

Ashizawa, Annette (ATSDR/DTEM/ATB)

From: De Rosa, Christopher (Chris) (ATSDR/DTEM/OD)
Sent: Friday, January 05, 2007 6:38 PM
To: Ashizawa, Annette (ATSDR/DTEM/ATB); Murray, Ed (ATSDR/DTEM/ATB)
Subject: Fw: Superfund Comments on ATSDR AOC Report

Attachments: ATSDR Report.doc

Fyi and needed follow up.

Sent from my BlackBerry Wireless Handheld (www.BlackBerry.net)

-----Original Message-----

From: Clark.Milt@epamail.epa.gov <Clark.Milt@epamail.epa.gov>
To: De Rosa, Christopher (Chris) (ATSDR/DTEM/OD) <cyd0@cdc.gov>
Sent: Fri Jan 05 17:15:04 2007
Subject: Superfund Comments on ATSDR AOC Report

Chris,



ATSDR Report.doc
(27 KB)

I now you folks are working hard to revise the document. Superfund has now transmitted a number of more site specific comments to GLNPO (and previously to ATSDR) which will help you provide an up to date status of remediation. Specific comments from Superfund, including our management, are noted below.....and these will be sent via GLNPO, but I wanted to give you a heads up on it.

Hope all is well. Call me if you need to.

Milt
312-886-1918

(See attached file: ATSDR Report.doc)

January 5, 2007

U.S. EPA Region 5 Superfund Comments on ATSDR Report: Public Health Implications of Hazardous Substances in the Twenty-Six Areas of Concern

U.S. EPA Superfund has reviewed the above draft document and offers the key general comments noted below. Previously Superfund provided specific comments on Superfund sites directly to ATSDR in November, 2006 and to GLNPO in January 2007. These specific comments addressed (1) current status of remediation and (2) health risk information. General comments are as follows:

- Many inaccuracies regarding site information were found which hopefully will be fully addressed in a final document prior to wider distribution. U.S. EPA has provided detailed comments and re-writes regarding sites to help ensure greater accuracy.
- The screening process to place sites within AOCs needs to be further reviewed. In many cases sites (e.g., Celotex in Chicago) are far removed from waterways and harbors associated with AOCs.
- The report implies that sites listed in the CERCLIS data base are potentially significant when such sites have already been investigated by Superfund and found not be of major health or environmental concern.
- The report needs to expand the discussion on limitations in any executive summary, introduction, and conclusions sections. While the report discusses limitations in these sections, by far the majority of the discussion is on limitations which might cause underestimation of adverse health effects rather than citing methodological limitations which impact the usefulness of the data (both environmental and health statistics) and its interpretation. (For example the report even dismisses the issue of known factors such as smoking and alcohol consumption which are known to adversely impact human health outcomes and statistics by saying it not necessary to mention or evaluate them since this is not an epidemiological study. Such intellectual gymnastics are not appropriate and will be lost on the public).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
GREAT LAKES NATIONAL PROGRAM OFFICE
77 WEST JACKSON BOULEVARD
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FEB 12 2007

Christopher T. De Rosa, Ph.D.
Director, Division of Toxicology and Environmental Medicine
Agency for Toxic Substances and Disease Registry
Mail Stop F29
Chamblee GA 30341-3717

Dear Dr. De Rosa:

After further careful review and consideration of the Agency of Toxic Substances and Disease Registry's (ATSDR) draft document Public Health Implications of Hazardous Substances in the Twenty-Six Areas of Concern Report, the U.S. Environmental Protection Agency (U.S. EPA) is submitting additional comments to ATSDR. U.S. EPA received the second draft of the report in October 2006. Due to time constraints at ATSDR, U.S. EPA was given 7 days to review this extensive report. While U.S. EPA did provide initial comments to ATSDR within the 7 day response time, we are providing a more thorough set of comments.

Subsequently, U.S. EPA Great Lakes National Program Office coordinated internally with all three Great Lakes Superfund Regions (II, III, and V) as well as the Office of Research and Development to compile a more complete set of report comments. U.S. EPA strongly recommends that these comments be carefully considered and fully utilized prior to ATSDR's releasing the report for public comment. U.S. EPA is concerned that the document, if released in its current form, could impact the credibility of ATSDR's effort (some of U.S. EPA's comments are matters of fact), and U.S. EPA would like to continue to work closely with ATSDR to assure the report provides the most value to ATSDR and the public.

ATSDR and U.S. EPA have worked very well together historically, and U.S. EPA greatly values this relationship. Without ATSDR's work and resources, there would not be a research program focused on health effects in the Great Lakes basin. U.S. EPA's Superfund Program also greatly benefits from the site-specific health assessments conducted by ATSDR. These health assessments improve the understanding of the environmental health risk at a Superfund site.


U.S. EPA looks forward to discussing these comments in depth with ATSDR, and we hope ATSDR will find these comments helpful.

The enclosed comments come from three different U.S. EPA programs: Superfund; Office of Research and Development – Human Health Program; and

Great Lakes National Program Office. General comments are provided upfront. Most of the specific comments are found in the portion(s) of the report to which they apply and are a compilation of comments from all 3 U.S. EPA programs involved in the review of the report. Some specific issues identified at one site or AOC may be applicable to other sites (i.e., table updates), and therefore additional edits may be warranted.

As these comments are extensive, U.S. EPA is available to go through the comments in person or on a conference call with ATSDR. Please let us know how we can be of further assistance. Contact Jackie Fisher with any questions at 312-353-1481 or at fisher.jacqueline@epa.gov.

Sincerely,



Gary V. Gulezian
Director

Enclosure

cc: Annette Ashizawa, ATSDR
Hugh Tilson, U.S. EPA ORD
Milt Clark, U.S. EPA Region V Superfund

February 8, 2007

U.S. EPA Great Lakes National Program Office, Regions 2, 3, and 5 Superfund, and Office of Research and Development Comments on ATSDR Report: Public Health Implications of Hazardous Substances in the Twenty-Six Areas of Concern

The comments below were compiled by U.S. EPA's Great Lakes National Program Office (GLNPO). The comments originate from GLNPO, Superfund Division (Regions II, III, and V), and Office of Research and Development (ORD). Each of the program offices and divisions supplied general comments as well as more specific report comments.

General Comments by GLNPO, Superfund and ORD:

Great Lakes National Program Office Comments

The Great Lakes National Program Office (GLNPO) appreciates ATSDR's ongoing commitment to work closely with our office, not only on this report, but on many of our program activities such as the Great Lakes Human Health Network, the State of the Lakes Ecosystem Conference (SOLEC), and the Great Lakes Regional Collaboration. U.S. EPA truly values the resources and support of ATSDR's Great Lakes Human Health Effects Research Program. In reviewing the *Public Health Implications of Hazardous Substances in the Twenty-Six Areas of Concern* report (hereunder "report"), GLNPO, in consultation with other U.S.EPA offices, seeks to provide useful comments which we hope will improve its quality and bolster the report's credibility.

We appreciate that ATSDR has incorporated many of the comments provided by U.S. EPA, in 2004, into the original draft of this report. However, we still find instances of contradictory facts and/or outdated information. For example, on page 16 of the report, ATSDR concludes that the APCO site presents a Public Health Hazard of 2. In the following paragraphs, the report states that as of January 2000, the APCO site had not been remediated. The following paragraph then states that the site was cleaned up in 2004. These statements, situated together, are confusing. It would be more appropriate to simply state that the site was remediated in 2004. Also, as the site has been cleaned up, it may no longer pose a health hazard to the public and may need to be reclassified. **U.S.EPA is especially concerned that contradictory facts and/or outdated information may undermine the credibility of the report.**

ATSDR uses a number of datasets to evaluate the public health implications in this report. While ATSDR does a good job of identifying and describing dataset limitations within the text of the report, ATSDR does not note these data limitations within the tables which present morbidity and mortality rates in each of the AOCs. **U.S.EPA strongly recommends that ATSDR incorporate these limitations in the tables so that the reader does not falsely draw health**

outcome conclusions from the tables.

U.S EPA recommends that the new AOC boundary maps be incorporated in the next draft of the report. U.S. EPA provided ATSDR the recently approved boundary maps in January 2007. For AOC status, please go to the U.S EPA website at <http://www.epa.gov/glnpo/aoc/index.html>.

Region V Superfund Program Comments

U.S. EPA's Superfund program has reviewed the report and offers the following general comments. Please note that Superfund provided site-specific comments directly to ATSDR in November, 2006 and to GLNPO in January 2007.

- Many inaccuracies regarding site information were found and should be fully addressed in a final document prior to wider distribution. U.S. EPA has provided detailed comments and re-writes regarding sites to help ensure greater accuracy.
- The screening process by which sites are placed within AOCs needs to be reevaluated for accuracy. In many cases, sites (e.g., Celotex in Chicago) are far removed from waterways and harbors associated with the AOC.
- The report implies that sites listed in the CERCLIS data base may present potentially significant threats to human health or the environment when many of these sites have already been investigated by Superfund and have been found not to be of major health or environmental concern.
- The report should expand the discussion on limitations in any executive summary, introduction, or conclusion sections. While the report discusses limitations in these sections, it mainly addresses limitations which might cause an underestimation of adverse health effects, rather than methodological limitations which may impact the usefulness of the data (both environmental and health statistics). (For example the report dismisses factors such as smoking and alcohol consumption which are known to adversely impact human health outcomes and statistics by stating that it is not necessary to mention or evaluate them since this is not an epidemiological study.)

U.S EPA recommends that ATSDR review U.S. EPA websites which provide up-to-date listings of NPL site information. For example Michigan sites can be found below

<http://www.epa.gov/region5/superfund/npl/michigan/index.html>

Superfund five year site status reports are posted at:

<http://cfpub.epa.gov/fiveyear/index.cfm?fuseaction=home.showSearchForm>.

Office of Research and Development - Human Health Research Program Comments

Review completed by Dr. Hugh Tilson, National Program Director for
Human Health Research

There is some important and interesting information in this report. There are, however, some very problematic issues, particularly as they relate to the inclusion of extraneous and non-peer-reviewed information that could lead to erroneous conclusions concerning potential exposures and consequent health effects.

Overall Conclusion: The utility of this report would be greatly improved if ATSDR would present descriptive data in a straight-forward fashion, (i.e., discharge data and descriptive county health data). Including information from other studies such as ATSDR public health assessments and databases (e.g., HAZMAT) may be beyond the scope of the stated intention of the report. Presenting information from potentially non-peer-reviewed sources without adequate citation and documentation may be misleading, (i.e., it may contradict the assertion that the report makes no causal inferences about "exposure" and "effect".)

Apparent contradictory statements: ATSDR incorporated U.S. EPA comments on the original draft of this report. However, many times the Superfund site updates were placed into the revised report in such a manner that the report contradicts itself from paragraph to paragraph and section to section. Such statements support the impression that the report may be using incomplete or out-of-date information concerning remedial actions that have already occurred.

Specific Comments:

PEER REVIEW – Page iii

Peer-review: The report states that three individuals external to the Agency contributed to the document, but their comments are not included. For a document that is likely to have significant public health implications, this level of external peer-review prior to its release to the public for comment may be viewed as insufficient. However, that determination cannot be made without having access to the external peer reviewer's comments. **U.S. EPA strongly recommends that this report go through external peer-review prior to the public comment period.**

EXECUTIVE SUMMARY

The executive summary appropriately provides a brief summary of release and discharge data, and AOC status. However, it does not describe any "public health implications" associated with this data. Given that the

executive summary may be the only section that some will read, it should be as complete as possible.

The fourth paragraph of the executive draft summary discusses AOC status and specific contaminants found within the AOCs. Some of these statements are incorrect. For example, the draft Executive Summary states that the Ashtabula River has been remediated. In fact, dredging is currently on-going. The project is not complete and therefore follow-up sampling to gauge post-cleanup levels of residual contamination has not yet been implemented. For more information, please refer to section 3.3. The Oswego River AOC was also delisted in 2006. GLNPO recommends that you review each of the AOC's status and update in this paragraph and other portions of the document pertaining to AOC status as needed. For AOC status, you can go the U.S EPA website at <http://www.epa.gov/glnpo/aoc/index.html>.

There are also what appear to be contradictory statements in the executive summary. It is difficult to reconcile the statement "With the exception of the Manistique River AOC (Lake Michigan), all AOCs continue to be impacted by the release of IJC pollutants as determined from both the TRI and NPDES data" (paragraph 4 executive summary) with "Data presented in this report demonstrate that many of the hazardous waste sites that, in the past, had contributed to human exposure or the environmental burden of the IJC critical pollutants and other contaminants were found to be remediated (Paragraph 5 executive summary)".

1. INTRODUCTION

U.S. EPA strongly recommends that the report be updated to include the finalized AOC boundary maps which were provided to ATSDR in January 2007.

1.1 ATSDR PUBLIC HEALTH ASSESSMENTS FOR THE 26 GREAT LAKES AOCs

Classification of site: This report describes sites according to categories, i.e., urgent public health hazard, public health hazard, or indeterminate public health hazard. Although the Public Health Assessment Guidance Manual is the basis for deciding on these categories, the rationale for each site is not well articulated in this document. There is some generalization provided on p.5 and 8, but this is not sufficient to understand how decisions were made for each site. Given that risk managers are likely to focus on such categories, it is critical that the report provide more extensive site-specific rationale for each classification.

1.2-1.3 TRI DATA FOR THE 26 U.S. GREAT LAKES AOCs /NPDES DATA FOR THE 26 U.S. GREAT LAKES AOCs

Exposure data: The primary source of exposure information for this report is self-reported discharge data from the TRI database and NPDES permitted discharges. Data from the TRI were obtained for 2001, whereas data for NPDES were obtained for 2004, which greatly weakens any interpretations concerning environmentally relevant concentrations of the chemicals. This is further complicated by the fact that these “exposure” data are presented in the context of county health data obtained for the year 2000.

The focus of this report is on IJC critical chemicals, which we believe is appropriate. However, the tables include information on many other chemicals, but it is not clear why these are included.

1.4 COUNTY HEALTH OUTCOME DATA FOR THE 26 U.S. GREAT LAKES AOCs

County Health Outcome Data: Community Health Status Reports are the primary source of health data in this report, providing measures of birth and mortality/morbidity. Limitations of these data are described on p.9. However, given the importance of these data to the substance of this document, greater detail on how the data was obtained is warranted.

It is particularly problematic the way the report presents and discusses health data. While comparisons are made between a targeted site and peer counties (p.7), the basis for conclusions about increased incidence of health outcomes is unclear. For example, on p. 18, it is stated that “Only three Monroe County health indicators compared unfavorable with both US indicators and with the median of peer county indicators”. This statement is problematic in at least two respects. First, the reader is not informed about the database used for the US indicators. Second, the term to describe the results appears to be entirely subjective. It was unclear what constitutes an “unfavorable comparison”. The reader may have problems evaluating this conclusion.

It is also noteworthy that county health data were not available in some cases (e.g., p. 182). The absence of these data without more detailed explanation is problematic. In addition, some of the indicators (p. 69, unmarried mothers) appear to have no relation to health. It is unclear why this information is included.

There is also inconsistency about the information provided under the rubric “Public Health Outcome Data”. P.7 makes it clear the type of information that is provided from the Community Health Status Reports and that this is the basis for comparison between target sites and peer

counties. Yet, other kinds of information (e.g., p. 36, blood lead and cadmium levels and urinary cadmium levels) are presented as public outcome data. This practice of including data that may or not may be relevant and are not derived from the county health status reports is confusing and very difficult to evaluate. It would have been better just to focus on the county health outcome data and not include a hodge-podge of other data that are often irrelevant, not peer-reviewed, or out-of-context.

It is not clear how useful the demographic information is and how it contributes to the stated objective of this document. How these data were collected is not adequately described and appears to be inconsistently presented (see p. 10 versus p. 16). In some cases, the data were not provided at all. More problematic is the inherent and inappropriate association between the presence of a potentially vulnerable population at an AOC and an “unfavorable” county health data indicator.

1.5 METHODOLOGY FOR DATA COLLECTION

Misleading association between “exposure” and “effect”: On page 7, it is stated that the observations made in this report are meant to be descriptive and that “...no causal inferences are drawn regarding an observed health effect and the presence of a contaminant known to be associated with that health effect”. In the preceding paragraph, it is also stated that “ATSDR public health assessments were used to obtain information on exposure and potential health effects for this report”. These appear to be contradictory statements. Including results from ATSDR public health assessments in the context of this report causes confusion and is misleading. Even the title of this report “Public Health Implications of Hazardous Waste Sites” predisposes the reader to expect predictive associations will be made between exposure and health effects. If it is intended that this document be viewed “... as an assessment to identify the co-occurrence of elevated patterns of morbidity and mortality and environmental contamination that may merit further hypothesis-based epidemiologic study” (p. xx), the extraneous information (e.g., public health assessments and reports from other sources) should be deleted. Including exposure and health data in the manner presented in this document (from potentially non-peer reviewed sources) is problematic, i.e., much of the information is presented without citation and the reader has no way to evaluate the conclusions.

It is widely accepted that few studies, including epidemiological studies, ever demonstrate causality. Nonetheless, associations between the presence of a chemical and an increased incidence of a health indicator are often used to make public health decisions. The indirect and assumed associations between “exposure” and “health effects” presented in this document will likely be used to support risk management decisions. Such

decisions may not be based on the best science available and could lead to cost-ineffective and inappropriate risk management actions.

1.9 THE COMPLETED EXPOSURE PATHWAY

As stated in the above comments (in sections 1.2-1.3), the report provides information on discharges of chemicals, i.e., it does not provide data on the actual concentration of any chemical in air, water, or soil. This fact greatly limits interpretations concerning actual exposures to concentrations. It is agreed that discharge data do provide some information about potential exposure by virtue of the fact that the chemicals are present in the environment. As pointed out on page 9 of the report, "Neither source of information [sic TRI or NPDES] reflect potential for human exposure". However, this statement seems at odds with the report's presentation of what constitutes a "completed exposure pathway". On p.9 of the report, it is stated that "A complete exposure pathway exists when direct evidence is available, or, in the judgment of the health assessment team, that there is a strong likelihood that people in the past or present are coming in contact with site-related contaminants". This is perhaps an over-simplified definition of a "complete exposure pathway". Living in proximity to a chemical is not necessarily "a completed exposure pathway". Risk assessors and other health professionals will know if exposure actually occurred, if such chemicals can be measured in bodily fluids (such as blood or urine) or if chemicals could be detected at a potential target site in the body. The discussion about exposure pathways should be modified or eliminated.

2. LAKE ONTARIO

2.1 OSWEGO RIVER AOC, OSWEGO COUNTY

Throughout the document, please acknowledge that the Oswego River AOC has been delisted and that there are no significant exposure concerns.

2.2 ROCHESTER EMBAYMENT AOC, MONROE COUNTY, NY

The discussion of the Rochester RAP incorrectly states that it has identified drinking water restrictions. The RAP clearly states that there are no drinking water restrictions anywhere in the RAP. It does identify occasional taste and odor problems due to issues unrelated to contaminants.

2.2.1.1 Rochester City of APCO Site (Former APCO Property Brownfield Site)

On p. 16, the report makes what appears to be a contradictory statement. For example, on page 16, under conclusions, a statement that "as of 2000,

the site had not been remediated”, is followed by a statement that “in 2004, it had been remediated”. It would be sufficient to say that the “site was successfully remediated in 2004 through the joint efforts of local, county and state governments.”

2.3 EIGHTEEN MILE CREEK AOC, NIAGARA COUNTY, NY

Eighteen Mile Creek has perhaps some of the most contaminated water, fish and wildlife and consequently the highest potential threats to any Lake Ontario subsistence anglers. The report write up does not identify these significant potential risks or the sources of these contaminants.

3. LAKE ERIE

3.2 PRESQUE ISLE BAY AOC, ERIE COUNTY, PA

3.2.1.4 Mill Creek Dump

The best source of information on Millcreek Dump Superfund site is the Third FYR available on the web at (<http://www.epa.gov/superfund/sites/fiveyear/f2006030001083.pdf>). The description is good and there are only a few details, listed below, that can be easily corrected:

1. The area of the site is 124.3 acres.
2. SVOCs are not important as site contaminants.
3. The newest U.S.EPA NPL is from 2006.

U.S EPA suggests that you add two pieces of information:

1. During last 9 years the treatment plant was operated by Responsible Parties (RP), and the cleanup standards have been met during this time. In December, the State discussed with the PRP how to replace RPs in October 2007 and continue plant operations.

2. Erie International Airport needs modernization to allow big transport planes to land in Erie. In the future, a planned extension of the airport runway may reach the site, particularly the edge of capped waste. U.S.EPA and State have already evaluated the airport extension plans and decided that the properly performed construction won't expose contaminated soils and jeopardize the cleanup process.

3.3 ASHTABULA RIVER AOC, ASHTABULA COUNTY,

Recent AOC Remediation projects that have been *initiated* under the Legacy Act Sediment Cleanup include the Ashtabula River AOC. This

project began in September of 2006 and is expected to remove over 600,000 cubic yards of sediment contaminated with PCBs.

3.3.1.1 Big D Campground

Based upon the best available information, it is not clear that there is a definitive connection between the Big D Campground and the Ashtabula River AOC. The mere presence of a Superfund site in the general area of an AOC does not automatically mean that contaminants have impacted the AOC.

3.3.1.2 Fields Brook

A clarification is needed. Although the Reactive Metals Incorporated facility (referred to as RMI Extrusion by U.S. EPA) is located on Fields Brook, (is not being addressed as part of the Fields Brook site). The RMI Extrusion facility is being addressed through DOE actions coordinated through the Ohio Department of Health-Bureau of Radiation Protection and state and federal RCRA programs. The public health assessment for the RMI Extrusion facility dealt with contaminants that differ from those found in Fields Brook. The RMI Extrusion facility has regulated radionuclides that are different from the TE-NORM radionuclides that were dealt with in the Fields Brook cleanup. In addition, the profile of organic and inorganic contamination found on the RMI Extrusion facility differs from what is found in the Fields Brook site. For additional information, please follow the links found at:
<http://www.ashtabula.doe.gov/rhtframe.htm> .

Health concerns from exposure to contaminants in Fields Brook were primarily related to PCBs and hexachlorobenzene. In fact, a significant amount of dense nonaqueous phase liquid (DNAPL) was encountered during the excavation of brook sediment and floodplain soil in 2000 and 2001. Excavation was completed in December 2002, with demobilization and closure of the landfill in 2003. At completion, 53,094 cubic yards of contaminated sediment and floodplain soil were excavated from Fields Brook. For additional information concerning work completed in Fields Brook and at the associated source control sites, please see the 2004 Five- Year Review of the Fields Brook site at
http://www.epa.gov/region5/superfund/fiveyear/reviews_pdf/ohio/fields_brook.pdf .

Follow-up monitoring of the brook (2005, 2006) has identified small pockets of DNAPL and areas of elevated PCBs in the industrial portion of the brook. U.S.EPA and the potentially responsible parties (PRPs) are evaluating whether this is material that was missed during the cleanup or a sign that there is continued contaminant loading into the brook. Once it

is determined whether there is a continuing contribution to the brook, impacted material will be excavated.

The text notes that several industrial facilities are potentially recontaminating Fields Brook sediment. It is not clear whether this is a reference to the original six source control areas (Acme Scrap Iron and Metal, the North and South Sewers, RMI Metals, Millennium TiCl₄ facility, Conrail Bridge Area, and the Detrex Corporation) that were addressed as part of the cleanup (to prevent recontamination) or a generic reference to a potential source(s) of the contamination found in recent O&M sampling. Note that U.S.EPA has not yet determined whether the excess contamination found during recent O&M sampling is material that was missed during the cleanup or new material contributed to the brook. The report should not jump to a conclusion that has not yet been proven.

3.3.1.3 Laskin Poplar Oil

The text states, "In addition, soil at the boiler house where the oil was burned were highly contaminated, and contaminants may have an impact on the local creek." Later text notes that the site "probably contributed to the environmental burden of the 3 IJC critical pollutants PCBs, 2,3,7,8-TCDD, lead, and mercury." Has there been sampling in the nearby creek to show that the Laskin Poplar Oil facility has impacted surface water? From the NPL summary on the U.S.EPA Region 5 web page, it's not clear that this conclusion has been drawn. Without a connection to contamination in the nearby surface water, it may not be appropriate to say that the site has impacted the AOC.

3.3.1.4 New Lyme Landfill

The text states that sediment near the New Lyme Landfill is contaminated. However, the surface water body is not identified. The U.S. EPA Region 5 web site states that, "The site lies entirely within the Lebanon Creek Watershed. The northern portion of the site drains directly into Lebanon Creek. The remainder of the site drains southward to an unnamed tributary of Lebanon Creek. Lebanon Creek drains into Rock Creek..." There is not sufficient information to document that this contamination has impacted the AOC. The site is 20 miles to the south of the Ashtabula.

3.3.5.1 Hazardous Waste Sites

Excavation in Fields Brook addressed PCBs, hexachlorobenzene (a primary constituent of the DNAPL) and low-level radionuclides. Recent O&M monitoring has found small pockets of DNAPL in the industrial portion of the brook and an area of elevated PCBs in the industrial portion of the brook. Investigations are on-going to determine whether these issues are the result of material not addressed during the prior site

cleanup or new material that has been contributed to the brook. A large mass of DNAPL is present below the Detrex Corporation facility. An extraction system is in place to remove DNAPL, but the system will need to operate for a long time since the volume of DNAPL is so large. The extraction system will be expanded to speed the removal of product. In addition, to ensure that there is not subsurface movement of DNAPL south to Fields Brook, Detrex will be installing an interceptor trench between its facility and Fields Brook in late 2006.

3.3 Tables

General Comment

From reading the report, one gets the idea that current releases are at least as significant as historical sources. This is likely not the case for the Ashtabula AOC. There was significant contamination in Fields Brook, which was the primary source of contamination to the Ashtabula River. The historical contribution of PCBs, VOCs, SVOCs, metals, and radionuclides via Fields Brook likely dwarfs current permitted releases. Even though the old ATSDR health assessment for Fields Brook found an indeterminate risk, the report did not look at the mass of contaminants in the brook and what that meant in terms of loading to the Ashtabula River. U.S EPA is not suggesting that some detailed evaluation be done to look at the historical mass of contaminants releases. Rather, the report could include a discussion that puts the waste sites, TRI data and NPDES data into perspective.

Table 3-3b

Is there a way to indicate which records drive the information in the table? For example, what site is considered to be the source of 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN?

Table 3-3c

Since it appears that the releases are pulled right from TRI data, it is important that a clear connection to the AOC is established for each facility/data point. A large soil release at a site with a questionable connection to the AOC could lead to a skewed determination that there is a mass of material that could erode and impact surface water. It would also be helpful for the facility to be identified along with the TRI data so that readers could easily understand the source of the identified release.

Current permitted releases may not be ideal, but in most cases, on-going contaminant contributions from industry are significantly less of a problem than historical contamination that remains in the watershed. Even if a waste site is remediated, there are residual levels of contamination that are considered allowable and acceptable from a risk perspective. If permitted NPDES discharges are discussed in the document (recognizing that although allowable, they are sources), the report should note that

having a site remediated doesn't necessarily remove all contamination that can impact an AOC.

3.5 BLACK RIVER AOC, LORAIN COUNTY, OH

Map Comment:

- 1) The AOC does not include the Lake Erie tributaries east of the Black River mouth; it is only the actual Black River watershed.

- 2) It appears the map was generated using two different GIS projections as the map on the disk shows that the Cities of Lorain and Elyria are no longer in the Black River AOC and in fact, shows these Cities to be in Cuyahoga County. Both Cities are indeed within Lorain County and Elyria is the county seat. It appears that the cities and roadways layers used to generate the map are in a different projection from the projection used for the layers of streams, counties and Lake Erie coastline.

3.5.1.1 Ford Road Industrial Landfill

This site is an inactive 15-acre landfill located in Elyria, and bordering on the Black River. The landfill was originally a ravine, but has been filled by the waste disposed there. The site is not fenced, accessible from all sides, and within 1 mile of several residences. Surface water at the site flows directly, as runoff, into the Black River, and also into an intermittent stream that drains into the Black River, and into a ravine, from whence runoff enters a wetland that drains into the Black River. Groundwater flows toward the Black River. The site was used for the disposal of industrial wastes from the 1950s until 1974. The wastes, from several local industries included organics, inorganics, heavy metals, pesticides, catalysts, sanitary sewage sludges, paint sludges, latex sludges, and small quantities of unknown hazardous wastes. The wastes were frequently burned after dumping; several areas of exposed ash are visible. Closing and capping of the landfills was not completed under U.S.EPA supervision or guidelines, the cap is sagging, and a number of drums and other wastes including ash are visible. The landfill is unlined. A landfill gas monitoring system was formally approved by Ohio EPA in early 2006 and was implemented. Sampling results have shown that no landfill gas is migrating through the existing cap.

USEPA negotiated an Administrative Order by Consent (AOC) with a group of potentially responsible parties (PRPs) to conduct a remedial investigation/feasibility (RI/FS) at the site in 2002. This work was completed in 2005 and a Record of Decision (ROD) outlining the preferred remedial action to clean up the site was signed in September 2006.

Category of Public Health Hazard: This site was previously categorized as an *Indeterminate Public Health Hazard* (Category 3) because of the lack of current environmental monitoring data and the fact that the available data did not provide a complete picture of the extent of contamination. However, with the completion of the RI/FS and the ROD, this site will need to be reevaluated to determine its correct category placement.

Contaminants of Concern in Completed Exposure Pathways:

Based upon the findings of the RI/FS and the risk assessment conducted at the site, the following contaminants of potential concern (COPCs) were identified:

- For soil and sediment, COPCs are PAHs, PCBs, and metals;
- For surface water the COPCs are one SVOC (bis[2-ethylhexyl]phthalate) and five metals (aluminum, antimony, arsenic, iron, and thallium);
- For groundwater, the COPCs are two VOCs (benzene and vinyl chloride), one SVOC (bis[2-ethylhexyl]phthalate), PCBs, and several metals; and
- For leachate, the COPCs are two VOCs (benzene and chloroform), one SVOC (bis[2-ethylhexyl]phthalate), three pesticides (beta-BHC, dieldrin, and heptachlor), and several metals.

One primary exposure pathway for human receptors is incidental ingestion of and dermal contact with soil at the Site. The exposure to COPCs in soil via the inhalation pathway is not expected to be significant, though, since soil COPCs consist primarily of inorganics, PCBs, and PAHs and the majority of Site soils are covered with vegetation, which mitigates the potential for generation of fugitive dust.

Potential exposure to COPCs in groundwater is not expected to be significant since no active potable water wells are in use within a one-mile radius of the Site. This was confirmed by City of Elyria Water Department records which document that the 10 residences identified in a search of Ohio DNR water well logs had installed wells between the mid-1950s and mid-1960s but they are all currently connected to the public water supply. In addition, the depth to groundwater (2004 data range from 4.5 to 26 feet below ground surface) prevents exposure to COPCs in groundwater via direct contact. Also, several potential seep locations were identified onsite, but exposure to leachate is not expected to be significant due to the limited nature of

these seeps coupled with the dense vegetation along the slopes of the landfill.

The portion of the Black River adjacent to the Site may be used for recreational activities such as fishing, wading, and swimming. Therefore, recreational receptors (i.e., children and adults) may be exposed to sediment and surface water within the Black River via the incidental ingestion and dermal contact exposure pathways. However, the intermittent stream adjacent to the Site is relatively small and is only inundated during significant rainfall events, which precludes its use for recreational activities such as fishing, swimming, or wading. Therefore, surface water from the ditch adjacent to the Site is not expected to present significant exposure pathways. Due to the ephemeral nature of the intermittent stream, recreational receptors may be exposed to substrate (i.e., soil/sediment) within the stream channel.

Consumption of contaminated fish from the Black River is a potentially complete exposure pathway. The observations of Site-related PCB concentrations in the sediment at the edge of the river indicate that the fish ingestion exposure pathway is potentially complete. PCBs are known to bioaccumulate in fish, and have been identified as a COPC for sediment.

Demographics: A residential area is located directly across Ford Road, west of the site.

Public Health Outcome Data: Not reported.

Conclusions: The Ford Road Industrial Landfill is currently being addressed under the U.S. EPA Superfund Program. It is anticipated that a Consent Decree with the responsible parties will be finalized in 2007 and work to implement the actions outlined in the ROD will begin shortly thereafter. This will address any previous issues raised at the site.

3.5.5.1 Hazardous Waste Sites

Only two hazardous waste sites in Lorain County have ever been categorized by ATSDR in health hazard Categories 1-3. Based on the documents for these sites reviewed in Section 3.1.1, there is no clear evidence that human exposure to site-related IJC critical pollutants is currently occurring at concentrations or doses that exceed health-based screening values. The Republic Steel Quarry Site has been remediated by removal of contaminated soil and exposure is prevented by restriction of access to the site. Contaminants remain in the quarry sediment, but are below the mixing zone. In the past, this site may have contributed to

the environmental burden of the IJC critical pollutants B(a)P and lead, and it still may serve as a reservoir of these contaminants.

The Ford Road Industrial Landfill has been investigated adequately, but it has not been remediated yet at this point in time. It is situated on the Black River and surface water and groundwater flow is toward the Black River. This site may have contributed and may continue to contribute to the Black River AOC's environmental burden of the IJC critical pollutants including PCBs. It is planned that the existing contamination will be addressed under a negotiated Consent Decree to implement the clean up alternatives outlined in the ROD. This will prevent any further contamination of the Black River from the Ford Road site.

Public health outcome data were not available for these sites.

Agricultural and storm water runoff, sedimentation from habitat loss and rapid construction growth, combined sewage overflow (CSO), and failing home sewage treatment systems are non-point sources of water quality degradation and are current issues of concern to the community as reported by U.S.EPA (June 2004).

Issues for Follow-Up

Previously for the Ford Road Industrial Landfill - in its 2002 health consultation, ATSDR concluded that up-to-date and more extensive monitoring data are needed to characterize the extent of the contamination and whether contaminants are leaching from the landfill into the Black River. Sampling of fish tissue may be needed. Access to the site should be restricted to protect children from the exposed drums and waste. However, with the current completion of the RI/FS and the ROD and the anticipated start of the clean up of the site, there are no longer any issues to follow upon at this time.

3.5.1.2 Republic Steel Corp. Quarry

The site includes a 4-acre quarry and about seven acres of wooded land surrounding the quarry. It was originally a sandstone quarry. From 1950 to 1975, Republic Steel Corp. used the quarry as a disposal site for waste pickle liquor consisting of sulfuric acid and dissolved metal oxides, and for rinse water from pickling operations. The waste was carried from the plant to the quarry by a ditch. Information regarding this site is taken from the 1989 ATSDR preliminary health assessment for this site, HazDat, and the 2003 U.S.EPA NPL fact sheet for the site.

Category of Public Health Hazard: This site was categorized by the 1989 ATSDR health assessment as an *Indeterminate Public Health Hazard* (Category 3) because of the potential threat to human health from

exposure to contaminants in quarry water and sediment, soil and dust, and possibly in fish. Contaminants of concern included the IJC critical pollutants B(a)P and lead. A subsequent ATSDR site review and update concluded that the site poses *No Apparent Public Health Hazard* (Category 4). The site was remediated after the original 1989 health assessment was completed.

Contaminants of Concern in Completed Exposure Pathways: None identified. In the 1989 ATSDR health assessment, contaminants of concern included the IJC critical pollutants B(a)P and lead.

Demographics: The demographic profile, from the 2000 U.S. Census, for vulnerable populations living within 1 mile of this site:

Children 6 years and younger	1,400
Females aged 15-44	2,469
Adults 65 and older	1,539

Public Health Outcome Data: Not reported.

Conclusions: The Republic Steel Corp. Quarry site may have contributed to the environmental burden of the IJC critical pollutants B(a)P and lead in the past. As reported in the U.S.EPA fact sheet, remediation of the site, including removal of sediment and soils from the drainage ditch and hot spots near the edge of the quarry, has occurred. Contaminated quarry sediments were left in place because the contaminants were below the mixing zone, and remediation could entrain contaminated sediments in the water, increasing the hazard. Fencing was improved and an ordinance was passed by the city of Elyria to prohibit the use of groundwater as well as the use of the quarry for recreational purposes. In addition, the property zoning will be maintained as heavy industrial use only. Continued periodic monitoring of quarry surface water, quarry fish tissue, and groundwater were recommended. Deletion of the site from the NPL was finalized in December 2002.

3.6 MAUMEE RIVER AOC, LUCAS, OTTAWA, AND WOOD COUNTIES, OH

General Note – The county data used in this report appears to be inconsistent please check that Lorain County data were not used.

3.6.2 TRI Data for the Maumee River AOC

Some TRI and NPDES data may be included in the tabulations, but may not be located in the AOC.

3.6.3 NPDES Data for the Maumee River AOC

The NPDES permitted discharges for Lorain County were used in this report and summarized in Table 3.6-C. However, Lorain County is not in the Maumee River AOC.

- Table 3.6-C is titled: **NPDES Permitted Average Annual Discharges (in pounds, 2004) to Surface Water, Maumee River AOC**. This is confusing and not consistent. What data does the table represent? Please clarify not only in this section but others.

3.7 RIVER RAISIN AOC, MONROE COUNTY, MI

3.7.1.1 Consolidated Packaging Corp.

The site does not represent the full impact of contamination at the AOC. The contaminant impact from Ford Outfalls Site, not mentioned in this report, likely far exceeds those associated with Consolidated Packaging.

3.8 ROUGE RIVER AOC, WAYNE AND OAKLAND COUNTIES, MI

Table 3.8F - There is a "P" missing from POLYCHLORINATED. see top line of chemical list.

3.8.1.13 Hi-Mill Manufacturing Company

Text Correction:

The Hi-Mill Manufacturing Company site is located on a ~~2.5-acre~~ 4.5-acre site west of the City Township of Highland (Oakland County), MI... After October 1983, the waste disposal methods shifted to recycling ~~rise~~ rinse water and...

Health Hazard Characterization

Regarding the health hazard categorization of Hi-Mill, U.S EPA recommends that this site be re-evaluated by ATSDR because site conditions have changed. For the purpose of this report, perhaps ATSDR can add a statement that a review of current conditions should be done to confirm the category is correct.

Hi-Mill is identified as category 3 -- indeterminate public health hazard -- based on a Public Health Assessment completed 15 years ago (1991).

The situations at Whitehall and Hi-Mill are somewhat similar, so designating one as a 4 and the other as a 3 appears to be inconsistent. They are similar in that the problem at both sites was a contaminated drinking well, and in each case the well was shut down and another source of drinking water was provided. The write-up on Whitehall states: "The 1992 ATSDR public health assessment concluded that the site poses

No Apparent Public Health Hazard because there is no current human exposure to significant levels of hazardous substance."

U.S EPA believes the same statement could be made for Hi-Mill.

In the Conclusion section for Whitehall, it states: "Although this municipal supply well contributed to human exposure to VOCs, it was not the source of contamination, which remains unknown. It has been taken off-line. Monitoring of the groundwater continues."

A similar statement, with some modifications, could be made for Hi-Mill. The suggested language is:

"Although ~~this municipal supply well~~ **the plant production wells** contributed to human exposure to VOCs, the wells have been sealed and a replacement well was installed in an uncontaminated area. ~~it was not the source of contamination, which remains unknown. It has been taken off-line.~~ Monitoring of the groundwater continues."

3.9 CLINTON RIVER AOC, OAKLAND AND MACOMB COUNTIES, MI

3.9.1.2 Liquid Disposal, Inc.

p 152 and 153 - both in the **Public Health Outreach Data** paragraphs - Correct spelling is Shelby Township

4. LAKE HURON

4.1 SAGINAW RIVER AND BAY AOC

4.1.1.7 Velsicol Chemical

Site Description:

The Velsicol Chemical Corp. is a fifty-four acre site, located in Gratiot County, Michigan. From 1936 until 1978, Velsicol (formerly Michigan Chemical Corp.) produced various chemical compounds and products at its main plant site in St. Louis, Michigan, such as hexabromobenzene (HBB), 1,1,1-trichloro-2,2-bis(p-chlorophenyl) ethane (DDT), polybrominated biphenyl (PBB), and tris(2,3-dibromopropyl) phosphate (tris). In 1982, a Consent Judgment was entered into by Velsicol, U.S. EPA and the State of Michigan, under which Velsicol agreed to construct a slurry wall around and a clay cap over the fifty-four acre main plant site. In return, Velsicol received a broad covenant not to sue from U.S. EPA and State of Michigan. The Pine River, which borders the main plant site on three sides and was known to contain significant levels of DDT and PBB, was not required to be remediated by the 1982 Consent Judgment. The

Pine River contamination was addressed at the time by the State of Michigan with a no-consumption advisory for all species of fish. The fish advisory continues to remain in effect.

Site Responsibility

This site is being addressed through federal, state, and potentially responsible parties' actions.

Threats and Contaminants

Onsite groundwater is contaminated with DDT, chlorobenzene, carbon tetrachloride, trichloroethylene (TCE), and other chlorinated compounds. Onsite soil samples revealed contamination with PBBs, copper, chromium, zinc, and magnesium. The sediments of the Pine River were also contaminated with similar contaminants through direct discharges from the site; however, surface waters do not show any significant impacts. Potential risks exist for people who eat contaminated fish and wildlife in the vicinity of the site.

Cleanup Progress

Under the 1982 Consent Judgement, Velsicol completed the construction of the containment system at the main plant site in 1985. The containment system consisted of a slurry wall around the fifty-four acre site and a clay cap over the site. The Consent Judgment also required that Velsicol maintain water levels within the containment system at less than 724.13 feet above mean sea level. Water levels within the containment system did not exceed 724.13 until 1993. Velsicol had to pump out 1.25 million gallons of water from the containment system in early 1994 and another 1.28 million gallons in late 1994. U.S. EPA and the State of Michigan asked Velsicol to conduct an assessment of the containment system to determine why water levels continued to rise in the system. Velsicol agreed and began the assessment in the summer of 1996 and completed it in March 1997. Velsicol also submitted technical documents to U.S. EPA in July 1996 to begin the process for getting approval to inject non-hazardous waste down their deep injection well, which is located five miles from the main plant site. Velsicol constructed an alarm and automatic shut-off system for the deep injection well in 1997. Velsicol received approval from U.S. EPA to inject non-hazardous waste down the deep well in 1997.

Around this same timeframe, U.S. EPA and the State of Michigan began a reassessment of contamination in the Pine River/St. Louis Impoundment. During summer 1996, sediment cores were collected from 23 locations in the St. Louis Impoundment and analyzed for PBB, HBB, and DDT.

Surficial sediment samples also were collected from depositional areas in the lower Pine River (below the St. Louis dam).

During summer 1997 the Agencies collected another round of sediment cores from 28 locations and analyzed them for DDT and total organic carbon (TOC). Additionally, the Michigan Department of Environmental Quality (MDEQ) collected fish for analysis.

Results from all sediment surveys indicated that the levels of total DDT in the Pine River and the St. Louis Impoundment were extremely high with a maximum of 32,000 ppm total DDT. A comparison of the 1980, 1981, 1996 and 1997 data showed that the concentration levels, as a whole, had not decreased over time.

On June 8, 1998, U.S. EPA signed an Action Memorandum for a time-critical removal action to address the most highly-contaminated sediments in the Pine River. The Action Memorandum called for dredging/ excavating sediments containing 3,000 ppm total DDT or greater (the hot spot), treatment of the sediments with a stabilizing/drying agent, and offsite disposal of the sediments. The removal action also included building necessary infrastructure such as roads, a staging pad, and a water treatment plant. Construction of the infrastructure was substantially complete by November 1998. Sediment removal began in the spring of 1999 and was completed in October 1999.

For the remaining contaminated sediments not addressed by the removal action, a streamlined Remedial Investigation and Feasibility Study (RI/FS) Report and Proposed Plan were made available to the public in August 1998. U.S. EPA signed a Record of Decision (ROD) on February 12, 1999, selecting Alternative 4 (Hydraulic Modification of the Pine River, Excavation of Sediments, Dewatering and Water Treatment) and Alternatives 5 and 6 (disposal of contaminated sediments in either a Resource Conservation and Recovery Act Subtitle D or C landfill). The ROD contemplated the use of temporary cofferdams and the dry excavation of sediments, but also recognized that the installation of temporary cofferdams might not be implementable in all locations in the St. Louis Impoundment and that some of the sediment removal might need to be completed using mechanical or hydraulic dredging. In accordance with the ROD, remedial action work in the Pine River would include the following components: installation of temporary cofferdams in the St. Louis Impoundment; dewatering of the areas within the cofferdams; dry excavation of the sediments; stabilization of the sediments with a drying agent; treatment of the water removed from the excavation areas; ongoing monitoring of operations to ensure protection of workers and the community; ongoing water column and air monitoring; and sediment sampling after completion of the excavation work to ensure the completion

of the project. In addition, the State of Michigan would continue to monitor fish levels until the fish advisory can be removed.

U.S. EPA began Phase I remedial action work in the fall of 1999 with the installation of sheet piling to construct cofferdams and to divide the southern half of the river into manageable cells. Phase I cleanup activities were completed during the 2003 construction season. Within the Phase I area, an access road with 20 seven-foot diameter culverts was built. This access road would later be utilized during the Phase II remedial action activities in order to reach the northern half of the river. U.S. EPA began dewatering and sediment removal in the northern half of the river (Phase II) in the summer of 2004 and completed the work in 2005, with the removal of the northern sheet piling completed in early 2006. During the 2006 construction season, U.S. EPA again dewatered the southern half of the river so that the in-river haul roads could be removed and the remaining contamination in the equalization basin could be excavated and shipped offsite for disposal. The remedial action work in the river will be completed by the end of 2006.

The use of dry excavation methods for cleanup of the Pine River sediments facilitated the discovery that the slurry wall around the 52-acre former plant site was failing, and Dense Non-Aqueous Phase Liquid (DNAPL) was migrating from the main plant site into the glacial till underlying the river sediments. Adaptive change management during the Pine River remedial action handled the discovery of DNAPL without losing construction time. By the end of the 2005 construction season, approximately 4,200 gallons of DNAPL had been pumped from the river bottom, approximately 612,000 cubic yards of sediment had been removed, an estimated 200 tons of DDT had been removed from the river, and 1,200 linear feet of interceptor trench had been installed along the riverbank to collect DNAPL migrating from the plant site. Laterals to the trench were installed to extend into the cells where residual DNAPL within the till was left in place due to the proximity to the lower water table. U.S. EPA also constructed a clay cap over the areas of the river bottom with residual DNAPL to isolate the contaminants from the river. Additional sections of interceptor trench are being installed during the 2006 construction season in the area near the former equalization basin.

Following the discovery that the slurry wall surrounding the former plant site was failing, the Agencies began an RI/FS at the main plant site, designated as operable unit 1 (OU1). (The Pine River sediment remediation project is designated as OU2.) MDEQ is the lead agency conducting the RI/FS and U.S. EPA is the support agency. Release of the RI Report is expected during late 2006.

Note also that the NPL fact sheet for the Velsicol Chemical site will be updated soon to reflect the following new information:

- MDEQ released the RI Report and risk assessments for the main plant site (OU1) in late Nov 2006 and held a public meeting in Dec 2006.
- the remedial action construction work in the Pine River (OU2) was completed in fall 2006

4.1.1.8 Hedblum Industries

The Hedblum Industries site is a 10-acre parcel located in Oscoda, Iosco County, MI, 1.2 miles west of Lake Huron. The site was leased to a series of industrial firms that manufactured parts for the automotive industry. Waste chemicals, including an estimated 4,000 gallons of spent trichloroethylene from a degreasing operation, were dumped in a pit near the main building. A pipe connecting an underground storage tank for trichloroethylene leaked. A number of residential wells in the area were found to be contaminated in 1973-1977. Most of the residents in the area of contamination were connected to municipal water in 1978, but a number were not. Trichloroethylene also was found in the bayou into which groundwater from the site discharges. The bayou feeds the Au Sable River. The information regarding this site is taken from the 1989 ATSDR health assessment and the 2003 U.S.EPA NPL fact sheet for this site.

Category of Public Health Hazard: This site was categorized as an *Indeterminate Public Health Hazard* (Category 3) because of the potential threat to human health from exposure to trichloroethylene and other VOCs.

Contaminants of Concern in Completed Exposure Pathways: None identified. No IJC critical pollutants are associated with this site. TCE has been identified in residential well water; eight households were estimated to have used contaminated well water at their household for an indeterminate time before they were switched to municipal water, but data were not adequate to measure the risks. One resident still has not switched to municipal water, and others use well water for gardens and lawns. Exposure pathways include ingestion, dermal contact, and inhalation of trichloroethylene volatilized from the water. The potential for exposure to trichloroethylene via subsurface vapor intrusion is also being assessed. As of 1990, no VOC contaminants were detected in residential wells. The groundwater is being treated by a system constructed in 1993.

Demographics: Demographic profile, from the 2000 U.S. Census, for vulnerable populations living within 1 mile of this site:

Children 6 years and younger	135
Females aged 15-44	331
Adults 65 and older	349

Public Health Outcome Data: None reported.

Conclusions: This site has contributed to human exposure and to the environmental burden of trichloroethylene in the past through contamination of groundwater used for household water and discharge of contaminated groundwater into a bayou feeding the Au Sable River, where is expected to volatilize. The groundwater, however, has been under remediation since 1993; however, the system has not been fully effective and will be upgraded in the near future.

4.1.1.12 Dow Chemical Co., Michigan Division, Midland Location

The Dow Chemical Company plant in the city of Midland, Midland County, MI was the subject of an ATSDR health consultation that was triggered by community concerns regarding high levels of PCDDs in soil in Midland and in fish in the nearby Tittabawassee River downstream of Midland. The Dow plant encompasses approximately 1,900 acres on the southern perimeter of the city. The Tittabawassee River forms the southern boundary of the plant site and flows southeast to join with the Saginaw River in the vicinity of the city of Saginaw. In the late 1800s, the Dow plant began production of chlorine from brine using an electrolytic cell process. PCDDs, PCDFs, and octachlorostyrene are known to be by products of the electrolytic cell process. A variety of additional chemicals have been produced at this Dow plant, including Agent Orange [which contains 2,4,5-trichlorophenoxyacetic acid (2,4,5-T)], and 2,4,5-trichlorophenol. PCDDs and PCDFs are known to be impurities in some chlorinated phenolic chemicals, such as 2,4,5-trichlorophenol and 2,4,5-T. Chlorophenol production started in 1915. Wastes generated from this process were initially transferred to 600 acres of onsite waste ponds. During high flow periods in the early 1900s, wastes from these ponds were intentionally released to the Tittabawassee River. Some site waste has been and is taken by truck from the Dow plant to local landfills. Since that time, Dow has operated its own wastewater treatment plant onsite, but a significant flood in 1986 overwhelmed the wastewater treatment plant and flooded areas of the plant where soils were contaminated with PCDDs. The runoff and untreated or partially treated chemical wastes entered the Tittabawassee River. Two incinerators are used for treatment of liquid and solid hazardous and non-hazardous wastes generated from manufacturing at the plant. Incineration of chlorine-containing wastes also produces PCDDs and PCDFs. Information regarding this site is taken from the 2002 health consultation prepared by ATSDR. This health consultation focused on contamination of Midland soil. A separate health consultation was prepared regarding contamination in the Tittabawassee River floodplain near the city of Saginaw, in Saginaw County (see Section 4.1.1.13).

Category of Public Health Hazard: This site was categorized as an *Indeterminate Public Health Hazard* (Category 3) because the data necessary to determine if dioxin contaminated soil in the Midland area poses a public health risk are not available. **The Michigan Department of Public Health and U.S. EPA has concluded that dioxin contamination (as PCDDs and PCDFs) found in some Midland residential soils and in fish clearly presents an unacceptable public health risk.**

Contaminants of Concern in Completed Exposure Pathways: Not identified. The IJC critical pollutants PCDDs and PCDFs were found at very high concentrations (expressed as total toxic equivalent, TEQ) concentrations in soil at the Dow plant. The residential areas to the northeast are expected to have the highest impact from historical incinerator emissions, but no data are available concerning dioxin concentrations in these areas of Midland. Most of the TEQ concentration data for the community fall within the range (>50 but <1000 ppt TEQs) that triggers additional ATSDR evaluation, including consideration of background and bioavailability data in order to evaluate the incremental contribution of soil exposure; this information was not available. An initial investigation for other contaminants besides PCDDs and PCDFs is expected to be completed in 2007. Fish contamination by PCDDs and PCDFs, which have resulted in fish consumption advisories, represent a completed exposure pathway.

Demographics: Residential neighborhoods are located in close proximity to the northeast perimeter of the Dow plant and within a quarter of a mile from a soil sampling site where total TEQs were above the ATSDR action level of 1,000 ppt.

Public Health Outcome Data:

- Michigan Department of Public Health Evaluations of Congenital Malformation Rates and Soft and Connective Tissue Cancer Mortality Rates, determined higher than expected birth defects and cancer in Midland (Michigan Department of Public Health, 1983). Specifically, data from birth and fetal death records showed four anomalies to have a statistically significantly higher rate in Midland County than in the State of Michigan rates for grouped years 1970-1975. These defects include cleft lip with or without cleft palate, cleft palate without cleft lip, hypospadias, and hip dislocation without CNS defects. Mortality rates from soft and connective tissue cancers among white females from Midland County were confirmed to be 3.8 and 4.0 times the national average for the periods of 1960-1969 and 1970-1978, respectively. While the statistically significant excess cancer rates may have occurred by chance alone, the unlikelihood of this occurring suggests that some other exposure factor was involved.

- An analysis of cancer incidence data for zip codes 48640 (southwest area of Midland including the Dow plant site) and 48642 (area northeast of the Dow plant) as compared with Midland County, Bay County, and the state of Michigan showed no elevated incidences of specific cancer types in these two zip code areas. There was a higher-than-expected incidence of all cancers combined in 48640 (but not 48642) as compared with Midland County, Bay County, and the state of Michigan for individual years 1994 through 1998 and all years combined. A higher-than-expected incidence of all cancers combined was seen in this zip code area upwind and including the site, but not the zip code area downwind of the site, which was considered more highly contaminated with PCDDs and PCDFs from the Dow Chemical Company's onsite incineration of chemical wastes. The interpretation of this data is not easily ascertained. Age-adjusted incidence rates for thyroid cancer in the two zip code areas were also computed and were considered statistically unreliable. This was documented in a table from the Michigan Department of Community Health (June 5, 2001) without numeric values being shown to justify this conclusion.
- A Dow Cohort mortality study of workers in the Midland plant compared 2,187 male employees who worked at any time between 1940 and 1983 in areas of the plant where there was potential exposure to dioxin, with exposure classified on the basis of job history. Causes of death were compared to those of the U.S. population and an internal "unexposed" group of employees. Rates for all causes of death were lower in the exposed cohort than in the U.S. population, likely due to the healthy worker effect (workers being healthy or they would not be working). However, there was a slightly higher rate for some cancers when the workers were compared to a group of unexposed employees. The relevance of this study to the non-Dow-employee residents of the community was considered questionable since the exposure situation is probably very different for workers as compared to the area residents.
- An analysis of birth defects data for 1992 through 1996 from the Michigan Birth Defects Registry did not show any consistent pattern of excesses in any particular category or for birth defects overall for Midland County (about 1,000 births/year). No excess was seen for types of birth defects, such as anencephaly, spina bifida, and cleft lip, which had been reported as related to dioxin exposure.

Conclusions: This site has contributed to the environmental burden of the IJC critical pollutants PCDDs and PCDFs. Whether residents of the community near the plant experienced a level of exposure sufficient to be considered a public health risk could not be determined due to the lack of soil monitoring data in the critical areas and other data deficiencies.

Please refer to the Michigan Department of Environmental Quality's report for more complete information. U.S. EPA collected sufficient soil and fish data in the 1980s to conclude that a public health risk did exist from consumption of fish.

4.1.1.13 Tittabawassee River

The Dow Chemical Company plant in the city of Midland, Midland County, MI was the subject of an ATSDR health consultation that was triggered by community concerns regarding high levels of PCDDs in soil in the city of Midland and in fish in the nearby Tittabawassee River downstream of Midland. An additional concern arose when sampling of the Tittabawassee floodplain near the confluence of the Tittabawassee and Saginaw Rivers revealed high levels of dioxin contamination. The soil contamination issue was considered in the ATSDR health consultation on the Dow Chemical Co. site, presented in Section 4.1.1.12, which provides a description of the plant location and releases to the environment. The issue of contamination of the floodplain of the Tittabawassee River is considered in a separate 2002 ATSDR health consultation, summarized below. The Tittabawassee floodplain area that is potentially of concern extends from the City of Midland in Midland County to the City of Saginaw in Saginaw County. The sampling sites were within Saginaw County.

Category of Public Health Hazard: This site was categorized as an *Indeterminate Public Health Hazard* (Category 3) because of the potential threat to human health from exposure to PCDDs and PCDFs and the lack of monitoring data for the residential area. This statement contradicts conclusions reached by the Michigan Departments of Environmental Quality and U.S.EPA. There is more than sufficient data to render conclusions.

Contaminants of Concern in Completed Exposure Pathways:

Elevated dioxin TEQs (as high as 7,261 ppt, includes PCDDs and PCDFs) were found in soil samples from a floodplain area near the confluence of the Tittabawassee and Saginaw Rivers in Saginaw County, analyzed as part of a wetland mitigation project, and in other floodplain areas (golf course, wildlife refuge) upstream from the mitigation site. These levels were considered to be high enough to pose an urgent public health hazard if people were routinely exposed to soil at these locations, but ATSDR concluded that the level of exposure on these properties is not known, and was concerned regarding the lack of sampling on nearby residential

properties. The only known source of dioxin contamination was the Dow Chemical Company plant upstream at Midland. ATSDR concluded that the contamination likely resulted from deposition of contaminated river sediments in the Tittabawassee River floodplain. As discussed in Section 4.1.1.12, fish in the Tittabawassee River below the city of Midland have elevated levels of PCDDs and PCBs. Based on the floodplain soil data together with the fish data, ATSDR concluded that dioxin contamination may be widespread throughout the Tittabawassee River watershed below Midland, but data were lacking on possible exposures. Subsequent sampling has found dioxin TEQs as high as 41,000 ppt within the first six miles downstream of the Dow plant.

Demographics: Twelve homes are located adjacent to the river less than half a mile upstream from the mitigation site where very high TEQs were detected. Numerous other residential properties are located within the floodplain upstream of the wetland mitigation site.

Public Health Outcome Data: ~~None reported.~~

In 2006, the University of Michigan conducted a dioxin exposure study which was funded by Dow. Some of the key initial findings of the study are:

- People who live in regions expected to have dioxin contamination in Midland/Saginaw have higher levels of dioxins in their blood than do people in a control area.
- People who have higher levels of dioxins in their soil have a higher TEQ (total dioxin-like activity) in their blood.
- People who eat fish from the Tittabawassee River, Saginaw River, and Saginaw Bay have higher levels of dioxins in their blood than people who do not eat fish from these areas.
- People who do recreational activities in the Tittabawassee River, Saginaw River, and Saginaw Bay have higher levels of dioxins in their blood than people who do not do recreational activities in these areas.

Conclusions: This site is contaminated with the IJC critical pollutants PCDDs and PCDFs, probably from releases from the Dow Chemical Company plant upstream at Midland, Midland County. The dioxin contamination is ~~may be~~ widespread throughout the Tittabawassee River watershed below Midland. ~~and but initial data were lacking on possible exposures~~ The available analytical sampling data combined with information on human activities in the watershed areas indicate that statistically significant exposures to dioxin could be occurring, especially within populations who consume significant quantities of locally harvested fish and/or wild game. A wild game study for the flood plain of the Tittabawassee River downstream of Midland was conducted by Dow in 2004. State of Michigan health assessors have reviewed the wild game data and found that levels of dioxins in the wild game harvested in the floodplain for the study were up to 7 times higher than samples taken

upstream of Midland in deer muscle meat, 118 times higher in deer liver, 66 times higher in turkey, and 40 times higher in squirrel. The results concluded that eating deer, turkey, or squirrel that contain dioxin at the levels found in the Dow wild game study could result in adverse health effects.

5. LAKE MICHIGAN

5.1 MUSKEGON LAKE AOC AND WHITE LAKE AOC, MUSKEGON COUNTY, MI

5.1.1.8 Ruddiman Drain Area (Ruddiman Creek Area)

Conclusions: The sediments of the main branch of this creek are contaminated with PCBs and lead at levels of concern for human exposure (and for ecological effects). The sources of this contamination were not discussed, and it was concluded that additional sampling was needed to better define the extent of contamination, including sampling of fish, and that warning signs were needed.

This site has been remediated under the Great Lakes Legacy Act. 90,000 cubic yards of contaminated sediment was removed from Ruddiman creek and pond between August 2005 and June 2006. This project removed approximately 126,000 pounds of lead, 320 pounds of PCBs and 204,000 pounds of chromium.

5.1.1.9 SCA Independent Landfill

This landfill occupies approximately one-third of a 100-acre site in Muskegon County, MI, in a swampy area near Black Creek, which flows along the north side of the landfill. The site received refuse, probably including industrial as well as domestic waste, starting in the 1950s and continuing through about 1987. The groundwater flow at this site is northward, and appears to empty into wetlands that border Black Creek. Information regarding this site is taken from the 1989 ATSDR preliminary health assessment, HazDat, and the 2003 U.S.EPA NPL fact sheet for the site.

Category of Public Health Hazard: In 1989, ATSDR categorized this site as an *Indeterminate Public Health Hazard* (Category 3) because of the potential threat to human health from exposure to contaminants and the lack of adequate monitoring data. In a subsequent site review and update, ATSDR characterized the site as posing *No Apparent Public Health Hazard* (Category 4).

Contaminants of Concern in Completed Exposure Pathways: Not identified. No IJC contaminants were contaminants of concern. Onsite

monitoring wells indicated limited, intermittent contamination of groundwater with VOCs including benzene at concentrations generally below health-based screening values. The U.S.EPA NPL fact sheet discusses contamination of groundwater, surface water, and wetlands with ammonia and manganese. The landfill has been remediated by improvement of the waste cover, surface water drainage, and leachate management; and by excavation of surface soil from onsite hot spots. Long-term groundwater and surface water monitoring started in 2001, and deed restrictions were being obtained for nearby residents to prohibit the use of private wells for drinking water.

Demographics: Demographic profile, from the 2000 U.S. Census, for vulnerable populations living within one mile of this site:

Children 6 years and younger	598
Females aged 15-44	1,054
Adults 65 and older	505

Public Health Outcome Data: None reported.

Conclusions: No IJC critical pollutants are implicated as contaminants from this site. The site has been remediated at least in part, but exposure to groundwater is being prevented by deed restrictions.

5.2 KALAMAZOO RIVER AOC, ALLEGAN AND KALAMAZOO COUNTIES, MI

5.2.1.2 Allied Paper/Portage Creek/Kalamazoo River

This site includes the ~~Allied Paper, Inc. Residual Disposal Area~~, Allied Paper, Inc., property in Kalamazoo, Kalamazoo County, Michigan, covering 75 acres in the city of Kalamazoo, a 3-mile stretch of Portage Creek from Cork Street, Kalamazoo to the confluence of the creek with the Kalamazoo River, and 35 miles of the Kalamazoo River, from Portage Creek downstream to Lake Allegan in Allegan County. The site is contaminated with PCBs from discharges and disposal of waste by the paper industry. Disposal areas are located on the banks of the river. Contaminated sediments have been largely deposited in four impoundment areas. The river sediments are estimated to contain over 350,000 110,000 pounds of PCBs. Information regarding this site is taken from the 1991 ATSDR public health assessment, HazDat, and the 2003 U.S.EPA NPL fact sheet. According to the U.S.EPA NPL fact sheet, the site includes the entire Kalamazoo River AOC (i.e., the 80-mile stretch of river from the Morrow Dam downstream to Lake Michigan).

Category of Public Health Hazard: This site was categorized as a *Public Health Hazard (Category 2)* in the 1991 ATSDR public health assessment due to the threat to human health from exposure to PCBs in

environmental media and biota. ATSDR health consultations in 2001 and 2002 categorized the public health threats associated with dermal contact with and incidental ingestion of water and sediments during recreational use of the river as *No Public Health Hazard* (Category 5, 2001) and *No Apparent Public Health Hazard* (Category 4, 2002)

Contaminants of Concern in Completed Exposure Pathways: The IJC critical pollutant, PCBs, was the primary contaminant of concern. The maximum levels of PCBs in fish from the Kalamazoo River and Portage Creek exceeded the FDA limit and the Michigan trigger level for fish consumption advisories (2 ppm). Although fish advisories were issued, it had been reported that anglers had been taking home fish in amounts inconsistent with consumption advisories. Turtles from the river also are used for food and may be highly contaminated. PCBs also were found in sediment and water of the river and creek. Some remedial action has taken place. The plan is to first eliminate ongoing sources of PCBs, including the exposed paper wastes along the river banks and the impoundments and then address in-stream sediments in a phased approach that would avoid recontamination by addressing in-stream sediment beginning upstream and working downstream. This approach is consistent with the National Research Council's report entitled "A Risk Management Strategy for PCB-Contaminated Sediments" and U.S.EPA National Guidance titled "Principles for Managing Contaminated Sediment Risks at Hazardous Waste Sites." The NRC report can be found at www.nrd.edu and U.S.EPA guidance at www.epa.gov/superfund/resources/remedy/pdf/92-85608.pdf.

Demographics: Demographic profile, from the 2000 U.S. Census, for vulnerable populations living within one mile of this site:

Children 6 years and younger	7,085
Females aged 15-44	17,055
Adults 65 and older	8,523

Public Health Outcome Data: Not reported. Because human exposure to PCBs at levels of public health concern may be occurring, the site (as of 1991) was being considered for a study to investigate fish ingestion and serum PCB levels. It was concluded that, if the number of people eating fish from the Kalamazoo River and Portage Creek were large, a fish consumption study would be warranted. As of 2000, ATSDR reported that the state was creating a study cohort of anglers, examining their fish consumption patterns, and obtaining medical histories and blood specimens for chemical analysis. The study found that Kalamazoo River fish-eaters had higher residue levels of total PCB and DDE in blood when compared to non-fish-eaters. However, the finding was not statistically significant (ATSDR 2000). In 2002, the MDEQ published the Final (Revised) Baseline Human Health Risk Assessment Report, which

concluded that the greatest health risk to people and fish-eating animals comes from eating PCB-contaminated fish from the Kalamazoo River. The risk assessment also concluded that contact with PCB-contaminated floodplain soils by dermal exposure presents a health risk to people, but that recreational activity in the Kalamazoo River such as swimming, boating and wading do not pose unacceptable PCB-related health risks to people.

Conclusions: The site covers a very large geographic area, heavily contaminated with PCBs from the paper industry. Remediation is in the early phases. Vulnerable populations living near the site are large.

5.3 GRAND CALUMET AOC, LAKE COUNTY, IN, AND COOK COUNTY, IL

Typo: the correct name of the ACS site is American Chemical Service, Inc. (no "s" at the end of Service)

5.3.1.1 American Chemical Services, Inc.

This site is in the remediation phase and in accordance with the air "permit" from the Indiana Dept of Environmental Management (IDEM), the ACS site releases VOCs to the atmosphere. The daily discharge limit is 3 pounds/hr or 15 pounds/day. Those numbers have not been exceeded. The discharge is from soil vapor extraction units - U.S EPA use thermal oxidizers to destroy VOCs extracted.

Superfund completed the second 5 Yr Review for the ACS site in April 2006. <http://www.epa.gov/superfund/sites/fiveyear/f0605002.pdf>

5.3.1.11 Estech General Chemical Co.

This approximately 54-acre site located in Calumet City, Cook County, IL, operated as an unpermitted landfill. Estech manufactured stored and disposed pesticides and fertilizers from 1952 until 1969. Backfilling of the lagoons occurred during this period, and pesticides were buried behind the pesticide building at the time of plant closure. In 1970, Strom Machinery Company (Strom) purchased the Estech site and used the property for storing machinery until 1974. In the late 1980s, Gordon Martin of GM Wrecking salvaged iron from the demolition of all on-site structures except the pesticide building. Reportedly, GM Wrecking also disposed of demolition debris, construction debris, and special wastes including shredded automobile interiors and soft parts referred to as "auto fluff" or "white good fluff".

The Superfund Technical Assessment and Response Team (START) conducted a site assessment in both 1997 and 1999 and detected PCB

and lead contamination in fluff and soil. U.S. EPA conducted a removal action in 1999. A 6 to 12 inch-thick soil/clay barrier was placed over the fluff material to mitigate potential threats to human health until a more thorough assessment could be conducted. Additional samples were collected by U.S. EPA in 2000 and 2001. ~~had used the site for prepare fertilizers, pesticides, and sulfuric acid. Some records indicate that drums and pesticides may be buried onsite. The information regarding this site was taken from the 1999 ATSDR health consultation for this site.~~

Category of Public Health Hazard: This site was categorized as a *Public Health Hazard (Category 2)* to the adult men living on the site and digging for scrap metal, who could be exposed to lead in soil at levels that pose a risk of adverse health effects.

Contaminants of Concern in Completed Exposure Pathways: Since the site is now capped there is no exposure to lead or other contaminants from incidental ingestion of, dermal contact with, and inhalation of contaminated soil particles. There was some indication from sediment samples from the Grand Calumet River and the wetland area on the site that contaminants might be migrating offsite.

Demographics: Demographic profiles for vulnerable populations were not reported. The public water supply for the local communities is from Lake Michigan. The total population living within a one-mile radius of the site is approximately 13,500.

Public Health Outcome Data: Not reported.

Conclusions: Lead, an IJC critical pollutant, was found in soil at the site at levels of health concern for the adult men living on the site, who might dig for scrap metal. Other contaminants were found at the site during the sampling events conducted by U.S. EPA in 2000 and 2001. There may have been some migration of contaminants offsite to sediment, but details were not available.

5.4 WAUKEGAN HARBOR AOC, LAKE COUNTY, IL

The city of Waukegan is demolishing the "clean" portions of OMC Plant 2, work should be completed by mid-November 2006. U.S.EPA completed a remedial investigation report for this operable unit in April 2006. Trespassing in the contaminated portions of the building can not be ruled out (scavengers). PCBs are the main contaminant of concern inside the parts of the building not being demolished by the city. Plans for further harbor sediment remediation are progressing. Following a 2006 risk assessment, a new cleanup level of 0.2-0.25 ppm PCBs was determined to be protective (based on fish consumption rate assumptions). Sediment

remediation could begin as early as 2008. A fish advisory was placed in the northern harbor by the state in 2006 due to PCB levels in certain fish.

5.4.1 Hazardous Waste Sites Relevant to the Waukegan Harbor AOC

The report mentions three sites Boerke Property, Former Tannery, and St. Francis Auto Wrecker. All these sites are outside of AOC boundary. There is lack of fate and transport data to show how these sites impact the Milwaukee Estuary AOC.

5.4.1.4 Outboard Marine Corp.

The **Outboard Marine Corporation** has contributed to the environmental burden and to human exposure from PCBs in fish. *The site underwent extensive sediment and soil remediation in the early 1990s and U.S.EPA reports that further site cleanup and sediment remediation are being planned.* The site has also been designated as an Environmental Justice Revitalization Project which will enable the area to receive funding for redevelopment and for educating vulnerable populations (e.g., women of child bearing age) about consuming PCB-contaminated fish. The total population within a 1 mile radius of the site is 7,040.

5.5 MILWAUKEE ESTUARY AOC, MILWAUKEE COUNTY, WI

Map Comment: It may be due to scanning process but the map of Milwaukee Estuary AOC shows mislabeling in the following: "Ilwau ee" - it should Milwaukee Estuary AOC, "Robert Belz Trust Co." - it should be "Robert Betz Trust Co."; "Try Chemical Corp" - it should be "Tri Chemical Corp."

5.5.1 Hazardous Waste Sites Relevant to the Milwaukee Estuary AOC

Site Name	Public Health Hazard Category	U.S.EPA NPL Status	Site ID	City
Boerke Property	2 (1998 HC)	Non NPL	WID9811896 32	Milwaukee
Fadowski Drum Disposal	3 (1988 HA) 4 (1994 HA)	Final	WID9809012 27	Franklin
Former Tannery	2 (1996 HC)	Non NPL	WI00014077 17	Milwaukee
Moss-American Co., Inc.(Kerr McGee Oil Co.)	3 (1988 HA) 2 (1991 HA)	Final	WID0390526 26	Milwaukee

Northwestern Barrel Company (Former)	1 (1997 HC) 3 (1998 HA) 5 (2002 HC) 4 (2002 HC)	Non NPL	WID9810959 95	S. Milwaukee
P&G School Bus Co.	2 (2000 HC)	Non NPL	WISFN05079 20	Milwaukee
Robert Betz Trust Co.	2 (1998 HC) 2 (1999 HC) 2 (2001 HC)	Non NPL	WI00001362 26	Milwaukee
St. Francis Auto Wreckers	2 (2002 HC)	Non NPL	WID9886390 68	Milwaukee
Try Chemical Corporation	2 (2001 HC)	Non NPL	WID0480343 00	Milwaukee

General Comment

Recommend re-evaluating the Public Hazard Categories for the above sites mentioned for the Milwaukee Estuary AOC. The sites located in the City of Milwaukee have high likelihood of being cleaned and redeveloped through City's Brownfields Cleanup program.

The two sites St. Francis Auto Wreckers and Boerke Property are not located in Milwaukee.

5.5.1.1 Boerke Property

Section 5.5, Milwaukee AOC- the Boerke Site was cleaned up in 2003. Arsenic and Naptha wastes were removed and disposed off-site. The only remaining wastes with concentrations exceeding the action levels are in the old disposal area at depth. This area has been provided with appropriate institutional controls to avoid disturbance and/or exposure of these remaining contaminated soils.

5.5.1.2 Fadrowski Drum Disposal

This 20-acre site is located in the city of Franklin, Milwaukee County, WI. The site was operated as a landfill for construction debris and fill dirt from 1970 to 1982. In 1983, however, excavation for fill dirt on the property revealed barrels of hazardous wastes. As of 1994, the site had been fenced, and 167 buried drums and associated contamination had been excavated and contained. An onsite pond was drained and back filled. Information regarding this site is taken from the 1994 ATSDR public health assessment, HazDat, and the 2003 U.S.EPA NPL fact sheet for the site.

Category of Public Health Hazard: This site was categorized as an *Indeterminate Public Health Hazard* (Category 3) in a 1989 preliminary health assessment. In 1994, after some remediation had been performed,

ATSDR concluded that the site poses *No Apparent Public Health Hazard* (Category 4).

Contaminants of Concern in Completed Exposure Pathways: The IJC critical pollutants B(a)P and lead were found in completed exposure pathways related to soil, but concentrations in surface soils were low enough that they did not pose a health risk. In fact, B(a)P was never a contaminant of concern at this site, although other carcinogenic PAHs were. There was some migration of contaminated soil from the disposal area into the adjacent wetland sand stream, but the contamination has been covered with clean soil. Groundwater was not appreciably affected. Since 1994, the drums have been removed, waste has been consolidated and capped, and monitoring wells and a leachate collection system have been installed. The effectiveness of the remedy is being monitored, and shows natural attenuation of site-related contaminants.

Demographics: Demographic profile, from the 2000 U.S. Census, for vulnerable populations living within 1 mile of this site:

Children 6 years and younger	856
Females aged 15-44	2,246
Adults 65 and older	1,208

Public Health Outcome Data: A health outcome data assessment, not related to this site but applicable to it, studied age-adjusted cancer rates for all cancer sites for the city of Franklin in comparison with the U.S., Wisconsin, and Milwaukee County for three time periods: 1960-1969, 1970-1979, and 1980-1985. The conclusion was that there are no significantly elevated rates for individual cancer sites, nor for specific cancers with an environmental exposure etiology, in Franklin.

Conclusions: The site has not been associated with completed exposure pathways to IJC or other pollutants at levels of health concern. The IJC critical pollutants B(a)P and lead were found in completed exposure pathways related to soil, but concentrations in surface soils were low enough that they did not pose a health risk. The site has been remediated. There may have been some migration of B(a)P and lead to an adjacent wetland and stream. The site was deleted from the NPL in September 2005.

5.6 SHEBOYGAN RIVER AOC, SHEBOYGAN COUNTY, WI

The Sheboygan River AOC consists of the lower Sheboygan River downstream from the Sheboygan Falls Dam, and includes the entire harbor and near shore waters of Lake Michigan.

5.6.1 Hazardous Waste Sites Relevant to the Sheboygan River AOC

ATSDR has evaluated the data for two hazardous waste sites in Sheboygan County, WI, and reached conclusions regarding the public health threat posed by these sites. These conclusions, along with information regarding the type and location of the site, and the date and type of assessment document, are summarized in Table 5.6-A.

Table 5.6-A Hazardous Waste Sites in Sheboygan County, WI

Site Name, County	Public Health Hazard Category	U.S.EPA NPL Status	Site ID	City
Kohler Company Landfill	3 (1989 HA) 2 (1995 HA)	Final	WID006073225	Kohler
Sheboygan Harbor & River	2 (1988 HA) 2 (1994 HA)	Final	WID980996367	Sheboygan

2 = Public Health Hazard, 3 = Indeterminate Public Health Hazard
HA = Public Health Assessment

For hazardous waste sites in Sheboygan County that at any time had Public Health Hazard Categories of 1-3 (both waste sites assessed by ATSDR), the number of contaminant records in HazDat that exceeded health based-screening values was 370, as shown in Table 5.6-B. Most of the records were for the water media group.

The IJC Great Lakes critical pollutants accounted for 89 (24%) of these records, with the records divided mainly among the water, soil, and biota media groups. The IJC critical pollutants that have been found at Sheboygan County hazardous waste sites at concentrations exceeding health-based screening values are: PCBs, PCDDs, PCDFs, B(a)P, DDT metabolite (p,p'-DDE), aldrin, dieldrin, lead, mercury, and hexachlorobenzene. Details are provided in Table 5.6-C.

Further evaluation of the data for the sites with Public Health Hazard Categories of 1-3 was conducted by ATSDR in the public health assessments and other health-related documents listed in the table. These evaluations are discussed in the following subsections.

5.6.1.1 Kohler Company Landfill

This 40-acre landfill is a disposal site for the Kohler Company, a manufacturer of bathroom fixtures and small engines. The site lies adjacent to the floodplain of the Sheboygan River. The east half of the landfill was built in the historic floodplain, but now is filled up to 40 feet

above its original elevation. The Sheboygan River, which empties into Lake Michigan 4.2 miles downstream of the site, borders the site on the south and east. Past disposal practices (mid 1950s through the 1970s) included pouring liquid slurries containing solvents, hydraulic oils, and metals into pits on the site, and filling the remainder with foundry sand and other solid and hazardous wastes. Starting in 1975, liquid hazardous wastes were no longer disposed at the site, and since 1980, solid hazardous wastes were no longer disposed at the site. Information regarding this site is taken from the 1995 ATSDR public health assessment, HazDat, and the 2003 U.S.EPA NPL fact sheet for the site.

Category of Public Health Hazard: ATSDR characterized this site as an *Indeterminate Health Hazard* in the 1989 public health assessment. In 1995, ATSDR characterized this site as a *Public Health Hazard (Category 2)* because PCBs in the floodplain and sediments adjacent to the Kohler Company Landfill pose a health hazard due to bioaccumulation through the food chain. Whether the PCB contamination is site-related is uncertain.

Contaminants of Concern in Completed Exposure Pathways: The IJC critical pollutants PCBs have been found at high concentrations (above the FDA standard of 2 ppm) in fish from the Sheboygan River and at even higher concentrations in tissues of mallard ducks caught in Sheboygan County. Advisories have been issued not to consume some species of fish and ducks, but many individuals remain unaware of these advisories. PCBs have been found at levels of concern in waste and soil of the landfill. It is not known whether PCBs have migrated to leachate or are present in surface water runoff, because these media have not been monitored for PCBs. Leachate flows toward the river, and surface water runoff drains directly into the Sheboygan River. PCBs were found in unfiltered samples from the shallow aquifer groundwater monitoring wells. Groundwater flow appears to be toward the river. There is a significant source of PCBs upstream from the Kohler Landfill (discussed in Section 5.6.1.2), so the source of PCBs in the floodplain and sediments adjacent to the Kohler Company Landfill is uncertain. VOCs (including vinyl chloride) and the IJC critical pollutant lead are present in groundwater at levels of concern, but the groundwater is not used as well water, and its discharge into the river will not result in harmful levels of exposure to people who swim or fish in the river. Remedial activities completed since ATSDR's 1995 assessment include installation of a multi-layer soil cap over the entire landfill, collection of groundwater and leachate within a perimeter drain along the southern and eastern margins of the landfill, and pumping of the collected groundwater and leachate to the city of Sheboygan's publicly-owned treatment works.

Demographics: Demographic profile, from the 2000 U.S. Census, for vulnerable populations living within one mile of this site:

Children 6 years and younger	119
Females aged 15-44	310
Adults 65 and older	184

Public Health Outcome Data: Not reported. An evaluation of health outcome data associated with human exposure to contaminants in Sheboygan River fish was performed for the Sheboygan Harbor & River site, to which it may be more applicable (see Section 5.6.1.2).

Conclusions: The site may have contributed to PCB contamination of the Sheboygan River in the past and to human exposure to PCBs through ingestion of PCB-contaminated fish and ducks in the past and present, but its contribution cannot be estimated due to the lack of appropriate monitoring for migration of PCBs from the landfill to the floodplain and river, and the presence upstream of another significant source. The site has been remediated by containment of wastes and collection of contaminated leachate and groundwater for treatment at a municipal wastewater treatment plant. Thus, future impacts of the site have been minimized.

5.6.1.2 Sheboygan Harbor & River

The Sheboygan Harbor & River site encompasses the lower Sheboygan River, from Sheboygan Falls to Lake Michigan, and extends into the harbor where the river enters Lake Michigan. In 1977, the Wisconsin Department of Natural Resources discovered that fish from the Sheboygan River contained PCBs at levels much higher than the FDA's tolerance level. Testing of waterfowl in 1985-1986 also indicated high levels of PCBs. Advisories were issued warning against eating fish and waterfowl. Sediments in the upper portion of the harbor's navigation channel upstream from the river's mouth were heavily polluted with heavy metals. Further sampling of river sediments and effluents from industries and sewage treatment plants implicated a die-casting plant, the Tecumseh Products Company, located just downstream of the dam at Sheboygan Falls. The plant lies in the floodplain, and used hydraulic fluids containing PCBs from 1966 to 1971. Removal actions in 1979 (of PCB-contaminated material from a dike near the Tecumseh facility) and in 1989 through 1991 (of the most highly PCB-contaminated sediments), and containment of PCB-contaminated sediments by covering with geotextile fabric and other layers, reduced the environmental burden. PCB levels in fish have dropped dramatically since the late 1970s. Information regarding this site is taken from the 1989 ATSDR preliminary public health assessment, the 1995 ATSDR public health assessment (public comment release), and the 2003 U.S.EPA NPL fact sheet. [The last NPL fact sheet update was July 2006, see updated information below.]

Category of Public Health Hazard: In both 1989 and 1995, ATSDR categorized this site as a *Public Health Hazard* (Category 2) to people who frequently eat fish and waterfowl from the area and to people who frequently play on contaminated river banks and floodplains. Although PCB levels in the environment and in fish have dropped due to removal activities, they are still high enough to pose a health hazard.

Contaminants of Concern in Completed Exposure Pathways: The IJC critical pollutants PCBs are present at levels expected to result in adverse health effects in the following completed exposure pathways: eating fish or waterfowl from the area and playing or digging in riverbank soil or floodplain sediments, resulting in dermal absorption and incidental ingestion. The IJC critical pollutants DDT and metabolites, dieldrin, and hexachlorobenzene were present in fish, but it was not discussed further as to whether the levels presented a health risk, or were higher than in fish from other areas. According to the U.S.EPA NPL fact sheet, additional planned remediation involves removal of PCB-contaminated sediment from the river and the inner harbor, removal of PCB-contaminated soil from the floodplains, and long-term monitoring of sediment and fish.

The first phase of the cleanup (Upper River Phase I), was implemented from August to October 2004 and focused on stopping PCB-soil and ground water contamination at the former factory property from further polluting the Sheboygan River.

The Phase II Upper River work being implemented by Pollution Risk Services, which bought the former Tecumseh facility -- includes the near-shore area, armored areas (river edges reinforced to prevent erosion) and the soft sediment deposits that settle on the river bottom where the current is slower.

Sediment areas that are near the former factory property, near-shore and armored areas will be removed with excavation equipment after they are drained. The soft sediment deposits will be dredged directly from the river, piped to an on-shore area to dry and then sent to a licensed landfill. Water pumped out during the dredging process will be treated and released back to the river.

Demographics: Demographic profile, from the 2000 U.S. Census, for vulnerable populations living within one mile of this site:

Children 6 years and younger	3,837
Females aged 15-44	8,074
Adults 65 and older	5,354

Public Health Outcome Data: A study of infants born to 34 mothers who ate at least two meals per month of fish from the Sheboygan River or Lake

Michigan for at least the previous 3 years, as compared with infants born to 39 mothers who ate less than two meals per year of such fish for the previous 3 years, reported the following differences. A higher rate of infectious illnesses during the first 4 months of life was reported in infants of the high exposure group, and the birth weights of the high exposure group babies were higher. There were no differences in the infants' behavior assessed with a standard developmental scale. The relatively low rate of fish consumption among the high exposure group mothers and the small sample size are limitations of the study.

Conclusions: Although partially remediated, the Sheboygan Harbor & River site remains a source of PCB contamination at levels that may cause adverse health effects in people exposed directly to the soil and sediments, or through the food chain. It flows into Lake Michigan and may be contributing to PCB contamination of the lake. Additional, extensive remediation of sediments is planned. Health outcome data indicate that infants of mothers who ate two meals per month of fish from the Sheboygan River or Lake Michigan had higher birth weights and a higher rate of infectious illnesses.

5.6.2 TRI Data for the Sheboygan River AOC

The TRI onsite chemical releases for Sheboygan County are summarized in Table 5.6-C. Total onsite releases in 2001 were 575,909 pounds, the majority of which were released to air.

IJC critical pollutants accounted for 9,695 pounds (1.7%) of the total onsite releases. The IJC critical pollutants released were PCDDs and PCDFs (to air), lead and lead compounds (primarily to air), and mercury (to air). The facilities that released these pollutants are listed in Table 5.6-D.

The highest onsite release of non-IJC chemicals was of hydrochloric acid aerosols (300,548 pounds) to air. No other chemicals were released in quantities \geq 150,000 pounds.

5.6.3 NPDES Data for the Sheboygan River AOC

The NPDES permitted discharges for Sheboygan County, WI are summarized in Table 5.6-E. The total average annual permitted discharges in 2004 were 7,760 pounds, the majority of which was ammonia nitrogen.

The IJC critical pollutant lead (65.7 pounds) was permitted to be discharged. The facility permitted to release this pollutant is listed in Table 5.6-F.

5.6.4 County Demographics and Health Status Data for the Sheboygan River AOC

The demographic profiles, from the 2000 U.S. Census, for vulnerable populations living in Sheboygan County, WI, are as follows:

Children 6 years and younger	12,081
Females aged 15-44	22,869
Adults 65 years and older	15,732

According to the 2000 HRSA community health status reports, Sheboygan County health status indicators that compared unfavorably with those of the U.S. and also with the median of the peer counties are as follows:

Infant mortality (per 1,000 births)

- none

Birth measures (as percent)

- none

Death measures (per 100,000 population)

- colon cancer

5.6.5.1 Hazardous Waste Sites

Only two hazardous waste sites in Sheboygan County, WI, were assessed by ATSDR. Both of these sites were associated with PCBs. One, the Kohler Company Landfill, has been remediated by containment. It is not entirely clear whether this site contributed to PCB contamination of the sediments, floodplain, and fish and waterfowl of the AOC.

The other site, the Sheboygan Harbor & River site, coincides with the AOC, and constitutes a public health hazard due to PCB contamination of river bank soil, river sediment, and fish and waterfowl at levels that may cause adverse health effects and that exist in completed exposure pathways. This site has been partially remediated by the facility that appears to be responsible for most or all of the PCB contamination, but PCBs are still present at levels of concern. Further and more extensive remediation of sediments and floodplain soils is planned. In the meantime, the site may be contributing to human exposure and to PCB burdens in Lake Michigan.

Public health outcome data, available for the Sheboygan Harbor & River, indicates that infants of mothers who ate two fish meals per month from the Sheboygan River or Lake Michigan had higher birth weights and more infectious illnesses than did infants from mothers who had much lower intakes of area fish.

Issues for Follow-Up

Kohler Company Landfill: The landfill, which contains PCBs, has been remediated by containment of wastes and treatment of leachate and groundwater. Continued monitoring is in place to ensure the effectiveness of the remedy.

Sheboygan Harbor & River: This site still poses a public health hazard and a source of PCB loading for Lake Michigan. Further extensive remediation has been planned.

5.6.5.2 TRI Data

The TRI onsite chemical releases for Sheboygan County in 2001 were 575,909 pounds, the majority of which were released to air.

IJC critical pollutants accounted for 9,695 pounds (1.7 %) of the total onsite releases. The IJC critical pollutants released were PCDDs and PCDFs (to air), lead and lead compounds (primarily to air), and mercury (to air).

The highest onsite release of non-IJC chemicals was of hydrochloric acid aerosols (300,548 pounds) to air. No other chemicals were released in quantities \geq 150,000 pounds.

5.6.5.3 NPDES Data

The NPDES permitted discharges for Sheboygan County, WI are summarized in Table 5.6-E. The total average annual permitted discharges in 2004 were 7,760 pounds, the majority of which was ammonia nitrogen.

The IJC critical pollutant lead (65.7 pounds) was permitted to be discharged. The facility permitted to release this pollutant is listed in Table 5.6-F.

5.6.5.4 County Demographics and Health Status Indicators

Vulnerable populations in Sheboygan County, WI, totaled 50,682. Only one Sheboygan County health status indicator (deaths from colon cancer) compared unfavorably with both U.S. indicators and with the median of peer county indicators.

5.6.5.5 Beneficial Use Impairments (BUIs)

Of the three health-related BUIs, restrictions on fish and wildlife consumption was the only BUI listed as impaired at this AOC site. Further

information is available at the U.S.EPA web site
(<http://www.epa.gov/glnpo/aoc/>) .

5.7 LOWER GREEN BAY AND FOX RIVER AOC (FOX RIVER/SOUTHERN GREEN BAY AOC), BROWN COUNTY, WI

Map Comment: The figure does not show the complete NPL site - it should include all of Green Bay for the NPL site (which is different than the AOC).

5.9 MANISTIQUE RIVER AOC, SCHOOLCRAFT COUNTY, MI

5.9.5.4 County demographics and Health Statistic Indicators

Manistique is in Schoolcraft County, not Manistique County.

Press Release Regarding Manistique

Manistique

FOR IMMEDIATE RELEASE

December 12, 2006

Contact: Robert McCann (517) 241-7397

First Beneficial Use Impairment Removed in Manistique River Area of Concern

The Manistique River Area of Concern (AOC) now has one less beneficial use impairment thanks to cleanup efforts undertaken in recent years. AOCs are sites along the Great Lakes experiencing severe environmental degradation stemming primarily from historic pollution.

Remedial actions in the area over the past 10 years, including the removal of sediments contaminated with PCBs and other industrial waste, have allowed the Department of Environmental Quality to remove the Manistique River's Degradation of Benthos impairment. Benthos refers to small organisms that typically live along the bottom of the river.

"This action demonstrates that progress has been made in restoring the quality of the Manistique River," said DEQ Director Steven E. Chester. "The DEQ is committed to protecting and enhancing the health of the Great Lakes and will continue to address sources of contamination in Michigan's Great Lake Areas of Concern."

Support for the action was provided by the U.S. Environmental Protection Agency and local Public Advisory Council. Of the 40 current Great Lakes

AOCs, 14 are located in Michigan. They include rivers, lakes, and bays located on the Great Lakes across the state. Michigan's AOC Program is administered by the DEQ's Water Bureau, in collaboration with other state and federal agencies and local stakeholders.

"The good news that small aquatic creatures in Manistique River are no longer contaminated is due in part to the successful Superfund cleanup of contaminated sediment in the river," said U.S.EPA Regional Administrator Mary Gade. "U.S.EPA continues to work with Michigan to clean up contaminated hot spots on the Great Lakes under the Great Lakes Legacy Act and other programs and U.S EPA look forward to repeating this success in other places."

Information about Michigan's AOC Program is posted on the DEQ Web site at <http://www.michigan.gov/deqwater>; select Great Lakes, and then Areas of Concern. Information about the Great Lakes is available on U.S.EPA's Web site <http://www.epa.gov/grtlakes>.

6. LAKE SUPERIOR

6.2 TORCH LAKE AOC, HOUGHTON COUNTY, MI

- Section 6.2, first sentence: The description of the AOC is wrong. The description should have been taken from the 1987 RAP document produced by Michigan DEQ. The correct description of the AOC is: *Torch Lake and its immediate environs*. Please replace the entire first sentence of this section with this correct description.
- Section 6-2, third sentence: the only waste site within the AOC is the western shore of Torch Lake, which constitutes the AOC.
- Based on comment above, the map of the AOC is incorrect as well.

6.2.1.1 Torch Lake

- Section 6.2.1.1, page 352, Category of Public Health Hazard: MDNR reports that they have not received any reports of fish tumors since 1993. In fact, MDEQ is currently in the process of removing the fish tumor beneficial use impairment (BUI) from the current list of BUIs.
- Section 6.2.1.1, page 352, Contaminants of Concern..., last two sentences: please revise the last two sentences as follows: *The Superfund remedy consisted of covering almost 800 acres of tailings and slag piles with clean soil and vegetation to stabilize the soil. Superfund declared the site construction complete in September, 2005. More specifically, the approximate 480 acres of the Superfund that lie wholly*

within the AOC were completed in 2002. This means that all planned remedial activities under the Superfund program are complete.

- Section 6.2.1.1, page 352, Public Health Outcome Data: What is the link between being Scandinavian and stomach cancer?
- Section 6.2.1.1, page 352, Conclusions: replace the last sentence as follows: All remedial activities under Superfund are complete and monitoring indicates that contamination levels are within safety standards.

6.2.5.1 Hazardous Waste Sites

Last paragraph: replace the middle sentence with: *Since 1999, when Superfund remediation began, almost 800 acres of the Torch Lake Superfund site have been remediated. However, only a smaller portion of this site, approximately 480 acres, resides within the boundaries of the Torch Lake AOC.*

6.2.5.5 Beneficial use Impairments

There are only 3 BUIs for the Torch Lake AOC, they are: Fish Tumors or Other Deformities, Restrictions on Fish Consumption, and Degradation of Benthos. Please revise the section accordingly.

6.3.1 ST. LOUIS RIVER AND BAY AOC, ST. LOUIS AND CARLTON COUNTIES, MN AND DOUGLAS COUNTY, WI

Recent Legacy Act Sediment Cleanup at AOC

Newton Creek/ Hog Island Inlet in the St. Louis River AOC:
This project removed 46,000 cubic yards of sediments contaminated with lead and PAHs. This project was completed in November, 2005.

6.3.1.2 St. Louis River Site

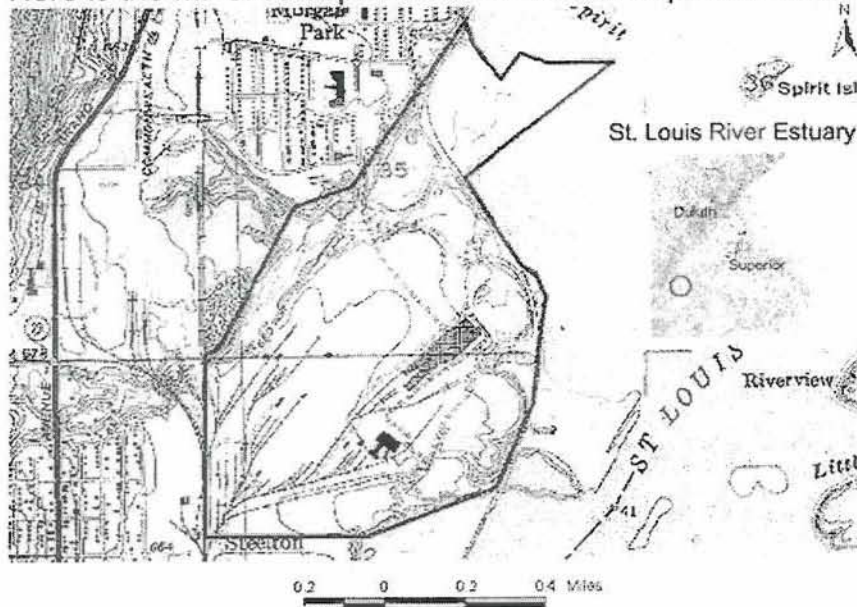
This site actually comprises two sites: the 255-acre St. Louis River/Interlake/Duluth Tar site and the 640-acre U.S. Steel site, located in western Duluth on the St. Louis River. The U.S. Steel site operated an integrated steel mill from about 1915 to 1979.

The figure in the current draft shows only one area as the St. Louis River Site and the boundaries are not accurate. For accurate descriptions of the two portions of the site (US Steel and the Interlake, Duluth Tar Stryker Bay area) go to <http://www.pca.state.mn.us/water/sediments/studies-stlouis.html> .

Note that this site called SLRIDT (St. Louis River Interlake Duluth Tar) includes two boat slips and one Stryker Bay).



Here is the MPCA's depiction of the US Steel portion of the site



In the ATSDR figure, the area where you have depicted as the St. Louis River Site is approximately in the area of the US Steel portion of the Site but it is not the right shape which is outlined in the figure above by a red line.

In addition to the information that you used to prepare this assessment... "Information regarding this site is taken from the 1989 ATSDR public health assessment, HazDat, and the 2003 U.S.EPA NPL fact sheet for this site." The MPCA has compiled an extensive set of data for the St. Louis River Site at the following link <http://www.pca.state.mn.us/water/sediments/studies-stlouis.html>

In the section of chapter 6.3 where you discuss the remediation activities that have taken place at the Site I suggest some additional remediation activities be listed:

The selected remedy for the SLIDRT portion of the Site consists of a combination of environmental dredging of approximately 25 acres of contaminated sediment (estimated at approximately 224,000 cubic yards) across the SLRIDT site where concentrations exceed the Cleanup Level of 13.7 mg/kg TPAH; in-situ capping with surcharging to depress the sediment to a certain depth, and dredged sediment containment. Other elements required in order to implement the selected remedy include long-term monitoring, O&M, contingency action, financial assurance, institutional controls and property acquisition and relocation. The remedy requirements of the WDNR for the portion of the SedOU which is located in the waters of the State of Wisconsin are set forth in Appendix 9 of the ROD.

The U.S. Steel portion of the St. Louis River Site is located approximately 4 miles south-west of the Duluth Central business district in the community of Morgan Park. The U.S. Steel Duluth Works was an integrated steel mill that included coke production, iron and steel making, casting, primary rolling and roughing, hot and cold finishing, and galvanizing.

The plant began production in 1915 and continued operating until May, 1979. In the 64 years of operation the coking operation produced a variety of solid, semi-solid, and liquid wastes which were discharged onto the surrounding land and into the St. Louis River estuary. Water quality surveys were conducted of the site by the State in 1928, 1948, and 1973. These studies showed a progressive deterioration of the water quality of Spirit Lake and the biota of the St. Louis River. The 1973 study showed St. Louis River quality exceeding MPCA surface water standards for ammonia, cyanide, and phenols in the steel plant vicinity. The level of contamination was attributed to the coke plant discharge.

In 1954 US Steel installed a settling basin, known as the Wire Mill Pond, to reduce the amount of solid pollutants entering the river. A survey in 1973 by MPCA staff found the pond was full with solids. The coke plant settling pond, north of the Morgan Park entry road, was constructed in the bed of a stream, the stream flowed through the pond to the St. Louis River. The MPCA issued a NPDES Permit to monitor and control the effluent from the coke waste pond. The stream water quality exceeded the surface water standards for ammonia, cyanide, and phenols. In 1979 the MPCA learned of the company's intention to close the coke and steel plant, thus ending the active use of the settling ponds

A Request for Response Action was issued to U.S. Steel in January, 1983 and the Order by Consent was executed in March of 1985. The U.S. EPA placed the US Steel site on the NPL list in 1984; however, the MPCA is

taking the lead in assuring that US Steel complies with all clean-up requirements. In 1985, the Remedial Investigation/Feasibility Study (RI/FS) was initiated, the buildings started to be demolished and a demolition landfill was built on-site. The Record of Decision (ROD) was signed in February, 1989, but was modified after 1989 to allow for more protective actions to be included than originally stipulated. Eighteen Operable Units (OU) were identified in the ROD and clean-up has been completed in sixteen. Two units remain in the river sediments adjacent to the Wire Mill Pond and the coke settling basin. These units are starting the remedial investigation process.

A. Tar and Tar Contaminated Soil - Complete In September 1994, USX placed a contract with 7 & 7, Inc. to remove Operable Unit A tars. Recyclable material was shipped to 7 & 7's facility in Ohio for recycling. Nonrecyclable tar and debris were disposed off-site. As of March 1995, all the tar spills were excavated and removed from the site. Confirmation samples were collected from the materials handling yard spill area, the wire mill pond spill area, the southwest tar spill area, the fuel oil storage tank spill area, and the ravine embankment spill area. Approximately 8,780 tons of materials were shipped off-site to the BFI Landfill near Madison, Wisconsin. Approximately 338 tons were recycled at the 7 & 7 recovery facility in Wooster, Ohio. Final site restoration was completed in October 1995.

B. Contaminated Water in Tanks and Pipelines – Complete - Water was pumped from tanks and basements as part of remedial work performed during 1985, 1988, and 1989. In 1985, 1988, and 1989 the water was passed through a baffled clarifier on-site before being discharged to the sanitary sewer for treatment at the WLSSD plant.

C. Solids in Large and Small Gas Holders - Complete Based upon the analytical results of samples collected from the large and small gas holders, from October through December 1993, a total of 1,148 tons of large gas holder solids were removed and shipped to a hazardous waste landfill in Belleville, Michigan; and a total of 66 tons of small gas holder solids were shipped to a special waste landfill in Clinton, Illinois.

D. Tar and Coking By-Products in Tanks - Complete Twenty-three tanks were emptied and cleaned during remedial work performed in 1985. The residual contents from these tanks were recycled as fuel. Twenty tanks were emptied and cleaned during remedial work performed in 1988. The residual materials from these tanks were

used as fuel or disposed by 7 & 7, Inc. as described with Operable Unit A.

E. Tars and Coking By-Products in Pipelines - Completed Pipelines were dismantled and cleaned as part of the remedial work performed in conjunction with the 1989 demolition of the coke plant facility. The clean pipes were transported from the site as scrap metal. The tars and coking byproducts removed from the pipes were placed with other fuel materials in the temporary staging areas on-site. A portion of the underground pipes were excavated and cleaned in 1992, with tar stored at the site and cleaned pipe being disposed as scrap metal. The remaining materials were used as fuel or disposed as described with Operable Unit A. USX submitted a response action plan in March 1999 that addressed the removal, cleaning and disposal of the remaining 7,800 feet of buried coke oven gas lines. The response action plan was approved by the MPCA in April 1999. Removal operations were completed in August 1999.

F. PCB Liquids - Complete - PCB liquids were removed from three PCB transformers during the spring and summer of 1989. The drained transformer carcasses were transported from the site with the PCB liquids in the fall of 1989. The PCB liquids and transformer carcasses were transported to General Electric Company's facility in Chicago, Illinois and incinerated.

H. Lubricants, Paints Solvents, Fuel Oils, Water, Metal Shavings - Complete - A majority of drums and containers were collected and placed temporarily in reinforced concrete containment cells. The contents of the drums were identified and appropriately disposed during the winter of 1989-90. The remaining drums scattered about the surface of the site were collected, the contents identified, and disposed of during the summer of 1992. Partially buried drums in 10 areas of the site were investigated in 1992 using geophysical methods. The drums were excavated; contents identified, and were shipped off-site in 1993 for use as fuel, incineration (PCBs), or for treatment to neutralize the alkalinity. Contaminated soil and debris excavated during removal of the drums were disposed at a hazardous waste landfill.

I. Non-Native Material in Settling Basin - Complete - The February 1989 Record of Decision (ROD) designates the no action alternative which includes routine inspections to verify that significant erosion did not occur and water quality monitoring was conducted to verify the long-term effectiveness of the no action response action for this and other operable units. This no action

response was subject to the completion of the PAH treatability study (completed and approved June 1990) examining implementation of alternative and innovative treatment technologies. The no action alternative also requires implementation of appropriate institutional controls to minimize future disturbance of the operable unit.

J. Tar and Tar-Contaminated Soils - Complete - USX retained Geraghty & Miller, Inc. to re-evaluate four alternatives for Operable Unit J, including a slurry wall containment system, a slurry wall system with in-situ treatment, in-situ cement stabilization, or a funnel and gate system. A Response Action Plan (RAP) for Operable Unit J was submitted to MPCA in March of 1996 and proposed *in-situ* cement stabilization as the preferred remedy. The MPCA approved the RAP in November 1996. Field work commenced in June 1997 and was completed in December 1997. Approximately 10,000 cubic yards of coal tar and tar contaminated soil were solidified in-place and a seven foot engineered cap was placed over the unit and vegetated. Semi-annual monitoring of the unnamed creek that flows around OUJ continues on a semi-annual basis, Monitoring to date has shown no exceedences of water quality performance criteria.

K. Dredge Spoil Material - Complete - The ROD designates top dressing of the cells of dredge spoil material including the rehabilitation of the culvert beneath the dredge spoil material. This response action was subject to the completion of the PAH treatability study (completed and approved June 1990) evaluating the implementation of alternative and innovative treatment technologies.

L. Stream Channel Complete - ROD designates the same no action alternative for this operable unit as for Operable Unit I above.

M. Delta and Stream Channel area - Complete ROD designates the same no action alternative for this operable unit as for Operable Unit I above.

N. Unnamed (Steel) Creek Estuary In process ROD designates the same no action alternative as for Operable Unit I, however, post-ROD sampling of estuary sediments showed that sediments were being reworked by wave and storm events, resulting in a continuing source of contaminants to the St. Louis River. USX has agreed to address the non-native sediments in both the Steel Creek and Wire Mill Pond estuaries. A Focused Feasibility Study (FFS) was submitted to the MPCA in July 1998. The MPCA is currently

performing a comparative analysis of two alternatives: Capping with construction of a wave barrier and removal with on-site storage. USX is in the final stages of preparing a Detailed Analysis Report for the two alternatives being considered.

O. Spit of Land Complete ROD designates the same no action alternative as for Operable Unit I above.

P. Wire Mill Pond Complete A Response Action Plan was submitted to the MPCA in March 1996 and approved by the MPCA in November 1996. Response actions commenced in June 1997 and were completed in December 1997. In all, 6487 tons of sediments containing high levels of oils and grease, PAHs and metals were removed and transported to an industrial waste landfill. The pond was lined with geotextile fabric, backfilled with clean sand and planted with native wetland vegetation. Performance monitoring of the outfall continues on a semiannual basis. No significant exceedences of performance criteria have been detected to date.

Q. Dredge Spoil Area Complete ROD designates the no action alternative as for Operable Unit I above.

R. Wire Mill Pond Delta (sediments under water) In process See Operable Unit N (Unnamed Creek Estuary) above.

6.3.5.1 Hazardous Waste Sites

Conclusions: This site appears to have contributed to the contaminant burden of the St. Louis River, particularly with regard to PAHs, and probably including IJC critical pollutant B(a)P. HazDat documentation for 2001 shows dioxin, furans, mercury, PCB, and PAHs contaminating sediment onsite. Offsite, methylmercury has contaminated fish. ATSDR recommended the cleanup of sediments and other remedial actions (e.g., dredging contaminated sediments) and evaluating human health risks for these remedial actions. Remedial actions have included the removal of sediments at this site.

The following are ATSDR conclusions to the section on the St. Louis River Site and in light of the activities that have been undertaken at both the U.S. Steel facility and the SLIDRT Site. U.S.EPA suggests that last sentence should be expanded to explain that more has taken place than just the removal of sediments.

7. CONCLUSIONS

General Comment:

Please evaluate the entire conclusion portion of the report to ensure that both AOC status and hazardous waste site status are up to date.

7.1 ATSDR PUBLIC HEALTH ASSESSMENTS FOR THE 26 GREAT LAKES AOCs

- Page 379: Torch Lake is not listed nor discussed in the Lake Superior section.
- Page 375 - The text states "Ashtabula River AOC: The four waste sites in this county that had health hazard categories of 1-3 have been remediated." The dredging of the Ashtabula River is on-going. In addition, excavation work in Fields Brook was completed in 2002, but follow-up work is necessary to address pockets of contamination (found during O&M sampling) in the industrial area of the brook. As for the other waste sites, it is not clear for some of them that there is a documented link to AOC contamination.
- Page 376– Typo - "River Raisin AOC: The Consolidated Packaging Corporation requires addition monitoring data for soil and groundwater contamination. No demographic data were reported for this site." Change "addition" to "additional".

7.3 ANALYSIS OF THE GIS MAPS AND THE TRI AND NPDES DATA

Please verify that the correct county data were used at each of the AOCs. Some sites referenced incorrect county locations.

7.4 Health Outcome Data

Please verify that the correct county data were used at each of the AOCs. Some sites referenced incorrect county locations.

7.6 SUMMARY

Summary tables with health outcome data (7.2) should be footnoted with the report limitations. By adding this footnote, the report table will hopefully not be taken out of context.