



**THIRD ANNUAL REPORT OF PROGRESS ON CHILDREN'S HEALTH ISSUES  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY  
TOXICS STEERING GROUP**

September 23, 2003

**I. INTRODUCTION**

This third annual report presents the findings and recommendations of the Michigan Department of Environmental Quality's (MDEQ's) Toxics Steering Group (TSG) for ensuring adequate protection of children's health. Specifically, this report documents the TSG's progress over the last year in implementing the recommendations from the Michigan Environmental Science Board (MESB) report entitled, *Analysis of the Michigan Department of Environmental Quality's Administered Environmental Standards to Protect Children's Health*, and directives from the March 17, 2000, memorandum from former MDEQ Director Russell J. Harding supporting those recommendations. Progress also is reported on additional recommendations and priorities identified in previous reports prepared by the TSG (MDEQ 2000, 2001, and 2002).

**II. SUMMARY OF THE MESB CHILDREN'S STANDARDS INVESTIGATION PANEL  
RECOMMENDATIONS AND CORRESPONDING TSG ACTIONS AND RECOMMENDATIONS  
FOR IMPLEMENTATION**

The MESB Children's Standards Investigation Panel (MESB Panel) recommendations are summarized under the four main headings below (A - D). Specific TSG actions taken in response to these recommendations and to recommendations from the TSG's Interim Report, First and Second Annual Reports are provided below each MESB Panel recommendation.

- A. The MESB Panel recommended that the "MDEQ Toxics Steering Group's interactions with toxicological, epidemiological, and risk assessment staff in other state departments" be increased.

In response to this recommendation, the TSG recommended that efforts to increase MDEQ's interactions with other state agencies continue. The TSG continues to operate with membership from other state of Michigan departments as directed in the MDEQ Policy and Procedures 09-006, approved on September 22, 2000, by former MDEQ Director Harding. Currently, Dr. Brian Hughes (Pesticide and Plant Pest Management Division) represents the Michigan Department of Agriculture (MDA) on the TSG. The Michigan Department of Community Health (MDCH) representatives (all from the Environmental and Occupational Epidemiology Division) are Dr. Linda Dykema, Ms. Christina Bush, Mr. Erik Janus, and Mr. Kory Groetsch. The TSG members from the other state departments participate in several subcommittees. Efforts to coordinate further with these other state agencies will continue to be pursued as opportunities arise. The expanded TSG continues to meet on a regular basis.

- B. The MESB Panel recommended that the "MDEQ continue to incorporate the best available science in the development and review of its environmental standards" and identified specific areas in which to focus initial efforts.

1. The MESB Panel made two specific recommendations concerning the MDEQ soil direct contact criteria (chemical criteria protective of incidental ingestion of and dermal contact with soil) developed under the authority of Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. First, the MESB Panel recommended that occasional high intakes of soil rather than average daily chronic intakes may sometimes be more appropriate in the development of these criteria. Second, the MESB Panel recommended that the MDEQ consider "exposure to the same substances through other exposure routes, such as water and food" in the development of soil direct contact criteria.

To address the MESB Panel's first recommendation, the TSG recommended that the MDEQ identify those compounds for which an occasional high intake of soil may pose an acute health risk and develop direct contact criteria protective of this exposure scenario. This was identified as a low priority recommendation. Although it has been discussed and a process drafted for identification of acutely toxic hazardous substances, no work has been completed to date primarily due to staffing issues. Promulgation of the Part 201 criteria in December 2002, effectively prevents any revisions to the criteria without undergoing a lengthy repromulgation process.

In addition, the TSG recommended that algorithms for the calculation of direct contact criteria be developed for a child-only receptor and that these algorithms be considered for use in developing criteria for land uses where children may be expected to be present (e.g., the residential scenario). This issue also was identified as a low priority by previous MDEQ management. Child-only direct contact criteria have been drafted by the MDEQ Remediation and Redevelopment Division (RRD); however, due to staffing limitations and the need to undergo a repromulgation process, it is not anticipated that these criteria will be able to be pursued in the near future.

To address the second issue, the TSG recommended that a relative source contribution factor less than one (i.e., less than 100 percent) be used to develop soil direct contact criteria for those chemicals having sufficient information. This option is currently available under the existing administrative rules to Part 201; however, an update of the scientific literature has not been conducted to determine if more chemical-specific relative source contribution factors can be developed. This issue was previously identified as a low priority and will likely remain as such due to the current staffing levels and the need for a lengthy and resource-intensive repromulgation process.

2. The MESB Panel recommended that it be a high priority for the MDEQ to collect high quality hazardous air pollutant data and conduct a risk assessment. It also noted that, "The recommended risk assessment should be used to prioritize the hazardous air pollutants based on estimated relative risk and the contribution that air exposures make to overall risk from the hazardous air pollutants." The MESB Panel recommended a periodic update schedule for screening level reevaluation and that "total risk" be assessed.

The MDEQ Air Quality Division (AQD) completed development of an air toxics monitoring strategy to address the need for high quality data on toxic air contaminants. To address the MESB Panel's recommendations, the TSG recommended that the AQD air toxics monitoring strategy effort be continued. This was identified as a high priority recommendation. The details of this strategy are provided in the June 27, 2002, report entitled, *The Development of an Air Toxics Monitoring Strategy for Michigan*. Currently, funding is not available to implement this strategy. The AQD anticipates that if funding

becomes available, the strategy will be used as a guide to help implement an expanded air toxics monitoring program.

As monitoring data are collected from the existing program or an expanded program, it will be necessary to conduct an analysis of it. These Michigan specific data, combined with data compiled through various United States Environmental Protection Agency (USEPA) efforts (e.g., National Air Toxic Assessment, Cumulative Exposure Projects) can be used as a portion of the rationale for prioritizing screening level updates. However, a comprehensive strategy is needed for a routine update of all screening levels, not just for those compounds for which monitoring data are available.

To further implement the MESB Panel's recommendation, the TSG recommended that a procedure be developed for a routine update of all screening levels considering all new and relevant information. This was identified as a high priority recommendation. No activity has taken place on this recommendation due to staffing limitations and other program priorities.

3. The MESB Panel recommended that the MDEQ continue to monitor the USEPA's efforts to assess drinking water and surface water standards for protection of children's health and "consider application of new USEPA approaches to Michigan standards as they are validated."

This is considered a high priority recommendation by the MDEQ. The MDEQ toxicologists continue to track new and revised federal and state drinking water standards and federal surface water standards, and incorporate them into Michigan programs as appropriate. Consistency across MDEQ divisions and programs is a primary objective when incorporating new or revised standards so that all MDEQ programs that rely on a set of standards or criteria are using the same values. Activities to implement the MESB Panel's recommendation include the following:

- a) The MDEQ Water Division (WD) currently tracks all changes in federal surface water quality standards and incorporates these changes into rules when appropriate. There were no revisions made to the water quality standards over the last year; and
- b) Section 20(a)(5) of Part 201 states that if a state drinking water standard exists for a hazardous substance, the drinking water criterion is the more restrictive of that state standard and the aesthetic criterion, if one is available. As a result, the RRD toxicologists monitor the promulgation of both federal and state drinking water standards. It generally takes a minimum of one year for a federal drinking water standard to be promulgated as a state standard. Therefore, because Part 201 specifically refers to a "state standard," a Part 201 drinking water criterion may not be consistent with the federal Safe Drinking Water Act. Since it is required by statute, adoption of a state standard as a Part 201 drinking water criterion does not require a change in the Part 201 Administrative Rules. Only one state drinking water standard was promulgated in the last year; the standard for total trihalomethanes was changed from 100 to 80 parts per billion on January 29, 2003. Notification to stakeholders is in process.

The TSG also recommended that the MDEQ monitor the USEPA's efforts to revise methods for calculation of drinking water and surface water standards for protection of children's health and incorporate these revised methods as appropriate. This

was identified as a high priority recommendation. The RRD and WD routinely monitor information from the relevant USEPA offices in the area of children's health issues. Other sources that would provide information regarding children's health and risk assessment methods are also monitored on a routine basis. As of August 2003, no information regarding upcoming changes to standards or risk assessment methods had been identified.

4. The following TSG subcommittees were active over the last year and charged with incorporating the best available science into the development and review of environmental standards:

Cancer Risk Assessment Subcommittee (Chair: Mr. Marco Bianchi, MDEQ AQD)

The Cancer Risk Assessment Subcommittee conducted a thorough review of the USEPA's 2003 reports entitled, *Draft Final Guidelines for Carcinogen Risk Assessment* and *Draft Supplemental Guidance for Assessing Cancer Susceptibility from Early-Life Exposure to Carcinogens*. Comments were sent to the USEPA on both documents stressing the need for ongoing clarification of the practical aspects of conducting a cancer risk assessment. These clarification points, as they relate to children's health risk assessment, included the following:

- a) How should risk assessors deal with multiple tumor types in a single study or multiple estimates based on different studies?
- b) How should risk assessors evaluate and weigh mechanistic data for determining mode of action and select models for empirical modeling?
- c) The USEPA's *Draft Supplemental Guidance for Assessing Cancer Susceptibility from Early-Life Exposure to Carcinogens* report is a "framework" document that provides the foundation for developing a consistent approach for this facet of risk assessment. Future drafts should address whether the particular methods and factors described in it are appropriate.
- d) Information is needed to describe the quantitative methods and the derivation of ratios used to determine increased incidences of early-life exposure to carcinogens.

Comments on the *Draft Final Guidelines for Carcinogen Risk Assessment* and the *Draft Supplemental Guidance for Assessing Cancer Susceptibility from Early-Life Exposure to Carcinogens* reports were submitted to the USEPA by MDEQ Director Steven E. Chester on May 30, 2003.

Uncertainty Factors Subcommittee (Chair: Mr. Jeffrey Crum, MDEQ RRD)

This Uncertainty Factors Subcommittee was formed to determine if an uncertainty factor (UF) to account for inadequacies in the toxicity database should be added to its existing scheme of UFs. The UFs account for several areas of uncertainty inherent in most toxicity databases and are used to reduce dosage levels from experimental studies to levels that will not result in adverse health effects to humans. There are five areas of uncertainty that the USEPA considers when applying UFs for deriving chronic reference toxicity values such as the oral reference dose (RfD) and inhalation reference concentration (RfC). The MDEQ toxicologists currently consider four of the five UFs when developing RfDs and RfCs. The fifth UF, which is the subject of this

subcommittee's review, is referred to as the database completeness uncertainty factor ( $UF_d$ ).

The  $UF_d$  is intended to minimize the potential of deriving an underprotective RfD/RfC as a result of incomplete characterization of the chemical's toxicity. Pursuant to USEPA guidance, the  $UF_d$  accounts for the inability of any single study to adequately address all possible adverse outcomes. For example, data may be lacking in evaluating developmental and reproductive effects, neurotoxicity, immunotoxicity, or other health effects, which may occur at lower test doses than the critical effect(s) that serves as the basis for the RfD/RfC. A significant portion of the Uncertainty Factors Subcommittee's review was, therefore, focused on comparing the doses causing these types of effects with doses from chronic studies that assessed other toxic endpoints. If an incomplete toxicity database exists, the  $UF_d$  (most likely a value of 1 or 3) may be considered to address this type of uncertainty in a calculated chronic RfD/RfC. The USEPA frequently applies an  $UF_d$  when deriving RfDs and RfCs for chemicals determined to have incomplete toxicity data to characterize the risk for these effects.

Several key scientific publications have been evaluated by the Uncertainty Factors Subcommittee to facilitate its determination. A report is scheduled to be completed by the end of December 2003.

Dioxin Review Subcommittee (Chair: Dr. Deborah Mackenzie-Taylor, MDEQ Waste and Hazardous Materials Division (WHMD))

This Dioxin Review Subcommittee is charged with reviewing the MDEQ standards and criteria for dioxin and dioxin-like compounds. As part of this review, this subcommittee has been following the USEPA's efforts in the reassessment of the toxicity and health risks associated with these compounds. Currently, the Dioxin Review Subcommittee is waiting for the National Academy of Sciences to complete its review on the aspects of the USEPA's draft reassessment. A decision is needed from the MDEQ management as to whether the Dioxin Review Subcommittee should wait until the USEPA dioxin reassessment is finalized prior to updating the state's standards or criteria for dioxin and dioxin-like compounds.

This past year, the Dioxin Review Subcommittee also reviewed several other significant reports and articles and is now in the process of conducting a scientific literature review to identify those significant articles that were published since the 2000 version of the dioxin reassessment. Ultimately, the information will be used to update the MDEQ toxicity assessment for dioxin and the resulting Part 201 cleanup criteria. The scientific literature indicates that the developing fetus appears to be much more sensitive to alterations in reproductive, immune, and nervous system development from dioxin exposure than adult animals.

The Dioxin Review Subcommittee assisted in the review of a proposal by The Dow Chemical Company (Dow) to study oral bioavailability of dioxins and furans in soils from Midland. The Dioxin Review Subcommittee in conjunction with members of the Probabilistic Risk Assessment (PRA) Subcommittee also provided review comments on two versions of a probabilistic risk assessment proposed by Dow for development of a site-specific residential soil criterion for contaminated soils in Midland, Michigan pursuant to Part 201.

Trichloroethylene Review Subcommittee (Chair: Mr. Jeffrey Crum, MDEQ RRD)

Formation of the Trichloroethylene Review Subcommittee was necessary to address public comments on the Part 201 trichloroethylene (TCE) cleanup criteria proposed for promulgation in the Part 201 Administrative Rules. The objective of this Trichloroethylene Review Subcommittee was to conduct an expedited review of an external review draft document published by the USEPA (2001) entitled, *Trichloroethylene Health Risk Assessment: Synthesis and Characterization* (USEPA HRA) and to determine if the current oral and inhalation toxicity values that were used to develop the Part 201 generic cleanup criteria should be updated prior to promulgation in the Part 201 Administrative Rules. The toxicity values recommended in the USEPA HRA indicate considerably greater toxicity of TCE than is currently reflected in the Part 201 generic cleanup criteria. Criteria based on the USEPA's proposed toxicity values would result in lower generic criteria than is currently promulgated in the Part 201 Administrative Rules.

Information in the USEPA HRA suggests that infants and children may be more susceptible to TCE's toxicity. Recent presentations by Dr. Jim Cogliano, USEPA Office of Research and Development, have recommended the treatment of early-life exposure as a risk factor and support the use of the high end of the cancer risk range currently recommended by USEPA to account for early life exposure. Dr. Cogliano did qualify his recommendation by stating that the high end of the risk range was not based on actual evidence suggesting children may be more sensitive.

Due to time constraints imposed by the schedule for promulgating the generic cleanup criteria in the Part 201 Administrative Rules, the Trichloroethylene Review Subcommittee was unable to complete a thorough review of the USEPA HRA and associated scientific documentation. As a result, several key tasks necessary to providing scientifically supported recommendations could not be completed. Following the Trichloroethylene Review Subcommittee's preliminary recommendations, it was determined by the TSG that adopting the USEPA's recommended toxicity values from the draft USEPA HRA would be premature given that the recommendations had not undergone a review by the USEPA's Science Advisory Board (SAB). The SAB began its review of the USEPA HRA in June 2002, and issued its report in December 2002.

Currently, the Trichloroethylene Review Subcommittee is tracking the incorporation of SAB's comments into the final USEPA HRA document and ultimately into the Integrated Risk Information System (IRIS) database. The finalized toxicity value will not be entered into IRIS until next calendar year.

Probabilistic Risk Assessment Subcommittee (Chair: Dr. Deborah MacKenzie-Taylor, MDEQ WHMD)

The Probabilistic Risk Assessment Subcommittee is charged with assisting in the development of staff guidance for evaluating probabilistic risk assessments (PRAs) submitted to the MDEQ. Training from the USEPA on PRAs is planned for this fall or winter and has been offered to all TSG members. Several members of the subcommittee assisted in reviewing two versions of a PRA submitted by Dow. Dow has proposed using PRA for developing site-specific criteria as part of the proposed scopes of work for corrective action of off-site impacts in Midland and along the downriver flood plain. The operating license conditions will require submittal of work plans for MDEQ

review for any site-specific PRA. The Probabilistic Risk Assessment Subcommittee will assist the WHMD in these reviews.

Polybrominated Diphenyl Ether Subcommittee (Chair: Ms. Christine Flaga, MDEQ RRD)

The Polybrominated Diphenyl Ether Subcommittee was recently created to respond to MDEQ management's request for recommendations regarding proposed legislation to ban polybrominated diphenyl ethers (PBDEs) in Michigan. The Polybrominated Diphenyl Ether Subcommittee is currently reviewing information on this group of chemicals and will provide comments on the proposed legislation within the next several weeks. Mr. Dennis Bush of the WD (and subcommittee member) conducted an evaluation of the toxicity and environmental fate of PBDEs for the purpose of determining whether PBDEs should be added to the Critical Materials Register. Mr. Bush's evaluation and recommendation recently underwent TSG review and is currently being reviewed by MDEQ management.

5. Efforts are continuing to coordinate the Children's Environmental Health Subcommittee (CEHS) with other subcommittees of the TSG to ensure that issues pertaining to children's environmental health are comprehensively addressed. Members of the CEHS also serve on the Uncertainty Factors, Dioxin Review, Trichloroethylene Review, Probabilistic Risk Assessment, Mixtures and Cumulative Risk, and Cancer Risk Assessment Subcommittees.
- C. The MESB Panel recommended that the MDEQ "incorporate the concepts of mixtures and cumulative risk into its regulatory risk assessment process as the science matures."

In response to this recommendation, the TSG formed the Mixtures and Cumulative Risk Subcommittee to evaluate the available approaches for performing toxicological risk assessment for exposures to mixtures of substances as well as cumulative exposure and risks. The Chair of the Mixtures and Cumulative Risk Subcommittee is Mr. Robert Sills, MDEQ AQD.

The Mixtures and Cumulative Risk Subcommittee is charged with evaluating the available approaches for performing toxicological risk assessment for exposures to mixtures of substances as well as cumulative exposures and risks. This subcommittee will consider how and if these approaches may be appropriately applied in the MDEQ regulatory programs. This is an extremely broad and challenging subject to address, with potentially wide ramifications to all of the MDEQ's regulatory risk assessment programs.

The MDEQ RRD had requested in 2001 that the TSG review a proposal for development of Part 201 cleanup criteria for total petroleum hydrocarbons. The proposal includes an approach to address the non-carcinogenic risks associated with exposure to mixtures of petroleum hydrocarbons, as well as an approach to address carcinogenic risks associated with exposures to mixtures of polycyclic aromatic hydrocarbons. Staffing limitations continued to interfere this last year with the research and evaluation of this issue.

- D. The MESB Panel recommended that the "MDEQ continue to keep abreast of the new information emanating from the federal government, academia and scientific literature" regarding the impact of environmental contaminants on children's health. In response to this recommendation, the TSG formed the CEHS.

Children's Environmental Health Subcommittee (Chair: Ms. Mary Lee Hultin, MDEQ AQD;  
Vice Chair: Ms. Amy Merricle, MDEQ WHMD)

The CEHS is charged with tracking developments in the area of children's environmental health and making recommendations to the TSG for incorporation into human health risk assessment procedures, as appropriate. The CEHS Chair regularly updates the TSG on current activities of the CEHS. The objectives of the CEHS and associated actions since the last annual report include the following:

1. Track the latest scientific findings in the area of children's environmental health:

The CEHS continues to actively track the latest scientific findings in children's health. The MDEQ librarian monitors new literature for publications in this area. All CEHS members monitor the literature through periodical reviews and the internet. A database has been developed listing reports and studies reviewed and critiqued by the group. The current contents of this database are attached as Appendix A to this report.

One result of this tracking effort was the identification of a concern for children exposed to diesel exhaust on school buses. The MDEQ collaborated with the Michigan Environmental Council and submitted a grant proposal to fund a campaign to reduce children's exposure to this important asthma trigger. The results of this campaign will be reported on in the next annual report.

2. Identify activities in other states in the area of children's environmental health:

The CEHS has been tracking developments on the Minnesota legislation involving a report entitled, *Health Risk Limits for Groundwater*, which was prepared by the Minnesota Department of Health, Division of Environmental Health. Minnesota staff concluded that evidence is sufficient to require an adjustment in their exposure assumptions to allow for differential intake by children.

The CEHS also has tracked efforts in California to implement Senate Bill 25, which required the review of existing health-based air quality standards to determine whether they were adequately protective of children's health. Dr. Melanie Marty from the California Office of Environmental Health Hazard Assessment presented a seminar on the implementation of Senate Bill 25 to the Minnesota Department of Health, who provided the CEHS with a videotape, slides, and transcripts of that presentation.

3. Track children's environmental health activities at the federal level:

Members of the CEHS track results of the individual research findings pertinent to their divisions/department areas of responsibility as time and resources allow. However, given other program priorities of staff, limited attention has been devoted to this effort.

The chair of the CEHS, along with a representative from the Michigan Department of Education, and Mr. Keith Harrison, Executive Director of the MESB, continue interaction with other Region V states on the subject of children's environmental health through conference calls organized by the USEPA. During one such call, CEHS members learned details about and the availability of referrals to the Region V Pediatric Environmental Health Specialty Unit at Cook County Hospital in Chicago.

In collaboration with the Cancer Risk Assessment Subcommittee, the CEHS provided comments to the USEPA on the Supplemental Guidance for Assessing Cancer Susceptibility from Early-Life Exposure to Carcinogens.

Dr. Carole Kimmel from the USEPA presented a seminar to the Minnesota Department of Health on the USEPA Reference Dose/Reference Concentration Draft Guidance. The Minnesota Department of Health provided the CEHS with a videotape, slides, and transcripts.

Dr. Deborah Rice from the USEPA's National Center for Environmental Assessment presented a seminar to the Minnesota Department of Health entitled, *Neurotoxic Effects Resulting from Developmental Exposure: Human and Animal Data*. The Minnesota Department of Health provided the CEHS with a videotape, slides, and transcripts. Both Dr. Kimmel's and Dr. Rice's presentations were reviewed in depth by the CEHS.

4. Participate in children's environmental health research:

Two members of the CEHS, in collaboration with staff from MDCH, University of Michigan, and Michigan State University (MSU) are working on a Center for Disease Control funded project examining potential associations of criteria air pollutants in two Michigan counties with adverse birth outcomes. The results, if available, of this project will be reported on in the next annual report.

### III. GENERAL RECOMMENDATIONS FOR FUTURE MDEQ ACTIONS

In addition to the recommendations described previously, the MESB Panel indicated that the MDEQ "risk assessors maintain their scientific strengths by taking advantage of education opportunities offered through various scientific societies, symposia, and the federal government. Such efforts would allow the scientific staff of the MDEQ to continue to appropriately use the most current risk assessment techniques." The TSG continues to support this recommendation.

Members of the TSG participated in a number of conferences/workshops on issues related to children's environmental health and risk assessment. The members brought information back to the TSG and its subcommittees to expand the TSG's knowledge base. Participation in these events allowed for information sharing between other states, agencies, and research institutions in the area of children's environmental health:

- Environmental Council of States/Association of State and Territorial Health Officials conducted the workshop "Toward an Action Agenda on Strategies to Reduce Environmental Factors that Affect Asthma in Children, Work Session Four: Outdoor Environmental Factors," October 16-17, 2002. Key speakers included Drs. Michael Lipsett of the California Office of Environmental Health and Hazard Assessment, and University of California (UC) San Francisco; Michelle Fanucchi from UC Davis; Ira Tager from UC Berkeley; Helene Margolis from the California Environmental Protection Agency Children's Environmental Health Center; Paul English from California Department of Health Services; and Christine Sansevero from the USEPA Diesel Programs. Many studies were discussed describing the role of criteria pollutants, traffic emissions, and various toxics on asthma exacerbation and induction. The TSG contact person is Mr. Michael Depa.
- Dr. Devra Davis presented "Environmental Deception and the Battle against Pollution" at MSU, and "Let's be Honest about Prevention: Why the Standard Approaches to Protecting Children's Health Need to Change" in Grosse Pointe. These presentations were coordinated by the MSU

School of Environmental Journalism and Local Motion. At the MSU presentation, Dr. Davis primarily discussed topics from her book entitled, "When Smoke Ran like Water: Tales of Environmental Deception and the Battle against Pollution." More information is available from her website at <http://www.whensmokeranlikewater.com>. The TSG contact persons are Ms. Mary Lee Hultin, Ms. Amy Merricle, and Dr. Deborah Mackenzie-Taylor.

- Ms. Helen Goeden from the Minnesota Department of Health provided discussion of Minnesota's work on children's risk assessments for groundwater at a Federal State and Tribal Risk Assessment Committee meeting last fall. The TSG contact person is Ms. Mary Lee Hultin.
- The Agency for Toxic Substances and Disease Registry (ATSDR) Partners in Public Health meeting in Atlanta in March 2003, included a seminar on a health study that examined TCE impacts on children. Using data from their TCE registry, the ATSDR looked at 14 sites in five states with 400 children enrolled. Exposure was primarily from drinking water. Children in Illinois, Indiana, and Michigan were tested on speech, oral, acoustic, and motor skills. An increase in abnormalities was found and associated with TCE exposure at levels below the current maximum contaminant level. The TSG contact person is Ms. Christina Bush.
- Former MESB Children's Standards Investigation Panel member, pediatrician Dr. Ruth Etzel presented a seminar on Children's Environmental Risks in January. The TSG contact person is Ms. Amy Merricle.

The TSG recommended that outside speakers from academia/industry/federal government be invited to conduct in-service training sessions for TSG members. This would provide a more cost-effective method of training than sending a number of staff to out-of-state training. The TSG is currently pursuing training from the USEPA on the Guidelines for Cancer Risk Assessment and PRA. Other possibilities for in-service training opportunities include a session on application of the USEPA Inhalation Reference Concentration Methodology or the use of epidemiology data for human health risk assessment.

#### **IV. NEW RECOMMENDATIONS FOR THE THIRD ANNUAL REPORT**

A review of the TSG recommendations from the Interim, First and Second Annual Reports indicate all are still applicable. Efforts should continue to implement these recommendations as program priorities, staff time, and resources allow.

Additionally, the TSG recommends that public education and outreach activities be encouraged by MDEQ, as opportunities arise, to address the need to adequately protect children's environmental health. One ongoing means of outreach is the TSG web page on the MDEQ web site, which is being updated. Another example of outreach and education efforts that took place this last year is exemplified through CEHS chair being invited to provide an overview of children's environmental health issues and actions at the State Public Affairs Committee of the Michigan Association of Junior Leagues annual meeting in May.

#### **V. SUMMARY**

The TSG has made progress on addressing the following issues related to children's environmental health during the time frame of August 2002 to August 2003.

- A. The TSG has continued interactions with other state agencies including regular participation in the TSG and its subcommittees by representatives of the MDCH and the MDA.
- B. The CEHS has been actively tracking changes made by other states and the federal government to address differences in children's exposure and sensitivity. Members of the TSG have attended seminars, symposia, and other training opportunities to stay abreast of risk assessment and children's health issues.
- C. The TSG expects to have a recommendation to the MDEQ before the end of the year to address additional uncertainty for health effects not frequently evaluated such as reproductive, developmental, neurological, and immunological effects.
- D. The Probability Risk Assessment Subcommittee and other TSG members are tentatively scheduled to attend USEPA training on PRA, which will be presented at the MDEQ.
- E. Review of dioxin and tracking of other toxicity values is ongoing to make sure that criteria for these chemicals are adequately protective of children's health using the best available science. However, implementation of updated criteria will be difficult with the criteria needing to be promulgated into the Part 201 Administrative Rules.
- F. The TSG is tracking updates and new guidance by the USEPA to better address exposure to chemical mixtures and cumulative risk.
- G. The TSG has provided comments to the USEPA on its proposed *Guidelines for Cancer Risk Assessment* to assist the USEPA in making this document transparent and useful for state risk assessors to apply the best available science.

Limited progress has been made on the following issues:

- A. Despite the development of an Air Toxics Monitoring Strategy, implementation of the strategy is unlikely due to a current lack of funding. Without better monitoring data, it will be difficult to determine the most critical air toxics for human exposure and prioritize screening level updates as recommended by the MESB. Staffing limitations also continue to impede efforts to update screening levels.
- B. The TSG and MESB Panel previously identified several considerations for MDEQ cleanup criteria that could be included to use the best available science to better protect children and adults from exposure. All three recommendations remain a low priority due to staffing constraints and the fact that Part 201 criteria are now promulgated into the Administrative Rules. These include:
  - 1. Direct contact criteria for soil with child-only exposure assumptions,
  - 2. Evaluation of acute toxicity for exposure pathways that may have peak exposures, and
  - 3. Consideration of other pathways of chemical exposure for those chemicals that are frequently found in food and other media.
- C. Although the TSG has been tracking changes made to federal drinking water standards, adoption of standards as they are changed is often delayed by two to four years for the cleanup and groundwater permitting programs since the regulation requires state drinking water standards to be adopted as Part 201 drinking water criteria. Once a federal standard

is finalized, the state has to go through the promulgation process to adopt a federal drinking water standard as a state standard. Frequently, the Michigan Legislature requires the maximum number of extensions to promulgate new rules adopting new drinking water standards, further delaying implementation of these standards in programs that should protect drinking water supplies for the people of Michigan.

- D. Although chemical mixtures and cumulative risk have been identified as a high priority, staff time and resources are very limited for tracking and implementing the best available science for these issues in most of the MDEQ programs.

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## APPENDIX A

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