

2008 303(d) List Summary of Public Comments

Indiana Department of Environmental Management (IDEM) requested public comment from September 26, 2007 through January 31, 2008, regarding the 2008 Draft 303(d) List. IDEM received comments from the following parties:

Alliance for the Great Lakes (AGL)
Deborah Chubb (DC)
Kelly Flood (KF)
Peabody Energy (PE)
Save the Dunes Conservation Fund (SDCF)
Save the Dunes Council (SDC)
Susan MiHalo (SM)
United States Steel Corporation, Gary Works (USSC)
Walt Flood IV (WF)

The following is a summary of the comments received and IDEM's responses thereto:

Fish Tissue Assessment Methodology and Delistings

Comment: Waterways segments listed on the 2006 303(d) List should not be delisted based on spot identification of contaminated fish. (DC)

Response: The delisting proposed in the draft 2008 303(d) list Notice of Comment was the result of the first phase of a two-step reassessment process through which all of the fish tissue data collected throughout the state were reviewed against the criteria for PCBs and mercury in fish tissue in IDEM's Consolidated Assessment and Listing Methodology (CALM). To characterize these assessments as "spot identification of contaminated fish" is incorrect as it implies that IDEM applied results to the smallest geographical extent possible in its assessments. This is not the case. The preliminary assessments reflected in IDEM's draft 303(d) list were conducted using geospatial software (GIS) to distinguish between waters for which IDEM had sufficient fish tissue data to make an assessment and those for which there was little or no data to support decision-making. This approach provided the necessary starting point for the development of decision rules regarding how to determine the appropriate distance over which to apply results from a given site, which were then applied during the second phase of the statewide reassessment.

During the initial reassessment of streams, fish tissue data were applied to the stream reach sampled, regardless of its length. For lakes, the data were aggregated and applied to the entire lake, not to the specific area of the lake in which the samples were collected. For both streams and lakes – and regardless of the parameter under consideration – the goal of IDEM's assessment process is to determine the appropriate geographical extent to which sampling results can be considered representative. IDEM decided that a phased approach to assessing the fishable use of waters throughout the entire state using fish tissue data directly was necessary to properly and consistently implement this methodology for the first time.

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Comment: IDEM should not remove impaired waters from the 5B Category of the 2008 303(d) List without presenting test data showing the impaired waters are safe [for recreational activities]. (WF)

Response: Category 5B impairments do not identify waters that are unsafe for recreational uses such as surfing, boating, swimming and fishing. Category 5B identifies waters where fish have been found to have high concentrations of PCBs and/or mercury in their body tissue. PCBs and mercury are bioaccumulative chemicals of concern, meaning that they become more concentrated as they make their way up the food chain. At present, adequate translators do not exist for applying concentrations of mercury or PCBs in fish tissue to concentrations in the water column. Toxicants may be present in fish at levels that have no ill effects on aquatic life but due to bioaccumulation may make them unsafe to eat. Given this, high concentrations of mercury and PCBs in fish tissue do not equate to high concentrations of these contaminants in the water column.

Fish consumption is the primary pathway for human exposure to these contaminants. IDEM's criteria concentrations for mercury and PCBs apply only to fish tissue, not water. Therefore, it also should not be assumed that if a waterbody is impaired for fish consumption that mercury and/or PCBs are present in the water column in amounts harmful to human health.

Because exposure occurs primarily through the consumption of fish as opposed to the act of fishing, swimming or other activities involving physical contact with surface waters, IDEM continues to defer to the current FCA and/or contact the Indiana State Department of Health with any specific questions or concerns in this respect. The current fish consumption advisory can be found online at: http://www.in.gov/isdh/dataandstats/fish/fish_adv_index.htm and contains specific information regarding the sizes and species of fish that can be safely consumed and how often. The 303(d) list is not intended to communicate health risk information.

Comment: Use of the USEPA default value for mercury fish tissue contamination is inappropriate as it does not address the potential or local or regional differences in regards to methyl mercury. (AGL)

Response: IDEM's assessment methodology for mercury in fish tissue makes the assumption that all the mercury in the fish tissue is methylmercury, which is conservative with respect to human health. IDEM's assessment methodology uses USEPA's water quality criterion for mercury in fish tissue, which is calculated based on a national average consumption rate. The use of the USEPA's criterion value was a policy decision based on the fact that it provides a more protective criterion than would result if IDEM used the different consumption rates expressed in Indiana's WQS to calculate criteria for the Great Lakes basin and downstate waters (see IDEM's response to the following comment). USEPA's criterion for mercury provides a single, more protective criterion that can be applied consistently throughout the state, regardless of regional differences.

Comment: More protective measures are warranted for mercury and PCBs in fish tissue as the new methodology for fish consumption does not account for the *Great Lakes Water Quality Initiative (GLI)*. (AGL)

Response: The relative protectiveness of Indiana's criteria values for mercury and PCB's in fish tissue is a function of the consumption rates upon which they are based. The consumption rates expressed in Indiana's WQS for human health are 15.0 g/day for waters in the Great Lakes basin and 6.5 g/day for downstate waters. IDEM has made no determination of an appropriate

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fish consumption rate to use in calculating benchmarks. For mercury, IDEM defaulted to the USEPA water quality criterion for mercury in fish tissue. For calculating the criterion for PCB in fish tissue, IDEM used the same consumption rate USEPA used to calculate its criterion for mercury in fish tissue for the general population, which is 17.5 g/day national consumption rate. The use of a higher consumption rate in the PCB calculation is consistent with that used by USEPA and results in a more protective criterion than applying the GLI (327 IAC 2-1.5-14) and non-GLI consumption rates (327 IAC 2-1-8.6).

Comment: Stronger mercury concentration requirements are warranted as the criterion of the standard being proposed is less stringent than the Indiana Department of Natural Resources (IDNR). (AGL)

Response: The FCA published by the Indiana State Department of Health (ISDH) and IDEM's 303(d) list differ in their purpose and function. The FCA are issued as a human health advisory to the public while the 303(d) list is intended to identify waters that are impaired for one or more designated uses – the 303(d) list is not a public health advisory and does not contain appropriate information for this purpose. For mercury, given the existing exposure assumptions upon which the water quality criteria are based, issuance of a FCA does not necessarily indicate an exceedance of WQS. This apparent contradiction is due to differences in the exposure assumptions between two different types of decision-making criteria.

FCAs are intended to provide for protection of human health over a lifetime of exposure, maximizing benefits of eating fish while minimizing the risk. The calculations used to determine if an FCA should be issued are based on contaminant concentration found in fish, which is treated as a constant while consumption rates are allowed to vary. Allowing for different consumption rates makes it possible to safely consume fish that have different levels of contamination. The recommended consumption rate is reduced as fish tissue concentrations increase. While this approach serves the purpose of advising the public about where they should limit their consumption of certain fish within certain size ranges, it creates a moving target that is difficult to use for CWA purposes. CWA assessments are intended to identify waters that are impaired. This is difficult to accomplish with any consistency if the definition of impairment varies from waterbody to waterbody as FCA do. Using FCA to make CWA assessments has always been problematic in this way and has led to impairment decisions that, for the most part, are based on one or two species of fish within certain size ranges, which do not accurately reflect the quality of the resource as a whole. IDEM's methods are consistent with CWA purposes because in calculating the criteria, the consumption rate is held constant, resulting in a criterion that can be applied consistently to all waters regardless of species or size ranges.

Comments: Inconsistencies between FCAs and proposed methodology for impairment of mercury and PCBs are likely to create confusion as FCAs should parallel impairment. Using the new WQS could result in a FCA without impairment. (AGL)

Response: The FCA published by the Indiana State Department of Health and IDEM's 303(d) list differ in their purpose and function. The purpose of the FCA is to provide health information directly to the public for use in making informed decisions regarding how much fish caught from Indiana waters they can safely consume. IDEM's 303(d) list identifies waters that fail to support one or more of their beneficial uses in keeping with the CWA. While CWA assessment and impairment decisions are based on the state's WQS, which also take into consideration human health, these decisions are not intended to be public health advisories.

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While mindful of these differences, IDEM's methodology maintains as much consistency as possible between the protocols ISDH uses to assess data for the FCA and the protocols IDEM uses to assess data for the determination of impairment. However, FCAs cannot and should not parallel impairment.

FCAs are intended to provide for protection of human health over a lifetime of exposure, maximizing benefits of eating fish while minimizing the risk. In determining whether a FCA should be issued, the essential question is: Given the contaminant concentrations in the fish, how much fish can a person consume and still be safe? Using this approach, it is possible to have high levels of contamination in fish tissue and still safely consume fish. The consumption rate is simply reduced, resulting in the issuance of a FCA. Thus, FCAs are based on a sliding scale and are expressed for a given waterbody in terms of certain species within certain size ranges. It should also be noted that very few FCAs apply to all fish in a given waterbody, which limits their utility for water quality assessment purposes. While they provide important information for the public, FCAs do not adequately characterize the water quality of the resource as a whole. Using a WQS-based criterion does because it determines a safe concentration applicable to the entire waterbody, regardless of the species or their sizes. Thus, IDEM's methodology provides a more holistic assessment than previous assessments based on FCAs.

Comment: Instead of proposing to remove waters impaired with mercury and PCBs, IDEM should propose to collect data more efficiently and ensure testing will be performed every 2 (two) years. (KF)

Response: IDEM's Fish Tissue Contaminant Monitoring Program follows the rotating basin strategy outlined in the agency's Surface Water Quality Monitoring Strategy (SWQMS). Following a rotating basin strategy allows the agency to use its monitoring resources more effectively by focusing efforts in 1-2 major basins each year rather than trying to spread the same resources over the entire state. This approach, which is preferred by USEPA, allows IDEM to provide a comprehensive assessment of the entire state every five years.

With any type of monitoring, the agency must decide whether its goals will be best met by collecting a lot of samples at a few sites, or monitoring a lot of sites, collecting only a few samples at each. The goal of IDEM's Fish Tissue Contaminant Monitoring Program is to get the most intensive coverage possible.

IDEM's Fish Tissue Contaminant Monitoring Program strikes the best balance available, conducting regular sampling of all the major reservoirs, a selection of natural lakes in the State and all the major rivers. The program also monitors at public access points, perceived and known problem areas, and previously unsampled lakes and streams. This monitoring program seeks a balance between understanding the contaminant levels in a wide variety of species (not just sport fish), monitoring for new and emerging contaminant and monitoring for the contaminants that drive fish advisories, some of which are legacies of our past practices. More than two hundred tissue samples are collected annually with more than 1,000 samples across the entire State of Indiana every five years with its SWQMS. From 1990 to the present, we have collected more than 3,300 individual or composite fish tissue samples for analysis from greater than 190 sites across the State of Indiana.

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Previous data for mercury and PCBs in fish tissue collected throughout the state indicate very little change in the concentrations of these contaminants in the short term. Monitoring in rotating basins every five years within the cycle of the SWQMS is adequate for detecting change and is therefore a more prudent use of public funds than monitoring every two years.

Comments on IDEM's Consolidated Assessment and Listing Methodology (CALM)

Comment: Waterways listed on the 2006 303(d) List should not be delisted due to a lack of relevant, supporting, or new data. (AGL)(DC)(SM)

Response: IDEM's 303(d) listing processes follow USEPA regulations, which require states to demonstrate good cause for removing waterbody impairments from their 303(d) list that were included on previous 303(d) lists (pursuant to 40 C.F.R. 130.7(b)(6)(iv)). USEPA's "delisting rules" are summarized here:

- *New data indicates that WQS are now being met.*
- *The state's assessment and/or listing methodology has changed, and the waterbody is no longer considered impaired.*
- *The state's WQS have changed and the waterbody is no longer considered impaired.*
- *The original listing was found to be in error.*
- *The state can demonstrate that there are other pollution control requirements in place that are better suited than a TMDL to address the problem.*
- *The impairment is not caused by a pollutant for which a load can be calculated.*
- *A TMDL for the impairment has been approved by USEPA.*

Comment: IDEM violates USEPA guidance by failing to properly use the USEPA 5m alternative for atmospheric mercury. IDEM has failed to include the supporting documentation for listing waters under subcategory 5m. (AGL)

Response: States are not required by USEPA to employ a Category 5m approach in their consolidated assessment and listing processes. USEPA guidance does not reflect statutory requirements. However, IDEM is in the process of evaluating USEPA's Category 5m approach to determine its feasibility and potential benefits.

Comment: It is unclear how IDEM can make changes to the 2008 303(d) List based on revisions to the state's WQS when large National Pollution Discharge Elimination Systems (NPDES) permits, which have been extended by the agency, are still affecting these impaired waters under the old WQS. (SM)

Response: IDEM has made significant headway in eliminating backlogged NPDES permits. By USEPA's definition, a backlogged permit is one which has not been reissued within 180 days of the permit's expiration date. In July of 2005, IDEM had, by USEPA's definition, approximately a 24% backlog of Major Municipal NPDES permits and a 58% backlog of Major Industrial NPDES Permits. As of February 2008, the Indiana NPDES permit backlog, per USEPA's definition, is 0% for Major Municipal permits and 10% for Major Industrial permits.

Changes in water quality standards (WQS) may or may not affect the limits included in an NPDES permit. For example, specific toxicants (i.e., lead, nickel) are typically only included in NPDES permits when there is a known industrial process source to the treatment facility for the specific toxicant. In addition, the NPDES permit may already contain more stringent

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limitations for a parameter than the change in a WQS would require. In this instance, the more stringent limitations are retained in accordance with antibacksliding regulations specified in 327 IAC 5-2-10(11)(A), unless a backsliding justification can be made in accordance with 327 IAC 5-2-10(11)(B).

Comment: Waterways listed on the 2006 303(d) List should not be delisted from the 2008 303(d) List based on the 2005 modified WQS, because the modification was not done according to statutory public comment requirements. (DC)

Response: The 2005 rulemaking to amend Indiana's WQS was conducted in accordance with the procedures outlined in Indiana Code (IC 13-14-9) and was subsequently reviewed and approved by the State Attorney General for its adherence to this code. Although proper procedures were followed in the rulemaking process, and the revised WQS standards were passed by Indiana's Water Pollution Control Board, IDEM has decided not to make any changes to its 303(d) list based on water quality criteria that were revised until these Interim WQS are formally approved by USEPA.

Comment: A clearer explanation is needed where the standard free cyanide has replaced total cyanide. The explanation given leads the reviewer to believe impaired waters have been tested for free cyanide, when actually the data regarding free cyanide is presently not available. (SDC)

Response: Although the majority of cyanide data IDEM has collected in the past is available in the form of total cyanide, the agency does have free cyanide data for some surface waters. The explanations provided for the cyanide delistings proposed in the draft 303(d) list were correct. Where it was indicated that the "Data indicates full support per Indiana's WQS", IDEM has free cyanide data that would support delisting under Indiana's Interim WQS. However, since the draft list was published, IDEM has decided not to make any changes to its 303(d) list based on Indiana's Interim WQS until they are formally approved by USEPA at which time, IDEM will reevaluate all cyanide assessments using the appropriate criteria provided in Indiana's approved WQS.

Comment: Representative data used to list impaired waters on the 303(d) List should not be older than 5 (five) years. (PE)

Response: Per USEPA guidance, IDEM uses the most recent five years' worth of data to revise its water quality assessments each year. In the case of a reassessment based on changes to IDEM's methodology, it is important to look at all data, regardless of its age, to determine whether the revised use support criteria would be met if assessed now.

Comment: IDEM should be clear as to exactly which data range was used to make the assessment that site-specific free cyanide criterion was exceeded, and should use the most recent 3 (three) years of data, which would be considered representative of current conditions. (USSC)

Response: IDEM's responses to the two previous comments apply here.

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Comment: While the methodology for aquatic life use support may be appropriate when utilizing acute criteria, it is not appropriate to compare a single maximum result from a three-year monitoring window directly to a chronic criterion, and it is not appropriate to disregard criteria averaging periods. (USSC)

Response: Four-day continuous monitoring is very resource intensive. Although IDEM is able to conduct this type of monitoring at a limited number of sites each year, Indiana and most other states are unable to monitor for four continuous days at every site to determine if a chronic water quality criterion is being met. Therefore, to help states make assessments based on available data, USEPA has provided assessment guidance for making 305(b) and 303(d) listing decisions. USEPA will most likely approve listings if a state follows the assessment methodologies or 'decision rules' recommended in the guidance document, and these are consistent with the WQS. IDEM has closely followed the recommendations in this USEPA guidance in developing the decision rules that are applied in assessing Indiana waters for listing and delisting purposes. These rules are described in the Agency's CALM (CALM), which is submitted to USEPA for review with the State's Integrated Report and 303(d) List of Impaired Waters every two years.

Waterbody-Specific Comments

Salt Creek

Comment: Regarding *E. coli* and dissolved oxygen impairments to the tributaries of Salt Creek, Sager's Lake Outlet (sampling site 6), Pepper Creek (sampling site 8), Unnamed Tributary of Salt Creek (sampling site 9), Robbin's Ditch (sampling site 12), and Block Ditch (sampling site 4), data has been collected and submitted to IDEM that is not presently on the 2008 303(d) List but should be considered and incorporated. (SDCF)

Response: IDEM appreciates the submission of these data for the purposes of updating assessments in the Salt Creek watershed. These data were provided to IDEM during the public comment period. In order to determine their usability for assessment purposes, IDEM must first review the project quality assurance project plan. Based on the staff time that would be needed to perform this review and prepare the data for assessment, these data are not considered by IDEM to be readily available for use in the 2008 303(d) listing cycle. However, IDEM's water quality assessments are an ongoing process, and these data will be considered for use in the next update of Indiana's 303(d) list.

Long Lake

Comment: Regarding Long Lake, before delisting, further investigation is warranted as IDEM has indicated it may have been listed by mistake for fish consumption advisory (FCA) for polychlorinated biphenyls (PCBs). (SM)

Response: During the second phase of its statewide reassessment of fish tissue data, IDEM verified that the Agency has no fish tissue data to support listing Long Lake in Porter County as impaired for PCBs in fish tissue. Since the draft list was published, IDEM has become aware of the existence of recent fish tissue data collected by United States Geological Survey (USGS) that may be useful in determining use support. Prior to the 2010 cycle, IDEM plans to work with USGS to obtain these data and review them to determine their usability for assessment purposes.

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Busseron Creek

Comment: Regarding the impairment of Busseron Creek for sulfate and TDS, if the Total Maximum Daily Load (TMDL) is not approved by the United States Environmental Protection Agency (USEPA), the impairment should not remain on the Category 4A List as Indiana does not have a WQS for TDS, and a comparison of the sulfate data to the proposed WQS may show the sulfate impairment no longer exists. (PE)

Response: The delistings for sulfates, total dissolved solids originally proposed in IDEM's 2008 draft 303(d) list and the sulfate additions proposed were based on changes that appear in Indiana's Interim WQS. Upon further consideration, IDEM has decided not to make any changes to its 303(d) list based on Indiana's Interim WQS until they are formally approved by USEPA at which time, IDEM will reevaluate all assessments for these parameters using the appropriate and approved criteria.

Black Creek/Brewer Ditch, Indian Creek, and the South Fork Patoka River

Comment: Regarding the sulfate impairment of Black Creek/Brewer Ditch, Indian Creek, and the South Fork of the Patoka River, the representative data submitted for these waterways should be compared to the new WQS before listing these waters as impaired on the 2008 303(d) List. (PE)

Response: IDEM's response to the previous comment applies here.

Comment: Regarding Black Creek/Brewer Ditch, Indian Creek, and the South Fork of the Patoka River, data listed by IDEM showing sulfate impairment is not representative of current conditions, and should undergo an assessment with respect to the new state WQS proposed for adoption from the Illinois Environmental Protection Agency (IEPA). In the event these streams are not impaired with regard to the new water quality standard, they should be removed from the listing for impairment. (PE)

Response: As noted in IDEM's responses to previous comments, IDEM has decided not to make any changes to its 303(d) list based on Indiana's Interim WQS until they are formally approved by USEPA at which time, IDEM will reevaluate all assessments for sulfates using the appropriate criteria provided in Indiana's approved WQS. IDEM cannot legally use another state's WQS because the Federal Clean Water Act requires states to make assessments in keeping with their established and approved WQS, which for Indiana, are codified in the Indiana Administrative Code (IAC 327 Article 2).

Comment: Regarding Impaired Biotic Communities found within Black Creek/Brewer Ditch and the South Fork of the Patoka River, more data needs to be acquired before listing them as impaired. (PE)

Response: The biological impairment of Black Creek/Brewer Ditch was based on a fish community sample collected in 2001, which meets the data requirements outlined in IDEM's CALM for use support determinations. The biological impairment of South Fork Patoka River was added to IDEM's 303(d) list in 1998 based on representative data collected at that time. Per USEPA requirements, this impairment must remain on the 303(d) list until IDEM has monitoring data indicating that the waterbody supports a well-balanced aquatic community.

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IDEM's water quality monitoring and its 305(b) assessment and 303(d) listing processes follow a 5-year rotating basin schedule. IDEM conducted additional sampling in the Patoka River basin in 2006. In keeping with the Agency's schedule for 305(b) assessment and 303(d) listing schedule, these data will be reviewed for assessment purposes in 2008, and any resulting changes to the state's 303(d) list will be proposed on IDEM's 2010 draft 303(d) list.

Comment: Regarding Indian Creek and its tributaries as well as Brewer Ditch's tributaries, data submitted to IDEM regarding Total Dissolved Solids (TDS), a very conservative estimate of the sulfate concentration, suggests both waterways are meeting sulfate WQS. (PE)

Response: As noted in IDEM's response to a previous comment, IDEM has decided not to make any changes to its 303(d) list based on Indiana's Interim WQS until they are formally approved by USEPA at which time, IDEM will reevaluate all assessments for these parameters using the criteria provided in Indiana's approved WQS.

Grand Calumet River

Comment: Regarding AU INC0122_00 or AU INC0122_ T1097 of the EBGCR, it is unclear as to what data IDEM used to list these segments as impaired for oil and grease. There are no results associated with Fixed Station GCR-42 from 1990-2007 or Fixed Station GCR-46 from 1999-2007, therefore the listing should be moved to Category 3. (USSC)

Response: The Oil and Grease impairments on the Grand Calumet River were originally listed based on 10 years' worth of data collected from fixed stations between 1959 and 1973. The locations for the specific sites used are identified in IDEM's 1977 305(b) Report, available for review through the IDEM Office of Water Quality File Room or by submitting a photocopy request to IDEM's 305(b)/303(d) Coordinator, Jody Arthur. Ms. Arthur can be contacted by phone at 317-234-1424 or by email at jarthur@idem.IN.gov.

USEPA regulations require states to demonstrate good cause for removing waterbody impairments from their 303(d) list that were included on previous 303(d) lists (pursuant to 40 C.F.R. 130.7(b)(6)(iv)). The data upon which these assessments were made were determined to be representative at the time they were collected. In order to delist the oil and grease impairments on the Grand Calumet River, IDEM would need more recent data indicating that these problems no longer exist.

Comment: Regarding AU INC0122_00 of the EBGCR, IDEM should use all valid and available data submitted and more appropriate method for determining use support when comparing daily sample results to chronic criteria for the ammonia. (USSC)

Response: Due to resource constraints, Indiana, like most other states, is unable to monitor for four continuous days at every site to determine if a chronic water quality criterion is being met. USEPA recognizes this and has provided guidance to states to assist them in making 305(b) assessments and 303(d) listing decisions based on the available data, which in many cases are daily results as opposed to four-day averages. USEPA will most likely approve listings if a state follows the assessment methodologies or 'decision rules' recommended in the guidance document, and these are consistent with the WQS. IDEM has closely followed the recommendations in this USEPA guidance in developing the decision rules that are applied in assessing Indiana waters for listing and delisting purposes. These rules are described in the Agency's CALM, which is submitted to USEPA for review with the State's Integrated Report and 303(d) List of Impaired Waters every two years.

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Regarding the use of all available data, IDEM reviews all readily available data submitted for potential use in the Agency's 305(b) assessment and 303(d) listing processes. IDEM is also working to determine the usability of water quality data submitted to other Agency programs in its 305(b)/303(d) assessment processes. However, based on the volume and variety of these data in terms of the format in which they are submitted and their relative data quality, IDEM does not presently consider these data readily available.

However, IDEM recognizes the potential value inherent in all water quality data to the Agency's 305(b) assessment and 303(d) listing processes and is currently developing a framework for the solicitation, review, and potential use of external data in these processes. It is anticipated that when this framework is fully developed and implemented, IDEM's ability to review data sets from all external source will be significantly improved.

Comment: After reviewing free cyanide data for the Grand Calumet River (GCR) provided by IDEM along with a corresponding site key, it is unclear which locations of the river are impaired for free cyanide. IDEM should review the delisting of the Grand Calumet River (GCR) for free cyanide as recent data provided by the agency appears to indicate many exceedances. (AGL)

Comment: In accordance with 327 IAC 2-1.5-16 site specific criteria for cyanide are applied from USS outfall 005 to one mile downstream. IDEM should use these criteria in assessing use support for that part of the segment INC0122_00. (USSC)

Comment: Regarding AU INC0122_00 of the EBGCR, the impaired designation can be made after IDEM collects data from representative sampling locations using the Indiana site specific criteria for free cyanide. (USSC)

Comment: Data for the most recent 3 years post-dredging should be used for the cyanide assessments. (USSC)

Comment: USS data for AU INC0122_00 with supporting documentation was submitted to IDEM in 2002 this combined with IDEM's 1999-2000 TMDL and the data generated for the 401 Certification and this should be compared to the free cyanide criteria. The USS DMR reports for outfall 005 and 010 show no exceedance of WQS and therefore it can be assumed that the cyanide criteria is being met instream and the segment does not warrant the impairment listing. (USSC)

Response: This response applies to all of the previous five comments regarding IDEM's Grand Calumet River assessments for free cyanide. The delistings for cyanide originally proposed in IDEM's 2008 draft 303(d) list were based on changes that appear in Indiana's Interim WQS. Upon further consideration, IDEM has decided not to make any changes to its 303(d) list based on Indiana's Interim WQS until they are formally approved by USEPA. At that time, IDEM will reevaluate all data originally used to make these assessments and will work to identify and review other available data for potential usability for assessment purposes. Per USEPA guidance, the most recent five years' worth of usable data will be considered to ascertain the use support status of the Grand Calumet River using the applicable and approved criterion for cyanide. The issues identified here will be taken into consideration at the time this reassessment is made.

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Comment: Regarding AU INC0122_00 of the East Branch of the Grand Calumet River (EBGCR), the impaired biotic community listing should be moved to Category 3. The sample taken would have been included in the dredging area hence the 1996 results would no longer be representative. (USSC)

Response: USEPA regulations require states to demonstrate good cause for removing waterbody impairments from their 303(d) list that were included on previous 303(d) lists (pursuant to 40 C.F.R. 130.7(b)(6)(iv)) and do not allow delisting based solely on the age of the data. The data upon which the original assessment was made were determined to be representative at the time they were collected. In order to delist, IDEM would need more recent data indicating that WQS are now being met.

Since the draft list was published, IDEM has become aware of the existence of more recent biological data that may provide new information with which to determine current aquatic life use support status of the Grand Calumet River. Until these data are obtained and reviewed for their usability for assessment purposes, the Grand Calumet River reach impaired for IBC will remain on Indiana's 303(d) List of Impaired Waters.

Comment: Regarding AU INC0122_00 or AU INC0122_T1097 of the EBGCR, the habitat quality (hIBI) and biological integrity data (mIBI) available are not current and do not represent current conditions. If IDEM has concluded they are impaired for biotic communities due to pollutant(s), then IDEM should identify the pollutants causing the biological impairment and identify the methodology used to determine such a conclusion. (USSC)

Response: IDEM's response to the previous comment applies here. With regard to identifying specific sources for biological impairment, impaired biotic communities (IBCs) are problematic from a water quality management perspective because USEPA requires that they be treated as a cause of impairment for listing purposes when they actually represent the secondary effect of other causes of impairment (i.e. stressors in the watershed). However, in keeping with USEPA policy, IDEM must retain these impairments on the State's 303(d) until their specific sources can be identified. This is usually accomplished through the TMDL process.

However, for the Grand Calumet River, IDEM has determined that developing a TMDL for the multiple impairments on the Grand Calumet River is not appropriate or cost effective at this time. This is because most of the water quality issues identified have been attributed to the presence of contaminated sediments in these waters. Dredging to remove the contaminated sediments is scheduled to begin in 2009 for both waterbodies. It is anticipated that once completed, these dredging projects will resolve most of the impairments presently identified resulting in the attainment of WQS within a reasonable timeframe.

Comment: Regarding the GCR, considering the money being spent to restore it, IDEM should not delist segments with the generic reason of insufficient data as there should be sufficient data. (SM)

Response: The water quality issues in the Grand Calumet River are very well defined and well documented. IDEM's proposed delisting of the Grand Calumet River was not based on a lack of data. Rather, it was based on changes in IDEM's use support criteria for biological data. However, upon further review of that data used to make the original assessment, IDEM scientists determined that the Grand Calumet River should remain listed for IBC until more recent data are available and show that the aquatic communities in the Grand Calumet River are no longer

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impaired. The specific reasons for this decision are addressed in IDEM's responses to the following two comments.

Comment: Regarding data collected at LM 020-0017 of the EBGCR, if IDEM chooses to use the 1996 biological and habitat data, it should be assessed as stated in the methodology section of the 2008 draft 303(d) List of Impaired Waters, which indicates poor habitat using the QHEI score from the 1996 sampling. (USSC)

Response: In the draft 2008 303(d) list, IDEM proposed delisting one reach of the Grand Calumet River for IBC. This decision was based on changes in the Agency's use support criteria for macroinvertebrate results that have occurred since the original assessment, which was based on data collected in 1996. Based on the current criteria, the 1996 macroinvertebrate community results do not indicate impairment. Upon further review, IDEM biologists have determined that the mIBI sub-metrics have failed to accurately characterize the severity of impairment at the lower end of the calibrated scale of the index and that reverse scoring on some of the sub-metrics is necessary to accurately characterize use support at severely impacted sites.

In addition, after the draft list was published, IDEM became aware of the existence of more recent data that may support the continued listing of the Grand Calumet River for IBC. Given this, IDEM decided to add this impairment back to Category 5A of the 303(d) list until these data can be reviewed for assessment purposes.

Regarding the use of the habitat data, in accordance with IDEM's CALM, IDEM does not use the Qualitative Habitat Evaluation Index (QHEI) to determine aquatic life use support. Rather, the QHEI is an index designed to evaluate the lotic habitat quality important to aquatic communities and is used in conjunction with mIBI and/or IBI data to evaluate the role that habitat plays in waterbodies where impaired biotic communities (IBC) have been identified.

Comment: Regarding AU INC0122_00 or AU INC0122_T109 of the EBGCR, IDEM should further clarify the applicability of the regional reference criteria for biological impairment. IDEM's previous response to this issue did not provide an explanation of how the biological data, or the identification of specific reference streams within the state or region, have been appropriately calibrated to represent a man-made and frequently modified navigational canal system. (USSC)

Response: The Hester-Dendy artificial multi-plate substrate regional reference criteria was determined using 134 samples collected in non-wadeable or non-riffle type habitats from low gradient tributaries, headwater streams to highly modified aquatic systems. Samples collected with this method in these systems were found to have a normal distribution with a mean total taxa richness of 7 to 8 taxa per sampler. The mean percent dominant taxa was found to be no more than 67.0%, and the mean Ephemeroptera, Plecoptera, Trichoptera (EPT) taxa richness was found to be 3 EPT taxa. The highest quality stream systems were found to typically have more than 10 total taxa.

The Grand Calumet system has been found to be one of the lowest scoring systems in the state. The nearby Burns Ditch in Porter County has a typical taxa count of 13 total taxa with a percent of dominance of 20%. The Chicago Lake Plain ecoregion, in which the Grand Calumet is part, should have, based on our calibrations a Hester-Dendy mIBI score of 3 which is significantly higher than the scores we determined for the Grand Calumet. Therefore, the multi-metric score used by IDEM to determine non-attainment is extremely conservative.

303(d) Attachment 5: Response to Public Comments on the Draft 2008 303(d) List of Impaired Waters

Comment: Regarding Assessment Unit (AU) INC0122_00 of the EBGCR, the proposed listing as impairment for ammonia under Category 5 is incorrect. After IDEM has collected data from representative sampling locations, a valid assessment of whether the designated use is impaired by ammonia can be made. Regarding the upper portion of the EBGCR, IDEM should investigate the use of other monitoring locations along this reach to correctly characterize it. (USSC)

Response: The assessment of the headwater portion of the Grand Calumet River (INC0122_00) was based on results from site LMG020-0001 located at the upstream end of the reach. Data from this site are robust, indicating exceedance of Indiana's WQS for ammonia in 32 out of 60 samples, far exceeding the 10% rule outlined in IDEM's CALM. IDEM scientists have determined that these results are representative of the entire reach to which the data were applied (INC0122_00) based on the magnitude of the ammonia impairment, the consistency in ammonia loadings to the stream, and the distance and downstream over which the ammonia impairment can be expected to persist given the high concentrations of the pollutant at the sampling site and the flow regime of the stream along this reach.

Comment: Regarding the headwaters segment AU INC0122_00 of the EBGCR, it should be divided into two different segments as there is a distinct physical difference between the headwaters and the remaining waters which includes a stretch of 3.2 miles downstream of the monitoring station. (USSC)

Response: IDEM does split assessment units for assessment purposes when necessary. In keeping with good science and USEPA guidance regarding the delineation of representative assessment units, IDEM's decisions regarding where to split an assessment unit to achieve representativeness are based on a combination of factors including land uses and potential sources of impairment, the presence of large tributaries or diversions, and other significant influences due to changes in riparian vegetation, stream banks, substrate, slope or channel morphology. These factors were taken into consideration to determine appropriate assessment units for the Grand Calumet River in 2002. IDEM is not aware of any changes since 2002 in the factors described that would be significant enough to warrant splitting INC0122_00 into two separate assessment units.

Comment: Regarding AU INC0122_00 of the EBGCR, if IDEM chooses not to use data from other sources, the free cyanide impairment should be shifted from a Category 5 to a Category 3 because of the lack of representative data applied to the entire 3.2 mile stretch of the upper reach and the lack of data quantity from representative locations. (USSC)

Response: The representativeness of the sampling location used to assess this reach of the Grand Calumet River is addressed in IDEM's responses to the two previous questions. Regarding specifically the assessment for cyanide, IDEM has decided to make no changes to the 303(d) list with respect to cyanide listing until Indiana's Interim WQS have been formally approved by USEPA.

303(d) Attachment 5: Response to Public Comments on the Draft 2008 303(d) List of Impaired Waters

Comment: Regarding the GCR, the TMDL for mercury should not be delayed until dredging is complete because for other waterbodies, TMDLs are completed prior to restoration. It is difficult to locate all sources of mercury. If a TMDL was completed, it would allow for the opportunity to identify sources and help reduce the heightened levels to sustainable levels. (SDC)

Response: The water quality issues in the Grand Calumet River are very well defined and well documented. Most of these issues are attributed to the presence of contaminated sediments in these waters. Dredging to remove the contaminated sediments is scheduled to begin in 2009 for both waterbodies. It is anticipated that once completed, these dredging projects will resolve most of the impairments presently identified. Therefore, TMDL development for the multiple impairments on the Grand Calumet River waters is inappropriate and not cost-effective at this time because the dredging, once executed, is expected to result in attainment of WQS within a reasonable timeframe.

Comment: The first of IDEM's three basic steps to achieve the goal of establishing allowable loads is to determine sources of contamination, and both point and non-point sources. We know what many of the point sources are for mercury including industry, hospital, dentist offices, etc. Do we really have to wait to clean up mercury in our stream until we know every single non-point source? (SDC)

Response: It is IDEM's position that in order to effectively address an environmental problem, its source(s) must be adequately and accurately characterized. However, despite the known difficulties associated with identifying and quantifying the specific sources of mercury in the aquatic environment, IDEM has developed programs and initiatives to ensure that the information presently available regarding point and nonpoint sources of mercury is used effectively to reduce the amount of mercury entering state waters to the extent possible. For example, point source discharges of mercury into Indiana waters are regulated through IDEM's National Pollutant Discharge System (NPDES) in the Office. IDEM also has a number of voluntary programs and initiatives in place to help control nonpoint sources of mercury. IDEM's Mercury Awareness Program educates citizens on the environmental and health-related dangers associated with mercury and encourages reducing the use of mercury-containing devices and to properly dispose of mercury-containing items. IDEM also provides assistance to Healthcare facilities, dental offices and other facilities that use products containing mercury in developing and implementing a mercury pollutant minimization program plan. Information on mercury and IDEM's efforts to reduce mercury in the environment can be found online at:

http://www.in.gov/idem/your_environment/mercury/index.html

TMDL Development

Comment: TMDLs for mercury and PCBs should be completed and not postponed because the USEPA has provided little guidance. The USEPA requires states to develop TMDLs or specify an alternative for all waters on the 303(d) List, mercury and PCBs are not exceptions. (AGL)(SM)

Response: IDEM has not stated that it will not develop TMDLs for mercury and PCBs in fish tissue. Rather, the agency has maintained that until adequate guidance for developing a TMDL to address these impairments is available, IDEM will continue to focus its limited resources on developing TMDLs on impairments for which appropriate methods have been established and for which best management practices have been developed to remedy them.

Comment: IDEM should follow the USEPA's rules for preparing TMDL statements. (WF)(KF)

Response: IDEM follows all rules and guidance when drafting TMDL documents. Indiana currently has 559 USEPA-approved TMDLs, and IDEM has never received a comment from USEPA regarding a failure to follow any established rule or guidance.

Comment: According to USEPA guidance, IDEM should have a comprehensive TMDL schedule for impaired waters incorporated into the 303(d) List. (AGL)

Response: IDEM has developed an approach to the development of TMDLs that puts the agency on a pace to address impaired waters as they are added to the 303d list. The TMDL development schedule corresponds with IDEM's basin-rotation water quality monitoring schedule. To take advantage of all available resources for TMDL development, impaired waters are scheduled according to the basin-rotation schedule unless there is a significant reason to deviate from this schedule. Waterbodies could be scheduled based on the following:

- 1. Waterbodies may be given a high or low priority for TMDL development depending on the specific designated uses that are not being met, or in relation to the magnitude of the impairment.*
- 2. TMDL development of waterbodies where other interested parties, such as local watershed groups, are working on alleviating the water quality problem may be delayed to give these other actions time to have a positive impact on the waterbody. If WQS still are not met, then the TMDL process will be initiated.*
- 3. TMDLs that are required due to water quality impairments relating to pollutant parameters where no USEPA guidance is available, may be delayed to give USEPA time to develop guidance.*

Comment: Indiana's proposed 2 (two) year TMDL schedule should be made available for public comment. (AGL)

Response: Per USEPA requirements, the two-year TMDL schedule, along with a strategy for addressing TMDL development in the long term, will be included in IDEM's finalized 303(d) list submission to USEPA on April 1, which will be made available on IDEM's website once approved.

303(d) Attachment 5: Response to Public Comments on the Draft 2008 303(d) List of Impaired Waters

Comment: IDEM's TMDL process should have clear deadlines and public transparency. (AGL)

Response: IDEM's TMDL development process is completely open to the public. IDEM has been cited nationally as having one of the most comprehensive and open processes, as compared to other states. All TMDLs written by IDEM have at least two or more mandatory public meetings, located in the watershed in which the TMDL will focus. The first meeting presents general information to the public and provides opportunity for public comment and information submittal. Indiana is one of a small percentage of states that actively encourages the submittal of third party data and uses this data in the development of TMDLs. IDEM's second public meeting focuses on the presentation of the draft TMDL and again IDEM solicits public comment. IDEM posts all meetings and documents on the agency website and we actively mail hundreds of stakeholders each year with meeting announcements and requests for information. Deadlines for TMDLs are flexible to allow for the inclusion of data, adequate public comment, and needed scientific analysis.

Further Clarifications within the 303(d) List

Comment: The 2008 303(d) List should be referenced on the front page of IDEM's website.

(KF)

Response: In addition to being published in the Indiana Register online, IDEM's Notice of Public Comment Period for the 2008 draft 303(d) list was posted on several IDEM Office of Water Quality websites, including those for the TMDL and Watershed Planning programs, the Integrated Report website, and the 303(d) list site. Notice of the IDEM's extension of the public comment period for the draft 303(d) list was also posted on the 303(d) website and appeared as Agency news on IDEM's website: <http://www.in.gov/idem/>.

Comment: Geographical Information Systems (GIS) map links having the stream segments labeled with AU Identifications (IDs) should be provided. (SDC)

Response: IDEM agrees with the need for greater accessibility of geographic information related to 303(d) listings and is currently preparing an interactive application in-house that will provide this information via the Internet. This information is expected to be updated on the Indiana Water Quality Atlas (IWQA), which currently provides the information for previous 303(d) lists. The IWQA is available online at: <http://iwqa.idem.in.gov/>.

Comment: An additional consolidated spreadsheet exhibiting the 2008 303(d) circumstances on a watershed-by-watershed basis would be helpful if added to the list. (SM)

Response: Indiana's draft 303(d) List included the 14-digit hydrologic unit code (HUC) for each impairment listed. In addition to a Microsoft Word document containing the 303(d) list, IDEM made a Microsoft Excel spreadsheet version of all tables contained in the draft list available online shortly after publication of the Draft list to facilitate sorting and searching by watershed at:

<http://www.in.gov/idem/programs/water/303d/index.html>

These tables appear under the link entitled, "Notice of Public comment Period: Excerpted Tables[XLS]"

Comment: A comprehensive and complete reference list of all data resources, as well as a

303(d) Attachment 5: Response to Public Comments on the Draft 2008 303(d) List of Impaired Waters

compilation of the databases used to conduct the 2008 303(d) assessment, and an explanation of inclusions and exclusions should be provided. (USSC) (SDC)

Response: In past listing cycles, this information has been included with the State's Integrated Report, which includes the 303(d) List of Impaired Waters. In addition to describing the Agency data used to develop the 2008 303(d) list, the 2008 Integrated Report contains a detailed discussion of IDEM's data solicitation, review and use of data from outside sources. Although IDEM makes this information available through the Integrated Report, IDEM agrees that it would be more useful to the public if included in the Notice of Comment Period for the draft 303(d) List. Given this, it is IDEM's intention to incorporate this information into the Notice of Comment Period for the 2010 Draft 303(d) list.