OK'd by MDEQ &/or MDCH.
- DEQ provide clarification on whether wash stations and fish sampling are good idea or not.
- Open up exposure study behind current scope.
- Define PPT so people understand what it is (education using experts).
- Address farming community in terms of dust control.

- Don't shut down Festival Park – contain/decking/etc. instead.
- Share mapping with local authorities.
- DEQ meet with real estate community on the facilities label – for all properties.
- Continue extensive health testing plans.
- Create way for people to contact Dow about health testing.
- Do health study & bioavailability as soon as possible.
- Concerned about dredge spoils in Zilwaukee Township.
- Get all the information in every township office.
- Phase 3 testing results ASAP to include James Township.
- Blood sampling in James Township (include Betty Damore).
- Signage in West MI and Boat Launch (Center Road) should be bigger.
- Info containers (brochures) were empty – make sure they're kept full.
- Provide info to workers in floodplain soils now.
- Community access – state as clearinghouse for information in Information Center.
- Table Probabilistic Risk Assessment until issues resolved.
- Wildlife – include invertebrates, earthworms, etc.
- Provide groundskeeping service in appropriate clothing during high-dust periods.
- Dredge Tittabawassee River for barge traffic for dredge spoils.
- Dow property listing and current agriculture use.
- Historical uses of Dow property along Tittabawassee River.
- Teach no-till farming and provide equipment.

After Ms. Carrington finished asking for the CAP members' suggestions, she indicated that she would be glad to come back to a future meeting. She also stated that Dow is interested in working with the full community, including schools, local units of government, etc., to get their input and would like to incorporate whatever is possible into the SOWs. Stamped, addressed envelopes were passed out for mailing any additional suggestions related to the SOWs to Dow. Ms. Howe reiterated that any additional comments on the SOWs can be e-mailed to the DEQ at howe@michigan.gov by October 10, 2003.

Due to the time limitation for Dow's presentation and the process by which the CAP members' input was solicited, there was no opportunity to answer questions as they came up in a manner that allowed for clarification or the free exchange of information. Therefore, at the end of the meeting after a short break, DEQ and DCH staff responded to key questions and provided clarifying information on several issues that had been raised during the "round robin." These issues are compiled below.

Purpose of hand wash stations: A question was raised about the ability of the hand wash stations placed in the parks to remove dioxin that had adhered to the skin. Although hand washing may not remove dioxin or furan molecules that have started to be absorbed through the skin, it will remove most of the dioxin associated with soil that is adhered to the skin and decrease the amount that may be ingested while eating. The body will take up more dioxin that is ingested than it will through the skin. Most of the parks have picnic areas but have no place to wash hands prior to eating. Without hand washing prior to eating, some dioxin contaminated soils could be ingested through food handling. In addition, washing children's hands and/or play toys that have contacted the soil can decrease their exposure through normal hand-to-mouth behavior. The hand wash stations are not going to eliminate exposure to dioxin-contaminated soils but may help to reduce some exposure if the public is adequately informed of their intended use.

Fish sampling and ecological risk assessment: The DEQ and some CAP members learned just prior to the meeting about the press release and newspaper articles regarding Dow awarding funding to Michigan State University (MSU) for ecological risk assessment. This led to

questions about fish testing and the overlap between the DEQ and Dow's ecological risk assessments.

DEQ staff explained that a number of whole fish samples from the Tittabawassee River have been analyzed for dioxin and furan content for ecological risk assessment purposes. It was noted that while the whole fish samples could not be used directly for human health risk assessment purposes, they are appropriate for ecological risk assessment purposes. These fish contained elevated levels of dioxin. An ecological risk assessment that is currently being conducted by the DEQ using the existing fish, soil, sediment, duck egg, and chicken egg data shows that the elevated levels of dioxin in sediment and soil are accumulating in animals. The DEQ's report on this ecological risk assessment will be complete this fall. The data on which this ecological risk assessment is based were requested by, and have been shared with, Dow. The DEQ has described to Dow how Dow could build upon the results of the DEQ ecological risk assessment as part of the SOW process such that this could satisfy the obligation under the SOW to conduct ecological risk assessment. While we believe that Dow and its contractor, MSU, could contribute significantly to the refinement of the aquatic and terrestrial risk assessments, the work plan submitted by MSU on behalf of Dow is, as you are aware, not yet approvable. The DEQ is working with Dow to develop an approvable work plan for ecological risk assessment. As previously communicated to Dow, any work not conducted under an approved work plan is done at the risk of not being deemed acceptable by the DEQ for SOW purposes.

Of particular concern with regard to the press release was the statement in the Midland Daily News that "The latest effort is intended to gain an understanding of food-chain relationships that will determine if dioxin is being absorbed in wildlife." As noted above, there is already substantial information that documents that dioxin is being absorbed by wildlife. The focus of the risk assessment activities must be to determine the extent of damage and to target remedial actions for the greatest effect.

During our discussion, an additional interim measure suggestion was raised regarding people who live in cities (e.g., downtown Saginaw) who consume fish such as carp and catfish. A potential interim response activity that was identified is focused education for the fishing population--more than is done currently through the fish advisory process.

Exposure study: Questions were raised regarding the large vs. the small study. An exposure investigation will determine which people have elevated exposures through blood sampling. The MDCH reiterated that the 25 person study is a first step to a larger study of several hundred. The larger study would include a comparison community that does not have a known point source. The smaller 25 person study is similar to what Dow has proposed for Riverside. The MDCH is pursuing mechanisms for funding other than Dow because both the MDCH and the federal Agency for Toxic Substances and Disease Registry (ATSDR) are unable to directly accept funds from companies. A large study will cost several million dollars. The study protocols will be shared when available and will also have external peer review through the ATSDR. The 25 person pilot study will be funded through the ATSDR/Centers for Disease Control and Prevention (blood sampling) and the DEQ (for collocated environmental media sampling). Soil sampling is intended to be completed this fall, with blood sampling to follow this winter.

Relationship of exposure study and health study to corrective action obligations: Although an exposure investigation and health study may provide very useful information about public health, it is not intended to provide the type of information necessary to develop cleanup criteria for dioxin. The regulations require that cleanup criteria be developed to protect public health, safety, welfare, and the environment. This includes protecting for the most sensitive toxic effect from reasonable maximum exposure conditions. Although an exposure study may help identify

some critical exposure pathways and exposure ranges for the individuals included in the study, it will not provide sufficient information on the reasonable maximum exposures. The regulations also require that criteria for substances that pose a carcinogenic risk be developed using the 95 percent upper bound on a calculated cancer risk of 1 additional cancer above the background cancer rate per 100,000 individuals. A health study, even if it included several hundred exposed individuals, could not detect that level of cancer risk. The most sensitive noncancer effects of dioxin appear to occur during early childhood development and are effects that are not frequently measured (reproductive organ effects) or are difficult to measure (learning, behavior, and immune system effects). It is unlikely that even a very well-conducted exposure and health study could provide adequate information to protect for these sensitive effects. Clarification was provided to stress the importance of clearly separating any exposure investigation/health assessment activities being conducted by the MDCH from corrective action obligations being performed by Dow in accordance with the hazardous waste operating license.

Agricultural guidance: The DEQ has been coordinating with Michigan Department of Agriculture (MDA) staff and guidance has been developed for farmers on their exposure to contaminated soils during planting and harvesting activities. This document entitled "Food, Farming and Gardening Guidelines for Minimizing Dioxin Exposure" is available on the following Web site: http://www.deq.state.mi.us/documents/deq-erd-trf-MDA%20dioxin%20fact%20sheet(FINAL).pdf. It was also mentioned that limited testing of crops by the MDA has shown nondetectable levels of dioxin.

One item that we did not get a chance to discuss, but was raised by two CAP members, is in regard to the level of dioxin exposure from food consumption vs. soil. Frequently it is heard that the vast majority of dioxin exposure in people comes from the diet, with many citations of the diet contributing 95 percent or more of total dioxin exposure. This statement may not be true for dioxin-contaminated areas. The 95 percent is based on national average dioxin exposure where there is no point source of these chemicals and the soil concentration is assumed to be 10 parts per trillion (ppt). It is not known exactly how much contaminated soil is contributing to exposures in the Midland and downriver areas where soil concentrations range up to 7,000 ppt. Estimates of the contribution from contaminated soils in Midland ranged from 9.4 to 35 percent of the total dioxin exposure at soil concentrations of 185 ppt and 348 ppt as determined by Dow in a multipathway risk assessment submitted to support permitting of the new incinerator. These estimates assumed average soil ingestion rates and varying levels of local fish consumption. An exposure investigation may help determine if elevated soil concentrations are contributing to elevated exposures (blood levels) and may help identify other potential local sources of elevated exposure (e.g., eating locally caught fish).

Wrap-up

Many thanks to Mary Kay Knoerr and Tittabawassee Township for providing the meeting place and snacks. The next CAP meeting is scheduled for 4:30 - 7:00 pm on Wednesday, October 8, 2003, at the Strosacker Center, Conference Room 110, located at 220 W. Main Street in downtown Midland. Also, thank you to Mike Krecek and Mayor Drummond Black for arranging for the next meeting place and snacks.

The meeting was adjourned at about 7:00 pm.