ILLINOIS POLLUTION CONTROL BOARD
November 15, 2007

IN THE MATTER OF:	)	
	)	
PROPOSED AMENDMENTS TO	)	R04-25
DISSOLVED OXYGEN STANDARD 35 ILL.	)	(Rulemaking - Water)
ADM. CODE 302.206	)	

Proposed Rule. Second Notice.

OPINION AND ORDER OF THE BOARD (by A.S. Moore):

Today the Board proposes amendments to Illinois' dissolved oxygen (DO) general use water quality standard (35 Ill. Adm. Code 302.206) for second notice. Second-notice review is conducted by the Joint Committee on Administrative Rules (JCAR) under the Illinois Administrative Procedure Act (5 ILCS 100/1-1 *et seq*. (2006)). On July 12, 2007, the Board adopted its first-notice proposal, which was published in the *Illinois Register* on August 3, 2007. *See* 31 Ill. Reg. 11028 (Aug. 3, 2007). The Board received four public comments during the 45-day first-notice public comment period, which ended on September 17, 2007.

At second notice, the Board makes only modest amendments to its first-notice rule language. Specifically, the Board replaces "calendar days" with "consecutive 24-hour periods" for measuring DO-standard attainment, as recommended by the Illinois Environmental Protection Agency (IEPA) in its public comment. Otherwise, the Board's proposal remains substantively unchanged from first notice.

Accordingly, the amendments proposed for second notice continue to:

- Be based on aspects of both the original proposal filed by the rulemaking proponent, the Illinois Association of Wastewater Agencies (IAWA), and the joint proposal later filed by the Illinois Department of Natural Resources (DNR) and IEPA.
- Be consistent with the National Criteria Document or "NCD" for DO of the United States Environmental Protection Agency (USEPA), *Ambient Aquatic Life Water Quality Criteria for Dissolved Oxygen (Freshwater)* (USEPA, Chapman 1986).
- Include a narrative DO standard, as well as a two-season numeric DO standard with values based on daily minima and 7- and 30-day averages.
- Include July in the "early life stages" season (March through July) of the proposed two-season DO standard.
- Designate stream segments to receive "enhanced" numeric dissolved oxygen standards to protect DO-sensitive fish and macroinvertebrate species present in meaningful amounts.

In this second-notice opinion, the Board first provides an introduction to dissolved oxygen, the relevant legal background, and the rulemaking. This is followed by an overview of the Board's main findings at first notice. Next, the Board sets forth this proceeding's procedural

history. The Board then discusses and rules upon the issues raised in public comment since the Board's first-notice decision.

INTRODUCTION

Dissolved oxygen is essential to aquatic organisms for aerobic respiration. DO occurs between water molecules as microscopic bubbles of oxygen that fish "breathe" through their gills.[1] Human activities, including biochemical oxygen demand or "BOD" and nutrient discharge, and natural processes affect DO levels in Illinois waters. The DO general use water quality standard is critical to many other regulatory programs, including "impairment" assessments and Total Maximum Daily Load or "TMDL" under Section 303(d) of the federal Clean Water Act (33 U.S.C. § 1313(d)). By its authority under the Environmental Protection Act (Act) (415 ILCS 5 (2006)) and to reflect the current science, the Board is proposing to update the existing DO water quality standard, which was adopted in 1972.

The Board's responsibility in this rulemaking arises from the Act, which charges the Board to "determine, define, and implement the environmental control standards applicable in the state of Illinois." 415 ILCS 5/5(b) (2006). Under Section 13 of the Act, the Board is granted specific rulemaking authority to establish water quality standards. *See* 415 ILCS 5/13 (2006). Section 13(a)(1) of the Act specifically addresses dissolved oxygen:

> (a) The Board, pursuant to procedures prescribed in Title VII of this Act, may adopt regulations to promote the purposes and provisions of this Title. Without limiting the generality of this authority, such regulations may among other things prescribe:
>
> (1) Water quality standards specifying among other things, the maximum short-term and long-term concentrations of various contaminants in the waters, the *minimum permissible concentrations of dissolved oxygen* and other desirable matter in the waters, and the temperature of such waters. 415 ILCS 5/13(a)(1) (2006) (emphasis added).

As noted, the Board adopted Illinois' current general use water quality standard for dissolved oxygen in 1972, at which time the Board found it "essential to an adequate fish population." Effluent Criteria, Water Quality Standards, Water Quality Standards Revisions for Intrastate Waters, R70-8, R71-14, R71-20, slip op. at 3 (Jan. 6, 1972). The standard is presently set forth at 35 Ill. Adm. Code 302.206 and reads as follows:

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[1] Sheila F. Murphy, hydrologist/geologist, U.S. Geological Survey http://bcn.boulder.co.us/basin/data/BACT/info/DO.html (page last updated April 23, 2007).

Section 302.206 Dissolved Oxygen

> Dissolved oxygen (STORET number 00300) shall not be less than 6.0 mg/l during at least 16 hours of any 24 hour period, nor less than 5.0 mg/l at any time. 35 Ill. Adm. Code 302.206.

Accordingly, the current standard permits dissolved oxygen to be less than 6.0 milligrams per liter (mg/L) no more than 8 hours in any 24-hour period, but at no time is dissolved oxygen allowed to fall below 5.0 mg/L. Section 302.206 is set forth in Part 302's Subpart B ("General Use Water Quality Standards"), which "contains general use water quality standards which must be met in waters of the State for which there is no specific designation (35 Ill. Adm. Code 303.201)." 35 Ill. Adm. Code 302.101(b); *see also* 35 Ill. Adm Code 302.201. Generally, "all waters of the State must meet the general use standards of Subpart B of Part 302," except as otherwise specifically provided in the Board's regulations, such as for waters designated as secondary contact and indigenous aquatic life waters. *See* 35 Ill. Adm. Code 303.201, 303.204.[2]

At first notice, the Board recognized that the State's current DO standard is outdated and needs to be amended consistent with USEPA's 1986 National Criteria Document or "NCD," as adapted to Illinois waters. In the NCD, USEPA recommends separate DO criteria for coldwater and warmwater biota. While the coldwater criteria address the protection of salmonids, the warmwater criteria are meant to protect nonsalmonids, which include many coldwater and "coolwater" fish, plus all warmwater fish. Exh. 2 (NCD) at 2. The warmwater criteria protect the early life stages of warmwater fish as sensitive as channel catfish and other life stages of fish as sensitive as largemouth bass. *Id.* In addition, the NCD provides for the establishment of seasonal criteria based on the life stages of aquatic organisms present as long as data is available to accurately determine the presence or absence of the more sensitive stages. *Id*. at 4. The early life stages include embryonic and larval stages and all juvenile forms to 30-days after hatching. *Id.* at 34.

The NCD recommends a daily minimum to ensure that no acute mortality of sensitive species occurs because of low DO concentrations. Exh. 2 (NCD) at 36. For early life stages, the NCD recommends that the averaging period should not exceed 7 days to adequately protect the most sensitive life stages of aquatic organisms. A 30-day average is recommended for other life stages. The NCD also recommends the use of a 7-day mean minimum value for other life stages to prevent significant episodes of continuous or regularly recurring exposures to DO concentrations at or near the lethal threshold. *Id.*

The current Illinois standard for DO was adopted 14 years before the NCD was issued by USEPA. Exh. 23 at 7. Not surprisingly then, the NCD's criteria for DO address several elements not addressed by Illinois' current standard: differences in sensitivity to low DO among

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[2] On October 26, 2007, IEPA filed a rulemaking proposal, accepted for hearing by the Board on November 1, 2007, seeking to amend, among other things, the secondary contact and indigenous aquatic life DO water quality standards at 35 Ill. Adm. Code 302.405. *See* Water Quality Standards and Effluent Limitations for the Chicago Area Waterway System and the Lower Des Plaines River: Proposed Amendments to 35 Ill. Adm. Code 301, 302, 303 and 304, R08-9.

types of fish or macroinvertebrates; differences in DO sensitivity depending on the life stages of fish; and practical considerations to account for occasional natural occurrences of low DO. *Id*. at 5.

Given the wide array of aquatic life and conditions across Illinois, the Board found at first notice that the current Illinois DO standard is not sufficiently sophisticated. PC 96 at 1, citing Exh. 23 at 1; PC 101 at 1; PC 102 at 2, 5; PC 103 at 1, 16; Exh. 14 at 1; Exh. 32 at 1-3; Statement at 4-5. As the Board noted in its first-notice opinion, almost all of the participants who have articulated a position in this rulemaking favor amending the current dissolved oxygen water quality standard for general use waters. There is also much consensus in the record on how the current standard should be amended, such as by adopting DO standards that change seasonally based on the life stages of fish.

The two primary areas of disagreement among the rulemaking participants prior to first notice were (1) whether to include the month of July in the early life stages timeframe and (2) whether certain stretches of Illinois streams should have more protective DO standards than the rest of the general use waters based on the presence of allegedly DO-sensitive aquatic organisms. At first notice, the Board proposed to include July in the early life stages period and to include designated stream segments for enhanced DO protection. The Board continues to do so at second notice. As provided in its most recent public comment and as discussed below, IAWA now supports including July in the early life stage period but still opposes designating stream segments for enhanced DO protection. *See* PC 113.

The amendments proposed today for second notice should significantly improve the current DO standard. Unlike the current DO standard, the proposed amendments take into account the varied DO requirements of aquatic communities and the diverse range of natural aquatic conditions present across Illinois. The amendments will also allow both public and private resources to be focused on those waters most impacted by low DO.

OVERVIEW OF THE BOARD'S MAIN FINDINGS AT FIRST NOTICE

The following is a brief summary of the main findings made by the Board in its 98-page first-notice opinion of July 12, 2007. First, the Board found that Illinois' current general use water quality standard for dissolved oxygen needs to be amended and that those amendments should be based primarily on USEPA's NCD for DO. *See* Proposed Amendments to Dissolved Oxygen Standard 35 Ill. Adm. Code 302.206, R04-25, slip op. at 12-14 (July 12, 2007) (first notice).

Next, the Board agreed with IAWA's proposed approach of having a two-season DO standard, one more protective for the sensitive early life stages of fish and another for other life stages. Further, the Board proceeded to first notice with IAWA's proposed numeric DO levels as follows, at least with respect to the vast majority of general use waters: for early life stages, a daily minimum DO concentration of 5.0 mg/L and a seven-day mean of 6.0 mg/L DO; for other life stages, a daily minimum DO concentration of 3.5 mg/L and a seven-day mean minimum of 4.0 mg/L DO. As proposed by DNR and IEPA, and ultimately agreed to by IAWA, the Board also proposed for first notice a 30-day mean DO standard of 5.5 mg/L for other life stages. *See*

Proposed Amendments to Dissolved Oxygen Standard 35 Ill. Adm. Code 302.206, R04-25, slip op. at 34-35 (July 12, 2007) (first notice).

The Board found that the analyses of several grab and semi-continuous DO monitoring datasets provided in this record indicate that the current Illinois DO standard does not account for the seasonal variation and diurnal fluctuations of DO naturally occurring in streams. Beyond that, however, the Board found that helpful conclusions cannot be drawn at this time from these DO datasets for the purposes of this rulemaking. *See* Proposed Amendments to Dissolved Oxygen Standard 35 Ill. Adm. Code 302.206, R04-25, slip op. at 46-49 (July 12, 2007) (first notice).

The Board agreed with DNR and IEPA that certain stream segments, approximately 8% of general use stream miles in Illinois, require incrementally enhanced DO standards based on the presence of meaningful amounts of DO-sensitive aquatic organisms. Accordingly, the Board proposed for first notice that these stream segments, identified in proposed Appendix D to Part 302, have the following DO standards: for early life stages, a daily minimum DO concentration of 5.0 mg/L and a seven-day mean of 6.25 mg/L DO; for other life stages, a daily minimum DO concentration of 4.0 mg/L, a seven-day mean minimum of 4.5 mg/L DO, and a 30-day mean DO standard of 6.0 mg/L. The Board noted that if a discharger believes these more protective DO standards are not warranted for a given stream segment, the discharger may seek site-specific relief from the Board, such as an adjusted standard or site-specific rule under the Act. *See* Proposed Amendments to Dissolved Oxygen Standard 35 Ill. Adm. Code 302.206, R04-25, slip op. at 68-74 (July 12, 2007) (first notice).

To protect late spring and summer spawning, the Board found that the month of July should be included in the early life stages (*i.e.*, March through July), as proposed by DNR and IEPA, rather than having the early life stages timeframe end on June 30, as IAWA had proposed. *See* Proposed Amendments to Dissolved Oxygen Standard 35 Ill. Adm. Code 302.206, R04-25, slip op. at 79-81 (July 12, 2007) (first notice).

As proposed by DNR and IEPA, and agreed to by IAWA, the Board also proposed for first notice a narrative DO standard for quiescent and isolated sectors of general use waters, such as wetlands and waters below the thermocline in lakes, to ensure that the full array of general use waters are protected. The numeric DO standards would not apply in these isolated waters where naturally-occurring DO concentrations cannot reasonably be expected to attain numeric values set for most general use waters. *See* Proposed Amendments to Dissolved Oxygen Standard 35 Ill. Adm. Code 302.206, R04-25, slip op. at 84-85 (July 12, 2007) (first notice).

At first notice, the Board declined to adopt the following suggestions made during this proceeding: (1) to express the DO water quality standard as percent saturation rather than as concentration in mg/L; and (2) to include a minimum DO level of 6.5 mg/L for all general use waters when water temperature is 10°C or below. *See* Proposed Amendments to Dissolved Oxygen Standard 35 Ill. Adm. Code 302.206, R04-25, slip op. at 87-89 (July 12, 2007) (first notice). The Board also declined to require that any IEPA "implementation rules" for DO monitoring or permitting be filed in this docket, but the Board did add language to the

DNR/IEPA proposal, more specifically describing the 7-day mean minimum, the 7-day mean, and the 30-day mean. *Id*. at 92-94.

Additionally, the Board did not include in its first-notice proposal a "waiver" for urban-impacted streams or a separate "wet weather standard" based on stormwater runoff. Finally, the Board found that the first-notice proposal would not have an adverse impact on the People of the State of Illinois. *See* Proposed Amendments to Dissolved Oxygen Standard 35 Ill. Adm. Code 302.206, R04-25, slip op. at 96-97 (July 12, 2007) (first notice).

PROCEDURAL HISTORY

On April 19, 2004, IAWA filed its rulemaking proposal to amend Illinois' general use water quality standard for dissolved oxygen.[3] The Board issued an order on May 6, 2004, accepting the IAWA proposal for hearing. DNR and IEPA filed their joint proposed revisions to the DO standard on April 4, 2006. Hearings concluded in November 2006 and public comments were filed as recently as June 2007.

As Toby Frevert, Manager of the Division of Water Pollution Control for IEPA, testified:

> Illinois' general use dissolved oxygen standard carries more significance than many of our other water quality standards and there is a wide diversity of opinion, perspective and attitude among the various constituencies participating in the proceeding. Exh. 14 at 2.

Given the significance of the DO general use water quality standard and the varied views of the rulemaking participants on how it should be revised, the Board accommodated the wishes of the participants and allowed this rulemaking to proceed at a pace that would allow for continued stakeholder discussions. To that end, the hearing officer scheduled hearings only when the participants stated that they were ready to proceed and only after the hearing officer, at the participants' request, conducted six status conferences and received eight status reports over the course of nearly two years.

The Board held five public hearings over six days in this rulemaking: (1) June 29, 2004, in Chicago; (2) August 12, 2004, in Springfield; (3) August 25, 2005, in Chicago; (4) April 25, 2006, in Springfield; and (5) November 2-3, 2006, in Springfield. The following 20 persons testified at the hearings indicated:

- Dennis Streicher, Director of Water and Wastewater for the City of Elmhurst (first, second, and third hearings, and fifth hearing);
- John Callahan, Executive Director of the Bloomington and Normal Water Reclamation District of McLean County (first and second hearings);

[3] The Board cites IAWA's "statement of reasons" included in its rulemaking proposal as "Statement at _."

- Dr. James Garvey, Associate Professor of Zoology and Associate Director of the Fisheries and Illinois Aquaculture Center at Southern Illinois University (first, second, and third hearings, and fifth hearing);
- Roy Harsch, Drinker Biddle Gardner Carton, attorney for IAWA (first, second, and third hearings, and fifth hearing);
- Toby Frevert, Manager of the Division of Water Pollution Control for IEPA (all five hearings);
- Dr. David Thomas, Chief of the Illinois Natural History Survey, DNR (second and third hearings);
- Mark Miller, Senior Policy Advisor for Lieutenant Governor Pat Quinn (second hearing);
- Stan Yonkauski, Deputy Counsel with DNR's Office of Legal Counsel (third hearing);
- Albert Ettinger, attorney for Environmental Law & Policy Center, Prairie Rivers Network, and Sierra Club (third hearing);
- Todd Main, Director of Policy and Planning, Friends of the Chicago River (third hearing);
- Dr. Thomas Murphy, Professor *Emeritus* of Chemistry, DePaul University (third, fourth, and fifth hearings);
- Roy Smogor, a stream biologist in IEPA's Surface Water Section (fourth and fifth hearings);
- Joel Cross, Acting Manager of the Watershed Protection Section within the Office of Resource Conservation of DNR (fourth and fifth hearings);
- Matthew Short with the Surface Water Section of IEPA (fourth hearing);
- Ann Holtrop, Watershed Information Specialist with the Watershed Protection Section of DNR (fourth hearing);
- Richard Lanyon, General Superintendent of the Metropolitan Water Reclamation District of Greater Chicago (fourth and fifth hearings);
- Thomas Muth, District Manager, Fox Metro Water Reclamation District (fifth hearing);
- Stephen Pescitelli, stream biologist with DNR (fifth hearing);
- Louis Kollias, Director of the Department of Research and Development with the Metropolitan Water Reclamation District of Greater Chicago (fifth hearing); and
- Cindy Skrukrud, Clean Water Advocate for the Illinois Chapter of the Sierra Club (fifth hearing).

The Board hearing officer accepted 41 hearing exhibits into the record. The hearing exhibits are described in Appendix I to this opinion and order. Upon receipt, the transcripts of the hearings were placed in the Clerk's Office On Line (COOL) on the Board's Web site at www.ipcb.state.il.us.[4] Many other documents from this rulemaking record are available through COOL, including Board opinions and orders, hearing officer orders, and public comments.

[4] Hearing exhibits are cited as "Exh. _ at _." The hearing transcripts are cited as "Tr.1 at _" for the first hearing, "Tr.2 at _" for the second hearing, "Tr.3 at _" for the third hearing, "Tr.4 at _" for the fourth hearing, and "Tr.5 at _" for the fifth hearing.

As required by Section 27(b) of the Act (415 ILCS 5/27(b) (2006)), the Board requested, in a letter of May 11, 2004, that the Department of Commerce and Economic Opportunity (DCEO) conduct an economic impact study (EcIS) for this rulemaking. In a letter of June 22, 2004, DCEO declined to perform an EcIS, noting its limited fiscal resources. When provided the opportunity at hearing, no one testified about DCEO's response. Tr.2 at 159.

The Board received 110 public comments prior to its first-notice decision.[5] Those public commenters are listed in Appendix II to this opinion and order. The first-notice public comment period ended on September 17, 2007, 45 days after publication in the *Illinois Register* of the proposed rule changes. *See* 31 Ill. Reg. 11028 (Aug. 3, 2007). The Board received four additional public comments during the first-notice public comment period:

- PC 111 filed by the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) on August 30, 2007.
- PC 112 filed by Dr. Thomas Murphy, Professor *Emeritus* of Chemistry, DePaul University on September 17, 2007.
- PC 113 filed by IAWA on September 17, 2007.
- PC 114 filed by IEPA on September 17, 2007 (received September 19, 2007, but considered timely-filed under the "mailbox rule" at 35 Ill. Adm. Code 101.300(b)(2)).

DISCUSSION

Several issues raised prior to first notice continued to be of concern to one or more participants after first notice: (1) subjecting designated stream segments to more protective DO standards; (2) the technical feasibility and economic reasonableness of meeting the proposed water quality standards; (3) the lack of "implementation rules"; and (4) expressing the DO water quality standard as concentration in mg/L rather than as percent saturation.

IAWA also asks the Board to specify, in these rules, the factors that would have to be demonstrated to receive site-specific relief from the new DO standards. In addition, IEPA proposes a small but important clarifying change to the first-notice rule language that required measuring DO attainment based on "calendar days." Further, as requested by the Board, IEPA commented on the potential for designating stream segments by "river miles."

The Board will address each of these areas in turn.

Designating Stream Segments for Enhanced DO Standards

IAWA agrees "with all of the modifications to [its] original petition except the establishment of a different dissolved oxygen standard for specified stream segments designated as enhanced segments." PC 113 at 2. IAWA contends that the proposed DO standards for enhanced stream segments are not based on "sound" science, or supported by field data. *Id.* IAWA states that it reluctantly supports including July in the early life stage period because of the scientific basis for protecting late spawning organisms, even though the Board's decision to

[5] Public comments are cited as "PC _ at _."

include July "with cooler months," according to IAWA, ignores meteorological conditions. *Id*., n.1.

IAWA contends that while the Board has broad authority to adopt water quality standards, including DO standards, under Section 27 of the Act, the authority is not unlimited. The Board must, continues IAWA, consider the existing physical conditions, including the nature of the existing receiving water. IAWA argues that "existing [water quality] data indicates that many of the proposed enhanced segments do not now meet the proposed dissolved oxygen standard." PC 113 at 3. According to IAWA, selecting "enhanced segments" on the basis of existing habitats, and the possibility that those stream segments would support DO-sensitive species in the future, is wasteful and not based on science. *Id.*

IAWA also asserts that the Board's decision to adopt enhanced DO standards for certain stream segments has a cost impact on the State and taxpayers. PC 113 at 3. The segments that do not comply with the DO standards, IAWA explains, will have to be placed on the 303(d) list for the "ultimate development" of TMDLs. *Id*. IAWA maintains that studying and establishing these TMDLs will be "ineffective and unnecessary" in the end:

> There is no evidence that the dissolved oxygen concentrations lower than the proposed standards in these segments is due to the impact from any point or nonpoint source discharges. It may be entirely possible that many of these segments, given there existing physical condition and nature, may not support dissolved oxygen levels that will comply even absent the impact of any discharges. *Id*.

IAWA argues that its assessment of the NCD and proposed DO standards have "withstood the test of several years of evaluation and field measurements that have continued to support" IAWA's position. PC 113 at 3. IAWA acknowledges the need for enhanced protection for some waters, but opposes designating enhanced stream segments without "ground truthing" data to support the designation. *Id.* IAWA maintains that adopting the first-notice proposal would result in designating stream segments that may never achieve the proposed enhanced DO standards and leave out other segments that may need enhanced protection. *Id*. at 3-4.

As noted in the first-notice opinion, the Board's proposed amendments to the DO standards are largely based on IAWA's proposal. The significant first-notice changes made to the IAWA proposal, and opposed by IAWA at that time, were the extension of the early life stage period and the inclusion of enhanced DO standards for certain stream segments. The Board welcomes IAWA's support for including July in early life stage period. However, the Board disagrees with IAWA's position that requiring the more protective DO standards for designated stream segments, roughly 8% of Illinois' general use stream miles, is not based on sound science. The Board's first-notice opinion addressed the concerns expressed in IAWA's most recent comment in great detail. *See* Proposed Amendments to Dissolved Oxygen Standard 35 Ill. Adm. Code 302.206, R04-25, slip op. at 68-74 (July 12, 2007) (first notice). The Board finds that IAWA has not raised any new issues or presented any new information to convince the Board to change its course regarding the enhanced DO standards for particular stream segments.

As discussed in the Board's first-notice opinion, the process of selecting the stream segments targeted for enhanced protection was based on extensive stream-specific biological information. *See* Proposed Amendments to Dissolved Oxygen Standard 35 Ill. Adm. Code 302.206, R04-25, slip op. at 73 (July 12, 2007) (first notice). DNR and IEPA established the presence of "meaningful amounts" of DO-sensitive organisms in specified Illinois streams by relying on extensive fish and macroinvertebrate data from approximately 1,100 stream sites across the State. Further, the State agencies relied on reasonable biological measures, and threshold values based on data from healthy streams to identify stream sites with meaningful amounts of DO-sensitive organisms. The Board reiterates its earlier finding that the biological data and scientific literature on the DO-sensitivity of aquatic life are more helpful than the limited DO datasets for setting DO water quality standards at levels that meet the needs of aquatic life.

When setting water quality standards, as discussed at first notice, the Board places significant weight on adopting a standard that fully protects aquatic life, rather than simply trying to arrive at a standard that would be met by current stream conditions. Frevert, Manager of the Division of Water Pollution Control for IEPA, testified about IAWA's questioning of how stream segments with samples violating the proposed enhanced DO standard could yet be home to "meaningful amounts" of DO-sensitive organisms:

> The fact that they are lower doesn't mean it's a fully protective condition. It's possible that DO sensitive organisms are in place and under some degree of stress, still hanging on to life, where we think a higher standard is appropriate anyway pursuant to the Clean Water Act procedures and the need for the standard to be protective. I don't think we want to set a standard that's on the ragged edge so the slightest little deviation from that standard has the system collapse. *** That doesn't mean that every system where those higher organisms can live is at the water quality condition we want or the standards we set . . . . [T]he fact that we say a standard is warranted doesn't mean it has to be an existing condition. Tr.5 at 30-31.

If stream segments do not meet the proposed DO standards upon adoption, the Board expects that those stream segments would be assessed in accordance with the requirements of Section 303(d) of the federal Clean Water Act. That provision requires states to identify and list waters that do not meet applicable water quality standards or do not fully support their designated uses. This list of impaired waters, known as the "303(d) list," is submitted to USEPA for review and approval. The federal Clean Water Act also requires that a TMDL be developed for each pollutant of an impaired water body. A TMDL must consider all potential sources of pollutants, whether point or nonpoint. It also takes into account a margin of safety, which reflects scientific uncertainty, as well as the effects of seasonal variation.

A new DO general use water quality standard in Illinois will impact these federally-driven requirements. Importantly, the new standard should be better tailored than the current DO standard for identifying waters that are actually DO-impaired. One of the primary objectives of updating the standard is to "bring in some pragmatism," in the words of Frevert, and "pare back

that list and help us find those places that really do need the attention," that is, "those streams with true DO problems." Tr.5 at 32.

Technical Feasibility and Economic Reasonableness

In its most recent public comment, MWRDGC states that, based on its 2005-2007 hourly DO data, "significant portions of the Des Plaines River System will immediately be in non-compliance" upon the effective date of the new DO water quality standards. PC 111 at 2. MWRDGC describes the compliance of this data with the proposed DO standards (for the daily minimum, 7-day mean of daily minima, and 30-day mean of daily means) as ranging from 50% to 100%. *Id.*, Tables 1-3. MWRDGC maintains that its hourly DO monitoring "indicates that several reaches within the Des Plaines River System cannot be reasonably expected to comply" with the proposed standards. *Id*. According to MWRDGC, reaches of the Des Plaines River System are "conducive to significant water column algae growth and, consequently, high magnitude diurnal DO fluctuations, especially during the summer months." *Id*. at 3. MWRDGC states that it is troubled by "standards which will immediately result in such widespread water quality violations due, in large part, to natural processes." *Id*.

The Board appreciates MWRDGC providing additional monitoring data for this record. Initially, the Board must reemphasize, however, that it "does not establish an ambient water quality standard for DO based on whether Illinois waters presently comply with the standard." *See* Proposed Amendments to Dissolved Oxygen Standard 35 Ill. Adm. Code 302.206, R04-25, slip op. at 96 (July 12, 2007) (first notice). The Board's primary task in this rulemaking is:

> to establish the "minimum permissible concentrations of dissolved oxygen" that will protect aquatic organisms in general use waters based on the scientific evidence. [415 ILCS 5/13(a)(1) (2006); *see also* PC 103 at 12.] In doing so, the Board fulfills its responsibility under the federal Clean Water Act to, in IEPA's words, "update outdated standards to reflect the current science." [PC 103 at 12.] Proposed Amendments to Dissolved Oxygen Standard 35 Ill. Adm. Code 302.206, R04-25, slip op. at 96-97 (July 12, 2007) (first notice).

Section 27(a) of the Act directs the Board to take into account the "technical feasibility and economic reasonableness of measuring or reducing the particular type of pollution" when conducting a substantive rulemaking. 415 ILCS 5/27(a) (2006). The new DO standard likely will indirectly impact technical and economic issues for particular pollutants in discharges. Section 27(b) of the Act requires the Board to determine whether a proposed substantive regulation "has any adverse economic impact on the people of the State of Illinois." 415 ILCS 5/27(b) (2006). A new DO standard has the potential to primarily affect wastewater dischargers (*e.g.*, POTWs, industrial dischargers, and agricultural point and nonpoint sources) that discharge oxygen-depleting substances, including BOD and nutrients. Tr.4 at 80-84; Statement at 2. The Board finds that the issues described by MWRDGC, however, would not be caused by this rulemaking.

As the Board found at first notice, there is no dispute in this record that there are Illinois streams not meeting Illinois' current DO standard, or that both the IAWA proposal and

DNR/IEPA proposal would "result in some significant (but smaller) number of exceedances [violations]." PC 103 at 14. As IEPA notes:

> In nearly every instance, this rulemaking is expected to be less restrictive than the current [DO] standard and therefore less likely to yield exceedances (violations) of no environmental significance. PC 103 at 11; *see also* Tr.4 at 161 (Lanyon, General Superintendent of MWRDGC, conceded on cross-examination that neither IAWA's nor DNR/IEPA's proposal "would impose a stricter DO standard than we have on the books today").

IEPA goes further, maintaining that because the DNR/IEPA-proposed DO standards more accurately reflect aquatic community needs, the joint-agency proposal "will actually be economically beneficial by more accurately focusing environmental management resources" on waters "in need." PC 103 at 11. The Board, in its first-notice opinion, agreed with IEPA and found that the amendments proposed for first notice would not have an adverse impact on the People of the State of Illinois. Nothing has since been provided to the Board that would warrant the Board changing this finding at second notice.

Moreover, as discussed at first notice, the Act provides several ways to seek either temporary or permanent site-specific relief from rules of general applicability, in the form of petitions for variances, adjusted standards, and site-specific rules. These mechanisms allow for case-by-case demonstrations before the Board based on factors such as compliance with the general rule imposing an "arbitrary and unreasonable hardship" (415 ILCS 5/35(a) (2006)), "factors relating to that petitioner are substantially and significantly different from the factors relied upon by the Board in adopting the general regulation" (415 ILCS 5/28.1(c)(1) (2006)), and the factors of "technical feasibility and economic reasonableness" (415 ILCS 5/27(a) (2006)).

In addition, while the Board makes no findings concerning the specific stream reaches referred to by MWRDGC, the proposed rules do include a narrative standard, reflecting the fact that under certain natural conditions unaffected by deleterious human activities, dissolved oxygen may periodically decline below numeric standards to concentrations typically considered acutely harmful to aquatic life. USEPA observed this phenomenon in its NCD:

> Naturally-occurring [DO] concentrations may occasionally fall below target criteria levels due to a combination of low flow, high temperature, and natural oxygen demand. Under these circumstances the numerical criteria should be considered unattainable, but naturally-occurring conditions which fail to meet criteria should not be interpreted as violations of criteria. Although further reductions in [DO] may be inadvisable, effects of any reductions should be compared to natural ambient conditions and not to ideal conditions. Exh. 2 (NCD) at 28.

To address these unavoidable situations, one component of the proposed narrative standard requires that quiescent and isolated sectors of general use waters be maintained at sufficient DO concentrations to support their natural ecological functions and resident aquatic communities. The proposed numeric standards for DO do not apply in these quiescent and isolated sectors, but

rather only in the main body of streams, in the water above the thermocline of thermally stratified lakes and reservoirs, and in the entire water column of unstratified lakes and reservoirs.

Implementation Concerns

MWRDGC takes issue with proposed Section 302.206(d)(3) requiring that DO attainment measurements "represent the true daily minima and daily means." PC 111 at 1. MWRDGC construes this language as suggesting that "some degree of continuous monitoring will be required, but [the rule language] does not identify how many daily values should be captured in order to 'assure' they are representative." *Id*. According to MWRDGC, the "sampling intensity is the crux of determining how resource intensive" DO monitoring must be "to comply with proposed standards." *Id*. MWRDGC acknowledges that the Board is not required to develop implementation rules in order to adopt water quality standards, but maintains that the "lack of guidance on this matter leaves the regulated community with an unfortunate level of uncertainty." *Id.*

Dr. Murphy also suggests that implementation rules be part of the proposal. Dr. Murphy states that measurement uncertainties will have implications on the effectiveness of the proposed rules. To account for the uncertainties, Dr. Murphy suggests including a margin of error by adding one or more mg/L to each of the proposed standards. PC 112 at 5.

The Board discussed implementation concerns extensively at first notice. As stated in that opinion, the Board declined to require the filing of implementation rules in this docket. *See* Proposed Amendments to Dissolved Oxygen Standard 35 Ill. Adm. Code 302.206, R04-25, slip op. at 90-94 (July 12, 2007) (first notice). The Board appreciates MWWRDGC and Dr. Murphy renewing their concerns over how the new DO standards will be implemented. At one point in this proceeding, Environmental Law & Policy Center, Prairie Rivers Network, and Sierra Club filed a "motion to suspend consideration of proposed amendments to the dissolved oxygen standard pending development of draft implementation rules." Ultimately, the motion was withdrawn and none of these environmental groups filed any public comment on the Board's first-notice decision to not require implementation rules in this docket.

Initially, the Board again notes that developing or adopting IEPA implementation "rules" is not necessarily a prerequisite to USEPA approval of these DO water quality standards. IEPA Resp. to Mot. to Suspend at 4-5 (Aug. 6, 2004). Moreover, Frevert, Manager of the Division of Water Pollution Control for IEPA, testified that he does not anticipate IEPA adopting any regulations on DO sampling:

> I don't anticipate any agency rules on that. We certainly establish our own field practices and field methodology, and we may identify some guidelines there for applications in certain types of circumstances, but that -- again, that's our field methods and manuals. That's not a regulation or an agency rule. Tr.5 at 253.

The new DO standards will now include 7- and 30-day averages to help ensure that aquatic organisms are not subject to chronically low DO. This critical enhancement to Illinois' current standard alone is expected to lead to additional monitoring beyond that presently

performed to determine compliance with 6.0 mg/L during 16 hours of any 24-hour period and 5.0 mg/L at any time. The Board found that subsection (d) of the DNR/IEPA-proposed Section 302.206 provided a detailed account of how to assess attainment of daily mean and minimum DO values. At first notice, however, the Board agreed with MWRDGC and the environmental groups that subsection (d) could benefit from specific language on how to assess attainment of the 7-day mean minimum, the 7-day mean, and the 30-day mean. To address these concerns, the Board added language on determining the 7- and 30-day values, and the proposed first-notice amendments described how to assess attainment of the DO mean and minimum values. Those provisions are further refined here at second notice, as discussed below. Again, the DO data needed to make these assessments will doubtlessly inform the eventual monitoring process. The Board continues to agree with IEPA that the temporal detail and measurement techniques necessary to determine compliance with the DO standard are "an inherent part of the standard itself, not separate implementation procedures." IEPA Resp. to Mot. to Suspend at 3 (Aug. 6, 2004).

On carrying out a measuring program to determine attainment of the DO standard, Frevert testified:

> It is their responsibility to assure that the way they design their monitoring system and the way they collect their data, it is truly representative, not misrepresentative of the normal variation. You can't go out and get three samples at nine at night, ten o'clock at night and eleven o'clock at night and pretend they represent the full 24-hour period. And I'm not trying to specify how many samples is the minimum to do it correctly. I think that would be a difficult or impossible task, but you must -- if you're collecting data and you're using it to draw conclusions or make assertions about compliance with this standard, it's your responsibility to look at the representativeness of your monitoring scheme and its statistical reliability. Tr.4 at 75-76.

IEPA has stated in this record that DO is not routinely included as a National Pollutant Discharge Elimination System (NPDES) permit effluent concentration and that even for dischargers located immediately upstream of stream segments selected for enhanced DO protection, IEPA does not plan to modify its permit issuance approach. According to Frevert:

> The DO standard that we've selected for any particular stream, whether it be tier one or tier two, is based on our understanding of the relative sensitivity of the biological community that we believe is there. That in and of itself is not going to have much, if any, impact at all on permit limitations, so we would do a normal permitting. If indeed the stream is impaired, whether it be in a level one or level two classification, and a point source is a significant contributing factor to it, I'm not sure the answer to that is immediately go and try to tweak the permit. It's try to figure out what's going on and to what extent that treatment facility is really not adequately controlling their waste, and we're not going to know that, and I don't believe whether the stream falls in tier one or tier two is going to make any difference in the way we treat that situation. Tr.4 at 122-23; *see also* Tr.5 at 254-56 (less than 1% of Illinois NPDES discharge permits have

conditions requiring in-stream monitoring to assess DO attainment; the vast majority of the permits have discharge limits of 10 or 20 mg/L $CBOD_5$ set under the deoxygenating wastes rule (35 Ill. Adm. Code 304.120)).

As at first notice, the Board has carefully reviewed the record and prior relevant rulemaking precedent. The Board finds that the participants have not raised any new issues or provided any new information to convince the Board that implementation rules must or should be a part of this docket. This docket has appropriately developed to the point where the Board can propose for second notice what the dissolved oxygen condition of Illinois general use waters should be. That task of the Board's is "fundamentally different [from] . . . day-to-day implementation and management and monitoring and enforcement decisions." Tr.1 at 142-43 (quoting Frevert). The Board again finds that the focus of this proceeding should remain on the water quality standards themselves, the adoption of which should not be delayed.

DO Saturation Versus Concentration

During the first-notice public comment period, Dr. Murphy provided further comment on using percent saturation to establish a DO standard for aquatic life. Regardless of the units used to describe dissolved oxygen in the proposed rule, Dr. Murphy believes problems for aquatic life exist at low temperatures with the proposed DO standards. Dr. Murphy concedes that the proposed rules would "not create problems for waters that are warm, because these are the temperatures at which the large majority of the studies have been performed." PC 112 at 3. On the other hand, Dr. Murphy finds no evidence in the record of studies at cold temperatures to support the proposed rule. *Id*.

According to Dr. Murphy, the availability of dissolved oxygen to an organism decreases as the water temperature gets colder. PC 112 at 1. Dr. Murphy calculates that water with 3.5 mg/L dissolved oxygen at 0°C is 24% saturated, and he equates the saturation value to 2 mg/L dissolved oxygen at 25°C. *Id*. at 1, 3. Dr. Murphy cites to a reference from Nathan Hawley, *et al*., EOS 87, 313 (2006),[6] describing conditions of hypoxia in Lake Erie when DO falls below 2 mg/L. *Id*. at 4-5.

Dr. Murphy renews his suggestion that the DO standard correspond to a percent saturation. Previously, Dr. Murphy suggested: (1) dividing the tiers into two or more temperature ranges and using percent saturation to determine a DO standard in mg/L (PC 83 at 5, PC 105 at 3); and (2) using 6.5 mg/L as a DO standard in waters at or below 10°C (Tr. 5 at 51-54). In his latest public comment, Dr. Murphy modifies his earlier suggestions by recommending a percent saturation of 33% or greater and applying it to different temperature ranges: 5 mg/L at 0°C, or 4 mg/L at 5-10°C. PC 112 at 4.

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[6] A complete citation to the reference cited by Dr. Murphy appears to be: Hawley, N., T.H. Johengen, Y.R. Rao, S.A. Ruberg, D. Beletsky, S.A. Ludsin, B.J. Eadie, D.J. Schwab, T.E. Croley II, and S.B. Brandt. "Lake Erie Hypoxia Prompts Canada-U.S. Study" *EOS, Transactions, American Geophysical Union*, Vol. 87. No. 32, pp. 313-19 (Aug. 8, 2006). http://www.glerl.noaa.gov/pubs/fulltext/2006/20060021.pdf

The Board reiterates that USEPA's NCD does not appear to contemplate a temperature-triggered DO standard. The two-concentration criteria structure presented in the NCD and followed by the Board at first notice represents USEPA's preferred approach to date. Although dissolved oxygen concentration, partial pressure, and percent saturation are all interrelated, the Board finds that relying on a criteria based on concentration in mg/L is the more direct and practical approach. As to the supporting body of scientific evidence, currently most DO monitoring data and the scientific literature regarding fish are based on mg/L.

At first notice, the Board invited public comment on whether other states with conditions similar to those in Illinois have adopted numeric DO standards, the applicability of which is based explicitly on water temperature. *See* Proposed Amendments to Dissolved Oxygen Standard 35 Ill. Adm. Code 302.206, R04-25, slip op. at 89 (July 12, 2007) (first notice). The Board has not received any public comments identifying any such states. IEPA is unaware of any USEPA Region 5 state (*i.e.*, Indiana, Michigan, Minnesota, Ohio, and Wisconsin, in addition to Illinois) that has adopted numeric DO standards with applicability based on water temperature. PC 114 at 4.

As with the 6.5 mg/L DO standard proposed by Dr. Murphy and the environmental groups before first notice for waters at or below 10°C, the Board finds that there is not enough evidence in this record to demonstrate that Dr. Murphy's latest proposal of 5 mg/L at 0°C or 4 mg/L at 5-10°C is necessary or appropriate to supplement the proposed numeric and narrative standards for Illinois general use waters.

Factors for Site-Specific Relief

IAWA agrees with the Board's position that site-specific relief may be available to a discharger if enhanced DO standards are not warranted for a given stream segment. IAWA argues, however, that these proposed regulations should prescribe the specific factors to be demonstrated by an affected discharger in order to successfully obtain relief from the Board. PC 113 at 4.

The Board agrees that such factors would be helpful to persons seeking such relief and also to the Board. The Board has in the past specified by rule the factors for seeking site-specific change from rules of general applicability. *See*, *e.g.*, 35 Ill. Adm. Code 620.260, 811.320. The Board declines, however, to amend the proposed DO water quality rules to address site-specific relief at this stage of the rulemaking. IAWA has not proposed any specific factors for Board consideration. The Board welcomes IAWA or any other person to file a rulemaking proposal addressing the factors for site-specific relief from the proposed DO standards. In the meanwhile, the Board will continue to evaluate requests for site-specific or adjusted water quality standards by relying on the existing statutory and regulatory criteria. See, e.g., 415 ILCS 5/28.1(a), (c) (2006); 35 Ill. Adm. Code 104.406, 104.426.

Calendar Days Versus Consecutive 24-Hour Periods

In its public comment, IEPA proposes amendments to the first-notice rule language regarding assessing attainment of DO standards. Specifically, IEPA now suggests that Section

302.206(d), as proposed for first notice, be modified to avoid restricting the determination of daily means and daily minima to a "calendar day." PC 114 at 2. According to IEPA, limiting measurements to a calendar day, as opposed to any period of 24 consecutive hours, can result in "unusable dissolved oxygen measurements that are otherwise valid and meaningful." *Id*. at 2-3. IEPA explains that while it originally proposed the calendar-day restriction, the language "unintentionally prevents using the results of any dissolved oxygen monitoring period that did not begin and end specifically at midnight." *Id*. at 3.

The Board agrees with IEPA that requiring measurements to be based on "calendar days" is unnecessarily restrictive and could lead to wasting resources. As IEPA notes, for example:

> [I]f hourly monitoring of dissolved oxygen began on Monday at 9:00 AM for seven "calendar days", none of the hourly measurements from Monday 9:00 AM to the same Monday at midnight (15-hour period) could be used to determine a daily mean or daily minimum. Similarly, assuming the monitoring ended eight days later on Tuesday at 9:00 AM, none of the hourly measurements from the immediately preceding period of Monday at midnight to Tuesday at 9:00 AM (9-hour period) could be used. PC 114 at 3.

The Board accordingly adopts for second notice the following revisions (double-underlined and stricken through) to Section 302.206(d), as proposed by IEPA:

d) Assessing attainment of dissolved oxygen mean and minimum values.

1) Daily mean is the arithmetic mean of dissolved oxygen concentrations in 24 consecutive hours ~~values measured in a single 24-hour calendar day~~.

2) Daily minimum is the minimum dissolved oxygen concentration in 24 consecutive hours ~~value as measured in a single 24-hour calendar day~~.

3) The measurements of dissolved oxygen used to determine attainment or lack of attainment with any of the dissolved oxygen standards in this Section must assure daily minima and daily means that represent the true daily minima and daily means.

4) The dissolved oxygen concentrations ~~value~~ used to determine a ~~in calculating or determining any~~ daily mean or daily minimum should not exceed the air-equilibrated concentration ~~value~~.

5) "Daily minimum averaged over 7 days" means ~~is~~ the arithmetic mean of daily minimum dissolved oxygen concentrations in seven consecutive 24-hour periods ~~values from the current and previous 6 calendar days~~.

6) "Daily mean averaged over 7 days" means ~~is~~ the arithmetic mean of daily mean dissolved oxygen concentrations in seven consecutive 24-hour periods ~~values from the current and previous 6 calendar days~~.

7) "Daily mean averaged over 30 days" means ~~is~~ the arithmetic mean of daily mean dissolved oxygen concentrations in 30 consecutive 24-hour periods ~~values from the current and previous 29 calendar days~~.

River Miles

IEPA recognizes that "river miles" are commonly used to identify particular points along "large, navigable Illinois rivers." PC 114 at 3. For two reasons, however, IEPA opposes using river miles to designate the stream segments subject to enhanced DO standards. First, IEPA states that it is not aware of "readily available and reliable stream mileages for the large majority of Illinois streams." *Id*. Second, IEPA believes that identifying stream segment endpoints by river mile is "more prone to error than is identifying segment endpoints by standardized map coordinates, i.e., latitude and longitude." *Id*. at 3-4. IEPA explains that "river mile" identification:

> requires measuring entire lengths of streams; the magnitude of potential error in such measurements depends directly on the resolution of the maps being used. In contrast, identifying points by standardized map coordinates does not require extensive linear measurements directly from a map of a specified resolution. *Id*. at 4.

The first-notice list of "Stream Segments for Enhanced Dissolved Oxygen Protection" appears as Appendix D to Part 302. The proposed Appendix D designates stream segments by basin name, segment name, segment number, end points by latitude and longitude, and county. For example, the first two of the stream segments proposed for enhanced DO protection appeared for first notice as follows:

302.Appendix D Section 302.206(d): Stream Segments for Enhanced Dissolved Oxygen Protection

BASIN NAME **Segment Name** **Segment No.** End Points	Latitude	Longitude	COUNTY
Illinois **Aux Sable Creek** **239**			
start	41.3982125891033	-88.3307365155966	GRUNDY
end	41.5221610266554	-88.3153074461322	KENDALL

Baker Creek			
123			
	start	41.0993159446094	-87.833779044559 KANKAKEE
	end	41.1187483257075	-87.7916507082604 KANKAKEE

Proposed Amendments to Dissolved Oxygen Standard 35 Ill. Adm. Code 302.206, R04-25 (July 12, 2007) (first notice).

The Board, at first notice, solicited comment on MWRDGC's suggestion that those stream segments proposed to receive more protective DO standards also be identified by "river mile." MWRDGC did not expand upon or renew its request in its first-notice public comment. The record of this proceeding lacks river mile information on the stream segments at issue, let alone such information from a reliable source. It bears keeping in mind that the stream segments identified in Appendix D are subject to enhanced DO standards. The precise extent of those segments is accordingly significant. Based on this record, the Board finds that the latitude and longitude designations in Appendix D, as proposed for first notice, provide the warranted reliability. The Board therefore agrees with IEPA and declines at second notice to propose river mile designations in Appendix D.

CONCLUSION

Illinois' current general use water quality standard for dissolved oxygen, adopted in 1972, is outdated and too simplistic to account for the natural variability of waters and their aquatic communities across this State. The DO standard proposed today for second notice is consistent with USEPA's NCD as adapted to Illinois waters and reflects the current science. By allowing both public and private resources to be concentrated on general use waters that are truly impaired by low DO levels, the proposal promises to significantly and economically enhance the protection of Illinois aquatic life.

The Board's second-notice proposal, as at first notice, includes the essential elements of IAWA's proposal, but with critical additions originally proposed by DNR and IEPA. The IAWA proposal of a two-season DO standard with averaging and DO values consistent with the NCD "warmwater" criteria is a major step toward modernizing the Illinois standard, but it does not go far enough. It is true that *most* of Illinois's aquatic organisms can be characterized as having the DO-sensitivity of "warmwater" organisms and that *most* spawning is completed in the spring. As this record shows, however, IAWA's proposal does not adequately address the fact that there are significant "intermediate" organisms and "late spring and summer spawners" in Illinois. The Board accordingly is proposing for second notice that designated stream segments (approximately 8% of Illinois' 71,394 general use stream miles) have enhanced DO standards based on the presence of meaningful amounts of DO-sensitive organisms and that the month of July be included in the sensitive "early life stages" timeframe (*i.e.*, March through July). The record demonstrates that these additional protections over and above the IAWA proposal are necessary to fully protect Illinois aquatic life.

The Board agrees with Joel Cross, Acting Manager of DNR's Watershed Protection Section, that this proposal is not a "lowering of dissolved oxygen standards within some waters during certain times of the year, but rather [a] focusing [of] needed protection for most sensitive

types and life stages of aquatic life where required." Tr.4 at 46. The second-notice proposal provides enhanced DO protection when and where it is most needed. Further, the narrative standard proposed today ensures that the full range of general use waters in Illinois is protected against low DO.

Additionally, the Board recognizes that after implementation of the final DO standard adopted in this rulemaking, further study may reveal that regulatory relief is warranted for specific stream stretches. The Act has mechanisms already in place, such as adjusted standards, that allow for case-by-case, site-specific relief when the necessary demonstrations are made before the Board.

The Board thanks all of those who have participated in this proceeding. The rulemaking record had benefited greatly from the active participation of many individuals and organizations, including Environmental Law & Policy Center, Prairie Rivers Network, Sierra Club, MWRDGC, and the Office of Lieutenant Governor Pat Quinn. The Board expresses deep gratitude to IAWA, DNR, and IEPA for their especially thorough contributions to this record. The Board appreciates the continued participation of IEPA, IAWA, MWRDGC, and Dr. Murphy and thanks them for their first-notice public comments.

At second notice, the Board amends its first-notice rule language at Section 302.206(d) for measuring DO-standard attainment by replacing "calendar days" with "consecutive 24-hour periods," as recommended by IEPA. The Board's proposal today is otherwise substantively unchanged from its first-notice proposal.

ORDER

The Board directs the Clerk to cause the filing of the following proposed rule amendments with JCAR for its second-notice review. Proposed deletions to the current rules at 35 Ill. Adm. Code 302 are stricken and proposed additions are underlined. Additionally, for ease of comparison, deletions from rule text proposed at first notice are stricken; additions are double-underlined.

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE C: WATER POLLUTION
CHAPTER I: POLLUTION CONTROL BOARD

PART 302
WATER QUALITY STANDARDS

SUBPART A: GENERAL WATER QUALITY PROVISIONS

Section
302.100 Definitions
302.101 Scope and Applicability
302.102 Allowed Mixing, Mixing Zones and ZIDs
302.103 Stream Flows

SUBPART B: GENERAL USE WATER QUALITY STANDARDS

SUBPART C: PUBLIC AND FOOD PROCESSING WATER SUPPLY STANDARDS

SUBPART D: SECONDARY CONTACT AND INDIGENOUS AQUATIC LIFE STANDARDS

SUBPART E: LAKE MICHIGAN BASIN WATER QUALITY STANDARDS

SUBPART F: PROCEDURES FOR DETERMINING WATER QUALITY CRITERIA

Section

APPENDIX D Section 302.206(d): Stream Segments for Enhanced Dissolved Oxygen Protection

AUTHORITY: Implementing Section 13 and authorized by Sections 11(b) and 27 of the Environmental Protection Act [415 ILCS 5/13, 11(b), and 27]

SOURCE: Filed with the Secretary of State January 1, 1978; amended at 2 Ill. Reg. 44, p. 151, effective November 2, 1978; amended at 3 Ill. Reg. 20, p. 95, effective May 17, 1979; amended at 3 Ill. Reg. 25, p. 190, effective June 21, 1979; codified at 6 Ill. Reg. 7818; amended at 6 Ill. Reg. 11161, effective September 7, 1982; amended at 6 Ill. Reg. 13750, effective October 26, 1982; amended at 8 Ill. Reg. 1629, effective January 18, 1984; peremptory amendments at 10 Ill. Reg. 461, effective December 23, 1985; amended at R87-27 at 12 Ill. Reg. 9911, effective May 27, 1988; amended at R85-29 at 12 Ill. Reg. 12082, effective July 11, 1988; amended in R88-1 at 13 Ill. Reg. 5998, effective April 18, 1989; amended in R88-21(A) at 14 Ill. Reg. 2899, effective February 13, 1990; amended in R88-21(B) at 14 Ill. Reg. 11974, effective July 9, 1990; amended in R94-1(A) at 20 Ill. Reg. 7682, effective May 24, 1996; amended in R94-1(B) at 21 Ill. Reg. 370, effective December 23, 1996; expedited correction at 21 Ill. Reg. 6273, effective December 23, 1996; amended in R97-25 at 22 Ill. Reg. 1356, effective December 24, 1997; amended in R99-8 at 23 Ill. Reg. 11249, effective August 26, 1999; amended in R01-13 at 26 Ill. Reg. 3505, effective February 22, 2002; amended in R02-19 at 26 Ill. Reg. 16931, effective November 8, 2002; amended in R02-11 at 27 Ill. Reg. 166, effective December 20, 2002; amended in R04-21 at 30 Ill. Reg. 4919, effective March 1, 2006; amended in R04-25 at 31 Ill. Reg. _____, effective _____.

SUBPART A: GENERAL WATER QUALITY PROVISIONS

Section 302.100 Definitions

Unless otherwise specified, the definitions of the Environmental Protection Act (Act) [415 ILCS 5] and 35 Ill. Adm. Code 301 apply to this Part. As used in this Part, each of the following definitions has the specified meaning.

"Acute Toxicity" means the capacity of any substance or combination of substances to cause mortality or other adverse effects in an organism resulting from a single or short-term exposure to the substance.

"Adverse Effect" means any gross or overt effect on an organism, including but not limited to reversible histopathological damage, severe convulsions, irreversible functional impairment and lethality, as well as any non-overt effect on an organism resulting in functional impairment or pathological lesions which may affect the performance of the whole organism, or which reduces an organism's ability to respond to an additional challenge.

"Chronic Toxicity" means the capacity of any substance or combination of substances to cause injurious or debilitating effects in an organism which

result from exposure for a time period representing a substantial portion of the natural life cycle of that organism, including but not limited to the growth phase, the reproductive phases or such critical portions of the natural life cycle of that organism.

"Criterion" means the numerical concentration of one or more toxic substances derived in accordance with the procedures in Subpart F of this Part which, if not exceeded, would assure compliance with the narrative toxicity standard of Section 302.210 of this Part.

“Early Life Stages” of fish means the pre-hatch embryonic period, the post-hatch free embryo or yolk-sac fry, and the larval period, during which the organism feeds. Juvenile fish, which are anatomically similar to adults, are not considered an early life stage.

"Hardness" means a water quality parameter or characteristic consisting of the sum of calcium and magnesium concentrations expressed in terms of equivalent milligrams per liter as calcium carbonate. Hardness is measured in accordance with methods specified in 40 CFR 136, incorporated by reference in 35 Ill. Adm. Code 301.106.

"Mixing Zone" means a portion of the waters of the State identified as a region within which mixing is allowed pursuant to Section 302.102(d) of this Part.

<u>“Thermocline” means the plane of maximum rate of decrease of temperature with respect to depth in a thermally stratified body of water.</u>

"Total Residual Chlorine" or "TRC" means those substances which include combined and uncombined forms of both chlorine and bromine and which are expressed, by convention, as an equivalent concentration of molecular chlorine. TRC is measured in accordance with methods specified in 40 CFR 136, incorporated by reference in 35 Ill. Adm. Code 301.106.

"Toxic Substance" means a chemical substance that causes adverse effects in humans, or in aquatic or terrestrial animal or plant life. Toxic substances include, but are not limited to, those substances listed in 40 CFR 302.4, incorporated by reference in 35 Ill. Adm. Code 301.106, or any "chemical substance" as defined by the Illinois Chemical Safety Act [430 ILCS 45]

"ZID" or "Zone of Initial Dilution" means a portion of a mixing zone, identified pursuant to Section 302.102(e) of this Part, within which acute toxicity standards need not be met.

(Source: Amended at 31 Ill. Reg. _____, effective _____)

SUBPART B: GENERAL USE WATER QUALITY STANDARDS

Section 302.206 Dissolved Oxygen

General use waters must maintain dissolved oxygen concentrations at or above the values contained in subsections (a), (b) and (c) of this Section. ~~Dissolved oxygen (STORET number 00300) shall not be less than 6.0 mg/L during at least 16 hours of any 24 hour period, nor less than 5.0 mg/L at any time.~~

a) General use waters at all locations must maintain sufficient dissolved oxygen concentrations to prevent offensive conditions as required in Section 302.203 of this Part. Quiescent and isolated sectors of General Use waters including but not limited to wetlands, sloughs, backwaters and waters below the thermocline in lakes and reservoirs must be maintained at sufficient dissolved oxygen concentrations to support their natural ecological functions and resident aquatic communities.

b) Except in those waters identified in Appendix D of this Part, the dissolved oxygen concentration in the main body of all streams, in the water above the thermocline of thermally stratified lakes and reservoirs, and in the entire water column of unstratified lakes and reservoirs must not be less than the following:

1) During the period of March through July,

A) 5.0 mg/L at any time; and

B) 6.0 mg/L as a daily mean averaged over 7 days.

2) During the period of August through February,

A) 3.5 mg/L at any time;

B) 4.0 mg/L as a daily minimum averaged over 7 days; and

C) 5.5 mg/L as a daily mean averaged over 30 days.

c) The dissolved oxygen concentration in all sectors within the main body of all streams identified in Appendix D of this Part must not be less than:

1) During the period of March through July,

A) 5.0 mg/L at any time; and

B) 6.25 mg/L as a daily mean averaged over 7 days.

2) During the period of August through February,

A) 4.0 mg/L at any time;

B) 4.5 mg/L as a daily minimum averaged over 7 days; and

C) 6.0 mg/L as a daily mean averaged over 30 days.

d) Assessing attainment of dissolved oxygen mean and minimum values.

1) Daily mean is the arithmetic mean of dissolved oxygen concentrations in 24 consecutive hours ~~values measured in a single 24-hour calendar day~~.

2) Daily minimum is the minimum dissolved oxygen concentration in 24 consecutive hours ~~value as measured in a single 24-hour calendar day~~.

3) The measurements of dissolved oxygen used to determine attainment or lack of attainment with any of the dissolved oxygen standards in this Section must assure daily minima and daily means that represent the true daily minima and daily means.

4) The dissolved oxygen concentrations ~~value~~ used to determine a ~~in calculating or determining any~~ daily mean or daily minimum should not exceed the air-equilibrated concentration ~~value~~.

5) "Daily minimum averaged over 7 days" means ~~is~~ the arithmetic mean of daily minimum dissolved oxygen concentrations in seven consecutive 24-hour periods ~~values from the current and previous 6 calendar days~~.

6) "Daily mean averaged over 7 days" means ~~is~~ the arithmetic mean of daily mean dissolved oxygen concentrations in seven consecutive 24-hour periods ~~values from the current and previous 6 calendar days~~.

7) "Daily mean averaged over 30 days" means ~~is~~ the arithmetic mean of daily mean dissolved oxygen concentrations in 30 consecutive 24-hour periods ~~values from the current and previous 29 calendar days~~.

(Source: Amended at 31 Ill. Reg. _____, effective _____)

302.Appendix D Section 302.206(d): Stream Segments for Enhanced Dissolved Oxygen Protection

	End Points	Latitude	Longitude	COUNTY
BASIN NAME				
Segment Name				
Segment No.				
Illinois				
Aux Sable Creek				
239				
	start	41.3982125891033	-88.3307365155966	GRUNDY
	end	41.5221610266554	-88.3153074461322	KENDALL
Baker Creek				
123				
	start	41.0993159446094	-87.833779044559	KANKAKEE
	end	41.1187483257075	-87.7916507082604	KANKAKEE
Baptist Creek				
160				
	start	40.5172643895406	-90.9781701980636	HANCOCK
	end	40.5217773790395	-90.9703232423026	HANCOCK
Barker Creek				
170				
	start	40.4730175690641	-90.3623822544051	FULTON
	end	40.4505102531327	-90.423698306895	FULTON
Battle Creek				
196				
	start	41.791467372356	-88.6440656199133	DEKALB
	end	41.8454435074814	-88.6580317835588	DEKALB
Big Bureau Creek				
209				
	start	41.2403303426443	-89.3778305139628	BUREAU
	end	41.6599418992971	-89.0880711727354	LEE
Big Rock Creek				
275				
	start	41.6325949399571	-88.5379727020413	KENDALL
	end	41.7542831812644	-88.5621629654129	KANE
Blackberry Creek				
271				
	start	41.6432480686252	-88.451129393594	KENDALL
	end	41.7663693677829	-88.3855968808499	KANE
Boone Creek				
284				
	start	42.3430701828297	-88.2604646456881	MCHENRY
	end	42.3116813126792	-88.3284649937798	MCHENRY
Buck Creek				
225				
	start	41.4305449377211	-88.7732713228626	LASALLE
	end	41.4508806057478	-88.919966063547	LASALLE
403				
	start	40.6513984442885	-88.8660496976016	MCLEAN

	end	40.6757825960266	-88.8490439132056	MCLEAN
Camp Creek 116				
	start	41.0119168530464	-89.7317034650143	STARK
	end	41.0202988179758	-89.6817209218761	STARK

BASIN NAME Segment Name Segment No.	End Points	Latitude	Longitude	COUNTY
168				
	start	40.2936155016035	-90.7791785207262	MCDONOUGH
	end	40.3985161419285	-90.5089903510732	MCDONOUGH
Camp Run				
115				
	start	41.0119168530464	-89.7317034650143	STARK
	end	41.0575944852479	-89.6822685234528	STARK
Cantway Slough				
250				
	start	41.1654521279715	-87.6179423055771	KANKAKEE
	end	41.1204910206261	-87.6018847740212	KANKAKEE
Cedar Creek				
164				
	start	40.4187924503946	-91.0119249544251	HANCOCK
	end	40.4320989747514	-90.9816512014458	HANCOCK
Central Ditch				
17				
	start	40.2466345144431	-89.8605138200519	MASON
	end	40.259146892407	-89.8331744969958	MASON
Clear Creek				
70				
	start	40.2358631766436	-89.1715114085864	LOGAN
	end	40.2817523596784	-89.2105606026356	MCLEAN
Coal Creek				
173				
	start	40.6458316286298	-90.2773695191768	FULTON
	end	40.6911917975894	-90.0990104026141	FULTON
Collins Run				
243				
	start	41.4219631544372	-88.3508108111242	GRUNDY
	end	41.4172036201222	-88.3955434158999	GRUNDY
Conover Branch				
184				
	start	39.8376993452498	-90.1465720267561	MORGAN
	end	39.8696939232648	-90.1234898871846	MORGAN
Coon Creek				
60				
	start	40.1076562155273	-89.0130117597621	DEWITT
	end	40.1755351290733	-88.8857086715202	DEWITT
Coop Branch				
31				
	end	39.2042878811665	-90.0972130791043	MACOUPIN
	end	39.1194481626997	-89.9878509202749	MACOUPIN
Coopers Defeat Creek				
114				
	start	41.1557502062867	-89.748162019475	STARK

end	41.1485959333575	-89.6944246708098	STARK
Copperas Creek 88			
start	40.4856512052475	-89.8867983078194	FULTON
end	40.549513691198	-89.9011907117391	FULTON
Court Creek 122			

BASIN NAME / Segment Name / Segment No.	End Points	Latitude	Longitude	COUNTY
	start	40.9184191403691	-90.1108008628507	KNOX
	end	40.9349919352638	-90.2673514797552	KNOX
Cox Creek				
177				
	start	40.0231674243157	-90.1158780774246	CASS
	end	39.9657957063914	-90.0180644049351	CASS
Crane Creek				
174				
	start	40.1328714038267	-89.9709414534257	MENARD
	end	40.2466345144431	-89.8605138200519	MASON
Crow Creek				
102				
	start	40.9323207251964	-89.4264477600798	MARSHALL
	end	40.9663161180876	-89.2558617294218	MARSHALL
Deer Creek				
59				
	start	40.117679723776	-89.3801215076251	LOGAN
	end	40.1915602627115	-89.1582023776838	LOGAN
Dickerson Slough				
421				
	start	40.3597968706068	-88.3225685158141	CHAMPAIGN
	end	40.4568389800294	-88.3442742579475	FORD
Drummer Creek				
423				
	start	40.37389931547	-88.3480753423386	CHAMPAIGN
	end	40.479101489993	-88.388698487066	FORD
Dry Fork				
35				
	start	39.1989703827155	-89.9609795725648	MACOUPIN
	end	39.1445756951412	-89.8876581181152	MACOUPIN
Du Page River				
268				
	start	41.4988385272507	-88.2166248594859	WILL
	end	41.7019525201778	-88.1476209409341	WILL
Eagle Creek				
392				
	start	41.1360015419764	-88.8528525904771	LASALLE
	end	41.1291172842462	-88.8664977236647	LASALLE
East Aux Sable Creek				
240				
	start	41.5221610266554	-88.3153074461322	KENDALL
	end	41.6231669397764	-88.2938779285952	KENDALL
East Branch Big Rock Creek				
277				
	start	41.7542830239271	-88.5621632556731	KANE
	end	41.8161922949561	-88.6002917634599	KANE

East Branch Copperas Creek

47

start 40.549514632509 -89.901189903351 FULTON

BASIN NAME Segment Name Segment No.	End Points	Latitude	Longitude	COUNTY
	end	40.6583152735498	-89.8516717710553	PEORIA
East Fork La Moine River				
167				
	start	40.3962156185095	-90.9339386121768	HANCOCK
	end	40.4506930058171	-90.758703782814	MCDONOUGH
East Fork Mazon River				
256				
	start	41.1872307009926	-88.2731640461448	GRUNDY
	end	41.0815161304671	-88.3093601699244	LIVINGSTON
East Fork Spoon River				
110				
	start	41.2158736312898	-89.6870256054763	STARK
	end	41.2603216291895	-89.7311074496692	BUREAU
Easterbrook Drain				
410				
	start	40.3687232740908	-88.5787269955356	MCLEAN
	end	40.3909243275675	-88.5484031360558	MCLEAN
Exline Slough				
252				
	start	41.1187483257075	-87.7916507082604	KANKAKEE
	end	41.3377194296138	-87.674538578544	WILL
Fargo Run				
94				
	start	40.8110626738718	-89.7625906815013	PEORIA
	end	40.7936211492847	-89.7147157689809	PEORIA
Ferson Creek				
281				
	start	41.9275380999085	-88.3177738518806	KANE
	end	41.9518312998438	-88.3965138071814	KANE
Fitch Creek				
131				
	start	41.0629732421579	-89.9929808862433	KNOX
	end	41.1048465021615	-90.0171275726119	KNOX
Forked Creek				
265				
	start	41.312634893655	-88.1518349597477	WILL
	end	41.4208599921871	-87.8221168060732	WILL
Forman Creek				
129				
	start	41.0920068762041	-90.1229512077171	KNOX
	end	41.061779692349	-90.1373931430424	KNOX
Fourmile Grove Creek				
232				
	start	41.5880621752377	-89.0154533767497	LASALLE
	end	41.6281572065102	-89.0480036727754	LEE
Fox Creek				

121				
	start	41.2158736312898	-89.6870256054763	STARK
	end	41.2178841576744	-89.6378797955943	BUREAU
Fox River				
270				
	start	41.6177003859476	-88.5558384703467	KENDALL
	end	41.7665361019038	-88.3100243828453	KANE

BASIN NAME Segment Name Segment No.	End Points	Latitude	Longitude	COUNTY
Friends Creek				
56				
	start	39.9296881580789	-88.7753341828841	MACON
	end	40.0511150621524	-88.756810733868	MACON
Furrer Ditch				
175				
	start	40.259146892407	-89.8331744807195	MASON
	end	40.256856262248	-89.8235353908665	MASON
Gooseberry Creek				
138				
	start	41.0815161304671	-88.3093601699244	LIVINGSTON
	end	41.0229178273291	-88.3433997610298	LIVINGSTON
181				
	start	41.2273512263311	-88.3737634512576	GRUNDY
	end	41.1567969821084	-88.3954921510714	GRUNDY
Grindstone Creek				
169				
	start	40.2936155016035	-90.7791785207262	MCDONOUGH
	end	40.3128991202966	-90.6514786739624	MCDONOUGH
Hall Ditch				
176				
	start	40.214043063866	-89.8947856138658	MASON
	end	40.1996396083582	-89.8430392085184	MASON
Hallock Creek				
101				
	start	40.9330251540704	-89.523027406387	PEORIA
	end	40.9162496002415	-89.5368879858621	PEORIA
Haw Creek				
125				
	start	40.8575772861862	-90.2335091570553	KNOX
	end	40.9174343445877	-90.3387634753254	KNOX
Henline Creek				
401				
	start	40.5867014223785	-88.6971328093932	MCLEAN
	end	40.6247936449316	-88.6315733675586	MCLEAN
Henry Creek				
100				
	start	40.932455717876	-89.5256512687818	PEORIA
	end	40.9472322228041	-89.5711427004422	PEORIA
Hermon Creek				
126				
	start	40.7818347201379	-90.2738699961108	KNOX
	end	40.7628476930817	-90.3372052339614	KNOX
Hickory Creek				
244				
	start	41.5038289458964	-88.0990240076033	WILL

end	41.4935392717868	-87.8108342251738	WILL
Hickory Grove Ditch 87			
start	40.4870721779667	-89.7285827911466	TAZEWELL
end	40.4136575635669	-89.7349507058786	MASON
Hickory Run 93			

BASIN NAME Segment Name Segment No.	End Points	Latitude	Longitude	COUNTY
	start	40.8217198390551	-89.7449749384213	PEORIA
	end	40.8581447502391	-89.7622130910013	PEORIA
Hillsbury Slough				
416				
	start	40.3453953438371	-88.3035309970523	CHAMPAIGN
	end	40.3928682378873	-88.2265028280313	CHAMPAIGN
Hodges Creek				
34				
	start	39.2630316914552	-90.1858200381692	GREENE
	end	39.2801974743086	-90.1528766403572	GREENE
Hurricane Creek				
44				
	start	39.449376470161	-90.5400508230403	GREENE
	end	39.4781872332274	-90.4508986197452	GREENE
Illinois River				
236				
	start	41.3255740245957	-88.9910230492306	LASALLE
	end	41.3986780470527	-88.2686499362959	GRUNDY
Indian Creek				
120				
	start	40.988610901184	-89.8221496834014	STARK
	end	41.2003389912185	-89.9349435285117	HENRY
182				
	start	39.8785447641605	-90.3782080959549	CASS
	end	39.8234731084942	-90.103743390331	MORGAN
224				
	start	41.7480730242898	-88.8741562924388	DEKALB
	end	41.7083887626958	-88.9437996894049	LEE
226				
	start	41.4400734113231	-88.7627018786422	LASALLE
	end	41.7377348577433	-88.8557728844589	DEKALB
396				
	start	40.7701181840118	-88.4858209632899	LIVINGSTON
	end	40.6469799222669	-88.4812665778082	LIVINGSTON
Iroquois River				
253				
	start	41.0739205590002	-87.8152251833303	KANKAKEE
	end	40.9614905075375	-87.8149010739444	IROQUOIS
447				
	start	40.7817769095357	-87.7532807121524	IROQUOIS
	end	40.8174648935578	-87.5342555764515	IROQUOIS
Jack Creek				
109				
	start	41.1283656948767	-89.7699479168181	STARK
	end	41.150467875432	-89.8374616586589	STARK
Jackson Creek				

246				
	start	41.4325013563553	-88.1725611633353	WILL
	end	41.4638503957577	-87.9160301224816	WILL
Joes Creek				
33				
	start	39.2801974743086	-90.1528766403572	GREENE
	end	39.3757180969001	-90.0772968234561	MACOUPIN

BASIN NAME / Segment Name / Segment No. / End Points	Latitude	Longitude	COUNTY
Johnny Run			
258			
start	41.2826709079541	-88.3633805819326	GRUNDY
end	41.0807507198308	-88.5801638050665	LIVINGSTON
Jordan Creek			
266			
start	41.3044458242397	-88.1279087273328	WILL
end	41.3077177643453	-88.1188984685001	WILL
Judd Creek			
106			
start	41.089645284216	-89.1847595119809	MARSHALL
end	41.0429807674449	-89.1339049242164	MARSHALL
Kankakee River			
248			
start	41.3923135096469	-88.2590124225285	GRUNDY
end	41.1660752568715	-87.526360971907	KANKAKEE
Kickapoo Creek			
57			
start	39.9932216924528	-88.8083252484687	MACON
end	39.9987405799186	-88.8205170598483	MACON
65			
start	40.1286520491088	-89.4532728967436	LOGAN
end	40.4376592310728	-88.8667409562596	MCLEAN
92			
start	40.6548826785105	-89.6134608723157	TAZEWELL
end	40.9170471944911	-89.6577393908301	PEORIA
Kings Mill Creek			
83			
start	40.4558745105979	-89.1642930044364	MCLEAN
end	40.509184986927	-89.0937965002854	MCLEAN
La Harpe Creek			
159			
start	40.4678428297867	-91.0424167497572	HANCOCK
end	40.5172643895406	-90.9781701980636	HANCOCK
La Moine River			
158			
start	40.3320849972693	-90.8997234923388	MCDONOUGH
end	40.5923258750258	-91.0177293656635	HANCOCK
Lake Fork			
61			
start	40.0837107988142	-89.3969397975165	LOGAN
end	39.9367293000733	-89.2343282851812	LOGAN
Langan Creek			
254			
start	40.9614905075375	-87.8149010739444	IROQUOIS
end	40.9432018898477	-88.0465558527168	IROQUOIS

Lime Creek				
214				
	start	41.4515003790233	-89.5271752648714	BUREAU
	end	41.4951141474998	-89.456554884734	BUREAU
Little Indian Creek				
183				
	start	39.8355964564522	-90.1231971747256	MORGAN

BASIN NAME Segment Name Segment No.	End Points	Latitude	Longitude	COUNTY
	end	39.8658175367056	-90.0423591294145	MORGAN
227				
	start	41.5091299863247	-88.7725444056074	LASALLE
	end	41.749433980972	-88.8141442269697	DEKALB
Little Kickapoo Creek				
67				
	start	40.3336625070255	-88.9736094275975	MCLEAN
	end	40.394785197415	-88.9473142490326	MCLEAN
Little Mackinaw River				
82				
	start	40.4423190352496	-89.4617848276975	TAZEWELL
	end	40.4481261917524	-89.4329939054056	TAZEWELL
Little Rock Creek				
274				
	start	41.6345548769785	-88.5384723455853	KENDALL
	end	41.7895688619816	-88.6981590581244	DEKALB
Little Sandy Creek				
107				
	start	41.0912632622075	-89.2247552498617	MARSHALL
	end	41.125352501365	-89.1758716886846	PUTNAM
Little Senachwine Creek				
99				
	start	40.9533145540839	-89.5292433956921	PEORIA
	end	41.0084439145565	-89.5499765139822	MARSHALL
Little Vermilion River				
233				
	start	41.3237602050852	-89.0811945323001	LASALLE
	end	41.5760289435671	-89.0829047126545	LASALLE
Lone Tree Creek				
418				
	start	40.3750682121535	-88.3819688457729	CHAMPAIGN
	end	40.3145980401842	-88.4738655755984	MCLEAN
Long Creek				
163				
	start	40.4466427913955	-91.0499607552846	HANCOCK
	end	40.4297652043359	-91.1507109600489	HANCOCK
Long Point Creek				
68				
	start	40.2755311999445	-89.0786438507327	DEWITT
	end	40.2549604211821	-88.9826285651361	DEWITT
394				
	start	41.038177645276	-88.7908409579793	LIVINGSTON
	end	41.0018214714974	-88.8534349418926	LIVINGSTON
Mackinaw River				
397				
	start	40.5796794158534	-89.2813445945626	TAZEWELL

	end	40.5649627479232	-88.478822725546 MCLEAN
Macoupin Creek 32			
	start	39.1989703827155	-89.9609795725648 MACOUPIN
	start	39.2121253451487	-90.2312084410337 JERSEY
Madden Creek 413			

BASIN NAME Segment Name Segment No.	End Points	Latitude	Longitude	COUNTY
	start	40.0943580002069	-88.5400649488702	PIATT
	end	40.2109635906658	-88.4943738561926	PIATT
Masters Creek				
220				
	start	41.4976109383336	-89.4125473607076	BUREAU
	end	41.5439000049343	-89.421988392756	BUREAU
Masters Fork				
217				
	start	41.4531024225454	-89.4290492805799	BUREAU
	end	41.5702310455498	-89.3821188149649	BUREAU
Mazon River				
257				
	start	41.3086768327676	-88.3389845675056	GRUNDY
	end	41.1872307009926	-88.2731640461448	GRUNDY
Mendota Creek				
234				
	start	41.5281666288805	-89.1041764154672	LASALLE
	end	41.5282367334928	-89.1224368860589	LASALLE
Middle Branch of Copperas Creek				
90				
	start	40.549514632509	-89.901189903351	FULTON
	end	40.5980896362772	-89.9368482699851	FULTON
Middle Creek				
165				
	start	40.3957329294144	-90.9741776721721	HANCOCK
	end	40.3888894030526	-91.0072502737366	HANCOCK
Mill Creek				
494				
	start	41.8213649020421	-88.3222376599138	KANE
	end	41.9231053361497	-88.4419826012614	KANE
Mole Creek				
390				
	start	41.0193910577853	-88.8019375580673	LIVINGSTON
	end	40.9109452909954	-88.9263176124884	LIVINGSTON
Morgan Creek				
272				
	start	41.6481172046369	-88.4151168308869	KENDALL
	end	41.6530911245692	-88.3631669287476	KENDALL
Mud Creek				
449				
	start	40.637099482441	-87.5885960450541	IROQUOIS
	end	40.6100172186722	-87.5261312404789	IROQUOIS
Mud Run				
117				
	start	41.0092425694765	-89.7790957399812	STARK
	end	40.9876287937001	-89.6785472090663	STARK

Murray Slough 259				
	start	41.2428845425989	-88.3615508333781	GRUNDY
	end	41.054741775769	-88.5825975362008	LIVINGSTON
Nettle Creek 237				
	start	41.3559056532822	-88.4326806825019	GRUNDY

BASIN NAME / Segment Name / Segment No.	End Points	Latitude	Longitude	COUNTY
	end	41.3989525138118	-88.5519708865374	GRUNDY
Nippersink Creek				
285				
	start	42.403479031235	-88.1904263022916	LAKE
	end	42.408321560969	-88.341299199739	MCHENRY
289				
	start	42.3885864249526	-88.3641081665149	MCHENRY
	end	42.4692291197455	-88.4764236384547	MCHENRY
North Branch Crow Creek				
103				
	start	40.9663161180876	-89.2558617294218	MARSHALL
	end	41.0005549578781	-89.1943061363378	MARSHALL
North Branch Nippersink Creek				
286				
	start	42.4376632559979	-88.2872504317539	MCHENRY
	end	42.4945866793007	-88.3294075716268	MCHENRY
North Creek				
119				
	start	40.9486975483619	-89.7633680090807	PEORIA
	end	40.9421533616142	-89.7281078793964	PEORIA
North Fork Lake Fork				
62				
	start	39.9367293000733	-89.2343282851812	LOGAN
	end	40.0523211989442	-89.0999303242614	DEWITT
North Fork Salt Creek				
71				
	start	40.2675598120912	-88.7867164044023	DEWITT
	end	40.3620541452609	-88.7204600533309	MCLEAN
Otter Creek				
171				
	start	40.2161621556914	-90.164317977292	FULTON
	end	40.3182822717998	-90.3860609925548	FULTON
279				
	start	41.9619670384069	-88.3574449893747	KANE
	end	41.9903303640688	-88.3568570687618	KANE
393				
	start	41.1611802253124	-88.8310854379729	LASALLE
	end	41.1541734588026	-88.7148550047115	LASALLE
Panther Creek				
178				
	start	40.0231674243157	-90.1158780774246	CASS
	end	39.9411115612757	-90.0607356525317	CASS
405				
	start	40.6607941387838	-89.196034413193	WOODFORD
	end	40.8483817762616	-89.0003562591212	WOODFORD
Paw Paw Run				

231				
	start	41.6177945875792	-88.8847204360202	LASALLE
	end	41.6630271288718	-88.9144064528509	DEKALB
Pike Creek				
216				
	start	41.5121637096396	-89.3366888940457	BUREAU
	end	41.5707857354427	-89.2125163729316	BUREAU

BASIN NAME Segment Name Segment No. End Points	Latitude	Longitude	COUNTY
388			
start	40.8655185113965	-88.7090974772719	LIVINGSTON
end	40.7989226101833	-88.7756316859923	LIVINGSTON
Pond Creek			
212			
start	41.3494925800361	-89.5685244208084	BUREAU
end	41.3541221673156	-89.6001721270724	BUREAU
Poplar Creek			
493			
start	42.0127893042098	-88.2799278350546	KANE
end	42.0604682884044	-88.151517184544	COOK
Prairie Creek			
69			
start	40.2688606116755	-89.1209318708141	DEWITT
end	40.3183618654781	-89.1150133167993	MCLEAN
79			
start	40.1610672222447	-89.6159697428554	MASON
end	40.3105388304102	-89.4819788351989	LOGAN
264			
start	41.3410818305214	-88.1859963163497	WILL
end	41.4048430210988	-87.9636949110551	WILL
391			
start	41.0691920852358	-88.8106812576958	LIVINGSTON
end	41.0162806406811	-89.0122375626521	LASALLE
Prairie Creek Ditch			
81			
start	40.242940205103	-89.5831738921535	LOGAN
end	40.268603376062	-89.5902703680441	LOGAN
Prince Run			
118			
start	40.9953442805941	-89.7634490486344	STARK
end	40.9486975483619	-89.7633680090807	PEORIA
Rob Roy Creek			
495			
start	41.6340658591268	-88.530902327864	KENDALL
end	41.7208669225124	-88.4449822691918	KENDALL
Rock Creek			
180			
start	39.9533586794244	-89.7717217346798	MENARD
end	39.9192042890665	-89.881417605895	MENARD
251			
start	41.2029705333006	-87.9860450524621	KANKAKEE
end	41.2416733683013	-87.9199539652218	KANKAKEE
Rocky Run			
221			
start	41.2966432755716	-89.5031050607007	BUREAU

	end	41.2892114895079	-89.5271301009319	BUREAU
Rooks Creek 386				
	start	40.9620056243899	-88.737743684525	LIVINGSTON
	end	40.7615433072922	-88.6752675977812	LIVINGSTON
Salt Creek 58				

BASIN NAME Segment Name Segment No.	End Points	Latitude	Longitude	COUNTY
	start	40.1286520491088	-89.4532728967436	LOGAN
	end	40.1404369482862	-88.8817439726269	DEWITT
409				
	start	40.2793653821328	-88.6019348286105	DEWITT
	end	40.3687232740908	-88.5787269955356	MCLEAN
Sandy Creek				
105				
	start	41.1083947129797	-89.3471796913242	PUTNAM
	end	41.0855613697751	-89.0792291942694	MARSHALL
Sangamon River				
408				
	start	40.0056362283258	-88.6286241506431	PIATT
	end	40.4223231153926	-88.67328493366	MCLEAN
Senachwine Creek				
96				
	start	40.929825860388	-89.4632928486271	PEORIA
	end	41.0900318754938	-89.5885134178247	MARSHALL
Short Creek				
162				
	start	40.4611057719393	-91.0582083107674	HANCOCK
	end	40.4682735975769	-91.0704506789577	HANCOCK
Short Point Creek				
389				
	start	40.9883827214271	-88.7830008925065	LIVINGSTON
	end	40.8951301673701	-88.8749997260932	LIVINGSTON
Silver Creek				
111				
	start	41.2185762138697	-89.6793069447094	STARK
	end	41.2431713087936	-89.6494927441058	BUREAU
South Branch Crow Creek				
104				
	start	40.9663161180876	-89.2558617294218	MARSHALL
	end	40.9410075148431	-89.1948285503851	MARSHALL
South Branch Forked Creek				
267				
	start	41.2631372965881	-88.0315238211836	WILL
	end	41.292604367733	-87.9621751169561	KANKAKEE
South Fork Lake Fork				
63				
	start	39.9367293000733	-89.2343282851812	LOGAN
	end	39.9674631778105	-89.0884701339793	MACON
South Fork Vermilion River				
395				
	start	40.7701181840118	-88.4858209632899	LIVINGSTON
	end	40.7234241258087	-88.355790853647	LIVINGSTON
Spoon River				

3				
	start	40.883272448156	-90.0994555125119	KNOX
	end	41.2158736312898	-89.6870256054763	STARK
Spring Creek				
161				
	start	40.5838583294631	-91.0397056763892	HANCOCK
	end	40.595079516268	-91.0572149428165	HANCOCK

BASIN NAME Segment Name Segment No.	End Points	Latitude	Longitude	COUNTY
166				
	start	40.4506930058171	-90.758703782814	MCDONOUGH
	end	40.5047702003096	-90.7202911238868	MCDONOUGH
223				
	start	41.3114342012759	-89.1969933188526	BUREAU
	end	41.5341774964794	-89.1599030581214	LASALLE
Stevens Creek				
55				
	start	39.833172054334	-89.008501860042	MACON
	end	39.8725126750168	-88.9902570309468	MACON
Sugar Creek				
76				
	start	40.1505909949415	-89.6335239996087	MENARD
	end	40.3515916252906	-89.1626966142058	MCLEAN
124				
	start	40.9273148603695	-90.1168866799652	KNOX
	end	40.9407150872189	-90.126984172004	KNOX
448				
	start	40.7817769095357	-87.7532807121524	IROQUOIS
	end	40.650106664471	-87.5259225515566	IROQUOIS
Sutphens Run				
228				
	start	41.5813276727649	-88.9196815109252	LASALLE
	end	41.5940767755281	-89.0434408697488	LASALLE
Swab Run				
127				
	start	40.8043825531334	-90.0417502151246	KNOX
	end	40.8089204046364	-89.9959890937906	KNOX
Tenmile Creek				
64				
	start	40.1166122038468	-89.0605809659338	DEWITT
	end	40.1573804135529	-88.9870426654374	DEWITT
Timber Creek				
77				
	start	40.3499903738803	-89.1633832938062	MCLEAN
	end	40.3824906556377	-89.0653243216353	MCLEAN
Trim Creek				
249				
	start	41.1679695055755	-87.6275919071884	KANKAKEE
	end	41.3235679470585	-87.6273348723156	WILL
Turkey Creek				
172				
	start	40.5312633037562	-90.2784734138591	FULTON
	end	40.6100168551688	-90.1683886238592	FULTON
402				
	start	40.6346912128201	-88.8256051903746	MCLEAN

end	40.6636296144043	-88.7848217949076	MCLEAN
Tyler Creek 283			
start	42.057069434075	-88.2869209701875	KANE
end	42.0886074301339	-88.3939734393445	KANE
Unnamed Tributary 230			

BASIN NAME Segment Name Segment No.	End Points	Latitude	Longitude	COUNTY
	start	41.6008353940091	-88.9239309686064	LASALLE
	end	41.6393800996109	-88.95237726256	LEE
406				
	start	40.8483817762616	-89.0003562591212	WOODFORD
	end	40.8446321845668	-88.9879480330159	WOODFORD
Unnamed Tributary of Big Bureau Creek				
222				
	start	41.2923889187328	-89.4849627504116	BUREAU
	end	41.2746773653832	-89.4967232161933	BUREAU
Unnamed Tributary of Coopers Defeat Creek				
113				
	start	41.1485959333575	-89.6944246708098	STARK
	end	41.1432423938169	-89.6549152326434	STARK
Unnamed Tributary of Dickerson Slough				
422				
	start	40.4068214049304	-88.3388760698826	FORD
	end	40.4286849455119	-88.3118606581845	FORD
Unnamed Tributary of Drummer Creek				
425				
	start	40.430183509928	-88.3944923485681	FORD
	end	40.4228198536222	-88.4420280012069	FORD
Unnamed Tributary of East Branch of Copperas Creek				
89				
	start	40.59257130763	-89.8385498955685	PEORIA
	start	40.59257130763	-89.8385498955685	PEORIA
Unnamed Tributary of East Fork of Spoon River				
112				
	start	41.1911731339471	-89.6948993736812	STARK
	end	41.1958777466981	-89.6635132189552	STARK
Unnamed Tributary of Indian Creek				
185				
	start	39.8195431621523	-90.231206997871	MORGAN
	end	39.7997709298014	-90.2444898890822	MORGAN
229				
	start	41.5989641246871	-88.913295513256	LASALLE
	end	41.6212302072922	-88.9971274321449	LASALLE
Unnamed Tributary of Jackson Creek				
247				
	start	41.4328713295604	-88.0777949404827	WILL
	end	41.4181859202087	-88.0389954976751	WILL
Unnamed Tributary of Johnny Run				
261				
	start	41.1315090714299	-88.5704499691513	GRUNDY
	end	41.1211734141418	-88.5813177275807	GRUNDY
Unnamed Tributary of Kickapoo Creek				
66				

	start	40.4376592310728	-88.8667409562596	MCLEAN
	end	40.4499435649154	-88.7941853627565	MCLEAN
95				
	start	40.843847234267	-89.6598940056171	PEORIA
	end	40.8376970553513	-89.655765678658	PEORIA

BASIN NAME Segment Name Segment No.	End Points	Latitude	Longitude	COUNTY
Unnamed Tributary of Lone Tree Creek				
417				
	start	40.3145980401842	-88.4738655755984	MCLEAN
	end	40.3084681821929	-88.4721825603404	MCLEAN
419				
	start	40.3200878690807	-88.4758169784284	MCLEAN
	end	40.3246054213609	-88.502979969789	MCLEAN
420				
	start	40.3555955038811	-88.4486860730234	CHAMPAIGN
	end	40.3553786361326	-88.4890287857383	MCLEAN
Unnamed Tributary of Mackinaw River				
398				
	start	40.5649627479232	-88.478822725546	MCLEAN
	end	40.4956570103387	-88.5106552787079	MCLEAN
399				
	start	40.558742486097	-88.5447290418444	MCLEAN
	end	40.532461937187	-88.5550436512012	MCLEAN
400				
	start	40.5536214693649	-88.6155771894066	MCLEAN
	end	40.5386135050112	-88.6150100834316	MCLEAN
Unnamed Tributary of Masters Creek				
219				
	start	41.5407471962821	-89.4154110620948	BUREAU
	end	41.5452528261938	-89.4136798690744	BUREAU
Unnamed Tributary of Masters Fork				
218				
	start	41.510430587881	-89.3900507138719	BUREAU
	end	41.6181398940954	-89.2965280984998	LEE
Unnamed Tributary of Nettle Creek				
238				
	start	41.4088814108094	-88.5216683950888	GRUNDY
	end	41.4186133676397	-88.5339604493093	GRUNDY
Unnamed Tributary of Nippersink Creek				
255				
	start	42.4692291197455	-88.4764236384547	MCHENRY
	end	42.4695432978934	-88.5110499918451	MCHENRY
288				
	start	42.4176539163554	-88.3444740410368	MCHENRY
	end	42.4179067763647	-88.3502762821058	MCHENRY
290				
	start	42.3969278131381	-88.4109784072142	MCHENRY
	end	42.3875994074602	-88.4491666706176	MCHENRY
Unnamed Tributary of North Fork of Salt Creek				
72				
	start	40.3598944577027	-88.7302360564635	MCLEAN
	end	40.3817246400667	-88.7481607936989	MCLEAN

73				
	start	40.3620541452609	-88.7204600533309	MCLEAN
	end	40.3690272117515	-88.6961244618476	MCLEAN
75				
	start	40.2987649882463	-88.7603546124853	MCLEAN
	end	40.3051172967471	-88.7525145171727	MCLEAN

Unnamed Tributary of Panther Creek

BASIN NAME Segment Name Segment No.	End Points	Latitude	Longitude	COUNTY
179				
	start	39.9411115612757	-90.0607356525317	CASS
	end	39.9350887523192	-90.047762075576	CASS
Unnamed Tributary of Pond Creek				
211				
	start	41.3541221673156	-89.6001721270724	BUREAU
	end	41.3352313411595	-89.5875580793812	BUREAU
Unnamed Tributary of Prairie Creek				
78				
	start	40.2086608970772	-89.6103029312127	MASON
	end	40.2239585519289	-89.638616348402	MASON
80				
	start	40.3105388304102	-89.4819788351989	LOGAN
	end	40.3114851545122	-89.4410508250634	LOGAN
Unnamed Tributary of Rooks Creek				
387				
	start	40.7615433072922	-88.6752675977812	LIVINGSTON
	end	40.7348742139519	-88.6985073106457	MCLEAN
Unnamed Tributary of Salt Creek				
412				
	start	40.3090617343957	-88.6002511568763	MCLEAN
	end	40.3165662374132	-88.6011454430269	MCLEAN
Unnamed Tributary of Sandy Creek				
108				
	start	41.0816545465891	-89.0921996326175	MARSHALL
	end	41.0690044849354	-89.0872784559417	MARSHALL
Unnamed Tributary of Sangamon River				
414				
	start	40.2187198550443	-88.3726776422252	CHAMPAIGN
	end	40.207759150969	-88.3556670563292	CHAMPAIGN
415				
	start	40.2618571248343	-88.3804307110291	CHAMPAIGN
	end	40.2604569179243	-88.4076966986332	CHAMPAIGN
Unnamed Tributary of Senachwine Creek				
97				
	start	41.0729094906046	-89.5194162172506	MARSHALL
	end	41.1005615839111	-89.5247542292286	MARSHALL
98				
	start	41.0008160428297	-89.5071527441621	MARSHALL
	end	41.0407981005047	-89.5430844273656	MARSHALL
Unnamed Tributary of Walnut Creek				
130				
	start	41.0811500581416	-90.0632765005186	KNOX
	end	41.0847653353348	-90.0680765817376	KNOX
132				
	start	41.0602585608831	-89.9869046205873	KNOX

	end	41.0721601609241	-89.9735120056073 STARK
133			
	start	41.0262443553352	-89.9515238620326 STARK
	end	41.0340788244836	-89.924721175772 STARK
Unnamed Tributary of West Bureau Creek			
215			
	start	41.4606455355906	-89.5251264675481 BUREAU

BASIN NAME Segment Name Segment No.	End Points	Latitude	Longitude	COUNTY
	end	41.4958522845312	-89.5472802493082	BUREAU
Unnamed Tributary of West Fork Sugar Creek				
85				
	start	40.3381506914873	-89.2954898975603	TAZEWELL
	end	40.3660114221746	-89.2448498120596	MCLEAN
86				
	start	40.3105145326502	-89.3291625265707	LOGAN
	end	40.3299182729366	-89.3779530037535	TAZEWELL
Valley Run				
241				
	start	41.4172036201222	-88.3955434158999	GRUNDY
	end	41.5039796750174	-88.5041976708714	KENDALL
Vermilion Creek				
235				
	start	41.4768291322914	-89.0571044195371	LASALLE
	end	41.5338604103044	-89.0473804190906	LASALLE
Vermilion River				
385				
	start	41.3202746199326	-89.067686548398	LASALLE
	end	40.8817674383366	-88.6504671722722	LIVINGSTON
Walnut Creek				
128				
	start	40.9597510841493	-89.9769499175619	PEORIA
	end	41.12653217294	-90.2059192933585	KNOX
404				
	start	40.6253040823561	-89.239009045057	WOODFORD
	end	40.7670065190601	-89.3054156233977	WOODFORD
Waubonsie Creek				
273				
	start	41.6864691774875	-88.3543291766866	KENDALL
	end	41.727653072306	-88.2817226140407	KANE
Waupecan Creek				
262				
	start	41.3345412028515	-88.4648617458928	GRUNDY
	end	41.1880870688571	-88.5889392759762	LASALLE
Welch Creek				
278				
	start	41.7390229211455	-88.5133300234389	KANE
	end	41.7542282081589	-88.4963865174814	KANE
West Branch Big Rock Creek				
276				
	start	41.7542830239271	-88.5621632556731	KANE
	end	41.791467372356	-88.6440656199133	DEKALB
West Branch Drummer Creek				
424				
	start	40.4348513301682	-88.3934764271309	FORD

	end	40.4490333768479	-88.4056995893214 FORD
West Branch Du Page River			
269			
	start	41.7019525201778	-88.1476209409341 WILL
	end	41.7799425869794	-88.1712650214772 DUPAGE
West Branch of Easterbrook Drain			
411			

BASIN NAME			
Segment Name			
Segment No.			
End Points	Latitude	Longitude	COUNTY
start	40.3633709579832	-88.5816306009141	MCLEAN
end	40.3762064931712	-88.5843753634505	MCLEAN
West Branch of Horse Creek			
263			
start	41.2492485076225	-88.1312055809841	WILL
end	41.0019131557324	-88.1364114459172	KANKAKEE
West Branch of Lamarsh Creek			
91			
start	40.5615978513207	-89.6991824445749	PEORIA
end	40.640281675188	-89.7388615248892	PEORIA
West Branch Panther Creek			
407			
start	40.7528335084236	-89.1030067348099	WOODFORD
end	40.7954060105963	-89.1900600098668	WOODFORD
West Bureau Creek			
213			
start	41.3209910742583	-89.5195916727401	BUREAU
end	41.478267808168	-89.5152211006131	BUREAU
West Fork Mazon River			
260			
start	41.2530670781541	-88.3508667933585	GRUNDY
end	41.0302502359071	-88.5226194555857	LIVINGSTON
West Fork Salt Creek			
74			
start	40.317360196629	-88.7559599297755	MCLEAN
end	40.3372561693307	-88.8039670869984	MCLEAN
West Fork Sugar Creek			
84			
start	40.2844404292499	-89.332075650855	LOGAN
end	40.4558745105979	-89.1642930044364	MCLEAN
Wolf Creek			
497			
start	41.1540042913791	-88.8612912917747	LASALLE
end	41.1611802253124	-88.8310854379729	LASALLE
Kaskaskia			
Bearcat Creek			
37			
start	39.0121682814832	-89.5317265036074	BOND
end	39.0568357269204	-89.4889786056249	MONTGOMERY
Becks Creek			
45			
start	39.1565938305703	-88.9491156388975	FAYETTE
end	39.3602481794208	-89.0227919838743	SHELBY
Brush Creek			
39			
start	39.1385354787129	-89.5805305687638	MONTGOMERY

	end	39.1539913389194	-89.561368040102	MONTGOMERY
Cress Creek				
41				
	start	39.1652709439739	-89.5012992382647	MONTGOMERY
	end	39.1962551507602	-89.5131844155481	MONTGOMERY
Dry Fork				

BASIN NAME / Segment Name / Segment No.	End Points	Latitude	Longitude	COUNTY
43				
	start	39.036113738887	-89.2488135289512	FAYETTE
	end	39.1033131262537	-89.2984242244004	MONTGOMERY
East Fork Shoal Creek				
23				
	start	38.8310032253066	-89.4990300331039	BOND
	end	38.9226451880864	-89.4117554251748	BOND
Gerhardt Creek				
27				
	start	38.3445550793694	-90.0600653224456	ST. CLAIR
	end	38.367857922464	-90.0997565611344	MONROE
Hurricane Creek				
42				
	start	38.9180334233238	-89.2472989134191	FAYETTE
	end	39.2167946546678	-89.2767284135051	MONTGOMERY
Loop Creek				
21				
	start	38.4738791704891	-89.8286629587977	ST. CLAIR
	end	38.4996759642082	-89.9058988238884	ST. CLAIR
Middle Fork Shoal Creek				
40				
	start	39.0848984732588	-89.5438724131899	MONTGOMERY
	end	39.1868483992515	-89.4798528829252	MONTGOMERY
Mitchell Creek				
48				
	start	39.1565938305703	-88.9491156388975	FAYETTE
	end	39.3191569074355	-88.9291931738519	SHELBY
Mud Creek				
51				
	start	39.4078984061571	-88.8964126852371	SHELBY
	end	39.4786612118046	-88.9523280946578	SHELBY
Ninemile Creek				
30				
	start	38.0441291788376	-89.9112042263573	RANDOLPH
	end	38.0507383485977	-89.8278402421236	RANDOLPH
Opossum Creek				
46				
	start	39.2718719283603	-89.006345202583	SHELBY
	end	39.2833737967471	-89.0555186821259	SHELBY
Prairie du Long Creek				
24				
	start	38.2583950460692	-89.9674114204896	MONROE
	end	38.3425597902873	-90.0517323138269	ST. CLAIR
Robinson Creek				
50				
	start	39.3519556417502	-88.8434641389225	SHELBY

end	39.5215530679793	-88.8331635597113	SHELBY
Rockhouse Creek 25			
start	38.279441694169	-90.0367398173562	MONROE
end	38.2999005789932	-90.1039357731424	MONROE
Section Creek 49			

BASIN NAME / Segment Name / Segment No.	End Points	Latitude	Longitude	COUNTY
	start	39.1835497280833	-88.9455894742885	FAYETTE
	end	39.1959160048126	-88.961892707007	FAYETTE
Shoal Creek				
22				
	start	38.4831106563982	-89.5775456200079	WASHINGTON
	end	38.5557239981111	-89.4968640710432	CLINTON
36				
	start	38.8310032008922	-89.4990300493802	BOND
	end	39.0848755752581	-89.5439018081354	MONTGOMERY
Silver Creek				
20				
	start	38.3369025707936	-89.8753691916515	ST. CLAIR
	end	38.5568068204478	-89.8305698867169	ST. CLAIR
Stringtown Branch				
53				
	start	39.7138824796477	-88.6677549810426	MOULTRIE
	end	39.7363136714592	-88.6944718913546	MOULTRIE
Unnamed Tributary of Gerhardt Creek				
26				
	start	38.367857922464	-90.0997565611344	MONROE
	end	38.3742880966457	-90.1107074126403	MONROE
Unnamed Tributary of Okaw River				
54				
	start	39.734248747064	-88.6620801587617	MOULTRIE
	end	39.80990395294	-88.6969360645412	PIATT
Walters Creek				
28				
	start	38.3425597902873	-90.0517323138269	ST. CLAIR
	end	38.3445550793694	-90.0600653224456	ST. CLAIR
West Fork Shoal Creek				
38				
	start	39.1385354787129	-89.5805305687638	MONTGOMERY
	end	39.1877434015581	-89.6041666305308	MONTGOMERY
West Okaw River				
52				
	start	39.6158126349278	-88.7105522558061	MOULTRIE
	end	39.7564321977535	-88.630211952428	MOULTRIE
Mississippi River				
Apple River				
372				
	start	42.3210892387922	-90.2520915343109	JO DAVIESS
	end	42.5078007598632	-90.1320538371008	JO DAVIESS
Bear Creek				
199				
	start	40.1421908412793	-91.322057103417	ADAMS
	end	40.3507607406412	-91.1831593883194	HANCOCK

Bigneck Creek 205				
	start	40.1189668648562	-91.2247381726013	ADAMS
	end	40.118891177483	-91.1409739765636	ADAMS
Burton Creek 192				

BASIN NAME Segment Name Segment No.	End Points	Latitude	Longitude	COUNTY
	start	39.8643091712617	-91.343323220756	ADAMS
	end	39.92393403238	-91.2381482737218	ADAMS
Camp Creek				
140				
	start	41.2607621817314	-90.514303172809	MERCER
	end	41.3114464274682	-90.2476056448033	HENRY
142				
	start	41.2202380211465	-90.895164796358	MERCER
	end	41.2787933006746	-90.6950345992843	MERCER
Carroll Creek				
349				
	start	42.1027782814517	-90.0265311556732	CARROLL
	end	42.0906369943302	-89.8985337135691	CARROLL
Clear Creek				
6				
	start	37.4821139304798	-89.377768200259	UNION
	end	37.5377402977406	-89.331689550578	UNION
381				
	start	42.4468385101031	-90.0472460146999	JO DAVIESS
	end	42.4780763391708	-90.035127804618	JO DAVIESS
Coon Creek				
376				
	start	42.4035528739642	-90.1272819897867	JO DAVIESS
	end	42.4347098804951	-90.1169407822902	JO DAVIESS
Copperas Creek				
148				
	start	41.3717279574558	-90.901871458269	ROCK ISLAND
	end	41.3616090539824	-90.7468725613692	ROCK ISLAND
Deep Run				
155				
	start	40.7779166934519	-90.9639489255706	HENDERSON
	end	40.794076798068	-90.9474772904134	HENDERSON
Dixson Creek				
154				
	start	40.7684181600505	-90.9376123103323	HENDERSON
	end	40.7650613473293	-90.9262679175808	HENDERSON
Dutch Creek				
4				
	start	37.4593003249666	-89.3688365937935	UNION
	end	37.4147572383786	-89.2744790735331	UNION
East Fork Galena River				
383				
	start	42.450241615252	-90.3876497193745	JO DAVIESS
	end	42.4876693698893	-90.286894403861	JO DAVIESS
Edwards River				
145				

start	41.1459068953479	-90.9832855425151	MERCER
end	41.2835429634312	-90.1022166001482	HENRY
Eliza Creek 146			
start	41.2754465656779	-90.9740195834639	MERCER
end	41.2948140261561	-90.8870757880317	MERCER
Ellison Creek			

BASIN NAME Segment Name Segment No.	End Points	Latitude	Longitude	COUNTY
153				
	start	40.7615810139869	-91.0723400800456	HENDERSON
	end	40.7295594797542	-90.7480413061409	WARREN
Galena River				
382				
	start	42.450241615252	-90.3876497193745	JO DAVIESS
	end	42.5068721036534	-90.390459616835	JO DAVIESS
Green Creek				
5				
	start	37.4514943718452	-89.3379244013686	UNION
	end	37.4666314694209	-89.3048476846202	UNION
Hadley Creek				
188				
	start	39.7025380326419	-91.1396851101986	PIKE
	end	39.7351716794518	-90.9664567571417	PIKE
Hells Branch				
378				
	start	42.3582317355027	-90.185076448587	JO DAVIESS
	end	42.4166702490621	-90.1660286242329	JO DAVIESS
Henderson Creek				
134				
	start	41.0518601460692	-90.652709618504	WARREN
	end	41.0728998007979	-90.3331881878676	KNOX
150				
	start	40.8788582366336	-90.9641994146698	HENDERSON
	end	40.989888583038	-90.8698875032336	HENDERSON
Hillery Creek				
144				
	start	41.2699394405307	-90.2020116075301	HENRY
	end	41.2553101029329	-90.1954503442612	HENRY
Honey Creek				
157				
	start	40.7000823335975	-91.0347691132118	HENDERSON
	end	40.7064734203141	-90.8589436695132	HENDERSON
186				
	start	39.4871465283426	-90.7799240715991	PIKE
	end	39.5633421986505	-90.8011460205638	PIKE
207				
	start	40.1052246871151	-91.2149469620062	ADAMS
	end	40.0689996865178	-91.2253825583113	ADAMS
Hutchins Creek				
7				
	start	37.5043385818368	-89.3755380391598	UNION
	end	37.58788138261	-89.3917584202331	UNION
Little Bear Creek				
194				

	start	40.3213003292038	-91.2390256840921 HANCOCK
	end	40.302753021887	-91.3102530307924 HANCOCK
Little Creek			
200			
	start	40.1807360433073	-91.2803860136891 ADAMS
	end	40.230127123031	-91.3051461065984 HANCOCK
McCraney Creek			

BASIN NAME / Segment Name / Segment No.	End Points	Latitude	Longitude	COUNTY
189				
	start	39.7167396162723	-91.1729844320811	PIKE
	end	39.8572624790589	-91.0907175471865	ADAMS
Mill Creek				
191				
	start	39.8643091712617	-91.343323220756	ADAMS
	end	39.9675786362521	-91.2477003180771	ADAMS
377				
	start	42.3539782358808	-90.1879698650198	JO DAVIESS
	end	42.4518923573772	-90.2485882677025	JO DAVIESS
496				
	start	38.9472270910927	-90.2956721236088	JERSEY
	end	38.9871246152411	-90.3431576290565	JERSEY
Mississippi River				
2				
	end	37.1887629940337	-89.4576720472899	ALEXANDER
29				
	start	38.8664117755941	-90.1477786925267	MADISON
	end	38.327795025976	-90.3709302644266	MONROE
384				
	start	42.5079432477656	-90.6430378486115	JO DAVIESS
	end	41.5746193723759	-90.392321397091	ROCK ISLAND
440				
	start	39.326689248302	-90.8243988873681	CALHOUN
	end	39.8935238218567	-91.4437639810547	ADAMS
Mud Creek				
202				
	start	40.1812148450863	-91.2785060826782	ADAMS
	end	40.1852755387137	-91.2660018265735	ADAMS
Nichols Run				
156				
	start	40.7735451176215	-90.9672827833242	HENDERSON
	end	40.7648298879037	-90.9675416302885	HENDERSON
North Henderson Creek				
136				
	start	41.0973619647032	-90.7191141378965	MERCER
	end	41.119743833988	-90.4494190524502	MERCER
Parker Run				
141				
	start	41.2623500459087	-90.4891341819923	MERCER
	end	41.2260011828886	-90.4145431241447	HENRY
Pigeon Creek				
190				
	start	39.7143204171354	-91.2372670411405	PIKE
	end	39.8220301600964	-91.2087922935523	ADAMS
Pope Creek				

137				
	start	41.1401437091914	-90.8116816399802	MERCER
	end	41.1394137238591	-90.2877112230995	KNOX
Sixmile Creek				
187				
	start	39.4592604039597	-90.8902507134236	PIKE
	end	39.5431657559583	-90.8891598316201	PIKE

BASIN NAME / Segment Name / Segment No.	End Points	Latitude	Longitude	COUNTY
Slater Creek				
198				
	start	40.291601584329	-91.2423526162923	HANCOCK
	end	40.2822885732908	-91.2189777154329	HANCOCK
Smith Creek				
152				
	start	40.9297989285848	-90.9146232873076	HENDERSON
	end	40.9291958384872	-90.7919464822621	HENDERSON
South Edwards River				
139				
	start	41.2656645104853	-90.2611866223557	HENRY
	end	41.1927071399434	-90.0393078982573	HENRY
South Fork Apple River				
380				
	start	42.4468385101031	-90.0472460146999	JO DAVIESS
	end	42.4176188464167	-89.9845802036023	JO DAVIESS
South Fork Bear Creek				
203				
	start	40.1677973436879	-91.2933473698779	ADAMS
	end	40.0950329934447	-91.0607522810856	ADAMS
South Henderson Creek				
135				
	start	41.0188478643653	-90.4811337762604	WARREN
	end	41.0121123609019	-90.4338464913801	KNOX
151				
	start	40.8788582366336	-90.9641994146698	HENDERSON
	end	40.8534764362853	-90.8707263659685	HENDERSON
Straddle Creek				
301				
	start	42.0906369943302	-89.8985337135691	CARROLL
	end	42.1316680929413	-89.783599495409	CARROLL
Thurman Creek				
204				
	start	40.1277667094818	-91.234525810555	ADAMS
	end	40.1580795200863	-91.1501036788115	ADAMS
Tournear Creek				
193				
	start	39.9042285951329	-91.2447718289928	ADAMS
	end	39.8738503674823	-91.1658282439773	ADAMS
Unnamed Tributary of Apple River				
375				
	start	42.3613497834653	-90.1603277978963	JO DAVIESS
	end	42.3651703478401	-90.1182227692179	JO DAVIESS
Unnamed Tributary of Bear Creek				
197				
	start	40.3187160045841	-91.2379753573306	HANCOCK

	end	40.3220475782343	-91.2218711128768 HANCOCK
201			
	start	40.2483484763178	-91.2634157983708 HANCOCK
	end	40.2576281291385	-91.2420554576986 HANCOCK
Unnamed Tributary of Copperas Creek			
149			
	start	41.3759130587612	-90.8569366994939 ROCK ISLAND

BASIN NAME / Segment Name / Segment No.	End Points	Latitude	Longitude	COUNTY
	end	41.3735944469795	-90.829794872711	ROCK ISLAND
Unnamed Tributary of Furnace Creek				
373				
	start	42.3419228115146	-90.2583358633166	JO DAVIESS
	end	42.3737126096251	-90.2971522307335	JO DAVIESS
374				
	start	42.3419228115146	-90.2583358633166	JO DAVIESS
	end	42.3615209718591	-90.24931703774	JO DAVIESS
Unnamed Tributary of South Edwards River				
143				
	start	41.2011516193172	-90.1850818577344	HENRY
	end	41.1943841818099	-90.1839265246101	HENRY
Unnamed Tributary of South Fork of Bear Creek				
206				
	start	40.0797919556019	-91.1461193615862	ADAMS
	end	40.0587441356106	-91.1467388825794	ADAMS
West Fork of Apple River				
379				
	start	42.4777531846594	-90.1103501186504	JO DAVIESS
	end	42.4739843218597	-90.1321517307332	JO DAVIESS
West Fork of Bear Creek				
195				
	start	40.3385207135212	-91.2203393068898	HANCOCK
	end	40.3592824400704	-91.2334357995319	HANCOCK
Yankee Branch				
147				
	start	41.2850778212191	-90.9379823025264	MERCER
	end	41.2926277702981	-90.9335620769218	MERCER
Ohio				
Big Creek				
16				
	start	37.4366764302436	-88.3127424957005	HARDIN
	end	37.5591274535694	-88.3148730216063	HARDIN
Big Grand Pierre Creek				
13				
	start	37.4163002207384	-88.4338876873615	POPE
	end	37.5702304746463	-88.4292613661871	POPE
Hayes Creek				
10				
	start	37.4452331751972	-88.7114120959417	JOHNSON
	end	37.4559134065693	-88.6286228702431	POPE
Hicks Branch				
14				
	start	37.5432903813926	-88.4245265989312	POPE
	end	37.5391971894773	-88.4135144509885	HARDIN
Little Lusk Creek				

12				
	start	37.4991426291527	-88.5277357332102	POPE
	end	37.5247950767618	-88.5017934865946	POPE
Little Saline River				
9				
	start	37.6429893859023	-88.6229273282692	SALINE

BASIN NAME / Segment Name / Segment No.	End Points	Latitude	Longitude	COUNTY
	end	37.5783125058777	-88.7169929932876	JOHNSON
Lusk Creek				
11				
	start	37.3685952948804	-88.4926140087969	POPE
	end	37.5649232438096	-88.5644984122843	POPE
Mississippi River				
2				
	start	36.9810279805712	-89.1311552055554	ALEXANDER
Ohio River				
1				
	start	36.9810279805712	-89.1311552055554	ALEXANDER
	end	37.7995447392016	-88.0255709974801	GALLATIN
Simmons Creek				
15				
	start	37.4274681380208	-88.4392381154217	POPE
	end	37.4644921054999	-88.4850750109356	POPE
South Fork Saline River				
8				
	start	37.6372646144582	-88.6447143188352	SALINE
	end	37.6650992000287	-88.7471054185807	WILLIAMSON
Unnamed Tributary of Big Creek				
18				
	start	37.4816237108967	-88.3412279259479	HARDIN
	end	37.4836843600581	-88.3434390004066	HARDIN
Wabash River				
488				
	start	37.7995447392016	-88.0255709974801	GALLATIN
Rock				
Beach Creek				
302				
	start	41.8989215290323	-89.121081932608	OGLE
	end	41.8637759544565	-89.185844184387	LEE
Beaver Creek				
322				
	start	42.2551087433884	-88.9247700103803	BOONE
	end	42.4341346635117	-88.7603784300954	BOONE
Black Walnut Creek				
341				
	start	42.1132080942552	-89.2141520188153	OGLE
	end	42.061557908797	-89.2316600156935	OGLE
Brown Creek				
335				
	start	42.3568412672282	-89.4493817584574	STEPHENSON
	end	42.3697340053709	-89.4802304815634	STEPHENSON
Buffalo Creek				
358				

start	41.9242552302868	-89.6809355972221	WHITESIDE
end	41.9752373833258	-89.6243677263482	OGLE
Cedar Creek 337			
start	42.3709196286357	-89.670256711355	STEPHENSON
end	42.3896058186609	-89.5870343171161	STEPHENSON

BASIN NAME / Segment Name / Segment No.	End Points	Latitude	Longitude	COUNTY
Coal Creek				
208				
	start	41.3941767873198	-89.8287586795479	BUREAU
	end	41.2930847238959	-89.6659810678663	BUREAU
Coon Creek				
304				
	start	42.0365871032824	-89.489365571257	OGLE
	end	42.0550520228278	-89.4762995939105	OGLE
326				
	start	42.254519734978	-88.7945563884938	BOONE
	end	42.1336677087989	-88.6039205825106	DEKALB
Crane Grove Creek				
371				
	start	42.2656461748962	-89.6058461735176	STEPHENSON
	end	42.2317224844045	-89.5804359629382	STEPHENSON
Deer Creek				
307				
	start	42.1046195671697	-88.7267155451459	DEKALB
	end	42.1076541965304	-88.6684575625598	DEKALB
Dry Creek				
332				
	start	42.4322162336943	-89.0509181181504	WINNEBAGO
	end	42.4892211712754	-88.9789486331688	WINNEBAGO
East Branch South Branch of Kishwaukee River				
306				
	start	42.0108038948242	-88.7236807475971	DEKALB
	end	41.9822037358546	-88.5449399063616	KANE
East Fork Mill Creek				
343				
	start	42.1402053009442	-89.2945061380348	OGLE
	end	42.1744627607887	-89.268245093523	OGLE
Elkhorn Creek				
350				
	start	41.8392614813286	-89.6956810578758	WHITESIDE
	end	42.0864514128748	-89.636841111792	OGLE
Franklin Creek				
303				
	start	41.8885909580789	-89.4120344682789	OGLE
	end	41.830393186845	-89.3092915487959	LEE
Goose Creek				
356				
	start	41.9282951879448	-89.692114617634	WHITESIDE
	end	41.9476422569681	-89.6849104470831	OGLE
Green River				
359				
	start	41.6266589513433	-89.5688644755145	LEE

end	41.8177589430141	-89.1263088319088	LEE
Kilbuck Creek 312			
start	42.1838622639314	-89.1301689015062	WINNEBAGO
end	41.9181917577798	-88.9212387567239	DEKALB
Kingsbury Creek 311			

BASIN NAME / Segment Name / Segment No.	End Points	Latitude	Longitude	COUNTY
	start	42.1077794424363	-88.8726630666396	DEKALB
	end	42.1579325310556	-88.8548684690422	BOONE
Kishwaukee River				
318				
	start	42.1866384939252	-89.1320796977525	WINNEBAGO
	end	42.2666635150817	-88.5250450377336	MCHENRY
Kyte River				
295				
	start	41.9881250432719	-89.3232327202272	OGLE
	end	41.9206998470585	-89.0576692414087	OGLE
Leaf River				
345				
	start	42.093677393629	-89.3249228482157	OGLE
	end	42.1545774626081	-89.5725820219443	OGLE
Lost Creek				
368				
	start	42.245723132043	-89.7807765552299	STEPHENSON
	end	42.2314500223394	-89.7709518073782	STEPHENSON
Middle Creek				
344				
	start	42.1559584011258	-89.2911997709031	OGLE
	end	42.1737499306461	-89.2931763612625	OGLE
Mill Creek				
342				
	start	42.1206847838382	-89.2792143996076	OGLE
	end	42.2092574596508	-89.3358557551327	WINNEBAGO
Mosquito Creek				
323				
	start	42.3066628798583	-88.9047855300292	BOONE
	end	42.3100003482313	-88.9099328193755	BOONE
327				
	start	42.246521748985	-88.7802719043895	BOONE
	end	42.1906300595167	-88.7849304281662	BOONE
Mud Creek				
325				
	start	42.2592878387497	-88.7503449689069	BOONE
	end	42.2805097009077	-88.7381130663589	BOONE
346				
	start	42.1301628959448	-89.4043328758949	OGLE
	end	42.1639762007661	-89.4554911246235	OGLE
North Branch Kishwaukee River				
320				
	start	42.2655855837644	-88.5514660318739	MCHENRY
	end	42.4163330454161	-88.5232715616737	MCHENRY
North Branch Otter Creek				
292				

start	42.4412940471901	-89.3074016078782	WINNEBAGO
end	42.4570625094589	-89.356265092275	WINNEBAGO
North Fork Kent Creek			
333			
start	42.2621663352674	-89.0944316410734	WINNEBAGO
end	42.310438304708	-89.1651357273603	WINNEBAGO
Otter Creek			

BASIN NAME / Segment Name / Segment No.	End Points	Latitude	Longitude	COUNTY
291				
	start	42.4565457866811	-89.2410171137247	WINNEBAGO
	end	42.4412940471901	-89.3074016078782	WINNEBAGO
348				
	start	42.1345277930786	-89.411492883497	OGLE
	end	42.1911608097275	-89.4222625773931	OGLE
Owens Creek				
310				
	start	42.1012605056104	-88.8850996053184	DEKALB
	end	41.994362186304	-88.8506687869106	DEKALB
Pine Creek				
305				
	start	41.9113031895505	-89.452879176459	OGLE
	end	42.0376146514025	-89.4909007464322	OGLE
Piscasaw Creek				
324				
	start	42.2618063936707	-88.8176068924198	BOONE
	end	42.3916885547221	-88.7041339551642	MCHENRY
Raccoon Creek				
328				
	start	42.4479288873423	-89.098286193015	WINNEBAGO
	end	42.4829761640917	-89.1400856130022	WINNEBAGO
Reid Creek				
353				
	start	41.8644109921615	-89.5919014348703	LEE
	end	41.9135187969506	-89.5728723309406	OGLE
Richland Creek				
336				
	start	42.3456275295301	-89.6832413426115	STEPHENSON
	end	42.5047442687577	-89.6477619118761	STEPHENSON
Rock River				
294				
	start	41.9881250432719	-89.3232327202272	OGLE
	end	42.4962174640048	-89.0418910839077	WINNEBAGO
Rock Run				
490				
	start	42.3211872463585	-89.4237342452712	STEPHENSON
	end	42.4281098959774	-89.4483616268915	STEPHENSON
Rush Creek				
321				
	start	42.2560676137827	-88.7031592940742	MCHENRY
	end	42.4031741332744	-88.5930626223964	MCHENRY
Silver Creek				
338				
	start	42.0611717976691	-89.335901928201	OGLE
	end	42.0866765435436	-89.3839889015445	OGLE

Skunk Creek			
354			
	start	41.8794703976699	-89.7072621672884 WHITESIDE
	end	41.897582187238	-89.7290746844729 WHITESIDE
South Branch Kishwaukee River			
308			
	start	42.2001609257306	-88.9840657029051 WINNEBAGO

BASIN NAME Segment Name Segment No.	End Points	Latitude	Longitude	COUNTY
	end	41.9015798699947	-88.7706697182685	DEKALB
315				
	start	42.2627093767756	-88.5609522875415	MCHENRY
	end	42.1066209842679	-88.4620443477841	KANE
South Branch of Otter Creek				
280				
	start	42.4412940471901	-89.3074016078782	WINNEBAGO
	end	42.4343122756071	-89.3600650183381	WINNEBAGO
South Fork of Leaf River				
347				
	start	42.1296104494647	-89.4546456401589	OGLE
	end	42.1085718337046	-89.5037134270228	OGLE
South Kinnikinnick Creek				
330				
	start	42.419961259532	-89.018119476068	WINNEBAGO
	end	42.4190921988888	-88.8710507717794	BOONE
Spring Creek				
339				
	start	42.0709215390383	-89.325546679708	OGLE
	end	42.0590157098796	-89.3110803788049	OGLE
Spring Run				
313				
	start	42.0402370001041	-89.0065478421579	OGLE
	end	42.0507770466662	-88.9858854279893	OGLE
Steward Creek				
297				
	start	41.8903673258897	-89.1021064698423	OGLE
	end	41.8259979751563	-88.9624738458404	LEE
Stillman Creek				
340				
	start	42.1259475370515	-89.2319193482332	OGLE
	end	42.0372051268587	-89.1542573242497	OGLE
Sugar Creek				
352				
	start	41.8392614813286	-89.6956810578758	WHITESIDE
	end	41.8644109921615	-89.5919014348703	LEE
Sugar River				
293				
	start	42.4357992567436	-89.1971727593158	WINNEBAGO
	end	42.4982890047043	-89.2624235677856	WINNEBAGO
Sumner Creek				
334				
	start	42.3227762010459	-89.3830042631004	WINNEBAGO
	end	42.25195988987	-89.3997975146614	STEPHENSON
Turtle Creek				
329				

start	42.4929910323531	-89.0439958173493	WINNEBAGO
end	42.4961371053418	-89.0246519221989	WINNEBAGO
Unnamed Tributary 361			
start	41.6608316904842	-89.4728200038511	LEE
end	41.6425311558513	-89.4137140926471	LEE
365			

BASIN NAME / Segment Name / Segment No.	End Points	Latitude	Longitude	COUNTY
	start	41.7443681625006	-89.168951821186	LEE
	end	41.738182745458	-89.1042187039322	LEE
492				
	start	42.1246069284208	-88.5882544654343	DEKALB
	end	42.1028295788327	-88.5105326912596	KANE
Unnamed Tributary of Buffalo Creek				
357				
	start	41.9332348110612	-89.6342816030603	OGLE
	end	41.93890647032	-89.6092042883405	OGLE
Unnamed Tributary of Coon Creek				
282				
	start	42.1336677087989	-88.6039205825106	DEKALB
	end	42.0754334787177	-88.5442273447775	KANE
491				
	start	42.150113155436	-88.6091713292612	DEKALB
	end	42.1691790844289	-88.5070973943593	MCHENRY
Unnamed Tributary of Elkhorn Creek				
355				
	start	41.9378871254405	-89.7318712136894	CARROLL
	end	41.9525180771018	-89.7332762139612	CARROLL
Unnamed Tributary of Green River				
360				
	start	41.8177589430141	-89.1263088319088	LEE
	end	41.8012094828667	-89.0296681468724	LEE
362				
	start	41.66455888603	-89.4729486542104	LEE
	end	41.650155479351	-89.4398464027055	LEE
364				
	start	41.750735979575	-89.2189268880904	LEE
	end	41.7278383993539	-89.1577958588247	LEE
366				
	start	41.7304138832457	-89.2547363744761	LEE
	end	41.7421804770435	-89.2683034846455	LEE
367				
	start	41.7336722733557	-89.2459381167869	LEE
	end	41.6996843512729	-89.2025409068097	LEE
489				
	start	41.7765356433433	-89.1781811586274	LEE
	end	41.791148742648	-89.1782543204659	LEE
Unnamed Tributary of Kyte River				
298				
	start	41.969037423435	-89.2727932207785	OGLE
	end	41.9423468128644	-89.2676252361535	OGLE
299				
	start	41.9474122868214	-89.1742920304606	OGLE
	end	41.9511979792854	-89.1378721025283	OGLE

Unnamed Tributary of North Branch Kishwaukee River 319			
	start	42.4163330454161	-88.5232715616737 MCHENRY
	end	42.4218523642031	-88.5063783493938 MCHENRY
Unnamed Tributary of Rock River 331			
	start	42.3730089457359	-89.0581319432428 WINNEBAGO

BASIN NAME / Segment Name / Segment No. / End Points	Latitude	Longitude	COUNTY
end	42.382841503485	-89.0950184603254	WINNEBAGO
Unnamed Tributary of South Branch Kishwaukee River			
309			
start	42.1219922946716	-88.9236557341498	DEKALB
end	42.1138208388943	-88.9372243118963	DEKALB
316			
start	42.1565644453666	-88.4449935784875	MCHENRY
end	42.1594149792506	-88.4178533576301	MCHENRY
317			
start	42.234010247227	-88.5199093723576	MCHENRY
end	42.2225793216803	-88.5259266256801	MCHENRY
Unnamed Tributary of Spring Run			
314			
start	42.0401565844742	-88.9948863767949	OGLE
end	42.0116835703089	-88.9710672286801	OGLE
Unnamed Tributary of Steward Creek			
296			
start	41.8444592840822	-89.0070046248547	LEE
end	41.8601589546913	-88.9714244440014	LEE
300			
start	41.871719116543	-89.069434926448	LEE
end	41.8792477545579	-89.037635229652	LEE
Unnamed Tributary of Yellow Creek			
369			
start	42.3067615221991	-89.8535571166391	STEPHENSON
end	42.3493669268537	-89.8275355259147	STEPHENSON
West Fork Elkhorn Creek			
351			
start	42.0864514128748	-89.636841111792	OGLE
end	42.0924853439498	-89.6474944357754	OGLE
Willow Creek			
363			
start	41.7653209616214	-89.1943294683724	LEE
end	41.7141851660088	-89.032161004274	LEE
Yellow Creek			
370			
start	42.2899156684427	-89.5696276563017	STEPHENSON
end	42.3796215769162	-89.9350879560031	JO DAVIESS
Wabash			
Bean Creek			
437			
start	40.2950579779894	-87.7823902126108	VERMILION
end	40.3344744135429	-87.7494458762005	VERMILION
Big Creek			
457			
start	39.3351439545995	-87.5878012286214	CLARK

start	39.436126036547	-87.7023848396263	CLARK
Bluegrass Creek			
436			
start	40.301292752824	-87.7969361668719	VERMILION
end	40.381268589802	-87.8562389558508	VERMILION
Brouilletts Creek			

BASIN NAME Segment Name Segment No. End Points	Latitude	Longitude	COUNTY
450			
start	39.7057649552945	-87.5509615193818	EDGAR
end	39.797449971524	-87.7178559181463	EDGAR
Brush Creek			
468			
start	38.993072718826	-88.1273817532169	JASPER
end	38.9675510537677	-88.1471375817992	JASPER
Brushy Fork			
484			
start	39.7161188745587	-88.0853294840712	DOUGLAS
end	39.8111289403664	-87.8839288887749	EDGAR
Buck Creek			
435			
start	40.3115126234324	-87.9255710854089	VERMILION
end	40.2862675329103	-87.9704593374522	CHAMPAIGN
Cassell Creek			
473			
start	39.4866434423672	-88.2094970436354	COLES
end	39.4909698054293	-88.207848854172	COLES
Catfish Creek			
477			
start	39.680891264864	-87.9341744320393	EDGAR
end	39.6581354970801	-87.8937116601235	EDGAR
Clark Branch			
483			
start	39.8111289403664	-87.8839288887749	EDGAR
end	39.8226610039489	-87.8513747624001	EDGAR
Collison Branch			
439			
start	40.2351860050982	-87.7725365689525	VERMILION
end	40.2197161120333	-87.803155121171	VERMILION
Cottonwood Creek			
469			
start	39.2033657707304	-88.2765033266093	CUMBERLAND
end	39.3142137713574	-88.229342077034	CUMBERLAND
Crabapple Creek			
452			
start	39.7057649552945	-87.5509615193818	EDGAR
end	39.8065708276187	-87.6467768455628	EDGAR
Crooked Creek			
465			
start	38.9817031629594	-88.066438923761	JASPER
end	39.0356467346919	-88.0923368283887	JASPER
Deer Creek			
485			
start	39.7053403128076	-88.0850387247647	DOUGLAS

	end	39.7025679945443	-88.2058470030399	DOUGLAS
Donica Creek 479				
	start	39.6453315324326	-87.9892294370803	COLES
	end	39.6172623271272	-87.9782640861296	COLES
Dudley Branch 475				

BASIN NAME Segment Name Segment No.	End Points	Latitude	Longitude	COUNTY
	start	39.5115642227627	-88.0564563693231	COLES
	end	39.5068188298145	-88.043669581567	COLES
East Crooked Creek 287				
	start	39.0356467346919	-88.0923368283887	JASPER
	end	39.1659729856615	-88.0610310241876	JASPER
East Fork Big Creek 458				
	start	39.436126036547	-87.7023848396263	CLARK
	end	39.5471103780713	-87.760040304497	EDGAR
Embarras River 460				
	start	38.9148628762488	-87.9834798036322	JASPER
	end	39.7161188745587	-88.0853294840712	DOUGLAS
Feather Creek 432				
	start	40.1172818042134	-87.8342855159987	VERMILION
	end	40.1416543211304	-87.8399367268356	VERMILION
Greasy Creek 480				
	start	39.6325904592965	-88.0822649850404	COLES
	end	39.6182255297223	-88.1320998047424	COLES
Hickory Creek 464				
	start	38.9714278418083	-87.972721454297	JASPER
	end	38.99191464315	-87.989292523907	JASPER
Hickory Grove Creek 478				
	start	39.6581354970801	-87.8937116601235	EDGAR
	end	39.5712873627184	-87.8825676201308	EDGAR
Hurricane Creek 470				
	start	39.2889007816578	-88.1544749600653	CUMBERLAND
	end	39.3793118297358	-88.0668208708762	COLES
Jordan Creek 433				
	start	40.0794151192358	-87.7990673709556	VERMILION
	end	40.0588834821927	-87.8360461636444	VERMILION
443				
	start	40.3360527696651	-87.6231745570584	VERMILION
	end	40.3553265493525	-87.5278198412106	VERMILION
Kickapoo Creek 471				
	start	39.4379695819539	-88.1681483569976	COLES
	end	39.4597583113682	-88.2917593820249	COLES
Knights Branch				

438				
	start	40.2763499940372	-87.7961879249888	VERMILION
	end	40.2520446574291	-87.8336356533235	VERMILION
Little Embarras River				
476				
	start	39.5736361588448	-88.0726889440362	COLES
	end	39.680891264864	-87.9341744320393	EDGAR

BASIN NAME / Segment Name / Segment No.	End Points	Latitude	Longitude	COUNTY
Little Vermilion River				
426				
	start	39.9463345271443	-87.5536756201362	VERMILION
	end	39.9593741043792	-87.6447473681732	VERMILION
Middle Branch				
442				
	start	40.3096675860339	-87.6376716065503	VERMILION
	end	40.417753327133	-87.5275419211693	VERMILION
Middle Fork of Vermilion River				
428				
	start	40.1035656386662	-87.7169902321166	VERMILION
	end	40.4043343147541	-88.0191381621282	FORD
Mill Creek				
487				
	start	39.2394256838229	-87.6762126527038	CLARK
	end	39.3566749194214	-87.7425049309309	CLARK
Muddy Creek				
242				
	start	39.1821395682335	-88.2309155529877	CUMBERLAND
	end	39.2033657707304	-88.2765033266093	CUMBERLAND
North Fork of Embarras River				
461				
	start	38.9148628762488	-87.9834798036322	JASPER
	end	39.0924749553725	-87.9784039128617	JASPER
North Fork Vermilion River				
441				
	start	40.236054881277	-87.6293326109766	VERMILION
	end	40.5010729612407	-87.5261721834388	IROQUOIS
Panther Creek				
462				
	start	39.0924749553725	-87.9784039128617	JASPER
	end	39.184289386946	-88.0087906828419	CUMBERLAND
Polecat Creek				
474				
	start	39.5013303165832	-88.1055006912296	COLES
	end	39.5162859310237	-88.0338496162262	COLES
Riley Creek				
472				
	start	39.4712869216685	-88.2108945161318	COLES
	end	39.5116227820733	-88.2569469311765	COLES
Salt Fork				
429				
	start	40.1035656386662	-87.7169902321166	VERMILION
	end	40.0368232483006	-88.0746580039075	CHAMPAIGN
455				
	start	39.7425080214619	-87.572919448772	EDGAR

	end	39.8018493662144	-87.5775868051385	EDGAR
Snake Creek 454				
	start	39.7128111863363	-87.6415954465778	EDGAR
	end	39.7066978623237	-87.6543043306751	EDGAR
South Fork of Brouilletts Creek 453				

BASIN NAME Segment Name Segment No.	End Points	Latitude	Longitude	COUNTY
	start	39.7256495590209	-87.6437626049444	EDGAR
	end	39.7319449005729	-87.6951881181821	EDGAR
Stony Creek				
431				
	start	40.0943454186494	-87.8170769835194	VERMILION
	end	40.1548847864725	-87.8840063394108	VERMILION
Sugar Creek				
456				
	start	39.4838820536199	-87.5320762217325	EDGAR
	end	39.6298164781408	-87.6762882912482	EDGAR
Unnamed Tributary of Big Creek				
459				
	start	39.5047911835054	-87.7121475341945	EDGAR
	end	39.5692784693864	-87.7194139533441	EDGAR
Unnamed Tributary of Brouilletts Creek				
451				
	start	39.797449971524	-87.7178559181463	EDGAR
	end	39.831592697221	-87.7758036967074	EDGAR
Unnamed Tributary of Brushy Fork				
482				
	start	39.7340344129883	-88.0771406153965	DOUGLAS
	end	39.802586616189	-88.0753634663247	DOUGLAS
Unnamed Tributary of Deer Creek				
486				
	start	39.7102184848625	-88.1385435180688	DOUGLAS
	end	39.678866903649	-88.1425332064637	DOUGLAS
Unnamed Tributary of Embarras River				
467				
	start	38.9934159067144	-88.129258689394	JASPER
	end	39.0034725453128	-88.1210073578163	JASPER
Unnamed Tributary of Greasy Creek				
481				
	start	39.6182255297223	-88.1320998047424	COLES
	end	39.621059195964	-88.1538483534688	COLES
Unnamed Tributary of Hickory Creek				
210				
	start	38.99191464315	-87.989292523907	JASPER
	end	39.0117394234421	-87.9896104862878	JASPER
Unnamed Tributary of Middle Fork of Vermilion River				
434				
	start	40.3478602982847	-87.9479087836067	CHAMPAIGN
	end	40.3408935605508	-87.9885982351498	CHAMPAIGN
Unnamed Tributary of Stony Creek				
430				
	start	40.1548847864725	-87.8840063394108	VERMILION
	end	40.1706704853124	-87.9033972187304	VERMILION

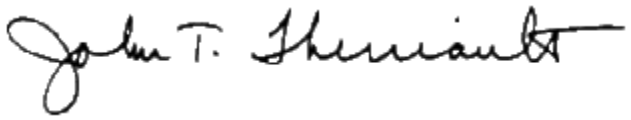
Unnamed Tributary of North Fork of the	Vermilion River		
444			
start	40.3553498759616	-87.6852979017427	VERMILION
end	40.3665727663496	-87.733231992072	VERMILION
445			
start	40.483638183168	-87.5751075709757	VERMILION
end	40.4930209841439	-87.5771391859822	IROQUOIS

BASIN NAME / Segment Name / Segment No. / End Points	Latitude	Longitude	COUNTY
446			
start	40.423223711311	-87.6788932053507	VERMILION
end	40.4280461995299	-87.6895565256772	VERMILION
Vermilion River			
427			
start	40.0116868805566	-87.5337540394346	VERMILION
end	40.1035656386662	-87.7169902321166	VERMILION
Wabash River			
488			
end	39.3034266238732	-87.605592332246	CLARK
West Crooked Creek			
466			
start	39.0356467346919	-88.0923368283887	JASPER
end	39.0545759701349	-88.1009871944535	JASPER
West Fork Big Creek			
19			
start	39.436126036547	-87.7023848396263	CLARK
end	39.5012337820195	-87.8003199656505	EDGAR
Willow Creek			
463			
start	39.0191952007294	-87.9402449982878	CRAWFORD
end	39.0529145507759	-87.9280073176635	CRAWFORD

(Source: Added at 31 Ill. Reg. _____, effective _____)

IT IS SO ORDERED.

I, John T. Therriault, Assistant Clerk of the Illinois Pollution Control Board, certify that the Board adopted the above opinion and order on November 15, 2007, by a vote of 4-0.



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John T. Therriault, Assistant Clerk
Illinois Pollution Control Board

APPENDIX I TO THE OPINION AND ORDER
R04-25
HEARING EXHIBITS

First Hearing: June 29, 2004, Chicago

Exhibit 1: "An Assessment of National and Illinois Dissolved Oxygen Water Quality Criteria" James E. Garvey and Matt R. Whiles (Apr. 2004)

Exhibit 2: "Ambient Water Quality Criteria for Dissolved Oxygen" USEPA (Apr. 1986)

Exhibit 3: Resume of Dennis Streicher

Exhibit 4: Copies of letters from Dennis Streicher to various organizations concerning the proposed rulemaking

Exhibit 5: Resume of James E. Garvey

Exhibit 6: Resume of Matt R. Whiles

Exhibit 7: From R02-19, written testimony of Robert J. Sheehan & Table 1 "Spawning periods for fishes in Illinois"

Exhibit 8: "Influences of Hypoxia and Hyperthermia on Fish Species Composition in Headwater Streams" Martin A. Smale and Chalres F. Rabeni (1995)

Second Hearing: August 12, 2004, Springfield

Exhibit 9: Pre-filed Testimony of Dr. James E. Garvey, with attached July 2004 report entitled "Long Term Dynamics of Oxygen and Temperature in Illinois Streams" by Dr. Garvey.

Exhibit 10: Electronic comments by Dr. Gary Chapman in the margins of "An Assessment of National and Illinois Dissolved Oxygen Water Quality Criteria" James E. Garvey and Matt R. Whiles (Apr. 2004)

Exhibit 11: One-page hard copy of e-mail sent July 22, 2004 at 8:52 a.m. from Roy M. Harsch regarding IEPA "implementation rules"

Exhibit 12: Letter entitled "Fight Effort to Lower Fox Oxygen Criteria," from David J. Horn, appearing on the Opinion page of the *Daily Herald*

Exhibit 13: Letter dated July 30, 2004 from David L. Thomas, Ph.D, Chief of the Illinois Natural History Survey to Lieutenant Governor Pat Quinn

Third Hearing: August 25, 2005

Exhibit 14: Statement of Toby Frevert, Manager of the Division of Water Pollution Control, IEPA

Exhibit 15: Pre-filed Testimony of Dennis Streicher, Director of Water and Wastewater with the City of Elmhurst, and President of IAWA

Exhibit 16: Pre-filed Testimony of Dr. James E. Garvey, with nine attachments

Exhibit 17: One-page list of streams entitled "Table 2 – Testimony of David L. Thomas, August 2005"

Exhibit 18: Pre-filed Testimony of Todd Main, Director of Policy and Planning, Friends of the Chicago River

Exhibit 19: Pre-filed Testimony of Thomas J. Murphy, Emeritus Professor of Chemistry, Environmental Science Program, DePaul University

Fourth Hearing: April 25, 2006

Exhibit 20: IEPA/DNR Proposed Rule Language (Attached to 4/4/06 Pre-filed Testimony of IEPA/DNR)

Exhibit 21: IEPA/DNR Proposed Section 302.Appendix D: Stream Segments for Enhanced Dissolved Oxygen Protection (Attached to 4/4/06 Pre-filed Testimony of IEPA/DNR)

Exhibit 22: IEPA's April 24, 2006 Response to Dennis Streicher of IAWA (includes compact disc of Dissolved Oxygen Results at IEPA Stream Sites (Selected Sites), Grab Samples (1994-2003), Continuous Monitoring Data (2004-2005))

Exhibit 23: IEPA/DNR Technical Support Document (Mar. 31, 2006) (Attached to 4/4/06 Pre-filed Testimony of IEPA/DNR)

Exhibit 24: Compact disc of IEPA/DNR Proposed Streams for Enhanced Dissolved Oxygen Protection (Attached to 4/4/06 Pre-filed Testimony of IEPA/DNR)

Exhibit 25: Amended Pre-filed Testimony of Richard Lanyon on behalf of the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC)

Exhibit 26: USEPA Method # 360.1, Approved for NPDES (Issued 1971), Oxygen, Dissolved (Membrane Electrode)

Exhibit 27: Testimony of Thomas J. Murphy, Emeritus Professor of Chemistry, Environmental Science Program, DePaul University

Status Conference Call: June 5, 2006

Exhibit 28: Compact disc with May 19, 2006 cover letter from DNR (five copies of disc) (disc includes the information from Exhibit 24, as well as the following information: stream segments that IEPA identified in the 2006 Assessment Database as being aquatic life use impaired (including segments where low dissolved oxygen is identified as a potential cause of impairment); and National Pollutant Discharge Elimination System (NPDES) discharge points and associated metadata)

Fifth Hearing: November 2-3, 2006

Exhibit 29: Pre-filed Questions of Environmental Law & Policy Center of the Midwest (ELPC), Prairie Rivers Network (PRN), and Sierra Club Directed to IEPA/DNR

Exhibit 30: IEPA/DNR Responses to Pre-filed Questions of ELPC, PRN, & Sierra Club

Exhibit 31: Pre-filed Testimony of Thomas J. Murphy, Emeritus Professor of Chemistry, Environmental Science Program, DePaul University

Exhibit 32: Pre-filed Testimony of Dennis Streicher

Exhibit 33: Certifications of Dissolved Oxygen Sample Collection by the Fox Metro Water Reclamation District, the City of Naperville, the Greater Peoria Sanitary District, the Village of Plainfield, the Rock River Water Reclamation District, and the Wheaton Sanitary District

Exhibit 34: Compact disc of IAWA Dissolved Oxygen Sampling Data

Exhibit 35: Pre-filed Testimony of Dr. James E. Garvey

Exhibit 36: Additional Testimony of Dr. James E. Garvey

Exhibit 37: Abstract of presentation made to the North American Benthological Society entitled "Effects of hypoxia on brood survival in the freshwater mussel, *Venustaconcha ellipsiformis*," B.E. Kaiser, M.C. Barnhart

Exhibit 38: "Anthropogenic Inputs of Nitrogen and Phosphorus and Riverine Export for Illinois, USA," Mark B. David, Lowell E. Gentry, reprinted from the *Journal of Environmental Quality*

Exhibit 39: "Biological Criteria and Tiered Aquatic Life Uses: Potential Changes to Illinois Water Quality Standards," IEPA Bureau of Water (Sept. 2006)

Exhibit 40: Pre-filed Testimony of Richard Lanyon, MWRDGC

Exhibit 41: Pre-filed Testimony of Louis Kollias, MWRDGC

APPENDIX II TO THE OPINION AND ORDER
R04-25
PUBLIC COMMENTS

PC 1 Robert W. Schanzle, President, Illinois Chapter of the American Fisheries Society
PC 2 Nancy Erickson, Director, Natural and Environmental Resources of Illinois Farm Bureau
PC 2.5 Metropolitan Water Reclamation District
PC 3 Thomas E. Tarasiuk
PC 4 Theresa A. Kolady
PC 5 Elaine R. Parnell
PC 6 Donald E. Lupei
PC 7 Justin Czapczyk
PC 8 Gary A. Jannusch
PC 9 Margaret E. Fox
PC 10 Richard A. Hilton
PC 11 Lois Johnson
PC 12 R. Gilkerson
PC 13 Ward P. Schwartz
PC 14 Patrick A. Kimse
PC 15 Jennifer Oviedo
PC 16 Angie Ali
PC 17 The Martlings
PC 18 George W. Carpenter
PC 19 Michele K. Mellor
PC 20 Brandon Zaleiski
PC 21 Edgar Oviedo
PC 22 Paul B. Smith
PC 23 Michael Kirschman
PC 24 The Thrashers
PC 25 The Workman's
PC 26 Alison Richards
PC 27 David J. Horn
PC 28 John E. Mozzocco
PC 29 Jody Strohm
PC 30 Pamela Pesertell
PC 31 The Fishers
PC 32 William H. Holleman
PC 33 Susan Stillinger
PC 34 Linda Gray
PC 35 M. Mey
PC 36 Kris A. Hall
PC 37 A. K. Helland
PC 38 Clifford L. White, Jr.
PC 39 W. H. Brisker
PC 40 Mark Donnelly
PC 41 Lenore G. Lee

PC 42 John D. McKee
PC 43 Donna Erfort
PC 44 Jyoti Srikishan
PC 45 Patricia Gebhardt
PC 46 Lara Miller
PC 47 Amanda B. Reyes
PC 48 Pat Dieckhoff
PC 49 Mary J. Zaander
PC 50 David H. Arnett
PC 51 Ann Schneck
PC 52 Dawn Rosch
PC 53 Caroline M. Quinlan
PC 54 Rick Maring
PC 55 Kyla Jacobsen
PC 56 The Shroders
PC 57 Ken Schaefer
PC 58 Brad Hoar
PC 59 The Masonicks
PC 60 Dennis Paige
PC 61 Kelley Ann Kepes
PC 62 Danielle Ebersole
PC 63 Christoph Parat
PC 64 Michael Ander
PC 65 Jean Leverenz
PC 66 Judith Boettmer
PC 67 John A. Olson
PC 68 David L. Segel
PC 69 Henry J. Wolf
PC 70 Ann Anderson
PC 71 James O. Breen
PC 72 Robert C. Arnet
PC 73 The Szymanskyj's
PC 74 Nikki Dahlin
PC 75 Gloria Klimek
PC 76 John Webb
PC 77 Mary Robbins
PC 78 Day Waterman
PC 79 Philip W. Cunio
PC 80 Lana M. Haley
PC 81 Jean Flemma, Executive Director, Prairie Rivers Network
PC 82 Dennis Streicher for Illinois Association of Wastewater Agencies
PC 83 Thomas J. Murphy, Ph.D.
PC 84 Todd Main, Policy Director, Friends of the Chicago River
PC 85 Stanton A. Browning, Executive Director, Greater Peoria Sanitary District
PC 86 Gregory J. Brunst, Director, Village of Addison
PC 87 Clifford L. White, Jr., Environmental Services Superintendent, City of St. Charles

PC 88 Downers Grove Sanitary District
PC 89 Thomas F. Muth, Manager, Fox Metro Water Reclamation District
PC 90 George R. Schillinger, Executive Director, American Bottoms Regional Wastewater Treatment Facility
PC 91 Michael R. Little, Executive Director, Urbana & Champaign Sanitary District
PC 92 Jane M. Carlson, P.E. and Troy W. Stinson, P.E. of Strand Associates, Inc.
PC 93 Steve Olsen, Plant Foreman of Dekalb Sanitary District
PC 94 Dr. James E. Garvey
PC 95 Chemical Industry Council of Illinois
PC 96 Illinois Department of Natural Resources
PC 97 James L. Daugherty, District Manager, Thorn Creek Basin Sanitary District
PC 98 Metropolitan Water Reclamation District of Greater Chicago
PC 99 Mayor Arthur J. Washkowiak of City of LaSalle
PC 100 Illinois Chapter of the American Fisheries Society
PC 101 Environmental Law & Policy Center, Prairie Rivers Network, and Sierra Club
PC 102 Illinois Association of Wastewater Agencies
PC 103 Illinois Environmental Protection Agency
PC 104 Darrel R. Gavle, P.E. and Pavel Hajda, Ph.D of Baxter & Woodman, Inc. Consulting Engineers
PC 105 Thomas J. Murphy, Ph.D.
PC 106 James E. Huff, P.E., Vice President, Huff & Huff, Inc.
PC 107 Dennis Streicher of Illinois Association of Wastewater Agencies
PC 108 Robert Fischer, Ph.D, President, ILAFS, Professor of Biology, Associate Chair, Biology, Eastern Illinois University
PC 109 Dennis Streicher of IAWA and Professor Jim Garvey of IAWA
PC 110 Illinois Environmental Protection Agency’s Response to Dennis Streicher's Public Comment of April 24, 2007
PC 111 Metropolitan Water Reclamation District of Greater Chicago
PC 112 Dr. Thomas Murphy, Professor *Emeritus* of Chemistry, DePaul University
PC 113 Illinois Association of Wastewater Agencies
PC 114 Illinois Environmental Protection Agency