

# **Illinois Environmental Protection Agency**

## **2012 Integrated Report and Section 303(d) List Responsiveness Summary**

Regarding

April 17, 2012 Public Hearing

Illinois Environmental Protection Agency  
Office of Community Relations



**Bureau of Water  
Impaired Waters of Illinois  
2012 Integrated Report**

**Responsiveness Summary**

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Final December 20, 2012

# **ILLINOIS ENVIRONMENTAL PROTECTION AGENCY**

**IN THE MATTER OF:**  
Impaired Waters of Illinois  
2012 Integrated Report

## **BACKGROUND INFORMATION**

The Illinois Environmental Protection Agency (Illinois EPA, IEPA or Agency) conducted a public hearing on Thursday, April 17, 2012, in the Illinois EPA Mississippi River Conference Room, located at 1021 North Grand Avenue East, Springfield, Illinois. The purpose of this hearing was to provide an opportunity for the public to comment on the Bureau of Water (BOW) draft 2012 Integrated Report.

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

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

## **PRE-HEARING OUTREACH**

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

- the Taylorville *Breeze Courier* (state newspaper) on March 16, 23 and 9, 2012.

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

- Bureau of Water, Division of Water Pollution Control
- Agency hearing officer

The public hearing notice was featured on the IEPA Internet Web Site. All Illinois EPA regional offices posted the hearing notice in a public area.

## **PUBLIC HEARING AND HEARING RECORD**

Approximately seven non-Agency persons attended at the April 17, 2012 hearing. Hearing officer Dean Studer opened the hearing at 10:33 a.m. Amy Walkenbach described the Draft 2012 Integrated Report. Agency staff responded to questions. Hearing officer Dean Studer closed the hearing at 11:10 a.m. Agency staff were available to meet with the public before and after the hearing. The transcript of the public hearing was posted on the Agency website on May 1, 2012.

The hearing record remained open for written comments postmarked through midnight June 17, 2012.

This responsiveness summary provides the Agency response to questions from the public hearing and written comments and questions received while the hearing record was open.

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

## **Agency Responses to Questions, Concerns and Comments**

1. Illinois Association of Wastewater Agencies (IAWA) supports the Illinois EPA's decision to stop using non standards based guidelines to list phosphorus, sedimentation/siltation, and sediment as causes of aquatic life impairments in Illinois streams. However, the IAWA believes that since these causes of impairment were originally assessed based on non-scientific threshold values they should be removed from the 2012-2013 303(d) list until such time as the regulations more clearly define standards for these parameters.

**Illinois EPA agrees that some past-identified causes that remain associated with Illinois 303(d)-list waterbodies are based on invalid guidelines. Specifically, these guidelines are invalid because they are not related to Illinois water-quality standards. Illinois EPA provided to USEPA its basis for removing waters or potential causes based on improper criteria in the 2008 and 2010 Integrated Reports. However, Illinois EPA does not intend to dissociate these past causes from the 2012 303(d) list because we believe that USEPA will not approve such actions as evidenced by their recent past practices.**

2. The negative impact of litter on the aesthetics of the Lake Michigan shoreline is indisputable. Nearshore waters and beaches strewn with dirty cigarette butts, plastic bags, bottles, cans, condoms, and the like, are not an inviting foreground for the natural beauty of Lake Michigan. Of particular concern are those items that not only detract from the view, but also are a health and safety hazard to the public, such as syringes, broken glass and drug paraphernalia. Given that it is not natural in origin, litter in the water is categorized as *floating debris* and is a potential cause for non-attainment. However, what is not clear from Illinois' methodology is how attainment or non-attainment is determined based on the presence of litter/floating debris. Therefore, the Alliance for the Great Lakes recommends that Illinois EPA strengthen the assessment methodology for the aesthetic quality use of Lake Michigan bays, harbors and beaches.

**Illinois EPA recognizes and appreciates the Alliance's concern for litter on and near Lake Michigan beaches. Illinois EPA assesses aesthetic quality in Lake Michigan waters by interpreting and applying the narrative Lake Michigan standards, while recognizing the lack of specificity inherent in the standard. Illinois EPA staff use their best judgment in assessing attainment of the standard, including assessments that may be based partly on litter in the water. We are open to examining how to improve this assessment method. We have reviewed and will continue to review data submitted by the Alliance for the Great Lakes. We invite the opportunity to discuss this issue further with the Alliance.**

3. As the Illinois EPA only provides one assessment methodology for all the conditions outlined in the Offensive Conditions narrative standard, the Alliance for Great Lakes criticizes the lack of specifics in the methodology and the absence of any reference to onshore algae. USEPA has undertaken a great deal of effort to develop a standard Beach Sanitary Survey (BSS) for Great Lakes beaches. The BSS is completed by Lake Michigan beach managers in Illinois on a regular basis and collects information, including onshore litter and algae, which could be used to assess aesthetic water quality. Given that the BSS's procedures, data integrity and reliability has been trusted by EPA and beach managers, the Alliance would like to see the survey given serious consideration as an assessment tool for algae and aesthetic impairments.

**In order to meet the requirements of section 303(d) of the Clean Water Act, states must determine if waters are attaining water quality standards. Illinois EPA believes that in order to responsibly address the assessments that are based primarily on the “Offensive Conditions” narrative standard in 35 Ill. Adm. Code 302.515, the standard must be interpreted by Illinois EPA staff with knowledge of the natural expectations for Lake Michigan waters. Because algae is a natural component of Lake Michigan waters, the presence of algae itself does not necessarily indicate that the standard is not attained. Illinois EPA will review Beach Sanitary Survey information when submitted to determine when/if such data can assist our staff’s assessments of aesthetic quality. We invite the opportunity to discuss this issue further with the Alliance for the Great Lakes.**

4. The Alliance commends Illinois EPA for its recognition of aesthetic quality as a use for Lake Michigan beaches and their inclusion of an assessment methodology. However, in requiring trained biologists to perform the assessments, IEPA is creating the potential for delay of beach assessments due to the resource constraints created by reductions in budget and staff as a result of the current economic situation. This requirement also ignores existing and readily available sources of assessment information – data collected through the EPA’s Beach Sanitary Surveys and the Alliance’s Adopt-a-Beach program. The Alliance’s Adopt-a-Beach survey, data collection and quality assurance methods are modeled on the EPA’s BSS methodology and therefore should be considered as a reliable source of aesthetic water quality information.

**Illinois EPA believes that in order to responsibly address the assessments that are based primarily on the “Offensive Conditions” narrative standard in 35 Ill. Adm. Code 302.515, the standard must be interpreted by Illinois EPA staff with knowledge of the natural expectations for Lake Michigan waters. We will continue to review Beach Sanitary Survey information and other information when submitted to determine how such data may contribute to our assessments of aesthetic quality. We invite the opportunity to discuss this issue further with the Alliance for the Great Lakes.**

5. Since 1972, the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) has conducted Ambient Water Quality Monitoring (AWQM) for waterways in the Chicago metropolitan area. MWRDGC understands that the Illinois EPA used

AWQM data that the District collected during 2008-2010, to assess water quality in the 2012 integrated report. Our AWQM program compares analytical results from pertinent stream segments to water quality impairments listed in the subject report, as well as the General Use water quality standards for the respective constituents. Our AWQM program includes the water quality constituents that were found by MWRDGC to be in substantial compliance with the Illinois General Use Water quality Standards according to the guidelines in Table C-3 on page 33 of the Illinois EPA 305b Report, even though they were noted in the subject report as impaired. We request that these water quality impairments noted in Table 1 be removed from the 303(d) list.

**Illinois EPA believes that insufficient basis exists to meet the request. Based on the information that follows, we believe that none of the water-quality parameters (i.e., causes of impairment) addressed below should be dissociated from the applicable segments that constitute the 2012 303(d) list.**

The Metropolitan Water Reclamation District or Greater Chicago (MWRDGC) provided water quality data (in their Table 1) that they believe to be in “substantial compliance” with General Use Water Quality standards according to the guidelines in Table C-3 of the 2012 Integrated Report. All of MWRDGC’s comparisons are based on percent compliance with standards. This is inconsistent with Illinois EPA guidelines in Table C-3 that using a percentage of exceedances<sup>1</sup> applies only to nontoxic constituents (e.g., water temperature, pH, and dissolved oxygen). For other constituents, the number (not percentage) of exceedances is used as a guideline. For constituents that have a chronic standard the guideline is based on the average of four consecutive samples. In addition, Table C-1 of the 2012 Integrated Report indicates that assessment conclusions are primarily based on biological (i.e., fish and macroinvertebrate) data along with water quality and habitat information. If biological data or chemical data indicate impairment (Tables C-1 and C-3), then only one exceedance of an applicable cause guideline (related to the protection of aquatic life use) indicates the constituent as a potential cause of impairment (Table C-5).

For each stream segment in MWRDGC’s Table 1, not every station that occurs in the segment is included, nor does Table 1 include every parameter that exceeded a water quality standard. Also, the information in MWRDGC’s Table 1 does not account for data from Illinois EPA and other organizations that have monitoring stations within MWRDGC’s service area. Illinois EPA considers all of these sources of information for assessing attainment of designated uses. If one or more of several monitoring stations within the same segment are assessed as not attaining aquatic life use due to various causes, then each cause is associated with the segment even if each applicable cause guideline was not exceeded at every monitoring station in the

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<sup>1</sup> Throughout this responsiveness summary, the term “exceedance” is used for measured DO values less than the specified minimum DO value in Illinois Pollution Control Board regulations. Similarly, “exceedance” applies when measured pH values are either higher than the Board-specified maximum or lower than the Board-specified minimum pH value. For all other parameters, “exceedance” is used when the measured value exceeds the specific value.

segment. Several MWRDGC monitoring stations presented in their Table 1 are part of the Chicago Area Waterway System (CAWS), for which an extensive effort to revise water quality standards is still pending before the Illinois Pollution Control Board. Consequently, for the Illinois 2008, 2010, and 2012 Integrated Reports, assessments were not updated for General Use CAWS segments IL\_HCCA-02, IL\_HCB-01, and IL\_HAA-01 in MWRDGC's Table 1 and for all Secondary Contact and Indigenous Aquatic Life Use segments in MWRDGC's Table 2.

Some water quality constituents in MWRDGC's Table 1 were identified in past water-quality reports by Illinois EPA as potential causes of impairment based on sediment-chemistry data. For the 2012 Integrated Report, Illinois EPA stopped using these sediment-chemistry guidelines because they are not validly related to any Illinois water-quality standards (see subpart A-2 Major Changes from Previous Report Methodology and Format). However, any such causes, from past 303(d) assessments, were left associated with the listed segment (see Response to Comment #1). The following segments in Table 1 have such past-identified causes that are based on sediment-chemistry guidelines: IL\_HCCC-04 (silver, barium, cadmium, copper, lead, nickel, mercury), IL\_G-39 (arsenic), and IL\_GL-10 (arsenic).

**Stream segment IL GL-10:** MWRDGC indicated in Table 1 that soluble nickel in segment IL\_GL-10 was in 100% compliance with the General Use Standard. However, the nickel standard depends on the hardness at the time the nickel sample is collected. MWRDGC used the maximum hardness value over the three year period (2008 - 2010). Because the nickel standard (acute and chronic) increases with increasing hardness, MWRDGC incorrectly used the least stringent value for comparison. In addition, MWRDGC looked at compliance with only the acute standard and not the chronic standard, which is included in Table C-3 of the 2012 Integrated Report. The chronic standard is based on four consecutive nickel and hardness values collected over any period of at least four days (Section 302.208 [b]). Illinois EPA determined that there were two violations of the chronic standard for nickel in this segment, one each at Arlington Heights Road and Devon Avenue.

Multiple data sources and monitoring stations were used to assess attainment of uses in segment IL\_GL-10. MWRDGC results at Arlington Heights Road included four chloride exceedances, one dissolved-oxygen exceedance, one pH exceedance, and one chronic exceedance for dissolved nickel. Results at Devon Avenue included four chloride exceedances and one chronic exceedance for dissolved nickel. Illinois EPA and Illinois Department of Natural Resources biological data at Thorndale Road and at Kennedy Boulevard and DuPage River/Salt Creek Workgroup data at Arlington Heights Road and at Devon Avenue indicated non-attainment of aquatic life use. As mentioned above, arsenic was previously identified as a cause of impairment based on sediment-chemistry guidelines.

**Stream segment IL HCCB-05:** MWRDGC's Table 1 includes the stream segment IL\_HCCB-05 and identifies it as "West Fork North Branch Chicago River at Golf Road." However, the geographic location (i.e., latitude and longitude coordinates)

provided by MWRDGC to Illinois EPA represents a site on a different stream, namely Middle Fork North Branch Chicago River at Golf Road. Previous data submitted to Illinois EPA by the MWRDGC identify this location as merely "North Branch Chicago River at Golf Road". The MWRDGC does have another station on West Fork North Branch Chicago River located on Dundee Road, which is not included in their Table 1. Data from this Dundee Road station in West Fork North Branch Chicago River included exceedances for chloride (10 exceedances) and dissolved oxygen (9.7% exceedances). Also for this segment, IL\_HCCB-05, Illinois EPA and Illinois Department of Natural Resources biological and water quality data at Walters Avenue and continuous-monitoring data at Dundee Road indicated impairment, including exceedances for chloride (2) and dissolved oxygen (46%).

**Stream segment IL HCCD-01:** MWRDGC results included two chloride exceedances. Per guidelines in Table C-3 of the 2012 Integrated Report, for any single toxic parameter (acute), two observations that exceed the applicable standard indicate the potential for moderate impairment of aquatic life. In addition, page 34 states, "When a stream segment is determined to be Not Supporting *aquatic life* use, generally, one exceedance of an applicable Illinois water quality standard (related to the protection of aquatic life) results in identifying the parameter as a potential cause of impairment (Table C-5)."

**Stream segment IL HCCD-09:** Illinois EPA and Illinois Department of Natural Resources biological data at Winnetka Road indicated aquatic life use impairment. MWRDGC water quality data at Frontage Road included exceedances for chloride (2) and dissolved oxygen (5.6%).

**Stream segment IL HCCC-04:** Illinois EPA and Illinois Department of Natural Resources biological data at Golf Road indicated aquatic life use impairment. MWRDGC water quality data at Glenview Road included exceedances for chloride (2) and dissolved oxygen (6.1%). As indicated above, silver, barium, cadmium, copper, lead, nickel, and mercury were previously identified as potential causes of impairment based on sediment-chemistry guidelines.

**Stream segment IL HCC-07:** MWRDGC results included exceedances for chloride (3) and dissolved oxygen (9.7%) at Dempster Street and chloride (6) and dissolved oxygen (5.7%) at Albany Avenue. Illinois EPA water-quality and continuous-monitoring results at Touhy Avenue included exceedances for chloride (2) and dissolved oxygen (5.3% for "grab" samples and 68% for continuous monitoring).

**Stream segment IL G-28:** MWRDGC results at Oakton Street included one chloride exceedance. Likewise, Illinois EPA results at Central Avenue included one chloride exceedance.

**Stream segment IL G-39:** MWRDGC's Table 1 included the Des Plaines River station at Ogden Avenue, but did not include the station at Willow Springs Road. Chloride exceeded the standard in three samples at each station. In addition, pH

exceeded the standard once at Willow Springs Road. As indicated above, arsenic was previously identified as a potential cause of impairment based on sediment-chemistry guidelines. Illinois EPA and Illinois Department of Natural Resources biological data at 43<sup>rd</sup> Street and at Willow Springs Road indicated aquatic life impairment, and chloride exceeded the standard once at Berry Point Road. All of the above information supports identifying pH as a potential cause of aquatic life use impairment in this segment.

**Stream segment IL\_HB-01:** Previous Integrated Reports included “oil and grease” as a cause of aquatic life impairment based on the General Use narrative standard. According to Subpart A-2 of the 2012 Integrated Report, Illinois EPA has determined that these narrative standards apply only to the protection of aesthetic quality. Causes of aquatic life use impairment, such as “oil and grease,” which were formerly based on these narrative standards were not be associated with assessments of aquatic life impairment made in 2012. However, where these are currently listed as causes of aquatic life impairment, they will not be removed from the 2012 303(d) List unless aquatic life use is determined to be fully supported.

**Stream segment IL\_HBD-05:** MWRDGC’s Table 1 incorrectly represents Thorn Creek at Joe Orr Road as IL\_HBD-05. The correct segment identifier is IL\_HBD-06. This segment extends from the Thorn Creek Sanitary District discharge to the confluence with Deer Creek. MWRDGC data included exceedances for chloride (1) and dissolved oxygen (3.7%). Illinois EPA biological data from about 0.9 mile downstream of the Thorn Creek Sanitary District indicated impairment.

**Stream segment IL\_HBD-04:** MWRDGC data indicated exceedances for chloride (1) and dissolved oxygen (3.3%). Illinois EPA biological data indicated impairment, and continuous-monitoring data indicated exceedances of the dissolved-oxygen standard (0.6%).

6. MWRDGC acknowledges that assessments of Indigenous Aquatic Life (IAL) Use streams were not updated in the current or previous cycles because comprehensive changes to the Secondary Contact and IAL Standards that were proposed by Illinois EPA in 2007 have not yet been approved by the Illinois Pollution Control Board. This pending change affected most of the deep-draft waterways of the Chicago Area Water Ways System (CAWS). However, MWRDGC would still like to point out that there are several parameters listed as impairments in segments of the CAWS that should not be listed according to MWRDGC’s AWQM Program data. Page 46 of the subject report states that IAL Use streams are fully supporting if “every available pollutant or stressor, <10 percent of observations exceed an applicable standard.” Our reports show water quality constituents that comply with applicable standards greater than 90 percent of the time. We request that these water quality constituents that were found to be in substantial compliance with water quality standards be removed from the 303(d) list.

**Because aquatic life and indigenous aquatic life uses were not updated for CAWS and lower Des Plaines River segments for the previous three cycles, the methods**

**to make indigenous aquatic life use assessments were also not updated. The methods would have changed to be more similar to aquatic life use methods (see Table C-3). Specifically, water temperature, pH and dissolved oxygen would still have been based on percent violations, but other parameters would have been based on number of exceedances. In addition, biological data would have also been used to assess General Use CAWS segments (see Tables C-1 and C-2). CAWS and Lower Des Plaines River segments will be assessed for the 2014 Integrated Report if designated uses, standards, and assessment methodologies are in place.**

7. With respect to the waters located in HUC 0512011114, and in particular Water ID's IL\_BF-01 and IL\_BFC-11, please identify the data that supports IEPA's conclusion that those waters are impaired for Fluoride. Also, please indicate whether that conclusion will be revisited after the Illinois Pollution Control Board issues as a final action the proposed amendments to the Fluoride water quality standard (Rulemaking R2011-018)?

**The assessment for IL\_BF-01 (Sugar Creek) and IL\_BFC-11 (Robinson Creek) was last updated in the 2010 cycle based on data from 2006 through 2008 collected at stations BF-01 and BFC-11. These data indicated seven exceedances of the fluoride standard of 1.4 mg/L in Sugar Creek (BF-01), and three exceedances of that standard in Robinson Creek (BFC-11). These exceedances were the basis for identifying fluoride as a potential cause of aquatic life use impairment in these streams.**

**In these assessments, our interpretation of water-chemistry data involves using the water-quality standards that apply at the time of the assessment.**

8. Part A, Section A-2 of the draft list states that Illinois EPA will no longer use any non-standards based guidelines to list sediments, sedimentation/siltation, or sediment chemistry and phosphorus. Under EPA's rules, states are required to identify the impaired water body and the pollutants causing or expected to cause impairments. If Illinois EPA does not believe that use of its statistical guidelines is appropriate for determining whether phosphorus, sediment, total suspended solids (TSS) or contaminants in sediment are a cause of ALU impairment, it is still required under EPA's rules that Illinois EPA identify the cause(s) of the ALU impairment and needs to describe its methodology for identifying when these pollutants are a cause. While Illinois EPA no longer thinks it is appropriate to use its statistical guidelines to identify these pollutants as causes of impairment, USEPA thinks it's reasonable to expect these pollutants to be causes of the ALU impairment when found at such elevated levels (85<sup>th</sup>-98<sup>th</sup> percentile).

**For phosphorus, sedimentation/siltation, total suspended solids, and sediment contaminants in sediment, Illinois EPA does not have numeric water-quality standards for the protection of aquatic life in streams. Moreover, Illinois EPA believes that insufficient information exists to identify what threshold amounts of phosphorus, sedimentation/siltation, total suspended solids, or sediment chemicals represent levels that are more likely than not to cause impairment of aquatic life use**

in Illinois streams. Therefore, Illinois EPA has no valid guidelines for reliably determining when any of these substances are causing impairment. Past guidelines used by Illinois EPA did not represent thresholds of aquatic life use impairment; therefore, Illinois EPA no longer uses them. Illinois EPA disagrees that it is "reasonable to expect" that any of these pollutants is causing impairment of *aquatic life* use merely because the amount of the pollutant is "elevated" relative to a statewide distribution.

9. Part A, Section A-2 subparagraph (g) states that Illinois EPA used 35 Ill. Adm. Code 302.504(c) to assess aesthetic quality of these waters. Section 302.504(c) provides a numeric phosphorus water quality standard for the open waters of Lake Michigan. It is our understanding that Illinois EPA is not using this to assess aquatic life use attainment. It's also our understanding that 35 Ill. Adm. Code Section 302.504(c) is based on the Phosphorus Management Strategies Task Force, "Phosphorus Management for the Great Lakes," final report to the International Joint Commission, Great Lakes Water Quality Board and Great Lakes Science Advisory Board, 1980 recommendations, which were intended to maintain Lake Michigan in an oligotrophic condition. The trophic condition relates more to the overall ecological condition of the lake than to aesthetics. Please explain Illinois EPA's basis for interpreting this standard as only applying to aesthetic quality?

**Illinois EPA has historically interpreted the phosphorus water-quality standard applicable to the Open Waters of Lake Michigan as being protective of the aesthetic quality use. In 2012 Integrated Report cycle, we did not assess attainment or lack of attainment of aesthetic quality use in any waters of the State except for inland lakes. In 2012, we began assessing attainment of aesthetic quality use in the open waters of Lake Michigan by applying the phosphorus water-quality standard of 0.007 mg/L. Illinois EPA's basis for this long-standing interpretation is our reading of several Illinois Pollution Control Board adopting opinions from the early 1970s.**

The Lake Michigan phosphorus water quality standard of 0.007 mg/L, now found at 35 Ill. Adm. Code 302.504(c), has existed since at least 1971. See #R70-06, P. 1-516 (January 6, 1971). In #R70-06, the Board, acknowledged that algae causes tastes and odors in water supplies and may reduce dissolved oxygen in the water, and algae is a nuisance to swimmers and can reduce the enjoyment and property value of shoreline property. Id. at 1-163. Therefore, for Lake Michigan, the phosphorous standard for the open water and shore water was set as 0.007 mg/L as phosphorus. Id. at 1-666 and 1-167. In a subsequent water-quality-standard revision rulemaking, the Board retained the phosphorus standard for Lake Michigan, but repealed it for other high quality General Use waters and concluded that:

*"Certain parameters taken from existing standards are preserved to require this high-quality lake to remain especially clean for esthetic and recreational purposes, in accordance with the important non-degradation policy. Similar provisions to protect other waters of unusually high quality have been omitted from the present draft for lack*

*of evidence as to which waters are entitled to such protection. The Lake Michigan provisions establish the principle of special protection for high-quality waters, and additional waters may be added in the future when the evidence so demand.” See, #R 71-14, P. 9 (December 21, 1971).*

In reviewing the various rulemaking proceedings before the Board concerning the 0.007 mg/L phosphorus standard applicable in the Open Waters of Lake Michigan, this low phosphorus water-quality standard was adopted to protect the exceptional aesthetic and recreational quality of Lake Michigan by trying to limit algae growth. USEPA comments that this standard is based on the Phosphorus Management Strategies Task Force, “Phosphorus Management for the Great Lakes,” final report to the International Joint Commission, Great Lakes Water Quality Board and Great Lakes Science Advisory Board (1980). However, as explained above, the phosphorus water-quality standard for Lake Michigan was adopted several years before 1980 and therefore is not based on the publication cited by USEPA.

10. Part A, Section A-2, subparagraph (a) states that for the 2012 list, sludge, bottom deposits, floating debris, oil, aquatic plants, aquatic algae, color, or turbidity will be listed as causes related to impairment of aesthetic quality use “only when their presence is considered a violation of the narrative standard in 35 Ill. Adm. Code 302.203 or 302.515.” We understand that the field biologists will be exercising their professional judgment; however, what guidance is there for the field biologists to use in making these judgments to ensure consistent application of the standard?

**Because of vagueness in the Illinois narrative standards, inherent uncertainty exists in applying the standards to assess attainment of aesthetic quality. In this context, Illinois EPA has provided general guidance to field staff in the form of several internal discussions about the meaning of the standard and its application, and has developed a standardized form for this assessment (see Appendix E, attached).**

11. Part A, Section A-2, subparagraph (A), states that Illinois EPA will no longer apply the narrative standard in 35 Ill. Adm. Code 302.203 to assessment for aquatic life use and that Illinois EPA has determined that the standard applies only to the protection of aesthetic quality. This revised interpretation appears to be inconsistent with the plain language of Section 302.203 and the regulatory structure of Part B, General Use Water Quality Standards.

**The above comment suggests that Illinois EPA’s current interpretation of 35 Ill. Adm. Code 302.203, Offensive Conditions, is inconsistent with the plain language. There is nothing in the plain language of Section 302.203 that suggests that this offensive conditions standard applies to aquatic life use. In fact, the Illinois Pollution Control Board’s adopting opinion in R88-21 indicates otherwise. In a 1990 rulemaking, the Board explicitly struck the reference to aquatic life from the then language of 302.203 and placed that language in Section 302.210. Consequently, it is counter intuitive to interpret that the deleted language is still**

part of the rule, and thus must be complied with. The Board's intent to limit the application of the offensive condition standard in Section 302.203 is also evident in the Board's action that changed the heading of the Section from "Unnatural Sludge" to "Offensive Conditions," as follows:

From 14 Illinois Register, p. 2915:

*Pollution Control Board  
Notice of Adopted Amendments  
Subpart B: General Use Water Quality Standards*

*Section 302.203 Unnatural Sludge Offensive Conditions*

*Waters of the State shall be free from unnatural sludge or bottom deposits, floating debris, visible oil, odor, unnatural plant or algal growth, unnatural color or turbidity of other than natural origin, , or matter of other than natural origin in concentrations or combinations toxic or harmful to human, plant or aquatic life. The allowed mixing provisions of Section 302.102 shall not be used to comply with the provisions of this Section. (Source: Amended at 14 Ill. Reg. 2899, effective Feb. 13, 1990)*

From 14 Illinois Register, p. 2918:

*Pollution Control Board  
Notice of Adopted Amendments*

*Section 302.210 Substances Toxic to Aquatic Life Other Toxic Substances*

*Any substance toxic to aquatic life shall not exceed one-tenth of the 96-hour median tolerance limit (96-hr. TLm) for native fish or essential fish food organisms, except for*

*Waters of the State shall be free from any substances or combination of substances in concentrations toxic or harmful to human health, or to animal, plant, or aquatic life. Individual chemical substances or parameters for which numeric standards are specified in this Subpart are not subject to this Section.*

*a) Any substance or combination of substances shall be deemed to be toxic or harmful to aquatic life if present in concentrations that exceed the following: ...*

The above Comment also suggests that the limited applicability of Section 302.203 is inconsistent with the regulatory structure of Subpart B that hosts general use water quality standards. This interpretation is inconsistent with the purpose, intent, and plain language of Subpart B standards. The purpose of Subpart B, as described in Section 302.203, is to protect waters for "aquatic life (except as provided in Section 302.213), wildlife, agricultural use, secondary contact use and most industrial uses and ensure the aesthetic quality of the State's aquatic environment." (emphasis added).

The plain language of Section 302.202 does not suggest that every standard specified under the Subpart must be protective of every use (i.e., aquatic life, wildlife, agricultural use, etc.) identified in this section. Rather, Section 302.202 simply suggests that the standards of Subpart B are intended to protect, as a whole, for the uses mentioned in 302.202. For example, the offensive conditions standard in Section 302.203 is adopted to “*ensure the aesthetic quality*” of the general use waters in the state of Illinois, not to protect every use specified in 302.202. Subpart B has several other examples where the water quality standards listed are not protective of every use specified in Section 302.202. Instead, these standards were adopted to protect one or a subset of the uses identified in Section 302.202. Some examples are:

- 1) Section 302.209, Fecal Coliform (the standard is adopted to protect primary contact use only);
- 2) Section 302.208(f), Numeric Water Quality Standard for the Protection of Human Health (the standards for mercury and benzene are adopted to protect for human health use only);
- 3) Section 302.208(g) (the standard for boron was adopted to protect for agricultural uses only, and the standard for phenols is adopted to protect for taste issues in fish only); and,
- 4) Section 302.307, Radioactivity (the standards for Gross Beta and strontium 90 were adopted to protect for human consumption uses only).

Illinois EPA's interpretation of Section 302.203 is thus consistent with the plain language and the regulatory structure of Subpart B.

12. Illinois EPA states that it also will apply 35 Ill. Adm. Code Section 302.515, which is the offensive condition standard for Lake Michigan water, only to aesthetic quality. Please explain how the revision to 302.203 and 302.210 support the revised interpretation of Section 302.515. Prior to the 2012 list, Illinois EPA has applied Section 302.515 to protect aquatic life use.

**35 Ill. Adm. Code 302.515 was added by the Illinois Pollution Control Board on December 18, 1997 in R97-25 “In the Matter of: Conforming Amendments for the Great Lakes Initiative: 35 Ill. Adm. Code Part 302.101; 302.105; 302. Subpart E; 303.443, and 304.222”. The language adopted by the Board was “Waters of the Lake Michigan Basin must be free from sludge or bottom deposits, floating debris, visible oil, odor, plant or algal growth, color or turbidity of other than natural origin. The allowed mixing provisions of Section 302.102 shall not be used to comply with the provisions of this Section.”**

Prior to this rulemaking, Section 302.203 was applicable to the Lake Michigan Basin and Open Waters because Subtitle E was cumulative with Subtitles C and D. Therefore, prior to the adoption of R88-21(A), the old version of 302.203 was applicable to these waters. After the adoption of R88-21(A), the new version of 302.203 was applicable to these waters. Finally, upon adoption of R97-25, the

**language from the revised 302.203 was copied directly into Subtitle E and the same language remained applicable (though in a new Section).**

13. To move an impaired waterbody to Category 4c, Illinois EPA must show that the impairment is caused by pollution and not a pollutant. If Illinois EPA has a current and full set of water chemistry data showing no violations of water quality standards for the waters it moves to 4c, then this could be a basis for the state showing that the impairment is not due to any pollutant. However, in the past there have been instances of Illinois EPA moving a waterbody to Category 4c without having a full set of water chemistry monitoring data to support the move. Please clarify that the state will not categorize waters under 4c unless it has water chemistry data showing that pollutants are not causing the impairment.

**The final paragraph on Page 34 and Appendix A-8 of the 2012 Integrated Report addresses placement of waters in category 4c. Based on USEPA Region 5's comment and on discussion with them, Illinois EPA modified language in the 2012 Integrated Report on Page 34 as follows:**

*"In some cases, biological data indicate that aquatic life use in streams is impaired but no pollutant cause of impairment is identified. If, after further review of all data, the assessor determines that the segment is attaining all water-quality standards and is not impaired by any pollutant, the segment is placed in category 4C, depending on the results of other use-attainment assessments (see Section C-3, Five-Part Categorization of Surface Waters, and Appendix A-8). In each of these cases, water data is available but reveals no violation of an Illinois Water Quality Standard. Illinois EPA does not place water bodies in Category 4C unless sufficient water chemistry data is available for review. In addition, the assessor considers all of the information related to the segment, including the amount of water-chemistry data available, the nature of the stream, the degree of impairment, the existence of potential pollution sources, NPDES permits, other relevant watershed information, and whether the impairment is explained by the presence of degraded habitat or other non-pollutant causes. If the assessor judges that an unidentified pollutant is contributing to the impairment, then Cause Unknown is identified as an additional cause and the segment is placed in Category 5 (the 303(d) List)."*

14. Part C, page 46, of the list states that indigenous aquatic life use has not been updated for this list because of the proposed comprehensive changes to the Secondary Contact and Indigenous Aquatic Life Standards. Illinois EPA submitted the proposed changes to the Illinois pollution Control Board in 2007, and has not assessed indigenous aquatic life use in streams since that date. We understand that Illinois EPA will evaluate the waters subject to the approved secondary contact and indigenous aquatic life use standards in existence at the time of development of it next list.

**For several years an Illinois EPA proposal has been pending with the Illinois Pollution Control Board. This proposal recognizes the improved resource potential of the Chicago Area Waterways System and Lower Des Plaines River relative to**

**past expectations. Accordingly, the proposal recommends new use designations and new water-quality standards intended to represent and protect this improved potential. When new uses and new water quality standards with which to assess attainment of those uses are adopted by the Board and approved by USEPA, Illinois EPA intends to assess attainment of the new uses in these waters by applying the standards. It is not clear at this time what the status of these proposed uses and standards will be when assessments are made for the 2014 cycle. Currently, the Board has adopted recreational uses for these waters but has not adopted bacteria criteria to protect any of the new uses. In addition, USEPA has disapproved the recreational use designations of some of the impacted waters. Whereas the Board plans to adopt new aquatic life uses in the near future, it is unlikely to have completed the adoption of new water quality standards to protect those uses before the assessments are made for the 2014 cycle. Therefore, Illinois EPA cannot commit at this time to what assessments will be completed for the 2014 cycle. Illinois EPA has agreed to meet with USEPA to discuss the status of the current approvals and disapprovals for the Chicago Area Waterways System rulemaking and to work towards the goal of conducting new assessments as soon as possible.**

15. As discussed during the 2008 listing process, [US]EPA believes that the changes made in the methodology in 2008 and carried over into the 2010 and 2012 methodology for identification of the listing of ALU attainment (Table C-1 page 30-31 of the 2012 list) are not appropriate for determining attainment status when one biological indicator shows no impairment and another biological indicator shows a moderate impairment (see box 1 B of Table C-1 for an example). In such situations there are two indicators with conflicting data and the water is only determined to be impaired if there are other types of supporting information (habitat, chemistry) showing impairment; otherwise, the water is determined to be supporting. One concern is that when there is an absence of water chemistry data, the default seems to be not to list the water. EPA believes Illinois EPA should consider listing the water as impaired if one of the indices indicates impairment even if the other indices does not indicate impairment, unless there is evidence using chemistry and or habitat data to demonstrate otherwise.

**The first concern expressed by USEPA rarely occurs. Except in rare, unforeseen situations, when biological data (i.e., fish or macroinvertebrates) are available so are water-chemistry data. Secondly, Illinois EPA's assessment methodology is already consistent with what USEPA believes that Illinois EPA should consider (see last sentence of USEPA comment above). According to Table C-1 of the 2012 Integrated Report, when one biological indicator shows full support and the other indicates impairment, Illinois EPA examines other evidence, including water-chemistry and physical-habitat data to support a final decision of fully or not supporting aquatic life use.**

16. USEPA's rules at 40 CFR 130.7 require that the state list waters not meeting water quality standards. Illinois EPA's methodology indicates that if both biological indicators show full support of ALU, then Illinois EPA does not consider water chemistry data for the assessment of whether the water is impaired. This is inconsistent with USEPA's

regulations, and has resulted in Illinois EPA delisting waters that should remain on the list. If a water segment is not meeting a WQS, including a numeric criterion, then it must be listed as impaired. For example, Illinois EPA has identified a number of waters not meeting the numeric DO standard, but is not listing the waters if biological indicators show that ALU is met. These waters need to be listed as impaired because the DO WQS is not met.

**It is not correct that Illinois EPA “does not consider water chemistry data” if both biological indicators show full support. Illinois always considers water chemistry data for each aquatic life use assessment decision. Specifically, Illinois EPA’s assessment methodology in the 2012 Integrated Report (Table C-1, p. 31) includes, "...Final review using site-specific knowledge and considering all available biological, water-chemistry, habitat and other information. This review considers factors such as the extent to which biological-indicator scores exceed or fall short of impairment thresholds, the type and degree of water quality standard exceedances, the type and degree of habitat degradation, and the presence or absence of pollution sources. Based on this review, the biologist may modify the preliminary use-attainment decision."** According to 35 Ill. Adm. 302.202 (Purpose) “*The General Use standards will protect the State’s water for aquatic life...*” Illinois EPA’s weight of evidence approach is a better and more direct measure of whether the goal of the standards, i.e., the protection of aquatic life, is being attained.

Much more than simple, indirect water-chemistry measures, biological indicators—such as a fish Index of Biotic Integrity—provide direct, reliable measures of aquatic-life health and facilitate detection of cumulative impacts on aquatic life from multiple stressors. By relying more on biological indicators than on less-reliable surrogates (e.g., water chemistry), Illinois EPA assessments of aquatic-life use best achieve their primary purpose: to determine the degree to which a water body provides for the protection and propagation of fish, shellfish, and wildlife (i.e., the Clean Water Act’s interim aquatic-life goal). Illinois EPA believes that it is unreasonable, scientifically unjustified, and ultimately counterproductive to give simple water-chemistry exceedances “*as much weight as the biological indicators in determining listing impairments*” (from Comment 17).

17. Illinois EPA’s methodology indicates that if both biological indicators show full support of ALU, then Illinois EPA does not consider water chemistry data for the assessment of whether the water is impaired. This practice is inconsistent with US EPA’s policy of independent application, which applies to 303(d) listed segments. Illinois EPA needs to consider all information independently, meaning that if chemistry data is not meeting WQS these violations need to be given as much weight as the biological indicators in determining listing impairments.

**See Response to Comment #16.**

18. In response to a comment on the proposed 2010 list that asks why Illinois EPA did not list certain dog beaches for recreational use, Illinois EPA responded that it does not

assess dog beaches for primary contact because public swimming is not allowed at these beaches. Under the BEACH Act, USEPA promulgated bacteria criteria which apply to coastal and Lake Michigan water that states have designated for swimming, bathing, surfing, or similar water contact activities. 69 FR 67218 (Nov. 16, 2004) Illinois' rule on protection for recreation and the applicability of bacteria criteria at 35 Ill. Adm. Code 302.209 sets out a test for what will be considered a "protected water" in the state: namely that the water (1) presently supports or has the physical characteristics to support primary contact and/or (2) flows through or adjacent to parks or residential area. The dog beaches would seem to meet both criteria, therefore, dog beaches should be assessed under Illinois EPA's methodology for assessing recreation use at Lake Michigan beaches. People maybe have contact with these waters; in addition bacteria may affect other areas that people do swim in.

**Illinois EPA's response to the comment on the 2010 Integrated Report was incomplete or inaccurate. We clarify as follows. The two dog beaches at issue, the Evanston Dog Beach and Winnetka Centennial Dog Beach, are beach areas located within one of the 51 Illinois EPA Lake Michigan Beach segments listed in Appendix B-4 of the 2012 Integrated Report. The Evanston Dog Beach is located within the "Clark Beach" segment (IL\_QM-07), and the Winnetka Centennial Dog Beach is located within the "Elder Beach" segment (IL\_QK-09). All 51 Lake Michigan Beach segments, representing all 63 miles of shoreline, are identified as impaired for primary contact recreation use in the 2012 Integrated Report.**

19. Review of the 2012 list show waters being delisted for dissolved oxygen (DO); USEPA assumes these delistings are from the 2008 list partially approved by US EPA, since DO was not included as a cause of impairment on the 2010 list. A few DO waters, identified below, which were on the approved portion of the 2008 list are not on the 2012 list and also are not identified as delisted. Please explain the basis for not including the following 16 water segments on the 2012 303(d) list for DO:

IL\_BE-14, IL\_CAN-01, IL\_CCA-FF-A1, IL\_CHEA-11, IL\_CJAE-01, IL\_DT-38, IL\_DT-69, IL\_EO-01, IL\_EO-04, IL\_H-01, IL\_IXI-01, IL\_OIC-02, IL\_P-24, IL\_RAI, IL\_ROK, IL\_STV.

**IL BE-14: This segment was assessed as fully supporting aquatic life use in 2010 based on fish and macroinvertebrate data from 2006 and water-chemistry data from 2006-2008. Dissolved-oxygen (DO) data from continuous monitoring showed no exceedances of the DO standard during two 7-day periods in 2006 (no exceedances in 678 observations). In addition, there were no DO exceedances in 19 non-continuous DO observations from 2006-2008.**

**IL CAN-01: This segment was assessed as fully supporting aquatic life use in 2010 based on fish, macroinvertebrate, habitat, and water-chemistry data from 2006. Although there were two DO exceedances in three observations at this segment, the exceedances represented natural conditions due to low flow and did not impair aquatic life in this stream.**

**IL\_CCA-FF-A1:** This segment was assessed as not supporting aquatic life use in 2010 based on macroinvertebrate data from a 2007 Facility Related Stream Survey that investigated the impacts of the Fairfield Waste Water Treatment Plant on Johnson Creek. No exceedances of the DO standard were indicated in 4 observations.

**IL\_CHEA-11:** This segment was assessed as not supporting aquatic life use in 2010 based on fish and macroinvertebrate data from a 2007 Intensive Basin Survey. No exceedances of the DO standard were indicated in 3 observations.

**IL\_CJAE-01:** This segment was assessed as fully supporting aquatic life use in 2010 based on fish, habitat, and water-chemistry data from 2007. Although there was one DO exceedance in three observations at this segment, the evidence indicated that this exceedance represented a natural condition due to low flow and did not impair aquatic life in this stream.

**IL\_DT-38:** Dissolved oxygen was dissociated from this segment as a cause of impairment for the 2010 Integrated Report because there had been no exceedances from 2006 through 2009 (Illinois EPA: 0 exceedances in 18 observations; Fox River Study Group (FRSG): 0 exceedances in 45 observations). There also were no DO exceedances for the 2012 Integrated Report (Illinois EPA: 0/24; FRSG 0/19).

**IL\_DT-69:** Dissolved oxygen was dissociated from this segment as a cause of impairment for the 2010 Integrated Report because there had been no exceedances from 2006 through 2009 (Illinois EPA: no exceedances in 3 observations; Fox River Study Group (FRSG): 0/39). There also were no exceedances for the 2012 Integrated Report (FRSG 0/16).

**IL\_EO-01:** Dissolved oxygen was dissociated from this segment as a cause of impairment because there were no DO exceedances (no exceedances in 16 observations) from 2006-2008. For assessment cycle 2012, the segment remained on the 303(d) list due to a low fish-IBI score.

**IL\_EO-04:** This segment joins immediately upstream to segment IL\_EO-01, but lacks a monitoring station. The assessment from segment IL\_EO-01 is extrapolated to IL\_EO-04.

**IL\_H-01:** This segment is on the 2012 303(d) list, and dissolved oxygen is identified as a cause of impairment (see Appendix A-1, page 43, & A-2, page 7).

**IL\_IXI-01:** This segment was assessed as not supporting aquatic life use in 2012 based on fish, macroinvertebrate, habitat, and water-chemistry data from 2009. Dissolved-oxygen data from continuous monitoring showed no exceedances of the DO standard during one 7-day period in 2009 (0 exceedances in 336 observations).

In addition, there were no DO exceedances in 3 non-continuous DO observations in 2009.

**IL\_OIC-02:** This segment was assessed as fully supporting aquatic life use in 2010 based on fish, macroinvertebrate, habitat, and water-chemistry data from 2006 and 2007. Although there was one DO exceedance in two observations at this segment, the exceedance represented a natural condition due to low flow and did not impair aquatic life in this stream.

**IL\_P-24:** This segment was assessed as fully supporting aquatic life use for the 2010 Integrated Report based on biological (fish and macroinvertebrate) and chemical data from 2008 (dissolved oxygen: 0 exceedances in 3 observations). This segment was assessed as not attaining aquatic life use for the 2012 Integrated Report because of a train derailment/ethanol spill in 2009 that resulted in a fish kill that extended over 50 miles, which also included segments IL\_P-20, IL\_P-21, and IL\_P-06.

**IL\_RAI:** This segment (Harrisburg Reservoir) has been assessed as fully supporting aquatic life use since at least the 2006 assessment cycle. We have never identified DO as a cause of impairment for this lake.

**IL\_ROK:** Aquatic life use in this segment (Raccoon Lake) was assessed as fully supporting in the 2010 cycle based on updated information collected in 2007. Dissolved Oxygen exceedances occurred, but percentage of exceedances was <10% of observations (actual = 8.5%).

**IL\_STV:** This segment is on the 2012 303(d) list, and dissolved oxygen is identified as a cause of impairment (see Appendix A-1, page 46, & A-2, page 62).

## **Glossary**

BOW	- Bureau of Water in the IEPA
CFR	- Code of Federal Regulations
DO	- Dissolved Oxygen
IEPA	- Illinois Environmental Protection Agency
ILCS	- Illinois Compiled Statutes
Ill. Adm. Code	- Illinois Administrative Code
mg/L	- Milligrams per liter
MWRDGC	- Metropolitan Water Reclamation District of Greater Chicago
Public Hearing Record	- Period of time before, and after the public hearing for collection of written testimony including the hearing transcript.
Responsiveness Summary	- A document prepared by the IEPA that responds to relevant comments, questions and issues received during the public hearing record.
TKN	- Total Kjeldahl Nitrogen
TMDL	- Total Maximum Daily Load
TN	- Total Nitrogen
TP	- Total Phosphorus
303(d)	- Section of the federal Clean Water Act

## **Distribution of Responsiveness Summary**

A letter announcing the completion of this responsiveness summary and its availability on the Agency website was mailed or emailed to all who registered at the hearing, to all who sent in written comments, and to anyone who requested a copy. Additional copies of this responsiveness summary are available from Shirley Durr, IEPA, Watershed Section, e-mail [Shirley.Durr@illinois.gov](mailto:Shirley.Durr@illinois.gov), phone 217-782-3362.

## **Bureau of Water Staff Who Can Answer Your Questions**

Questions Concerning the 2012 Integrated Report.....	Amy Walkenbach.....	217-782-3362
Legal procedures.....	Deborah Williams.....	217-782-5544
Hearing of April 17, 2012.....	Dean Studer.....	217-782-3362

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

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