

Comment: According to the ATSDR Toxicological Profile for Chlorinated Dibenzo-p-Dioxins, the following populations may have higher exposures than the general population. Those groups include those who were the victims of industrial accidents, those living in proximity to sites where CDD's are produced as chemical by-products and those where the chemicals are disposed, those living near hazardous waste incinerators, or sites of environmental contamination. Interestingly, the Midland area has all of these things. Dow has uncontrolled contamination sites on site containing dioxin laden waste, a landfill off-site they use to dispose of dioxin-contaminated waste, a manufacturing site with production of compounds known to generate dioxin as a byproduct, two hazardous waste incinerators with dioxin emissions, old industrial accidents which potentially contained dioxin contaminated wastes, and recent incidents involving the loss of containment of dioxin-laden dried soils. Further, measured levels of dioxin in the community and downriver are orders of magnitude above background levels.

ATSDR also suggests that other populations may be at risk because of dietary behavior, including recreational and subsistence fishers, subsistence hunters, infants and children who are breast fed, and subsistence farmers and their families living in areas with elevated dioxin levels that also consume home grown foods. Note that fishers, hunters and breast-fed children are at risk without even living in contaminated areas, and represent the most at-risk populations in the Midland/downriver area. The Midland/Saginaw area has representatives of each of these populations (however only anecdotal reports of subsistence farmers available).

Area residents may have elevated rates of PCB's in their bodies because of major PCB contamination in the Saginaw area. Michigan fish are also widely contaminated with PCB's. Michigan was also the site of a serious and widespread PBB industrial incident that resulted in elevated levels of PBB's in many Michiganders. While TEQ's have not been defined for PBB's, some are dioxin-like in their activity and must be considered as additive to other exposures. In order to be complete and accurate, all dioxin-like compounds must be considered when assessing potential health impacts, not only those likely to be present in the general population, but also those specific to this region. Historically, there have been fish consumption bans based on PBB contamination in the Chippewa River, the Pine River, the Saginaw River and the Tittabawassee River. There have been numerous PCB and dioxin fish advisories as well (see Toxic Chemicals in the Great Lakes and Associated Effects, Environment Canada, page 230).

Local residents are often simultaneously exposed to various airborne chemicals as well as exposure to dioxin-contaminated soils. What are the combined effects and what is the potential for synergism? (Lists several examples of reported releases of ammonia, vinyl chloride, benzene, cyclohexane, and others as example)

Response: Comments noted. These issues will be addressed in future documents.

Comment: The draft dioxin assessment report by US EPA "Exposure and Human Health Reassessment of 2,3,7,8-(TCDD) and Related Compounds" was not cited.

Response: The EPA dioxin reassessment was not cited because it is not yet final. The draft EPA document carries a notation of "Do not cite or quote." MDCH will cite the dioxin reassessment in the future if EPA removes the notation.

Comment: Have people with soft tissue cancers or children with learning difficulties been tested for exposure to dioxin?

Response: Neither the MDCH nor the ATSDR is aware of any testing of Midland residents for dioxin exposure other than testing which may have been conducted by Dow for its worker studies.

Comment: The State needs to notify people about growing zucchini, yellow squash and pumpkins on dioxin-contaminated soil as these absorb higher levels (than other produce).

Response: This comment was conveyed to the Michigan Department of Agriculture. The Michigan Department of Agriculture addressed this issue at a public meeting in October 2002 by indicated it was safe to eat squash as part of a normal diet. The Department of Agriculture has also put a fact sheet on its website entitled, "Food, Farming and Gardening Guidelines for Minimizing Dioxin Exposure."

Comment: The chances of getting cancer from the general environment are almost nothing. The EPA has overestimated the dioxin danger by about a factor of 10.

Response: The EPA's dioxin reassessment is not yet final and is undergoing review both internally and within several federal agencies. The appropriateness of EPA's assessment has not yet been determined.

Comment: Studies have proven that grass cover provides a reasonable barrier to dioxin exposure from soils.

Response: Grass cover does indeed provide a barrier to underlying soil contamination. However, grass cover is easily disturbed when people landscape, garden, or even when children play. For this reason, the MDEQ generally recommends a minimum of 6 inches of clean soil be placed over contaminated soil before grass cover is established.

Comment: At what depths were the soil and sediments collected?

Response: The depth of soil samples varies depending on where they were collected. In Midland, soil samples were generally taken from the top 1 inch of soil, just under any vegetative cover.

Comment: Are you using TEQ and TEF data from the WHO scheme (1998) or the EPA (ATSDR) recommended in De Rosa et al., 1997? Does it make any difference in interpretation?

Response: The TEQs reported in the March 2002 health consultation were based on the toxicity equivalency factors (TEFs) recommended in the De Rosa et al., 1997 citation.

Currently the MDEQ and the MDCH are using the TEFs recommended in 1998 by the World Health Organization (WHO). Although the revised TEFs differ slightly from the previous recommendations, it makes little difference in calculation of the TEQs for Midland because the TEFs have not changed for the congeners found most abundantly in Midland soils.

Comment: There has been inadequate sampling to date to determine hot spots in Midland and downriver. Extensive sampling will be required to determine exactly where dioxin is elevated, in order to remediate contaminated soils and sediments. Further, extensive sampling of indoor dust in order to quantify that source is necessary. There may be areas where water samples may also be necessary, although dioxin's tendency to adhere to particles should be a consideration when selecting water-testing sites. All sampling plans should be developed in consultation with the community and the most impacted residents.

Response: The MDEQ is responsible for developing sampling plans and/or approving any sampling plans developed by Dow. The MDEQ has formed a "Community Advisory Panel" or CAP to provide an opportunity for the community to comment on these plans.

Comment: The ATSDR's 1 ppb action level was derived more than 15 years ago [and] has been referred to as a policy-based level, rather than a risk or health-based level. The number does not incorporate the newest synthesis of dioxin science in the dioxin reassessment. Further, the ATSDR and MDCH in numerous communications recognize a variety of other relevant numbers to consider when evaluating the potential health impacts from contaminated soils.

With regard to the policy derived cutoff of 1ppb: 1ppb is much higher than the levels found to cause adverse health effects. In fact, a "no effect" level has not been scientifically established. Those who have suggested that levels below 1ppb are "safe" are misleading the public.

Response: ATSDR's Policy Guidance on Dioxin in Soil concludes that "the action level of 1 ppb (TEQ) for dioxin and dioxin-like compounds, when coupled to a site-specific context of evaluation for the range >50 ppt to < 1 ppb TEQs in residential soils, is protective of public health and continues to represent a level at which consideration of health action to interdict exposure, including cleanup should occur." However, in recognition of the recent advances in understanding the toxicity of dioxin, the ATSDR is currently reconsidering the 1,000 ppt action level and the accompanying dioxin policy.

Comment: Michigan residential and industrial soil cleanup levels compared with some other EPA Regions are not protective. Both EPA Region III and EPA Region IX have cleanup standards far more protective than those promulgated in Michigan. The residential standard in Region III is 4.3 ppt and the industrial standard is 38 ppt. The residential standard in Region IX is 3.9 ppt and 27 ppt for industrial sites. A recent review by the MDEQ of the Michigan methodology suggests that the cleanup standard should actually be lowered when information from the dioxin reassessment is considered.

Response: Comment noted, however, the MDCH does not develop MDEQ cleanup criteria.

Comment: Midland and downriver soils are significantly elevated compared to state and national averages. The average of dioxin soil testing in the state is 6 ppt. The national average is between 8 and 10 ppt, although those “background” levels include measurements from the Midland community (158 ppt) which substantially skew the findings. Absent Midland levels, the background dioxin levels are more likely 1 ppt (see Lester, Background Levels of Dioxin in Soil). These levels are in dramatic contrast to those found in the Midland community and downriver. Why would Michigan want to increase its toleration of this highly toxic, known carcinogen to 150 or 1,500 ppt?

Response: The MDEQ has collected and analyzed soil samples from areas with no known source of dioxin contamination. The range of total dioxin TEQ concentrations is from 1 to 35 ppt. No samples from Midland are included in this range. A discussion of dioxin background data for Michigan has been added to the consultation. Concentrations of environmental contaminants that exceed background levels do not necessarily represent an exposure risk. Soil cleanup criteria or action levels consider the inherent toxicity of a chemical as well as the potential for people to be exposed to the contaminant in soil or other environmental media. The ATSDR screening level of 50 ppt, as well as the MDEQ criteria of 90 ppt, are based on these considerations.

Comment: I am not convinced that further sampling is a cost effective use of taxpayer money, there is a health effect concern for the residents of Midland, or any level of analysis or remediation would satisfy the concerns of the activists who petitioned for the study. The absence of data does not, in and of itself, justify another study.

Response: The MDCH has recommended further soil sampling in Midland in neighborhoods in closest proximity to the Dow plant site. No soil dioxin data are available for these areas. Some samples taken nearby, but just inside the fence line on the Dow property had levels of total dioxin TEQs that exceeded the ATSDR action level of 1,000 ppt. It is possible that people living in these areas may be experiencing higher levels of dioxin exposure that cannot be known for certain without additional soil sampling.

Comment: If public policy requires additional sampling, there should be a cost-benefit analysis to determine whether or not the overall effort is justified in light of the resources consumed, social impact on the community and projected improvements in the quality of life for Midland residents.

Response: Neither federal nor Michigan law requires that a cost-benefit analysis be conducted before environmental contamination is investigated. Such assessments generally come after the nature and extent of contamination is identified, and options to clean up or remediate the contamination are being explored.

Comment: There is some general concern that Dow’s brine well system is being used to dispose of potentially hazardous chemicals.

Response: Comment noted. The MDCH will look into this issue and it will be addressed in future documents if necessary.

Comment: Ambient Air Monitoring: MDCH failed to discuss ambient air monitoring conducted in 1997-98 which showed the level of dioxins in ambient air is similar to that in rural, non-industrialized parts of the US.

Response: The current consultation focuses on soil dioxin contamination only. Other media will be addressed in future documents.

Comment: Dust Control Program: MDCH failed to acknowledge that Dow has had an extensive dust-control program in place since 1980.

Response: Comment noted, however dioxin levels in Midland soils remain above the MDEQ residential soil direct contact criteria and the ATSDR screening level.

Comment: Residential Soil Sampling Data – MDCH failed to acknowledge that more than 100 soil samples have been collected in residential areas of Midland and not one exceeded the ATSDR action level of 1ppb. Two samples that did exceed 1ppb were in areas zoned for industrial use.

Response: Soil sampling results for the city of Midland are discussed in the Environmental Contamination and Other Hazards section on pages 3-5 of the consultation. Table 1 on page 4 provides the results of residential soil sampling as well as the Dow plant site. Total dioxin TEQs were detected at concentrations ranging up to 2,663 ppt along Salzburg Road. This area is a road right-of-way and public access is not restricted. Total dioxin TEQs were also detected at concentrations up to 1,068 at the northeast perimeter of the Dow plant site. Commercial and residential properties are located immediately across Saginaw Road and these areas have not been sampled to determine if the elevated concentrations extend off the Dow property.

Comment: Won't excavation or other remediation efforts increase airborne exposure?

Response: The MDCH has not proposed any remedial methods in the city of Midland. Rather, we have recommended additional sampling to define the extent of dioxin soil contamination.

Comment: Is the MDCH trying to impose unnecessarily stricter limits (than the EPA) on potentially harmful substances in our community?

Response: The MDCH is not a regulatory agency and cannot impose contaminant limits. MDCH recommends that State of Michigan law and cleanup criteria be applied in the city of Midland.

Comment: Please follow up on the soil reports for Central Middle School and the Central Park areas as well as the elementary schools near the plant. Further sampling was proposed years ago

but never addressed. The number of children with learning disabilities in these school attendance areas seems out of proportion with those in other parts of town.

Response: This comment has been noted and will be taken into consideration during any sampling activities that occur within the City of Midland.

Comment: Consideration should be given to the fact that Love Canal, Hyde Park and Syntex soils capped at 50 ppt. Given the background contamination in the food supply, communities can tolerate little additional accumulation from soil.

Response: This comment has been noted. As indicated in the health consultation, additional data and information is needed to evaluate this situation.

Comment: Consideration should be given to the total impact/exposure risk imposed on the surrounding communities due to historic and current chemical manufacturing and waste incineration. Air and soil contamination should be considered as well as exposure to other pollutants.

Response: This comment has been noted. The goal is to develop several health consultations and then a comprehensive public health assessment.

Comment: The report says, "Levels of dioxins detected in soil adjacent to the eastern perimeter of the Dow plant site and along a road way (haul route) in the community exceeded 1,000 ppt." I would like to see this modified to clearly identify the sites. What cross streets or what bounded areas are impacted?

Response: Cross roads have been added to the description of these sample locations on pages 4 and 5 of the consultation.

Comment: There is information that this is a follow-up to the studies of the mid-1980s. Is this routine monitoring?

Response: No, the 1996 MDEQ sampling investigation and the 1998 Dow investigation would not be considered "routine monitoring." Routine environmental monitoring programs typically involve sampling the same location(s) for the same parameters at periodic fixed, interval(s). The 1996 and 1998 studies were in follow up to earlier Dow and U.S. EPA studies that were conducted in the early to mid-1980s. These earlier studies did not provide the information necessary to determine if the dioxin and furan levels in the Midland Area soils are below the applicable regulatory criterion that have been developed to be protective of human health. Most of the data collected from these earlier studies was limited to one dioxin congener, 2,3,7,8-TCDD. It is now known that there are 17 dioxin and furan congeners that are important in determining dioxin-like toxicity. The 1980s data are incomplete in this regard, and provide only a partial estimate of dioxin-like toxicity, resulting in the need to conduct further investigation. The MDEQ conducted the initial follow up study in 1996 because that is when Michigan was

delegated the responsibility to oversee corrective action at hazardous waste facilities by the U.S. EPA.

Comment: I ask that you continue to include and consider skin and inhalation exposures in the evaluations in addition to the oral pathway which seems to be the center of discussion. These other pathways should not be ignored, especially with regard to children.

Response: Comment noted. MDCH is not ignoring these pathways of exposure. However, the soil ingestion route of exposure has a greater impact on overall exposure than does either dermal (skin) or inhalation exposure. A comprehensive public health assessment will incorporate these exposure pathways.

Comment: Soil samples should be taken all over town as contaminated soil may have been moved to a new construction area.

Response: Comment noted. The MDCH will consult with the MDEQ as soil-sampling plans for the city of Midland are developed.

Comment: Suggested correction for your report conclusion: "The data necessary to determine if dioxin-contaminated soil in the Midland area poses a public health risk are not available; therefore the site poses an indeterminate public health hazard." The correct way to write the first part of the conclusion above is: "Based on a study of all available data, there is no current evidence of a public health risk in the Midland area due to dioxin-contaminated soil."

Response: MDCH does not agree with the suggested language. The conclusions are based on the lack of adequate environmental data, not human health data. No change has been made in the consultation.

Comment: "The wording in the second paragraph under the Summary should be modified to more accurately reflect the soil dioxin levels in community"

Response: The second paragraph of the Summary was modified by adding numeric values for the ATSDR screening and action levels for dioxin to provide a frame of reference.

Comment: The summary section should reflect the current status of the mitigation efforts imposed by the MDEQ and how they impact on further exposure in the community.

Response: MDCH does not agree that mitigation efforts should be addressed in the health consultation. Remedial activities to be performed by Dow under its Corrective Action obligations have not yet been determined at the time of this writing.

Comment: "The last paragraph in the summary section discusses a "comprehensive exposure assessment" that should be implemented in any areas where soil levels exceed the ATSDR screening level. This statement is in direct conflict with the ATSDR Decision Framework that

states an Exposure Assessment is appropriate when the soil levels reach or exceed 1,000 ppt action level." The comment continues by suggesting revised language.

Response: The summary section has been revised for clarity.

Comment: "On the top of page 2 reference is made to a 1985 EPA study and provides a single quote about a comprehensive health study. This "quote selection" gives a slanted view of the conditions in Midland." This section should be amended.

Response: The bulleted item referred to by the commenter is taken directly from the petition letter dated May 1, 2001, and is included as the third bullet in a list of three that provide the concerns of the petitioners listed in the letter. The reader is advised to read the previous 3 paragraphs to put this item into appropriate context. No change is warranted in the consultation.

Comment: "In the 2nd paragraph page 2, the report references "community concerns about potential dioxin contamination and the Dow Midland facility." The process used to develop this consultation ...have not in anyway engaged the Midland community. This section of the report should be modified by (1) removing reference to "community" in the 2nd sentence of the 2nd paragraph and interesting "petitioner" in its place; and (2) add "the community has not yet been engaged in the development, review, or comment on this report."

Response: The language the commenter objects to is a direct quote from a letter dated November 2, 2001 from ATSDR to the petitioners. Language in direct quotes is not generally subject to change: if changed, the language is no longer a quote. The current process of providing a public comment period is intended to engage the community in review and comment.

Comment: The "Report" significantly understates the decline in dioxin concentrations between the EPA 1986 sampling and the 1996 study. The community soil levels were nearly 50% lower (without mitigation) which was probably due to the natural decay of the dioxins.

Response: MDCH disagrees with this statement. The 1998 Dow Corporate Center Study that was conducted in follow-up to the 1996 MDEQ study demonstrated that there is a high degree of spatial variability in dioxin concentrations between sampling points that are relatively close to each other. Minor disturbances of the upper portion of the soil horizon from soil disturbances such as landscaping appear to substantially influence dioxin concentrations. Therefore, based on the results of the 1998 Dow study, it is inappropriate to conclude that there has been a measurable decline in dioxin soil concentrations from the 1980s to the 1990s. There is no basis to conclude that any significant "natural decay" of dioxins and furans is occurring in Midland soils.

Comment: "Table 2, Page 5 – Data for the non-residential areas should be separated from residential areas and compared to ATSDR (or EPA) recommendations for Industrial or other appropriate designations."

Response: ATSDR does not recommend a specific level of dioxin in soil for industrial land use. Rather, the ATSDR Decision Framework recommends site-specific evaluation of exposure pathways that would include identification of appropriate receptors and the level of exposure that may occur on non-residential property. Table 2 has been revised to show the MDEQ Industrial soil direct contact criterion of 990 ppt as the appropriate comparison value for soil samples taken from the Dow plant site.

Comments: The following language is recommended for the last sentence of the first paragraph on page 6: Chlorinated dioxins and furans are very persistent in soil, and community exposure to levels in the ATSDR screening range of 50 –1000 ppt may have occurred in the past. There is no evidence the community has been exposed to levels that exceed the ATSDR action level of 1,000 ppt. Further, there is not current evidence that these exposures have resulted in health problems in the Midland population."

Response: The suggested language implies that adequate environmental data are available and have been evaluated to determine that exposures to soil concentrations greater than 1,000 ppt have not occurred. Further, the suggested language implies that adequate health effects data are available, and proper evaluation has shown no health problems in the Midland population. Both implications are unfounded and the suggested language will not be incorporated into the consultation.

Comment: "Under the ATSDR Interim Guidance section on page 8, last sentence, the report states "...and whether or not adverse health effects will result". This is very controversial, as the writer of the report cannot state that health effects will occur as a result of exposures to these very low levels of dioxin. These statements reflect on the credibility of the Consultations again conclusions are being drawn before site-specific evaluations have been conducted. If health effects will occur, why are we not seeing health effects in the community?"

Response: The sentence when read in context conveys the uncertainty surrounding dioxin exposure, uptake, and the potential health effects that could result. The language will not be changed. The consultation does not state that health effects will occur, rather it states that many factors may affect whether or not health effects will occur.

Comment: "In the ATSDR Child Health Initiative section, the last paragraph discusses animal studies as evidence of health concerns regarding birth defects. However, in these laboratory studies the defects observed were from substantially higher doses of dioxin that [sic] is being seen in soils testing from the community. Recommend modifying the report by inserting "high" before the work exposures in the next to last sentence on page 9."

Response: The MDCH does not agree that high levels of dioxin were administered to animals whose offspring showed adverse health effects in laboratory studies. "High" is an imprecise term and several studies have shown adverse health effects in the offspring of animals fed a diet that contained as little as 50 parts per trillion in-feed. The section will not be modified.

Comment: The report should make it clear that the intent is to use ATSDR's Decision Framework to guide further study of the community.

Response: Explicit language has been added to the ATSDR Interim Guidance section to make this intent clear.

Comment: The commenter recommends the following actions for the Midland community:

- Develop a soil-sampling plan for the residential area immediately north and east of the Plant.
- Soil dioxin levels that exceed 1,000 ppt should be mitigated.
- Exposure Investigations to measure actual exposure in the community should proceed in areas where soil sampling exceeds 1,000 ppt. Exposure Assessments should include a comprehensive Human Health Study that is scientifically sound and peer reviewed.
- Require Public Health actions be implemented if the ATSDR Action Level of 1,000 ppt is exceeded.
- For area of the Midland community that have soil dioxin levels between 50 and 1,000 ppt; the ATSDR Evaluation of site-specific factors should be conducted.
- The Midland County Health Department expects to be included as a full partner in the development and implementation of any additional soil testing, exposure investigations, community surveys, Human Health Studies or community education efforts.

Response: The response is provided below, point-by-point.

- Sampling plans are under development for the areas north and east of the plant indicated by air dispersion modeling to be the most highly impacted by air-borne emissions from the Dow plant incinerators.
- MDCH agrees that soil dioxin levels that exceed 1,000 ppt may require mitigation.
- MDCH agrees that exposure investigations should be conducted for areas where soil dioxin levels exceed the ATSDR action level of 1,000 ppt. However, evaluation of site-specific exposure factors may also be needed where soil dioxin levels are detected between 50 and 1,000 ppt. Human health studies are generally the next step if an exposure investigation indicates that people are exposed and are absorbing contaminants into their bodies. An epidemiological health study is not conducted as part of an exposure investigation.
- MDCH agrees that public health actions should be implemented if soil dioxin levels exceed the ATSDR action level.
- MDCH has, on several occasions, in person and in writing, asked the Midland County Health Department to participate in the health consultation process.

Comment: Analysis of blood lipid levels in studies of other occupationally exposed workers and a credible estimation of such levels in Midland residents, shows that the most highly exposed occupational workers had lifetime average serum lipid levels 1,000 to nearly 10,000 times greater than the estimated contribution to serum lipid levels of the most highly contaminated Midland soils. Accordingly, based on the consistent findings in the occupational studies that

low levels of dioxin exposure do not indicate any increased risk of adverse effects, there is no reason to believe limited dioxin intake such as that from residential Midland soils, would have adverse health effects on Midland residents.

Response: Exposure to dioxins in soil and the resulting incremental addition to a person's total dioxin body burden cannot be addressed without consideration of other exposures. If, as many scientists believe, exposure to dioxins in the food supply is already at a level that may cause health effects, then any additional exposure is undesirable.

Comment: Ample data exist to show that the northeast quadrant of Midland, including the residential areas located therein, are not impacted by dioxin anywhere near the ATSDR action level of 1ppb.

Response: Neither MDCH nor MDEQ agree that ample data exist for the City of Midland. Additional sampling is required under the hazardous waste management facility renewal operating license issued by the MDEQ to the Dow Chemical Company on June 12, 2003.

Comment: A contingency plan for public health actions if total dioxin TEQ concentrations in soil samples exceeds the ATSDR action level is not necessary because none of the previous samples have shown dioxin levels above 1,000 ppt.

Response: A contingency plan, developed prior to soil sampling, is necessary to prevent undue delay in taking actions to protect public health should dioxin soil levels be found in excess of the ATSDR action level.

Comment: All interested stakeholders should be allowed to review sampling plans, not just the MDCH, ATSDR and the U.S. EPA.

Response: The recommendation that MDCH, ATSDR and the U.S. EPA be allowed to review any sampling plans is not exclusive of other stakeholders. The MDEQ has formed a Community Advisory Panel to allow the public to review and comment on actions planned for the city of Midland under the hazardous waste operating license issued to Dow.

Comment: The recommendation to provide the National Institute for Occupational Safety and Health (NIOSH) with copies of this consultation since dioxin contamination is located on an operating facility is gratuitous (i.e., unnecessary).

Response: Agreed. This recommendation has been removed from the Consultation.

Comment: An Exposure Investigation is not necessary because there is no scientific basis to find that Midland soils pose any potential public health hazard.

Response: The consultation concludes that there is an indeterminate public health hazard because the scientific evidence is not available to determine whether or not dioxin in Midland soil poses a hazard. An exposure investigation is necessary to determine if people in Midland who are exposed to contaminated soil are being affected.

Comment: June 27, 2001 - "The Midland Community Leader Panel on Dioxin learned that ATSDR was petitioned to conduct a health assessment by several environmental groups. Michigan Department of Community Health (MDCH) initiates a public health assessment of Midland without contacting or seeking involvement of the Midland County Health Department (MCHD)." The Midland County Health Department was denied the opportunity to review and provide input into the MDCH report before it was issued.

Response: The MCHD was notified on June 28, 2001, by way of a letter addressed to Mr. Charles Newell that (1) ATSDR had received a petition for a public health assessment in Midland, (2) that ATSDR had a cooperative agreement with the MDCH to conduct public health assessments in Michigan, and (3) that MDCH would begin collecting the available information and would use this information to determine IF a public health assessment was warranted for Midland. The letter stated in part that "MDCH will keep you informed of the progress on this project and welcomes the involvement of the Midland County Health Department." The letter was on MDCH letterhead and signed by Linda D. Dykema (then Larsen), Section Manager of the MDCH Toxicology and Response Section.

Comment: "July 19, 2001 – MDCH staff contact the Midland County Health Department and inform them they are making a tour of the Dow Plant facility and of the community. The Health Officer stated he would like to be a part of the community tour. A few days later the MDCH called and noted they stated [sic] the Midland County Health Department could not be a part of the tour."

Response: Two members of the MDCH staff, an ATSDR representative, and a DEQ staff person met with Dow representatives, and toured Midland and the Dow Plant Site on July 30, 2001. MDCH had received requests from local Midland officials, Dow representatives, and the petitioners all of whom wanted to take part in the tour. When it became apparent that 20 or more individuals wanted to be included, MDCH made the decision that this would not be a productive use of staff time. Because not all parties could be accommodated, the decision was made to disinvite ALL those who had made requests. Dow representatives were, of course, present during the tour of the plant site.

Comment: November 8, 2001- Midland County Health Department received notice from ATSDR that a reasonable basis to proceed with a public health assessment for the Midland Community and the MDCH was under contract to conduct the study. Midland County Health Department was given no information by MDCH.

Response: MCHD was notified by a letter addressed to Mr. Charles Newell dated November 8, 2001 that the ATSDR had found a reasonable basis to proceed with a public health assessment in Midland. The letter was on MDCH letterhead and signed by Linda

D. Dykema (then Larsen), Section Manager of the MDCH Toxicology and Response Section. The letter invites Mr. Newell to contact Dr. Dykema with any questions or additional information he'd like to provide.

Comment: The MDCH met with the petitioners on October 3, 2001, to discuss the health assessment process and to provide an opportunity for exchange of additional information. In contrast to the cooperative relationship described above - in which MDCH apparently solicited information from, and gave information to, the petitioners - MDCH met with Dow only belatedly and briefly. Moreover, MDCH ignored vital information that Dow summarized and presented.

Response: Page 2, 2nd paragraph of the consultation states that MDCH and a representative of the ATSDR Region 5 office met with Dow and toured the Dow facility on July 30, 2001 *before* meeting with the petitioners. MDCH spent several hours with Dow officials and considered all information presented.

Comment: Napalm has never been produced in Midland. In addition, Dursban *is* Chlorpyrifos and therefore they should not be both listed. Moreover, the selection of the above-listed items, among the hundreds of beneficial chemicals and products Dow produces or has produced in Midland, distorts the reality of the vital role these chemicals play in agriculture, pharmaceuticals, consumer products and various other sectors. The statement should be replaced with something more objective and neutral. For example: "Early products include bromides, chlorine, caustic soda, carbon tetrachloride, chloroform, arsenical insecticides, magnesium metal, and indigo. The product line expanded rapidly to include monochlorobenzene, salicylic acid, calcium chloride, phenol, ethylene dibromide, and later styrene, vinyl, and vinylidene chloride. Currently, more than 500 chemicals are produced, including industrial and specialty chemicals, plastics, herbicides and pesticides, pharmaceuticals, and consumer products."

Response: The first sentence in paragraph 6, page 2 of the consultation has been revised to read, "Chemicals that have been produced at the Dow plant include but are not limited to: styrene, butadiene, picric acid, mustard gas, Saran Wrap, Styrofoam, Agent Orange, and various pesticides including Chlorpyrifos (i.e., Dursban) and 2,4,5-trichlorophenol (2,4,5-T)."

Comment: Extensive air monitoring conducted in 1997-98 has shown that the dioxin levels in Midland's ambient air are not elevated. Moreover, extensive and effective dioxin emission controls are in place at Dow's facility, and therefore current emissions from Dow's plant site are not contributing to any increase in dioxin levels in Midland residential areas. Absent other dioxin sources, dioxin levels in Midland soils should not increase appreciably. MDCH should describe the current level of strict emissions control on Dow's incinerator to provide the proper context for this statement, and should note that any dioxin concentrations attributable to Dow are from historic, not current, operations at the Midland plant site.

Response: Since public comment release of the consultation in March 2002, the two former Dow incinerators have been replaced. Paragraph 7, page 2 of the consultation has been revised.