

**Bureau of Water
Impaired Waters of Illinois
Draft 2008 Integrated Report**

Responsiveness Summary

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ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

IN THE MATTER OF:)
Impaired Waters of Illinois)
Draft 2008 Integrated Report) IEPA File 64-08

BACKGROUND INFORMATION

The Illinois Environmental Protection Agency (Illinois EPA or Agency) conducted a public hearing on Thursday, April 24, 2008, in the Illinois EPA Training Room, located at 1021 North Grand Avenue East, Springfield, Illinois. The purpose of this hearing was to provide an opportunity for the public to comment on the Bureau of Water (BOW) draft 2008 Integrated Report.

The Illinois EPA is required under Sections 303(d), 305(b) and 314 of the federal Clean Water Act to assess waters of the state and evaluate compliance with applicable water quality standards and designated uses. Waters that are assessed as not achieving those standards are identified on the Integrated Report.

Waters identified in the Integrated Report in accordance with Section 303(d) are deemed impaired for specific chemical constituents and consequently additional loadings (i.e., discharges) of those constituents may be restricted. In addition to possible restrictions on future loadings to these listed water bodies, waters identified in the Section 303(d) list are subject to the development of Total Maximum Daily Loads (TMDLs). TMDLs in Illinois may take the form of a watershed study in which the chemical constituent causing impairment to that water body is evaluated. A TMDL is the sum of the allowable amount of a single pollutant that a water body can receive from all contributing sources and still meet water quality standards or designated uses.

PRE-HEARING OUTREACH

Pursuant to the federal regulations for public participation in 40 CFR 25, the hearing was announced in state publications including:

- *Edwardsville Intelligencer* (state newspaper) on March 24, 31 and April 7, 2008.

The public hearing notice was sent via first class mail to persons and groups on lists provided by:

- Bureau of Water, Division of Water Pollution Control
- Illinois EPA Office of Community Relations

The public hearing notice was featured on the Illinois EPA Web Site www.epa.state.il.us. All Illinois EPA regional offices posted the hearing notice in a public area.

PUBLIC HEARING AND HEARING RECORD

The 19 non-Agency persons in attendance at the April 24, 2008, hearing represented consulting firms, environmental organizations, sanitary districts, homeowners associations, energy interests, academia, public water supplies and planning commissions.

Hearing officer Scott Ristau opened the hearing at 10:08 a.m. Dean Studer described the Draft 2008 Integrated Report. Questions and comments were received from the public. A panel of Agency staff responded to the questions. Hearing officer Scott Ristau closed the hearing at 11:02 a.m. Agency staff were available to meet with the public before and after the hearing.

The hearing record remained open for written comments postmarked through midnight May 27, 2008.

This responsiveness summary provides the Agency responses to comments and questions from the public while the hearing record was open. The Agency responses to these comments and questions are divided into two parts. The first part contains a summary of the issues raised and addressed at the public hearing. Page and line numbers provided refer to the hearing transcript. Comments and issues submitted to the Agency in writing and those raised at the hearing that require additional clarification are contained in the second part.

Questions, concerns and comments are in regular type
Agency responses are in bold type

Agency Responses to Questions, Concerns and Comments

Issues Raised and Addressed at the Hearing

The following issues were raised at the hearing on April 24, 2008. Page and line numbers after the comments refer to the pages and lines in the transcript. The transcript is available on the web at <http://www.epa.state.il.us/public-notices/2008/impaired-waters-report/hearing-transcript.pdf>. If you would like copies of the transcript, please contact Shirley Durr at (217)782-3362.

- Concerns about details on implementing changes in how dissolved oxygen is listed in the Integrated Report:
 - In how many cases are point sources the cause of low dissolved oxygen?
Page 22, line 23 through page 25, line 6.
 - Currently no criteria for B.O.D.
Page 28, line 2 through page 29, line 11.
- Concern of Holishor Homeowners Association about the watershed effecting Holiday Shore Lake. The Association would like to apply for a Clean Water Act Grant.
Page 25, line 23 through page 27, line 23.
- Why are derived criteria missing from Table C-5 (Guidelines for Causes of Impairment in Streams) of the Integrated Report?
Page 29, line 12, through page 30, line 18.
- The Integrated Report now lists fish kills as a non-pollutant cause of impairment. How will fish kills be attributed to certain pollutants?
Page 30, line 19 through page 32, line 6.
- Is there a plan to collect total nitrogen data in the future?
Page 32, line 15 through page 33, line 20.

- The listing of the Rock River states that fish kills and low dissolved oxygen are causes of impairment. However, there have been no fish kills in the Rock River in the last 10 years, and dissolved oxygen levels are at least 7 mg/L.

- Why are they still listed in the report?

Page 34, line 23 through page 36, line 12. See also Comment #1 in the next section.

- How old is the data in the report?

Page 36, line 13 through page 38, line 11. See also Comment #1 in the next section.

- Will this be updated in the next report?

Page 36, line 12 through page 39, line 6.

- Is there anything that can be done in terms of the scope of the USGS study to ensure that it is useful in TMDL development for Peoria lake and the Illinois River and is there anything that we can do to accelerate the TMDL development?

Page 39, line 9 through page 42, line 5.

Issues Raised Requiring Additional Explanation

Issues Raised during the Hearing that the Agency Agreed to Explain Further

1. There have been no fish kills on the Rock River in ten years and the dissolved oxygen level is seven milligrams per liter. Why is the Rock River still listed as impaired for fish kills and low dissolved oxygen? How long will this data be used?

Response: The above statements are not correct. Fish kills were reported in 2003 at several locations in the Rock River. The Illinois Department of Natural Resources determined that the kills were due to natural low water levels, nutrients and either very low or very high dissolved oxygen concentrations, so formal reports were not completed. Supersaturated dissolved oxygen levels (>200 percent), excessive algal blooms (chlorophyll a >400 µg/L), high biochemical oxygen demand (BOD) (>9 mg/L) and low dissolved oxygen concentrations (<5.0 mg/L) were reported in the Rock River during summer 2003. The presence of dams on the Rock River in addition to drought conditions contributed to these problems.

The dissolved oxygen level in the Rock River is not 7 mg/L at all locations at all times. Data from five Rock River stations sampled from 2003 through 2005, which was the period of data used for the 2008 Integrated Report, indicated that dissolved oxygen ranged from 1.09 to 16.52 mg/L with a median of 11.8 mg/L. The lowest concentrations (<3.0 mg/L) were found in July 2005 at or before 7:30 a.m. The Rock River was not reassessed this cycle because there was no new biological data. It is scheduled to be sampled again in 2008.

2. At what time will the Agency be taking data the from the Fox River, and where will this data be collected? Are any stations located in Yorkville?

Response: The Fox River was sampled in 2007 as part of the Intensive Basin Survey Program. Locations sampled on the Fox River included Chain of Lakes State Park (Rt. 173), McHenry, Burton's Bridge, Algonquin, South Elgin, Geneva, Oswego and Wedron. The Fox River is also sampled nine times per year at six locations as part of the Ambient Water Quality Monitoring Network Program. Neither of these monitoring programs have stations located in Yorkville. The next intensive basin survey for the Fox River is scheduled for 2012 and will probably consist of the same stations.

Issues Raised in Writing

3. The Agency should re-evaluate the 24 water body segments listed as impaired by atrazine using the provided data for the time frame of 2004 through 2007. This should replace the data from 2003 through 2005.

Response: Data from the 2006/2007 Syngenta Atrazine Study formally submitted to the Agency by Dennis Tierney on May 27, 2008, was used to reevaluate the 15 Community Water Supplies included in the study. This atrazine data was used to assess compliance with the Public and Food Processing Water Supply use and Aquatic Life use. Based on these data, eight lakes that previously had atrazine identified as a cause of Public and Food Processing Water Supply use impairment no longer have atrazine identified as such. These waters are: Lake Carlinville (RDG), Lake Coulterville (ROV), New Gillespie Lake (SDU), Old Gillespie Lake (SDT), Ashland Lake (SDZO), Hillsboro Glenn Shoals (ROL), Palmyra-Modesto Lake (RDZP) and Waverly Lake (SDC). In cases where atrazine was the only parameter listed as causing impairment for the use, the assessment was reevaluated (if more recent data was available) to determine whether or not there remains an impairment for Public and Food Processing Water Supply use. In some cases, additional causes of impairment were identified and are listed in Appendix A of Integrated Report. In other cases, it was determined that the use was fully supported.

4. Based on the atrazine data for the most recent four years (2004 through 2007), Ashland Lake (SDZO), Hillsboro Glenn Shoals (ROL), Palmyra-Modesto Lake (RDZP), and Waverly Lake (SDC) should not be listed as having the drinking water use impaired by atrazine.

Response: Based on the 2006/2007 data received from Syngenta, all four of these lakes have had atrazine delisted as a cause of Public and Food Processing Water Supply use impairment.

5. Water body segment O-08 on the Kaskaskia River should not have atrazine listed as a cause of impairment, as it appears that the Agency made an error in listing atrazine as a cause of impairment.

Response: The atrazine listing as a cause of impairment for segment O-08 was due to a transcription error and has been corrected. Atrazine is no longer listed as a cause of impairment for any use in this segment.

6. When a robust data set is available for a water body for atrazine, the Agency should give more weight to the four quarterly average metric than the other metrics used to determine atrazine impairment. Compliance with the federal Safe Drinking Water Act for Maximum Contaminant Level (MCL) is based on a rolling quarterly average.

Response: The protocol that the Agency uses is appropriate for a multi-barrier approach to protecting and restoring drinking water resources. As well as single detections over 12 ppb, single quarterly detections over 3.0 ppb and running four quarter detects over 3 ppb, we also use MCL violations. If a Community Water Supply (CWS) is detecting atrazine at MCL violation levels after treatment, then the source water is likely to have even higher levels present, thus we deem those waters as impaired.

7. The Agency should consider using the Drinking Water Levels of Comparison published in the *Federal Register* on February 20, 2003 instead of the MCL of 3 parts per billion.

Response: The Agency feels that since the assessment is for Public and Food Processing Water Supply use, the MCL is an appropriate level for assessment. Source waters with greater than 3 ppb of atrazine require a Community Water Supply (CWS) utilizing them to use enhanced treatment to be in compliance with Public and Food Processing Water Supply Standards.

8. Water body segments on Beaucoup Creek (NC-07), Big Muddy River (N-11), and Little Muddy River (NE-05) should not have atrazine listed as a cause of impairment as it appears that the Agency made an error in listing atrazine as a cause of impairment in these segments.

Response: In the draft 2008 integrated report, for three Assessment Units (N-11, NE-05, and NC-07), atrazine was mistakenly listed as a potential cause of impairment of Aquatic Life use. These mistakes have been corrected.

9. Carlyle Lake (ROA) should not be listed as impaired because of atrazine if no atrazine data is available. If atrazine data are available for this segment adequate to support listing atrazine as a cause of impairment, then it should be shifted from a high priority for TMDL development to either a medium or low priority for TMDL development.

Response: Atrazine is listed as a cause of Aquatic Life use impairment in Carlyle Lake. This assessment remains unchanged from the 2006 IR. The listing of atrazine is based on 2003 data provided by Syngenta. The sampling location was identified as raw water intake for the city of Centralia (IL1214220). There were two observations exceeding the treated-water MCL threshold by more than fourfold (dates 6/17/03 and 6/23/03).

The city of Centralia has raw water intakes in lakes Raccoon, Centralia, and Carlyle and since the percentage of water drawn from each of the intake locations was not specified for the samples provided, data were interpreted conservatively (assuming equal percentages from all lakes). Consequently, atrazine was listed as a cause of Aquatic Life use impairment for those lakes where Aquatic Life use was impaired (Raccoon and Carlyle).

Data submitted by Dennis Tierney (Syngenta), along with his comments to Scott Ristau on May 27, 2008, were used to re-evaluate the listing of atrazine as a cause of Aquatic Life use impairment for Raccoon and Carlyle lakes. For Carlyle Lake (ROA), five observations were reported for dates October 27, 2007, through Dec. 17, 2007. Since atrazine has been identified as a substance known to vary regularly in concentration in surface waters during a typical year, we do not believe that the data submitted represents the relevant period where we typically see elevated atrazine concentrations in untreated water. Therefore, we do not believe that we have sufficient data to remove atrazine as a cause of Aquatic Life use impairment in Carlyle Lake at this time.

For Raccoon Lake, 131 observations representing the dates Jan. 12, 2004, through Sept. 24, 2007, were submitted. We believe that there are sufficient data available to re-evaluate atrazine as a cause of Aquatic Life use impairment for Raccoon Lake. Based on the re-evaluation of data, atrazine will not be listed as a cause of Aquatic Life use impairment for this lake in the 2008 IR. Please note that atrazine will remain as a cause of Public and Food Processing Water Supply use impairment for Raccoon Lake.

Since Carlyle Lake is listed as impaired for Aquatic Life use, and the Public and Food Processing Water Supply use is not impaired by atrazine, the lake will not automatically get a high priority for TMDL development. The priority given to Carlyle Lake will depend on the number of impairments and impaired water bodies in the watershed in which Carlyle Lake is located.

10. The Agency should consider using the draft criteria for Aquatic Life use published in the *Federal Register* in October of 2003 instead of the state derived criteria for atrazine. These criteria are a 30-day exposure of no more than 27 parts per billion (ppb), a 60-day exposure of no more than 18 ppb, and a one-hour exposure of no more than 1,500 ppb. The state-derived criteria are 82 ppb acute and 9 ppb chronic.

Response: When deriving water quality criteria, Illinois EPA is restricted by statute to the procedures in 35 Ill. Adm. Code Part 302 Subpart F. This was the procedure used to arrive at the values of 82 and 9 ppb. The only way that the draft USEPA atrazine criteria could be considered in water body assessments would be to have the Illinois Pollution Control Board (IPCB) adopt these criteria as numeric water quality standards. When USEPA finalizes the atrazine National Criteria, Illinois EPA is obligated to consider proposing those values to the IPCB for adoption as

Illinois numeric water quality standards. Given the draft status of the USEPA criteria, the issue is not up for consideration at this time.

11. The Agency should retain water body segments listed as impaired by low dissolved oxygen on the 303(d) list until it can be ascertained that a pollutant is not the reason for the low dissolved oxygen level.

Response: The Agency and USEPA do not consider dissolved oxygen to be a pollutant. Since only pollutant causes of impairment are identified on the 303(d) list, it is not appropriate to include dissolved oxygen impairments on the 303(d) list. However, these waters are identified in Appendix B (Specific Assessment Information) of the 2008 Integrated Report. As has been the past practice of the Agency, when TMDLs are being developed in watersheds that have water body segments impaired for dissolved oxygen, the Agency plans to continue to investigate the potential sources of the dissolved oxygen impairment to determine if they are pollutant related.

12. A footnote, directing the reader to Appendix B should be added in Appendix A where "Cause Unknown" is used.

Response: There is more comprehensive information about each water body in Appendix B than there is in Appendix A-1. As stated in the text of the Integrated Report, Appendix A-1, the 303(d) list, is a subset of all assessments and includes only waters impaired by pollutants for which TMDLs still need to be developed. All readers are encouraged to review Appendix B as well as Appendix A-1. A footnote would serve little purpose since there may be no additional information related to cause unknown in Appendix B. Cause unknown specifically indicates an unknown pollutant cause. All pollutant causes are listed in Appendix A-1 unless a TMDL has been developed for that cause.

13. Total nitrogen should be retained as a potential cause of impairment for Aquatic Life use in Illinois waters. The criterion for listing of total nitrogen as a potential cause of impairment can be based on measured concentrations, the TN:TP ratio and the occurrence of other factors such as low dissolved oxygen and excessive algal and plant growth.

Response: Illinois believes the criteria previously used to indicate that total nitrogen was a cause of Aquatic Life use impairment were not scientifically sound and did not in fact indicate that waters were nutrient impacted. The criteria used for Aquatic Life use assessment during the 2006 Integrated Report cycle indicated total nitrogen impairment for streams where the combined nitrate and nitrite concentration exceeded 7.8 mg/L in streams, where the total nitrogen concentration exceeded 3.6 mg/L in inland lakes or where the total nitrogen exceeded 0.65 mg/L in

Lake Michigan. At this time, Illinois does not believe a scientifically-sound guideline is available for indicating when nitrogen is impairing Aquatic Life use in Illinois.

The ratio of TN:TP has been used in the scientific literature as an indication of whether nitrogen or phosphorus is more likely limiting plant or algal growth. However, the ratio of TN:TP does not indicate whether nutrient impacts are occurring or whether they are likely to occur.

The development of guidelines for assessing nutrient impacts or protecting waters from those impacts is very difficult and complex. Illinois is currently working on developing nutrient standards but has not proposed any new standards at this time. We will continue to reevaluate the nutrient criteria that we use and make changes to improve the defensibility of those criteria when warranted.

14. Cedar Creek is a tributary to Henderson Creek located in Knox and Warren counties. Cedar Creek consistently achieved compliance with the chronic, sub-chronic and acute ammonia water quality standards in 2007 and should not be listed as impaired for ammonia.

Response: Ammonia was removed as a cause of impairment from two segments (LDD-C1 and LDD-C2) on Cedar Creek based on new data provided by the Galesburg Sanitary District (SD). Cedar Creek was listed as not attaining the Aquatic Life use in the 2008 Draft Integrated Report based on biological data collected in 2004. The listing of ammonia as a potential cause of impairment in the 2008 Draft Integrated Report was a continuation from previous report cycles based on in-stream monitoring of Cedar Creek by the Galesburg SD as part of their National Pollutant Discharge Elimination System (NPDES) permit. The listing of ammonia in previous report cycles was initially based on the pre-2002 General Use Standard for ammonia (Section 302.212). However, portions of the ammonia data collected in 1999 failed to meet the current General Use ammonia standard (Section 302.212, adopted November 2002). Post-1999 ammonia data collected from Cedar Creek was insufficient to reevaluate the initial ammonia listing.

The Galesburg SD provided data collected in 2007 in a May 19, 2008, letter from Steve Davis, the SD superintendent, to Scott Ristau, the IEPA hearing officer for the Draft 2008 Integrated Report. The Galesburg SD collected water temperature, dissolved oxygen, pH and ammonia from four stream sites downstream of the outfall on a weekly basis from May through November 2007. These were the same sites previously monitored by the Galesburg SD as part of their NPDES permit. A revised QAPP with data quality objectives related to the sampling was submitted to the Agency by the Galesburg SD.

There were no violations of the General Use water quality standard for ammonia in the 2007 data from Cedar Creek. The 2007 data was the basis for the delisting of

ammonia as a cause of impairment from segments LDD-C1 and LDD-C2. Due to degraded biota, Cedar Creek will still be listed as not attaining the Aquatic Life use.

15. Data for the following water body segments have been collected and indicate that the water quality standards are being met. These segments (with the cause of impairment in parentheses behind the segment number) should not be listed on the 303(d) list: G-03 (low dissolved oxygen, silver), HCB-01 (silver), HBD-04 (fluoride, silver), and HAA-01 (pH, silver).

Response: The Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) submitted data for consideration in the 2008 Integrated Report twenty-four days past the deadline of August 15, 2007. In addition, MWRDGC comments on the 2008 Draft Integrated Report were submitted six days past the deadline. Given the above, this reply will not address each questioned segment/pollutant but will give an overview of how the assessments were completed.

As indicated in Table C-3 on page 58 of the 2008 Draft Integrated Report and in the responsiveness summary for the 2006 Integrated Report, the most recent consecutive three years of water quality data are generally used in the assessment process. Aquatic Life use assessments for the 2008 cycle included Illinois EPA data from 2003 through 2005 and MWRDGC data from 2004 through May 2007. Other outside sources of data were also used. Frequently, more than one station is monitored in a given segment, so in these cases potential causes from all stations within the segment are listed. According to the letter from Richard Lanyon (June 2, 2008) only two years of data (2005 and 2006) were used for the MWRDGC data summary. This may explain some of the apparent discrepancies.

On Page 79 of the 2008 Draft Integrated Report, it is indicated that because of the rulemaking before the Illinois Pollution Control Board, waters designated as Secondary Contact and Indigenous Aquatic Life Use were not reassessed for the 2008 cycle. Unfortunately, this statement should have included (and will in the final report) three General Use waters that are part of this rulemaking including the North Shore Channel (HCCA-02), Chicago River (HCB-01) and the Calumet River (HAA-01). Assessments of aquatic life and primary contact uses were not updated for these waters for the 2008 cycle.

16. The draft Integrated Report states that the assessments for Lake Calumet have not been updated because no new data were available. The assessments for all ten secondary contact waters should be treated the same.

Response: As indicated on page 79 of the 2008 Draft Integrated Report, all waters designated as Secondary Contact and Indigenous Aquatic Life Use were not reassessed for the 2008 cycle because of the rulemaking before the Illinois Pollution

Control Board. It also happens to be the case with Lake Calumet that there was no new data.

17. Data for the following secondary contact use water body segments have been collected and indicate that the water quality standards are being met. These segments (with the cause of impairment in parentheses behind the segment number) should not be listed on the 303(d) list: HCC-08 (iron, oil and grease), HCA-01 (pH), GI-03 (unionized ammonia), GI-06 (dissolved oxygen), GI-02 (iron), HA-05 (iron, dissolved oxygen, silver), HAB-41 (arsenic, barium, copper, nickel, silver, zinc), and H-01 (dissolved oxygen).

Response: On Page 79 of the 2008 Draft Integrated Report, it is indicated that because of the rulemaking before the Illinois Pollution Control Board, waters designated as Secondary Contact and Indigenous Aquatic Life Use were not reassessed for the 2008 cycle.

18. Work is currently underway for conducting a comprehensive study of fish populations and habitat, including sediments, throughout the Chicago Area Waterway System. The study will identify ambient fish populations and life stages. This information should better define the capabilities of the Chicago Area Waterway System to support aquatic life and resolve issues of the potential to support early life stages of fish. A habitat index will be developed for these highly modified waters and as assessment made of expected improvements in Aquatic Life use due to improvements in water quality. Field data collection should be complete by the end of 2008 and a final report compiled in mid-2009.

Response: Thank you for the comment. The Agency looks forward to seeing the final report.

Glossary

BOW	- Bureau of Water in the Illinois EPA
CFR	- Code of Federal Regulations (U. S. EPA)
Illinois EPA	- Illinois Environmental Protection Agency (Agency)
ILCS	- Illinois Compiled Statutes
Ill. Adm. Code	- Illinois Administrative Code (IAC)
IPCB	- Illinois Pollution Control Board
IR	- Integrated Report
NPDES	- National Pollutant Discharge Elimination System
ppb	- Parts per billion
Public Hearing Record	- Period of time before, and after the public hearing for collection of written testimony including the hearing transcript.
QAPP	- Quality Assurance Program Plan
Responsiveness Summary	- A document prepared by the Illinois EPA that responds to relevant comments, questions and issues received during the public hearing record.
TMDL	- Total Maximum Daily Load
USEPA	- United States Environmental Protection Agency
303(d)	- Section 303(d) of federal Clean Water Act

Distribution of Responsiveness Summary

A letter indicating that the responsiveness summary was available was posted on the Agency website and was mailed to all who registered at the hearing and to all who sent in written comments. Anyone wishing a hardcopy of this responsiveness summary was asked to contact Shirley Durr, Illinois EPA, Watershed Section, e-mail Shirley.Durr@illinois.gov, phone 217-782-3362.

In addition, the responsiveness will be included as an appendix in the 2008 Integrated Report. Copies of the report will be available after Region 5, USEPA approves the report.

Bureau of Water Staff Who Can Answer Your Questions

Questions Concerning the 2008 Integrated Report.....	Dean Studer.....	217-782-3362
Legal Procedures.....	Sanjay Sofat.....	217-782-5544
Hearing of April 24, 2008.....	Scott Ristau.....	217-782-3362

The public hearing notice, the hearing transcript and this responsiveness summary are available on the Illinois EPA web site: <http://www.epa.state.il.us/public-notices/>.

Illinois Environmental Protection Agency
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276