

BEFORE THE POLLUTION CONTROL BOARD
OF THE STATE OF ILLINOIS

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AUG 19 2011

STATE OF ILLINOIS
Pollution Control Board

IN THE MATTER OF:)
)
Triennial Review of Water Quality) R11-18
Standards for Boron, Fluoride) (Rulemaking-Water)
and Manganese: Amendments to 35)
Ill. Adm. Code 302. Subparts B, C, E)
And F and 303.312)

PC# 5

ORIGINAL

NOTICE

Clerk
Pollution Control Board
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Chicago, Illinois 60601
(Overnight Mail)

Kathleen Crowley, Hearing Officer
Pollution Control Board
James R. Thompson Center
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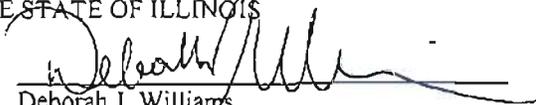
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(1st Class)

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Pollution Control Board the Post-Hearing Comments of the Illinois Environmental Protection Agency on behalf of the Illinois Environmental Protection Agency, a copy of which is herewith served upon you.

ENVIRONMENTAL PROTECTION AGENCY
OF THE STATE OF ILLINOIS

By: 
Deborah J. Williams
Assistant Counsel

DATE: August 18, 2011
Illinois Environmental
Protection Agency
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THIS FILING IS SUBMITTED ON RECYCLED PAPER

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STATE OF ILLINOIS
Pollution Control Board

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IN THE MATTER OF:)
)
TRIENNIAL REVIEW OF WATER QUALITY) R11-18
STANDARDS FOR BORON, FLUORIDE) (Rulemaking – Water)
AND MANGANESE: AMENDMENTS)
TO 35 ILL. ADM. CODE 302.Subparts B, C, E)
and F and 303.312)

ORIGINAL

**POST-HEARING COMMENTS OF THE ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY**

On December 2, 2010, the Illinois Environmental Protection Agency ("Illinois EPA" or "Agency") filed a rulemaking proposal with the Pollution Control Board ("Board") in the above-captioned proceeding containing proposed amendments to the Board's water quality standards regulations.

The Board found that the Illinois EPA's proposal met the procedural requirements of 35 Ill. Adm. Code 102.202 and accepted the proposal for hearing at its December 16, 2010 meeting.

Hearings were held on the Agency's proposal on June 21, 2011 in Springfield and on July 26, 2011 in Chicago. On May 23, 2011, the Agency submitted the pre-filed testimony of Brian Koch which was presented at the June 21st Springfield hearing. See, Exhibit 1. In addition to testimony of the Agency, the Board also received testimony in support of the Agency's proposal at the June hearing from James L. Machin, P.E. of TRC on behalf of Marathon Petroleum. See, Exhibit 7. Testimony of Leonard Hopkins on behalf of Southern Illinois Power Cooperative was pre-filed in advance of the July

26th hearing. See, Exhibit 8. The Board has also received public comments from the City of Effingham and Marathon Petroleum in support of the Agency's proposal and from City of Springfield, Office of Public Utilities, City Water Light and Power ("CWLP"). None of the testimony or comments received to date expressed opposition to the Agency's rulemaking proposal.

Prior to the June 21st hearing, the Board distributed questions for the Agency witnesses. See, Exhibit 4. While the Agency answered most of the Board's questions on the Record at the hearing, there were a handful of questions that required follow up or additional information. The Agency has attempted to fully address and respond to all the issues raised by the Board in these Post-Hearing Comments. In addition, at the July 26th hearing held in this matter, counsel for the Sierra Club raised a few additional questions which the Agency agreed to respond to by the Hearing Officer's August 19, 2011 deadline.

Citations to Water Quality Standards regulations in Other States

The Board's technical staff requested that the Illinois EPA provide citations to the other state regulations that Mr. Koch referred to in the testimony provided in response to questioning by CWLP. See, June 21, 2011 hearing transcript at 34. In that testimony, Mr. Koch was referring to chronic boron water quality criteria for the protection of aquatic life use in existence in other Midwest states. Mr. Koch testified that he found chronic standards in other states ranging from 0.95 mg/L to 5.0 mg/L. See, June 21, 2011 transcript at 34. Mr. Koch was referring to their boron standards derived using the Great Lakes Initiative (GLI) methodology. *Id.* See, 60 Fed. Reg. 15365 – 15425 (March 23, 1995).

The other Midwestern states Mr. Koch was referring to in his testimony were Ohio, Indiana and Michigan. Each of these states has adopted the Great Lakes Initiative (GLI) methodology, which is nearly identical to the 1985 Guidelines methodology. Ohio's regulation for development of statewide aquatic life use criteria is OAC 3745-1-36. These regulations can be found at the following internet link: <http://www.epa.state.oh.us/portals/35/rules/01-36.pdf> (last accessed August 10, 2011). The citation to Indiana's methodology regulations is 327 IAC 2-1.5. For Michigan, the relevant regulations are found in Part 4, Water Quality Standards, of Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994, PA 451, as amended. Rule 323.1057 of the Part 4 Rules provides the procedures for derivation of aquatic life, human health, and wildlife values using the Great Lakes Initiative (GLI) methodology. See, http://www.michigan.gov/deg/0,1607,7-135-3313_3686_3728--,00.html and http://www.michigan.gov/documents/deg/wb-swswas-rules-part4_254149_7.pdf (last accessed August 10, 2011).

These Great Lakes states (including Illinois) use procedures developed by U.S. EPA to derive water quality criteria which are then made publically available. Individual aquatic life use criteria derived in this manner are often not promulgated in State regulations. However, Ohio and Michigan provide compilations of their criteria in tabular form on their websites. The Table listing all of the Michigan criteria can be found at http://www.michigan.gov/deg/0,1607,7-135-3313_3686_3728-11383--,00.html (last accessed August 10, 2011). Michigan's chronic boron criteria for the Great Lakes basin aquatic life use is 5.0 mg/L. Ohio's table for the Lake Erie drainage basin is found at <http://www.epa.state.oh.us/portals/35/wqs/Erieval13.pdf> (last accessed August 10,

2011). At the time the Agency reviewed Ohio's chronic boron criterion for the Great Lakes basin it was 0.95 mg/L. Since that time, Ohio has updated that criterion to 3.9 mg/L.

U.S. EPA also provides a GLI Clearinghouse which compiles information on state standards which Mr. Koch relied on in developing his testimony. Indiana has provided information to the GLI Clearinghouse which lists older boron guidance number of 0.36 mg/L and a 1.6 mg/L number that is listed as "under development." In addition to these Midwestern States, the GLI Clearinghouse also lists a Great Lakes chronic boron aquatic life use criteria for New York of 10 mg/L with a regulatory basis for developing this criterion provided as NYCRR Part 702. The downloadable and searchable GLI Clearinghouse database is found at <http://www.epa.gov/gliclearinghouse/>.

Additional information on Cyanide Proposal

In Question 2(f) to the Agency, the Board asks: "Proposed Section's 302.208(e) and 302.504(a) list acute and chronic standards for cyanide as being the same for either weak acid dissociable, or WAD, or the available form. Analytically speaking, is there a difference in the results for WAD and available forms for an identical sample?" See, June 21, 2011 Hearing Transcript at 76-77. In response to this question, Sanjay Sofat testified that the Agency would provide a written answer to this particular question. *Id.* at 77. Dr. Rao of the Board's technical staff requested that the Agency's written response also include an answer to the remaining question contained in 2(f) "If so, should there be different compliance standards depending on the method used?" *Id.*

The intent of the Illinois EPA regarding the changes proposed to the cyanide water quality standard at 35 Ill. Adm. Code 302.208(e) and 302.504(a) in the instant

rulemaking is to clarify what laboratory tests are acceptable for comparison of water quality concentrations to the existing water quality standards. Because cyanide exists in many forms or species (free cyanide, cyanide complexed with various metals, cyanide incorporated in organic molecules) and only some of these forms (certainly free cyanide and also some of the more weakly bonded species) are toxic to aquatic life, matching a laboratory method to the standards is much more complex than for other substances. A good listing and explanation of the variety of cyanide species may be found in USEPA's Ambient Water Quality Criteria for Cyanide – 1984 EPA 440/5-84-028.

In R02-11, commenters suggested that a new U.S. EPA laboratory method, Method OIA-1677 Available Cyanide by Flow Injection, Ligand Exchange, and Amperometry (EPA-821-R-99-013) was suitable for the purpose of evaluating attainment of the cyanide water quality standards. Illinois EPA agreed with this suggestion, but also had found that weak acid dissociable cyanide (Standard Methods 4500-CN I) was a suitable method. However, the Board regulations give a STORET parameter code of 718 for cyanide, which indicated that weak acid dissociable cyanide was the form of cyanide that should be measured to evaluate the standards. Therefore, the existing regulations do not indicate that monitoring for available cyanide with Method OIA-1677 is also suitable. In eliminating the STORET numbers and specifying the two types of cyanide, the Agency had hoped to clarify the acceptable forms and methods.

While Illinois EPA thought it would be a simple change to add the cyanide laboratory method (acceptable forms) as instructions in the regulations, a larger issue arose with the question raised by the Board. As a result, the Agency researched the

national norms for cyanide monitoring where there were similar or identical standards found at U.S. EPA and other states. Illinois EPA found that U.S. EPA had recently categorized cyanide into two groups, total cyanide and available cyanide. Total cyanide is not of interest to those wanting to compare water concentrations to toxicity based water quality standards because total cyanide measures all species, those toxic to aquatic life well as cyanide strongly bound to other substances and not harmful. Available cyanide is a category created to address toxicity-based water quality standards. It contains two laboratory methods measuring what are thought to be the toxic species of cyanide. U.S. EPA updated the Code of Federal Regulations on July 1, 2010 and 40 CFR 136.3 now specifies which available cyanide laboratory methods are "U.S. EPA approved" and may be used in NPDES permit reporting. Method OIA-1677 is one of these methods. The other is Cyanide Amenable to Chlorination, Standard Methods 4500-CN-G. This method is very similar to the weak acid dissociable cyanide method.

Illinois EPA therefore modifies its proposed change to the cyanide standards at 302.208(e) and 302.504(a) to say Available Cyanide, USEPA Method OIA-1677 or Cyanide Amenable to Chlorination, Standard Methods 4500-CN-G. The proposed language change would be:

SUBPART B: GENERAL USE WATER QUALITY STANDARDS

Section 302.208 Numeric Standards for Chemical Constituents

e) Numeric Water Quality Standards for the Protection of Aquatic Organisms

Constituent	STORET Number	AS (µg/L)	CS (µg/L)
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Cyanide** 00718 22 5.2

where: $\mu\text{g/L}$ = micrograms per liter
 e^x = base of natural logarithms raised to the x- power
 $\ln(H)$ = natural logarithm of Hardness (STORET 00900)
 * = conversion factor multiplier for dissolved metals

** Standard to be evaluated using either of the following U.S. EPA approved methods: Available Cyanide, USEPA Method OIA-1677 or Cyanide Amenable to Chlorination, Standard Methods 4500-CN-G (40 C.F.R. 136.3).

SUBPART E: LAKE MICHIGAN BASIN WATER QUALITY STANDARDS

Section 302.504 Chemical Constituents

The following concentrations of chemical constituents must not be exceeded, except as provided in Sections 302.102 and 302.530:

Constituent	STORET Number	Unit	AS	CS	HHS
Cyanide** (Weak acid dissociable)	00718	$\mu\text{g/L}$	22	5.2	NA

Where:

NA = Not Applied

$\text{Exp}[x]$ = base of natural logarithms raised to the x-power

$\ln(H)$ = natural logarithm of Hardness (STORET 00900)

* = conversion factor multiplier for dissolved metals

** Standard to be evaluated using either of the following U.S. EPA approved methods: Available Cyanide, USEPA Method OIA-1677 or Cyanide Amenable to Chlorination, Standard Methods 4500-CN-G (40 C.F.R. 136.3).

This proposed change also addresses the question posed by the Sierra Club at the July hearing in this matter regarding “whether the agency is now looking at the most recent detection methods for cyanide.” See, July 26, 2011 Hearing Transcript at 14.

With regard to the Board’s question of whether there is a difference, analytically speaking, in the results for WAD and available forms for an identical sample, the question and answer will be adjusted to correspond to the updated Illinois proposal substituting cyanide amenable to chlorination for weak acid dissociable cyanide. The Agency has not been able to find a definitive answer to this question. Since the two laboratory methods are different, it seems plausible that the measured result in a given sample may be slightly different. Both methods strive to measure the components of cyanide in the sample that would be toxic to aquatic life. Given the wide assortment of cyanide species that may be found in any given sample and the differences in the laboratory methods, the two tests may not give the exact same result. However, by relying on these two U.S. EPA methods for measuring the available (rather than total) cyanide, Illinois EPA believes these are the best existing methods to get at the desired result of measuring the concentration of species of cyanide toxic to aquatic life that may best be compared to the existing water quality standards.

In response to the Board’s question of whether there should be different compliance standards for the two tests used, the Agency believes the answer to this question is no. The water quality standard was derived from laboratory experiments that exposed various aquatic organisms to doses of free cyanide. Potassium or sodium cyanide was dissolved in relatively pure water and then the organisms were exposed to solutions in a range of concentrations. The results of the tests were based on a nominal

test concentration calculated to be the threshold that caused toxic effects. Cyanide is not found in nature in the very pure and 'free' form used in the tests. Therefore, burden fell on the regulatory Agencies to find laboratory methods that measured the toxic species of cyanide as found in effluents and the environment. The laboratory methods must match the standard as nearly as possible, not the other way around.

U.S. EPA has approved two methods that attempt to measure the toxic species in cyanide as found in nature and industrial processes. U.S. EPA has also approved a method for total cyanide in 40 CFR 136.3, but that would be an inappropriate method for comparison with the water quality standard. The total cyanide method would measure both toxic and non-toxic forms of cyanide, thereby providing a result that is unsuited for comparison to the water quality standards because it could lead to violations of the water quality standards where no toxicity would exist. Likewise, free cyanide would not be a good method because it would tend to underestimate the toxic cyanide present and might lead to non-detection of violations where they exist.

At the July 26, 2011 hearing, the Sierra Club asked the Agency to respond to the following questions related to cyanide: "What is the typical percentage of WAD of total cyanide? ... What percentage typically is available cyanide of total cyanide, and what measure of cyanide is used in toxicity testing?" See, July 26, 2011 hearing transcript at 14. The previous paragraphs explain that free cyanide is generally used in toxicity testing. As to the proportion of total cyanide measured by the Weak Acid Dissociable, Cyanide Amenable to Chlorination or Available Cyanide methods, the answer depends on the nature of the mixture of cyanide species in the sample. If the cyanide solutions used in the aquatic life toxicity testing that gave rise to the cyanide water quality

standards were measured with each method, then cyanide amenable to chlorination or available cyanide would comprise nearly 100% of total cyanide because all the cyanide in the test solution started out as free cyanide; very available as a toxicant. At the other end of the spectrum, an effluent or ambient water sample would possibly result in analyses that cyanide amenable to chlorination or available cyanide would be a small fraction of total cyanide because the species present could likely have been predominantly strongly bound metalocyanide compounds that are not toxic and not measured by the Cyanide Amenable to Chlorination or Available Cyanide methods.

Concentrations of boron and fluoride in the Open Waters of Lake Michigan

The Board asked Illinois EPA whether the Agency conducts monitoring in the Open Waters of Lake Michigan. If possible, the Board also asked the Agency to provide information on the levels of boron and fluoride obtained from this monitoring. See, June 21, 2011 transcript at 83.

The Agency's Lake Michigan monitoring includes stations that are both within the breakwaters or harbors of Lake Michigan and within the Open Waters. The Agency reviewed boron and fluoride data from the Open Waters of Lake Michigan stations for the period of August 18, 1999 to October 16, 2008 and determined that of a total of 286 samples boron (total) averaged <0.025 mg/L with a maximum value of <0.05 mg/L. For fluoride (total) the average was <0.11 mg/L and the maximum was 0.22 mg/L of a total of 393 samples. As would be expected, these levels are very low and well below the existing Lake Michigan Basin standard that will continue to be applied as the Open Waters of Lake Michigan standard.

Derived Water Quality Criteria Publication Proposal

The Board's regulations at 35 Ill. Adm. Code Sections 302.595 and 302.669 require quarterly publication of derived water quality criteria listing in the Illinois Register. Since this requirement was established in R88-21(A) and R97-25, the Agency has complied with the publication requirement regardless of whether or not the Agency had derived any new or revised water quality criteria during that period.

In addition to the published list of criteria that has been developed for use in particular National Pollutant Discharge Elimination System ("NPDES") permits, a similar (and more user friendly) list of derived water quality criteria is available on the Agency's website. See, <http://www.epa.state.il.us/water/water-quality-standards/water-quality-criteria.html>). As indicated above with regard to boron criteria in other mid-western states, it is common for agencies to supply the regulated community and the general public with tables listing the various derived criteria as Illinois EPA does on its website. Therefore, the Agency is proposing to eliminate the Illinois Register publication requirement and rely on the website publication. The intent of this proposal is to save resources and costs for the State and to provide a superior method of public notice to the audience for the information. As Mr. Sofat testified at the June 21st hearing " as soon as we have a derived criterion available we can post that on the website and, therefore, it's immediately available to the public and the regular [sic] community..." See, June 21, 2011 Hearing transcript at 84.

At the June 21st hearing, the Board staff expressed some concerns with the Agency's proposal to replace Illinois Register publication of the Agency's derived water quality list with publication on the Agency's website. See, June 21, 2011 Hearing

Transcript at 83-87. In these comments, the Agency will provide additional justification for its proposal and some suggestions to address the Board's concerns.

In response to the questions from the Board staff at the June 21, 2011 hearing, the Agency indicated it would be willing to include the Agency's general internet address (www.epa.state.il.us) in the rulemaking proposal. *Id.* at 85. Including the entire link to the current placement of the derived water quality listing would be problematic in the event minor changes to the links occur, but the Agency's website is not expected to change. To provide the Board with additional information on the availability of this listing on the Agency's website, Illinois EPA has included "screen shots" of the website pages that lead to the Derived Water Quality Listing as seen by the user in Attachment A. The Agency would be willing to include additional clarifications to the website the Board feels would be appropriate and helpful.

The Board also asked "What terms or phrase will persons use to search the Agency's website for this list or could that also be part of the rule language...?" *Id.* at 85. The Agency conducted test searches to address this question. From the Illinois EPA's homepage the terms "derived water quality criteria", "derived criteria", "water quality criteria" and "criteria" all take you directly to the appropriate website. Even a search of "water quality" brings up the listing as the second choice with the first choice being one of the pages in Attachment A. Even a general Google search on the internet of the term "derived water quality criteria" or "derived criteria" leads directly to the Agency's listing.

Dr. Rao of the Board staff also asked "If the rule is adopted as proposed, does the Agency intend to give some sort of public notice when the Agency's website is

updated?" Id. at 86. This question reveals a major weakness in the current method of publication. Although the Illinois Register provides presumed adequate public notice throughout the State; in reality, there is no way for a reader to know in which issue of the Illinois Register the Agency's quarterly list will be published. Although the Illinois Register is considered an archive of the prior lists, there is not a practical way to search the prior lists without viewing the Table of Contents of every issue. To address this problem, the Agency's manner of listing voluntarily maintains a running tally of the prior Illinois Register publications and also provides archive information by tracking dates the criteria were originally derived and when they were later updated or reviewed. A recent derived water quality listing with the Agency's "archive" is included for reference as "Attachment B". The Agency would be willing to undertake potential action to address concerns related to these issues such as providing a public notice or press release on its website when the list is updated or providing an archive of prior derived water quality lists on the current derived water quality list page.

In addition, the Board asked whether the Agency would be willing to consider providing the Board information to enable the Board to publish the listing in its Environmental Register publication. Id. at 87. Certainly as an alternative to Illinois Register publication, the Agency would be able to develop a system to provide the Board with an email notification regarding the chemicals on the derived water quality listing that have been added, updated or used in NPDES permitting as these changes occur.

The Agency reviewed the quarterly publications from 2008 through the second quarter of 2011 and concluded that in many of the quarters the list had to be published

even though it had not been updated. Of the 14 quarters in this period, only six quarters contained any changes or updates. In 8 of these quarters, the Agency was legally required to publish the listing even though no changes had been made. In the most recent 10 quarters, only a single chemical was updated and only 3 of the last 10 listings contained any updates. For 7 of the last 10 publications, there were no updates.

In addition to the issue of maintaining an archive, the Hearing Officer explained that the derived water quality procedures themselves raised concerns for some of unlawful delegation of rulemaking authority and that the Illinois Register publication was helpful in addressing those concerns. See, June 21, 2011 Hearing Transcript at 88. In the event these concerns cannot be overcome, they do not lead to the conclusion that the Agency must submit a quarterly publication to the Secretary of State regardless of whether any criteria have been derived during the previous quarter. The frequency of quarterly publication is no longer justified based on the frequency of changes made.

However, the Agency believes the concerns expressed by the Hearing Officer can be overcome by an analysis of the background of the publication requirement from R88-21. In the Board's First Notice Opinion in R88-21, the Board indicated that "The Board has modified the Agency's proposal for listing of derived criteria to require updating at least quarterly, and also to require publication of such lists in the Illinois Register. The purpose of this requirement is enhancement of public access to and awareness of such criteria." Proposed Amendments to Title 35, Subtitle C (Toxics Control) R88-21, First Notice Opinion (August 31, 1989) slip op. at 33. In 1989, the Board and the Agency could never have envisioned the currently available methods of making information available immediately and without cost to every citizen via the

Agency's website. Subsequently in the same proceeding, the Board also needed to respond to comments that R88-21(A) resulted in an inappropriate delegation of rulemaking authority to the Illinois EPA. In its Second Notice Opinion the Board identified two components of the rule that made the regulations legally defensible: "the Board had required the Agency to notify the public by publication of the notice in the Illinois Register, and also provided opportunity to challenge the validity of the criteria in any proceeding in which they are applied to that person." Proposed Amendments to Title 35, Subtitle C (Toxics Control), R88-21(A), Second Notice Opinion and Order, (December 6, 1989) Slip op. at 13. The special appeal rights for derived criteria that allow a criterion to be challenged for the first time when it is applied to an individual in their permit and the requirement that such appeals must go to the Board rather than directly to the courts is the key to the validity of these unique provisions. Review of the record in R88-21 and R88-21(A) indicates that the importance of the Illinois Register publication is in its public notice value, not in its ability to fulfill any requirements under the Administrative Procedure Act. The Agency feels it has demonstrated that use of its website is more effective at accomplishing this public notice purpose today than the Illinois Register.

As Mr. Koch testified, "In the past whenever someone has contacted me in regards to a criterion, they've always done it by finding it on the website itself. I don't believe anyone has ever said that they've seen something on the Illinois Register and they wanted to contact me with regards to it." See, June 21, 2011 Hearing Transcript at 86. The Agency is confident that the regulated community is comfortable and familiar with the publication of derived criteria in a tabular method on the State environmental

agency's website, as is done now by Illinois EPA, U.S. EPA and many other States. In the event this method of publication is not sufficient to address the Board's concerns, the Agency is willing to consider any available options to address the Board's concerns while still lessening the burden on the Agency to submit quarterly updates to the Secretary of State that are not being reviewed or relied upon. The only option the Agency would be opposed to would be to place a requirement to publish both places (Illinois Register and website) in the Board's regulations as this would be increased administrative burden on the Agency.

Cost of manganese removal technology

At the July 26th hearing, the Sierra Club asked for information on the costs of manganese removal. See, July 26, 2011 Hearing Transcript at 13. Public and Food Processing Water Supply standards are intended to represent the maximum allowable concentration of a substance at the point of surface water intake that will allow for attainment of the finished drinking water MCL for that substance following conventional treatment. Conventional treatment is defined in 35 Ill. Adm. Code 302.303 as consisting of coagulation, sedimentation, filtration, storage and chlorination, or other equivalent treatment processes. Conventional treatment, at a minimum, is conducted by all public water providers in Illinois. Because the Public and Food Processing Water Supply standard and finished drinking water MCL are both set at 0.15 mg/L, the existing regulations do not account for any removal of manganese from surface waters that may occur during conventional treatment. The basis for modifying the current Public and Food Processing Water Supply standard for manganese is that conventional treatment

is known to effectively remove manganese, as summarized by the Agency in Attachment 1 to the Statement of Reasons (see pages 9-12 and Exhibit E).

Exhibit E of Attachment 1 to the Statement of Reasons indicates that >90% of manganese is removed from surface waters at conventional Illinois utilities located on impaired Public and Food Processing Water Supply waters with manganese in excess of 0.15 mg/L. A literature review was also conducted by the Agency, whereupon it was determined that the conventional process of chemical oxidation followed by sedimentation and filtration is estimated to remove as much as 90-100% of manganese from waters withdrawn for public water supply use (Hamann et al. 1990, Casale et al. 2002). Treatment consisting of chemical oxidation, sedimentation, and filtration is commonplace in Illinois. This degree of treatment is economically reasonable and technically feasible for any utility that requires treatment to reduce common raw water constituents, including naturally elevated concentrations of manganese in their water supply. The Agency does not believe any utilities would incur additional treatment costs as a result of this rulemaking.

Manganese standards in Lake Michigan

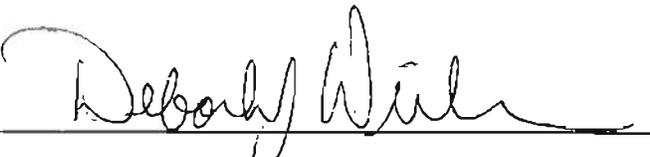
At the July hearing, counsel for the Sierra Club also asked about the manganese Open Waters of Lake Michigan standards: “We have a question as to why there's -- how we would justify the difference in handling of manganese versus boron and fluoride vis-a-vis the Lake Michigan standards and the drinking water standards.” See, July 26 Hearing Transcript at 13-14. Mr. Ettinger's question asks the Agency to justify the difference in the handling of Open Waters of Lake Michigan standards for boron and fluoride versus manganese, specifically in regards to the retaining of the existing 0.15

mg/L manganese standard despite the increase of the Public and Food Processing Water Supply standard (in inland waters) from 0.15 mg/L to 1.0 mg/L. As stated in testimony by Mr. Koch and further explained in Attachment 1 to the Statement of Reasons, the Agency is not proposing any changes to the current boron, fluoride, and manganese standards that are applicable in the Open Waters of Lake Michigan. See, June 21, 2011 transcript at 82. Because there are no specific Open Waters of Lake Michigan standards for boron and fluoride, the Lake Michigan Basin standards for these substances are currently applicable in the Open Waters. The listing of 1.0 mg/L boron and 1.4 mg/L fluoride as standards in the Open Waters of Lake Michigan is being included because the aquatic life-based Lake Michigan Basin standards for these substances are being increased. Relocating the existing Lake Michigan Basin standards of 1.0 mg/L boron and 1.4 mg/L fluoride into the Open Waters of Lake Michigan standards will provide an additional measure of protection against increased loadings of these substances. Such a change was not necessary for manganese due to the presence of an existing Open Waters of Lake Michigan standard for manganese that is not being changed. It was the Agency's intent to maintain the highest level of historical protection for the Open Waters of Lake Michigan, not to directly mimic or mirror the Public and Food Processing Water Supply standards.

Illinois EPA appreciates the Board's time and efforts in this rulemaking proceeding. The Agency hopes these comments address any outstanding questions or concerns with regard to the instant rulemaking proposal. Wherefore, for the reasons and based on the evidence outlined in these Post-Hearing Comments, the Illinois EPA

asks the Board to proceed to First Notice on R11-18 with the Agency's proposal as amended in these comments with regard to the acceptable cyanide methods.

Respectfully submitted,

By: 

Deborah J. Williams
Assistant Counsel
Division of Legal Counsel

Date: August 18, 2011

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ATTACHMENT A

Illinois Environmental Protection Agency

Pat Quinn, Governor

Illinois Environmental Protection Agency

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"A partnership in which citizens, business and government work together in a spirit of cooperation to make sure we have clean air, land and water for future generations is also the best way to grow our economy and ensure a good quality of life for all Illinoisans."

Lisa Bonnett
 Intern Director, IEPA

News Releases

Highlights

08/07/11 - Governor Quinn Signs Legislation to Advance Wind Energy in Illinois

New Laws Give State Additional Tools to Grow Green Economy

CHICAGO – August 7, 2011. Governor Pat Quinn today announced the signing of two bills into law that advance clean wind energy in Illinois. The new laws create a council to study offshore wind energy projects in Lake Michigan and clear the way for more wind energy projects throughout Illinois.

IEPA ePayments Portal National Pollution Discharge Elimination System (NPDES) Permit fees may now be paid electronically.

07/21/11 - Illinois EPA Awards Green Infrastructure Grants for Stormwater Management Program

A fact sheet containing information on disposal of flood debris and flood waste is now available, in the wake of this spring's major floods.

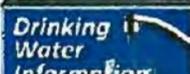
Features























ATTACHMENT A

Illinois EPA - Bureau of Water



Illinois Environmental Protection Agency

Pat Quinn, Governor



Agency Links

- [Air](#)
- [Land](#)
- [Water](#)
- [Offices & Projects >](#)
- [About the IEPA >](#)
- [Site Fact Sheets](#)
- [Calendar of Events](#)
- [Statutes & Rules](#)
- [Forms & Publications >](#)
- [Vehicle Testing](#)
- [Internships >](#)
- [Kids & Education](#)
- [USEPA's TRI](#)
- [FOIA Requests](#)
- [Right-to-Know](#)
- [Recycling](#)
- [Contact IEPA](#)
- [Quick Answer Directory](#)
- Info Centers**
- [Agriculture](#)
- [Citizens](#)
- [Local Government](#)
- [Program Fees](#)
- [Small Business](#)
- [State Links](#)
- [Government](#)
- [Business](#)
- [Employment](#)
- [Education](#)
- [Health & Safety](#)
- [Family & Home](#)
- [Travel & Recreation](#)
- [About Illinois](#)
- [Illinois.gov](#)
- Search**

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[Notice of Mandatorization](#)

Welcome to the Bureau of Water

The mission of the Bureau of Water is to:

- Ensure that Illinois' rivers, streams and lakes will support all uses for which they are designated including protection of aquatic life, recreation and drinking water supplies,
- Ensure that every Illinois Public Water system will provide water that is consistently safe to drink,
- Protect Illinois' groundwater resource for designated drinking water and other beneficial uses

Recent News

[Assessment of Total Chromium in Illinois Community Water Supplies](#)

In response to the Environmental Working Group's recent report on the presence of chromium-6 in drinking water, U.S. EPA will work with state and local officials to better determine the prevalence of this contaminant. Illinois EPA believes that it is very important that we start with a sound understanding and assessment of what we know relative to total chromium in Illinois ground and surface water (including Lake Michigan) used as a source of public water supply. The Illinois EPA has prepared a fact sheet entitled "[Assessment of Total Chromium in Illinois Community Water Supplies](#)" which references data for drinking water quality for total chromium, as well as source water quality for total chromium from surface water and groundwater sources.

[State Revolving Fund Recommendations Released](#)

The Illinois EPA has released [draft recommendations](#) for the development of new guidelines, procedures and regulations for

Current Features

[Private Well Sampling Results in Village of McCollum Lake](#)

An Illinois EPA analysis of private well sample results in the Village of McCollum Lake and related hydrogeological evaluation is now available.

[Emergency Preparedness](#)

When an *emergency strikes*, inadequate preparation can cause a small problem to escalate quickly into a disaster. Having the proper information in easily accessible locations, being able to obtain the resources needed to address the emergency, and communicating among individuals within the public water supply service area are important keys to address any emergency.



Water Menu

- [Water Pollution Control](#)
- [Public Water Supply](#)
- [Financial Assistance](#)
- [About the Bureau](#)
- [Forms](#)
- [Publications](#)
- [Rules & Regulations](#)
- [Partners for Conservation](#)
- [Water Resource Assessments](#)
- [Total Maximum Daily Load](#)
- [Storm Water Requirements](#)
- [Green Infrastructure Plan](#)
- [Nutrient Issues](#)

ATTACHMENT A

Bureau of Water-Water Pollution Control



Illinois Environmental Protection Agency
Pat Quinn, Governor

Agency Links

- Air
- Land
- Water
- Offices & Projects »
- About the IEPA »
- Site Fact Sheets
- Calendar of Events
- Statutes & Rules
- Forms & Publications »
- Vehicle Testing
- Internships »
- Kids & Education
- USEPA's TRI
- FOIA Requests
- Right-to-Know
- Recycling
- Contact IEPA
- Quick Answer Directory
- Info Centers**
- Agriculture
- Citizens
- Local Government
- Program Fees
- Small Business
- State Links
- Government
- Business
- Employment
- Education
- Health & Safety
- Family & Home
- Travel & Recreation
- About Illinois
- Illinois.gov
- Search

Bureau of Water

Water Pollution Control

The Bureau of Water conducts the following programs in striving to protect and enhance the quality of the State's surface waters.



- Permit Programs
- Compliance/Enforcement
- Surface Water Quality Monitoring & Assessment
- Watershed Management
- Operator Certification
- Field Operations
- Water Quality Standards
- Ash Impoundment Strategy

Water Menu

- Water Pollution Control
- Public Water Supply
- Financial Assistance
- About the Bureau
- Forms
- Publications
- Rules & Regulations
- Partners for Conservation
- Water Resource Assessments
- Total Maximum Daily Load
- Storm Water Requirements
- Green Infrastructure Plan
- Nutrient Issues

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ATTACHMENT A

Water Quality standards

The screenshot shows the Illinois Environmental Protection Agency website. At the top, there is a banner with the agency's name and logo, and the text "Pat Quinn, Governor". Below the banner is a navigation menu with "Agency Links" and "Water Pollution Control" highlighted. The main content area is titled "Water Quality Standards" and contains a paragraph about the Illinois Pollution Control Board, a list of links (Derived Water Quality Criteria, Forms, Agency Rules and Regulations, Illinois Pollution Control Board - Title 35 of the Illinois Administrative Code), and a photograph of a stream. To the right of the main content is a "Water Menu" with a list of links. On the left side of the page, there is a vertical sidebar with a search bar and various links categorized by topic (Air, Land, Water, etc.). At the bottom of the page, there are logos for Illinois EPA, the Governor's Office, and the Department of Natural Resources.

Agency Links

- Air
- Land
- Water
- Offices & Programs
- About the EPA
- Site Fact Sheets
- Calendar of Events
- Statutes & Rules
- Forms & Publications
- Vehicle Testing
- Internships
- Jobs & Education
- ISOP's TRI
- EPA Response
- Right-to-Know
- Recycling
- Contact EPA
- Quick Answer
- Directory
- Info Centers
- Agriculture
- Citizens
- Local Government
- Program Plans
- Small Business
- State Links
- Government
- Business
- Employment
- Education
- Health & Safety
- Family & Home
- Travel & Recreation
- About Illinois
- Illinois.gov

Water Pollution Control

Water Quality Standards

The Illinois Pollution Control Board, a sister Agency to the Illinois EPA, promulgates water quality standards in Illinois. Two Sections of 35 Illinois Administrative Code (IAC), Section 302. Water Quality Standards and Section 303, Water Use Designations and Site Specific Water Quality Standards contain the standards applicable to lakes and streams. Procedures to be followed in using water quality standards to set NPDES permit limits are found in Section 309. Other implementation procedures are found in Agency Rules.

- Derived Water Quality Criteria
- Forms
- Agency Rules and Regulations
- Illinois Pollution Control Board - Title 35 of the Illinois Administrative Code



Water Menu

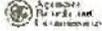
- Water Pollution Control
- Public Water Supply
- Financial Assistance
- About the Bureau
- Forms
- Publications
- Rules & Regulations
- Permits for Conservation
- Water Resource Assessments
- Total Maximum Daily Load
- Storm Water Requirements
- Green Infrastructure Plan
- Nutrient Issues

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Secretary's Office
Attn: Denise Underhill



ATTACHMENT A

Derived Water Quality Criteria



Illinois Environmental Protection Agency

Pat Quinn, Governor

Water Quality Standards

Derived Water Quality Criteria

Narrative standards exist in Illinois Pollution Control Board (IPCB) regulations at 35 IAC. 102.210 and in Subpart F for General Use Waters and at 302.540 and elsewhere in Subpart E for Lake Michigan Basin Waters. Lake Michigan Basin waters include all tributaries of Lake Michigan, harbors and open waters of the Illinois portion of the lake. General Use Waters cover all other waters of the state except those waters designated as Secondary Contact and Indigenous Aquatic Life Use Waters, which consist of several canals and rivers in the Chicago area. A narrative standard also exists for Secondary Contact Waters but derived criteria are not yet included in the list of criteria at this site.

The narrative standards allow the Illinois EPA to derive numeric water quality criteria values for any substance that does not already have a numeric standard in the IPCB regulations. These criteria serve to protect aquatic life, human health or wildlife, although wildlife based derived criteria have not yet been derived. The following list provides the criteria derived to date. The reader should pay particular attention to the "Notes for Table Headings" found below the list, because many criteria are provided with important comments. For example, some criteria have been derived from a less than ideal data set yet we include these values because we find it desirable to have some numeric indication of toxicity. These values may not be suitable for use in a regulatory setting, however. Criteria that have been used to limit discharges of a substance in an NPDES permit are published quarterly in the *Illinois Register*. All values on this list are subject to recalculation at any time. Illinois EPA will endeavor to keep this list updated. References to criteria in this list should include the date contained in the list heading.

[Derived Water Quality Criteria List - Updated 2/05/2009 \(PDF, 75KB\)](#)

[Problems viewing Acrobat PDF files?](#)

Agency Links

- Air
- Land
- Water
- Offices & Projects
- About the IEPA
- Site Race Sheets
- Calendar of Events
- Statutes & Rules
- Forms & Publications
- Vehicle Testing
- Internships
- Kids & Education
- USEPA's TRI
- POL Requests
- Right-to-Know
- Recycling
- Contact IEPA
- Quick Answer Directory
- Info Centers
- Agriculture
- Children
- Local Government
- Program Fees
- Small Business
- State Links
- Government
- Business
- Employment
- Education
- Health & Safety
- Family & Home
- Travel & Recreation
- About Illinois
- Illinois.gov

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U.S. Air Quality State of Action Decisions



Water Menu

- Water Pollution Control
- Public Water Supply
- Financial Assistance
- About the Bureau
- Forms
- Publications
- Rules & Regulations
- Partners for Conservation
- Water Assurance Assessments
- Total Maximum Daily Load
- Storm Water Requirements
- Green Infrastructure Plan
- Nutrient Issues

ATTACHMENT A

http://www.epa.state.il.us/water/water-quality-standards/water-quality-criteri...

www.epa.state.il.us/water/water-quality-standards/water-quality-criteri...

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Substance	CAS#	Unit	Aquatic Life Criteria		Unit	Base Derived (µg/L)	Human Health Criteria		Unit	Data Derived (µg/L)	RPDES Permit
			Acute	Chronic			MTG	POC			
benzophenone	43-82-9	GU	120	42	µg/L	600200	-	-	-	-	Y
benzophenone	556-55-8	GU	(150)	(15)	µg/L	500200	-	-	-	-	Y
benzophenone	34350-87-1	GU	150	15	µg/L	500200	-	-	µg/L	500200	Y
benzophenone	67-64-1	GU	1.5	0.15	µg/L	500200	-	-	-	-	Y
benzophenone	75-65-2	GU	300	30	µg/L	501120	-	-	mg/L	501120	Y
benzophenone	107-07-3	GU	2	0.23	µg/L	500200	-	-	mg/L	501120	Y
benzophenone 2-propanone	79-06-1	GU	25	2.4	µg/L	500215	-	-	-	-	Y
benzophenone	107-13-1	GU	518	73	µg/L	500200	-	0.21	µg/L	500200	Y
benzophenone	15573-00-8	GU	(160)	(100)	µg/L	500200	-	2.8	µg/L	500200	Y
benzophenone	506-00-3	GU	(-)	-	µg/L	500200	-	0.600	µg/L	500200	Y
benzophenone 3-phenylphenyl	90-61-7	GU	(4.5)	(0.4)	µg/L	500200	-	-	-	-	Y
benzophenone 3-phenylphenyl	13373-76-2	GU	68	7.6	µg/L	520517	-	-	-	-	Y
benzophenone 3-phenylphenyl	10606-51-0	GU	110	14	µg/L	500200	-	-	-	-	Y
benzophenone 3-phenylphenyl	145-31-4	GU	(20)	(10)	µg/L	501312	-	-	-	-	Y
benzophenone	63-63-3	GU	120	11	µg/L	500200	-	-	-	-	Y
benzophenone	170-12-7	GU	0.50	0.53	µg/L	500200	-	33	µg/L	500200	Y
benzophenone	7445-34-0	GU	1,000	120	µg/L	600200	-	1,200 (D)	µg/L	600200	Y
benzophenone	7445-34-0	GU	1,000	120	µg/L	600200	-	1,200 (D)	µg/L	600200	Y
benzophenone	1317-64-0	GU	(-0.02)	-	µg/L	500200	-	-	-	-	Y
benzophenone	101224-9	GU	42	0.0	µg/L	500200	-	-	-	-	Y
benzophenone	100-81-7	GU	180	14	µg/L	220618	-	-	-	-	Y
benzophenone (2-phenyl-1-phenylethyl)	7195-13-0	GU	(1.1)	(0.00)	µg/L	500200	-	-	-	-	Y
benzophenone	12-37-5	GU	-	-	-	-	-	0.19	µg/L	500200	Y
benzophenone	56-55-3	GU	-	-	-	-	-	0.18	µg/L	500200	Y
benzophenone	50-32-8	GU	-	-	-	-	-	0.016	µg/L	500200	Y
benzophenone	274-99-2	GU	-	-	-	-	-	0.16	µg/L	500200	Y
benzophenone (2-phenyl-1-phenylethyl)	207-06-6	GU	-	-	-	-	-	1.6	µg/L	500200	Y
benzophenone	65-85-0	GU	(18)	(1.4)	µg/L	501100	-	-	-	-	Y
benzophenone	106-91-6	GU	1000	80	µg/L	500215	-	-	-	-	Y
benzophenone	95-67-1	GU	-	0.4	µg/L	500200	-	-	-	-	Y
benzophenone	118-84-6	GU	31	2.5	µg/L	500200	-	0.0042	µg/L	500200	Y
benzophenone	112-85-7	GU	-	-	-	-	-	13	µg/L	500200	Y
benzophenone	112-85-7	GU	-	-	-	-	-	13	µg/L	500200	Y
benzophenone	31-55-8	GU	-	-	-	-	-	(1.1)	µg/L	500200	Y
benzophenone	52038-32-9	GU	-	-	-	-	-	41	µg/L	500200	Y

ATTACHMENT B

ILLINOIS REGISTER

ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF PUBLIC INFORMATION

LISTING OF DERIVED WATER QUALITY CRITERIA

Pursuant to 35 Ill. Adm. Code 302.595 and 302.669, the following water quality criteria have been derived as listed. This listing updates revisions to existing criteria for the period April 1, 2011 through June 30, 2011.

A cumulative listing of criteria as of July 31, 1993 was published in 17 Ill. Reg. 18904, October 29, 1993. Listings of waterbodies for which water quality criteria were used during subsequent three month periods were published in 18 Ill. Reg. 318, January 7, 1994; 18 Ill. Reg. 4457, March 18, 1994; 18 Ill. Reg. 8734, June 10, 1994; 18 Ill. Reg. 14166, September 9, 1994; 18 Ill. Reg. 17770, December 9, 1994; 19 Ill. Reg. 3563, March 17, 1995; 19 Ill. Reg. 7270, May 26, 1995; 19 Ill. Reg. 12527, September 1, 1995; 20 Ill. Reg. 649, January 5, 1996; 20 Ill. Reg. 4829, March 22, 1996; 20 Ill. Reg. 7549, May 30, 1996; 20 Ill. Reg. 12278, September 6, 1996; 20 Ill. Reg. 15619, December 6, 1996; 21 Ill. Reg. 3761, March 21, 1997; 21 Ill. Reg. 7554, June 13, 1997; 21 Ill. Reg. 12695, September 12, 1997; 21 Ill. Reg. 16193, December 12, 1997; 22 Ill. Reg. 5131, March 13, 1998; 22 Ill. Reg. 10689, June 12, 1998; 22 Ill. Reg. 16376, September 11, 1998; 22 Ill. Reg. 22423, December 28, 1998; 23 Ill. Reg. 3102, March 12, 1999; 23 Ill. Reg. 6979, June 11, 1999; 23 Ill. Reg. 11774, September 24, 1999; 23 Ill. Reg. 14772, December 27, 1999; 24 Ill. Reg. 4251, March 17, 2000; 24 Ill. Reg. 8146, June 9, 2000; 24 Ill. Reg. 14428, September 29, 2000; 25 Ill. Reg. 270, January 5, 2001; 25 Ill. Reg. 4049, March 16, 2001; 25 Ill. Reg. 7367, June 8, 2001; 25 Ill. Reg. 12186, September 21, 2001; 25 Ill. Reg. 16175, December 14, 2001; 26 Ill. Reg. 4974, March 29, 2002; 26 Ill. Reg. 13370, September 6, 2002; 27 Ill. Reg. 1736, January 31, 2003; 27 Ill. Reg. 7350, April 18, 2003; 27 Ill. Reg. 17128, November 7, 2003; 28 Ill. Reg. 5038, March 19, 2004; 28 Ill. Reg. 8363, June 11, 2004; 28 Ill. Reg. 12943, September 17, 2004; 29 Ill. Reg. 1449, January 21, 2005; 29 Ill. Reg. 7239, May 20, 2005; 29 Ill. Reg. 12672, August 12, 2005; 29 Ill. Reg. 18963, November 18, 2005; 30 Ill. Reg. 5458, March 17, 2006; 30 Ill. Reg. 9195, May 12, 2006 and 30 Ill. Reg. 14377, September 1, 2006; 31 Ill. Reg. 4941, March 23, 2007; 31 Ill. Reg. 7477, May 25, 2007; 31 Ill. Reg. 13233, September 14, 2007; 31 Ill. Reg. 15875, November 26, 2007; 32 Ill. Reg. 4271, March 21, 2008; 32 Ill. Reg. 8454, June 6, 2008; 32 Ill. Reg. 13595, August 15, 2008; 32 Ill. Reg. 19961, December 19, 2008; 33 Ill. Reg. 3683, February 27, 2009; 33 Ill. Reg. 9191, June 26, 2009; 33 Ill. Reg. 13526, September 25, 2009; 33 Ill. Reg. 17178, December 18, 2009; 34 Ill. Reg. 6546, May 7, 2010; 34 Ill. Reg. 7811, June 4, 2010; 34 Ill. Reg. 13565, September 17, 2010; 34 Ill. Reg. 17490, November 12, 2010; 35 Ill. Reg. 3618, February 25, 2011 and 35 Ill. Reg. 8574, June 3, 2011.

Aquatic life and human health criteria for General Use (35 Ill. Adm. Code 303.201) and Lake Michigan Basin (35 Ill. Adm. Code 303.443) waters are listed below. General Use human health criteria are derived for protection of primary contact waters, criteria derived for waters not supportive of primary contact recreation are specified, where applicable. General Use and Lake Michigan Basin waters used as Public and Food Processing Water Supplies (35 Ill. Adm. Code 303.202) are subject to more stringent human health criteria as specified in their respective

ATTACHMENT B

ILLINOIS REGISTER

ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF PUBLIC INFORMATION

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ATTACHMENT B

ILLINOIS REGISTER

ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF PUBLIC INFORMATION

LISTING OF DERIVED WATER QUALITY CRITERIA

derivation procedures (35 Ill. Adm. Code 302.648 and 302.657 and 35 Ill. Adm. Code 302.585 and 302.590, respectively). Newly derived criteria or criteria used in NPDES permitting this quarter are highlighted in bold print.

General Use Criteria

Chemical: Acenaphthene	CAS #83-32-9
Acute criterion: 120 ug/l	Chronic criterion: 62 ug/l
Date criteria derived: November 14, 1991; revised February 1999	
Applicable waterbodies: Not used during this period.	
Chemical: Acenaphthylene	CAS # 208-96-8
Acute criterion: 190 ug/L	Chronic criterion: 15 ug/L
Date criteria derived: March 1, 1998	
Applicable waterbodies: Not used during this period.	
Chemical: Acetochlor	CAS #34256-82-1
Acute criterion: 150 ug/l	Chronic criterion: 12 ug/l
Date criteria derived: September 26, 2007	
Applicable waterbodies: Not used during this period.	
Chemical: Acetone	CAS #67-64-1
Acute criterion: 1,500 mg/l	Chronic criterion: 120 mg/l
Date criteria derived: May 25, 1993	
Applicable waterbodies: Not used during this period.	
Chemical: Acetonitrile	CAS #75-05-8
Acute criterion: 380 mg/l	Chronic criterion: 30 mg/l
Human health criterion (HTC): non-primary contact, 20 mg/L	
Date criteria derived: December 7, 1993; revised January 23, 2007	
Applicable waterbodies: Not used during this period.	
Chemical: Acrolein	CAS #107-02-8
Acute criterion: 2.7 µg/l	Chronic criterion: 0.22 µg/l
Date criteria calculated: February 1999; reviewed January 2008	
Applicable waterbodies: Not used during this period.	
Chemical: Acrylonitrile	CAS #107-13-4
Acute criterion: 910 ug/l	Chronic criterion: 73 ug/l
Human health criterion (HNC): 0.21 ug/l	
Date criteria derived: November 13, 1991	
Applicable waterbodies: Not used during this period.	

ATTACHMENT B

ILLINOIS REGISTER

ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF PUBLIC INFORMATION

LISTING OF DERIVED WATER QUALITY CRITERIA

Chemical: Aniline	CAS #62-53-3
Acute criterion: 120 µg/l	Chronic criterion: 15 µg/l
Date criteria calculated: July 24, 1998; reviewed April 15, 2009	
Applicable waterbodies: Not used during this period.	
Chemical: Anthracene	CAS #120-12-7
Acute criterion: 0.66 ug/L	Chronic Criterion: 0.53 ug/L
Human health criterion (HTC): 35 mg/l	
Date criteria derived: August 18, 1993, revised May 30, 2007	
Applicable waterbodies: Not used during this period.	
Chemical: Antimony	CAS #7440-36-0
Acute criterion: 1,200 ug/L	Chronic Criterion: 320 ug/L
Human health criterion (HTC): 12,000 ug/l	
Non-primary contact: 1,200 ug/l	
Public and food processing water supply: 6 ug/l	
Date criteria derived: September 29, 2008	
Applicable waterbodies: Not used during this period.	
Chemical: Atrazine	CAS #1912-24-9
Acute criterion: 82 ug/l	Chronic criterion: 9.0 ug/L
Date criteria derived: May 2, 2005	
Applicable waterbodies: Not used during this period.	
Chemical: Benzo(a)anthracene	CAS #56-55-3
Human health criterion (HNC): 0.16 ug/l	
Date criteria derived: August 10, 1993; revised February 1999	
Applicable waterbodies: Not used during this period.	
Chemical: Benzo(a)pyrene	CAS #50-32-8
Human health criterion (HNC): 0.016 ug/l	
Date criteria derived: August 10, 1993; revised February 1999	
Applicable waterbodies: Not used during this period.	
Chemical: Benzo(b)fluoranthene	CAS # 205-99-2
Human health criterion (HNC): 0.16 ug/l	
Date criteria derived: August 10, 1993; revised February 1999	
Applicable waterbodies: Not used during this period.	
Chemical: Benzo(k)fluoranthene	CAS #207-08-9
Human health criterion (HNC): 1.6 ug/l	
Date criteria derived: August 10, 1993; revised February 1999	
Applicable waterbodies: Not used during this period.	
Chemical: Bis(2-ethylhexyl)phthalate	CAS #117-81-7
Human health criterion (HNC): 1.9 ug/l	

ATTACHMENT B

ILLINOIS REGISTER

ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF PUBLIC INFORMATION

LISTING OF DERIVED WATER QUALITY CRITERIA

Date criteria derived: February, 1999; reviewed: June 2009 Applicable waterbodies: Not used during this period.	
Chemical: Bromodichloromethane	CAS #75-27-4
Acute criterion: 10 ug/l	Chronic criterion: 1 ug/l
Human health criterion (HNC): 13 ug/l	
Date criteria derived: February 1, 1999	
Applicable waterbodies: Not used during this period.	
Chemical: Carbon tetrachloride	CAS #56-23-5
Acute criterion: 3,500 ug/l	Chronic criterion: 280 ug/l
Human health criterion (HNC): 1.4 ug/l	
Date criteria derived: June 18, 1993	
Applicable waterbodies: Not used during this period.	
Chemical: 2-Chloroaniline	CAS #95-51-2
Acute criterion: 75 ug/l	Chronic criterion: 6 ug/l
Date criteria derived: June 21, 1996; reviewed April 15, 2009	
Applicable waterbodies: Not used during this period.	
Chemical: 4-Chloroaniline	CAS #106-47-8
Acute criterion: 2.4 ug/l	
Date criteria derived: February 26, 1992; reviewed April 15, 2009	
Applicable waterbodies: Not used during this period.	
Chemical: Chlorobenzene	CAS #108-90-7
Acute criterion: 990 ug/l	Chronic criterion: 79 ug/l
Date criteria derived: December 11, 1991	
Applicable waterbodies: Not used during this period.	
Chemical: Chloroethane	CAS #75-00-3
Acute criterion: 13 mg/l	Chronic criterion: 1 mg/l
Date criteria derived: December 11, 1991	
Applicable waterbodies: Not used during this period.	
Chemical: Chloromethane	CAS #74-87-3
Acute criterion: 16 mg/l	Chronic criterion: 1.3 mg/l
Date criteria derived: December 11, 1991	
Applicable waterbodies: Not used during this period.	
Chemical: Chloroform	CAS #67-66-3
Acute criterion: 1,900 ug/l	Chronic criterion: 150 ug/l
Human health criterion (HNC): 130 ug/l	
Date criteria derived: October 26, 1992	
Applicable waterbodies: Not used during this period.	
Chemical: Chrysene	CAS #218-01-9

ATTACHMENT B

ILLINOIS REGISTER

ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF PUBLIC INFORMATION

LISTING OF DERIVED WATER QUALITY CRITERIA

Human health criterion (HNC): 16 ug/l Date criteria derived: August 10, 1993; revised February 1999 Applicable waterbodies: Not used during this period.
Chemical: 2,4-D CAS #94-75-7 Acute criterion: 100 ug/l Chronic criterion: 8 ug/l Date criteria derived: July 1, 1993; reviewed April 15, 2009 Applicable waterbodies: Not used during this period.
Chemical: Dibenz(a,h)anthracene CAS #53-70-3 Human health criterion (HNC): 0.016 ug/l Date criteria derived : February, 1999, reviewed June 2007 Applicable waterbodies: Not used during this period.
Chemical: 1,2-dichlorobenzene CAS #95-50-1 Acute criterion: 210 ug/l Chronic criterion: 17 ug/l Date criteria derived: December 1, 1993 Applicable waterbodies: Not used during this period.
Chemical: 1,3-dichlorobenzene CAS #541-73-1 Acute criterion: 500 ug/l Chronic criterion: 200 ug/l Date criteria derived: July 31, 1991 Applicable waterbodies: Not used during this period.
Chemical: 1,1-dichloroethane CAS #75-34-3 Acute criterion: 20 mg/l Chronic criterion: 2 mg/l Date criteria derived: July 31, 1991 Applicable waterbodies: Not used during this period.
Chemical: 1,2-dichloroethane CAS #107-06-2 Acute criterion: 25 mg/l Chronic criterion: 4.5 mg/l Human health criterion (HNC): 23 ug/l Date criteria derived: March 19, 1992 Applicable waterbodies: Not used during this period.
Chemical: 1,1-dichloroethylene CAS #75-35-4 Acute criterion: 3,000 ug/l Chronic criterion: 240 ug/l Human health criterion (HTC): 110 ug/l Non-primary contact: 120 ug/l Public and food processing water supply: 6.6 ug/l Date criteria derived: March 20, 1992; revised May 04, 2009 Applicable waterbodies: Not used during this period.
Chemical: 1,2-dichloroethylene CAS #540-59-0 Acute criterion: 14 mg/l Chronic criterion: 1.1 mg/l Date criteria derived: November 18, 2008

ATTACHMENT B

ILLINOIS REGISTER

ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF PUBLIC INFORMATION

LISTING OF DERIVED WATER QUALITY CRITERIA

Applicable waterbodies: Not used during this period.	
Chemical: trans-1,2-dichloroethylene	CAS #156-60-5
Human health criterion (HTC): 34 mg/l	
Date criteria derived: February 1, 1999; reviewed December 2, 2010	
Applicable waterbodies: Not used during this period.	
Chemical: 2,4-dichlorophenol	CAS #120-83-2
Acute criterion: 630 ug/l	Chronic criterion: 83 ug/l
Date criteria derived: November 14, 1991	
Applicable waterbodies: Not used during this period.	
Chemical: 1,2-dichloropropane	CAS #78-87-5
Acute criterion: 4,800 ug/l	Chronic criterion: 380 ug/l
Date criteria derived: December 7, 1993	
Applicable waterbodies: Not used during this period.	
Chemical: 1,3-dichloropropylene	CAS #542-75-6
Acute criterion: 99 ug/l	Chronic criterion: 7.9 ug/l
Date criteria derived: November 13, 1991	
Applicable waterbodies: Not used during this period.	
Chemical: 2,4-dimethyl phenol	CAS #105-67-9
Acute criterion: 740 ug/l	Chronic criterion: 220 ug/l
Date criteria derived: October 26, 1992	
Applicable waterbodies: Not used during this period.	
Chemical: 4,6-dinitro-o-cresol = 2-methyl-4,6-dinitrophenol	CAS #534-52-1
Acute criterion: 29 ug/l	Chronic criterion: 2.3 ug/l
Date criteria derived: November 14, 1991	
Applicable waterbodies: Not used during this period.	
Chemical: 2,4-dinitrophenol	CAS #51-28-5
Acute criterion: 85 ug/l	Chronic criterion: 4.1 ug/l
Date criteria derived: December 1, 1993	
Applicable waterbodies: Not used during this period.	
Chemical: 2,6-dinitrotoluene	CAS #606-20-2
Acute criterion: 1,900 ug/l	Chronic criterion: 150 ug/l
Date criteria derived: February 14, 1992	
Applicable waterbodies: Not used during this period.	
Chemical: Diquat	CAS #85-00-7
Acute criterion: 990 ug/l	Chronic criterion: 80 ug/l
Date criteria derived: January 30, 1996	
Applicable waterbodies: Not used during this period.	
Chemical: Ethyl mercaptan (ethanethiol)	CAS #75-08-1

ATTACHMENT B

ILLINOIS REGISTER

ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF PUBLIC INFORMATION

LISTING OF DERIVED WATER QUALITY CRITERIA

Acute criterion: 17 ug/l	Chronic criterion: 2 ug/l
Date criteria derived: April 8, 2002	
Applicable waterbodies: Not used during this period.	
Chemical: Fluoranthene	CAS #206-44-0
Acute criterion: 4.3 ug/L	Chronic Criterion: 1.8 ug/L
Human health criterion (HTC): 120 ug/l	
Date criteria derived: August 10, 1993; revised June 6, 2007 (Acute/Chronic)	
Applicable waterbodies: Not used during this period.	
Chemical: Fluorene	CAS #86-73-7
Acute criterion: 59 ug/L	Chronic Criterion: 16 ug/L
Date criteria derived: June 6, 2007	
Applicable waterbodies: Not used during this period.	
Chemical: Formaldehyde	CAS #50-00-0
Acute criterion: 4.9 mg/l	Chronic criterion: 0.39 mg/l
Date criteria derived: January 19, 1993	
Applicable waterbodies: Not used during this period.	
Chemical: Hexachlorobenzene	CAS #118-74-1
Human health criterion (HNC): 0.00025 ug/l	
Date criteria derived: November 15, 1991	
Applicable waterbodies: Not used during this period.	
Chemical: Hexachlorobutadiene	CAS #87-68-3
Acute criterion: 35 ug/l	Chronic criterion: 2.8 ug/l
Date criteria derived: March 23, 1992	
Applicable waterbodies: Not used during this period.	
Chemical: Hexachloroethane	CAS #67-72-1
Acute criterion: 380 ug/l	Chronic criterion: 31 ug/l
Human health criterion (HNC): 2.9 ug/l	
Date criteria derived: November 15, 1991	
Applicable waterbodies: Not used during this period.	
Chemical: n-Hexane	CAS #110-54-3
Acute criterion: 250 ug/l	Chronic criterion: 20 ug/l
Date criteria derived: April 8, 2002	
Applicable waterbodies: Not used during this period.	
Chemical: Indeno(1,2,3-cd)pyrene	CAS #193-39-5
Human health criterion (HNC): 0.16 ug/l	
Date criteria calculated: February, 1992, reviewed June 2007	
Applicable waterbodies: Not used during this period.	
Chemical: Isobutyl alcohol = 2-methyl-1-propanol	CAS #78-83-1

ATTACHMENT B

ILLINOIS REGISTER

ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF PUBLIC INFORMATION

LISTING OF DERIVED WATER QUALITY CRITERIA

Acute criterion: 430 mg/l	Chronic criterion: 35 mg/l
Date criteria derived: December 1, 1993	
Applicable waterbodies: Not used during this period.	
Chemical: Methylene chloride	CAS #75-09-2
Acute criterion: 17 mg/l	Chronic criterion: 1.4 mg/l
Human health criterion (HNC): 330 ug/l	Non-primary contact: 490 ug/l
	Public and food processing water supply: 4.6 ug/l
Date criteria derived: January 21, 1992; revised November 25, 2008	
Applicable waterbodies: Not used during this period.	
Chemical: Methyl ethyl ketone	CAS #78-93-3
Acute criterion: 320 mg/l	Chronic criterion: 26 mg/l
Date criteria derived: July 1, 1992	
Applicable waterbodies: Not used during this period.	
Chemical: 4-methyl-2-pentanone	CAS #108-10-1
Acute criterion: 46 mg/l	Chronic criterion: 1.4 mg/l
Date criteria derived: January 13, 1992	
Applicable waterbodies: Not used during this period.	
Chemical: 2-methyl phenol	CAS #95-48-7
Acute criterion: 4.7 mg/l	Chronic criterion: 0.37 mg/l
Date criteria derived: November 8, 1993	
Applicable waterbodies: Not used during this period.	
Chemical: 4-methyl phenol	CAS #106-44-5
Acute criterion: 670 ug/l	Chronic criterion: 120 ug/l
Date criteria derived: January 13, 1992	
Applicable waterbodies: Not used during this period.	
Chemical: Methyl tert-butyl ether (MTBE)	CAS #134-04-4
Acute criterion: 67 mg/l	Chronic criterion: 5.4 mg/l
Date criteria derived: September 18, 1997	
Applicable waterbodies: Not used during this period.	
Chemical: Metolachlor	CAS #51218-45-2
Acute criterion: 380 ug/l	Chronic criterion: 30.4 ug/l
Date criteria derived: February 25, 1992; revised October 1, 2007	
Applicable waterbodies: Not used during this period.	
Chemical: Naphthalene	CAS #91-20-3
Acute criterion: 510 ug/l	Chronic criterion: 68 ug/l
Date criteria derived: November 7, 1991; revised February 1999	
Applicable waterbodies: Not used during this period.	

ATTACHMENT B

ILLINOIS REGISTER

ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF PUBLIC INFORMATION

LISTING OF DERIVED WATER QUALITY CRITERIA

Chemical: 4-nitroaniline Acute criterion: 1.5 mg/l Date criteria derived: May 5, 1996 Applicable waterbodies: Not used during this period.	CAS #100-01-6 Chronic criterion: 0.12 mg/l
Chemical: Nitrobenzene Acute criterion: 15 mg/l Human health criterion (HTC): 0.52 mg/l Date criteria derived: February 14, 1992; revised February 1999 Applicable waterbodies: Not used during this period.	CAS #98-95-3 Chronic criterion: 8.0 mg/l
Chemical: Pentachlorophenol Acute criterion: 20 ug/l Date criteria derived: national criterion at pH of 7.8, September 1986 Applicable waterbodies: Not used during this period.	Chronic criterion: 13 ug/l
Chemical: Phenanthrene Acute criterion: 46 ug/l Date criteria derived: October 26, 1992 Applicable waterbodies: Not used during this period.	CAS #85-01-8 Chronic criterion: 3.7 ug/l
Chemical: Propylene Acute criterion: 4.0 mg/l Date criteria derived: April 8, 2002 Applicable waterbodies: Not used during this period.	CAS #115-07-1 Chronic criterion 0.40 mg/l
Chemical: Pyrene Human health criterion (HTC): 3.5 mg/l Date criteria derived: December 22, 1992 Applicable waterbodies: Not used during this period.	CAS #120-00-0
Chemical: Styrene Acute criterion: 2.5 mg/L Date criteria derived: October 26, 1992; reviewed May 4, 2009 Applicable waterbodies: Not used during this period.	CAS #120-42-5 Chronic criterion: 0.2 mg/L
Chemical: Tetrachloroethylene Acute criterion: 1,200 ug/l Date criteria derived: March 23, 1992 Applicable waterbodies: Not used during this period.	CAS #127-18-4 Chronic criterion: 150 ug/l
Chemical: Tetrahydrofuran Acute criterion: 220 mg/l Date criteria derived: March 16, 1992 Applicable waterbodies: Not used during this period.	CAS #109-99-9 Chronic criterion: 17 mg/l
Chemical: Thallium	CAS #7440-28-0

ATTACHMENT B

ILLINOIS REGISTER

ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF PUBLIC INFORMATION

LISTING OF DERIVED WATER QUALITY CRITERIA

Acute criterion: 86 ug/l Human health criterion (HTC): 3.0 ug/l Non-primary contact: 3.0 ug/l Public and food processing water supply: 1.2 ug/l Date criteria derived: October 22, 2007; revised November 18, 2008 Applicable waterbodies: Not used during this period.	Chronic criterion: 11 ug/l
Chemical: 1,2,4-trichlorobenzene Acute criterion: 370 ug/l Date criteria derived: December 14, 1993; revised February 1999 Applicable waterbodies: Not used during this period.	CAS #120-82-1 Chronic criterion: 72 ug/l
Chemical: 1,1,1-trichloroethane Acute criterion: 4,900 ug/l Date criteria derived: October 26, 1992 Applicable waterbodies: Not used during this period.	CAS #71-55-6 Chronic criterion: 390 ug/l
Chemical: 1,1,2-trichloroethane Acute criterion: 19 mg/l Human health criterion (HNC): 12 ug/l Date criteria derived: December 13, 1993; revised February 1999 Applicable waterbodies: Not used during this period.	CAS #79-00-5 Chronic criterion: 4.4 mg/l
Chemical: Trichloroethylene Acute criterion: 12,000 ug/l Human health criterion (HNC): 25 ug/l Non-primary contact: 26 ug/l Public and food processing water supply: 2.5 ug/l Date criteria derived: October 23, 1992; revised November 18, 2008 Applicable waterbodies: Not used during this period.	CAS #79-01-6 Chronic criterion: 940 ug/l
Chemical: 1,2,4-trimethylbenzene Acute criterion: 360 ug/l Date criteria derived: July 15, 1998; reviewed December 2, 2010 Applicable waterbodies: Not used during this period.	CAS #95-63-6 Chronic criterion: 29 ug/l
Chemical: Vinyl chloride Acute criterion: 22 mg/l Human health criterion (HNC): 1.5 ug/l Non-primary contact: 2 ug/l Public and food processing water supply: 0.025 ug/l Date criteria derived: October 23, 1992; revised January 23, 2007; revised November 17, 2008 Applicable waterbodies: Not used during this period.	CAS #75-01-4 Chronic criterion: 1.7 mg/l

ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF PUBLIC INFORMATION

LISTING OF DERIVED WATER QUALITY CRITERIA

Lake Michigan Basin Criteria

<p>Chemical: Antimony CAS #7440-36-0</p> <p><u>Aquatic Life Criteria:</u> Acute criterion: 470 ug/l Chronic criterion: 120 ug/l</p> <p>Date criteria derived: September 29, 2008</p> <p>Applicable waterbodies: Not used during this period.</p>
<p>Chemical: Bis(2-ethylhexyl)phthalate CAS #117-81-7</p> <p><u>Aquatic Life Criteria:</u> Acute criterion: 76 ug/l Chronic criterion: 17 ug/l</p> <p><u>Human Health Non-threshold Criteria:</u> Public and food processing water supply: 2.8 ug/l Non-drinking water: 3.2 ug/l</p> <p>Date criteria derived: June 20, 2006</p> <p>Applicable waterbodies: Not used during this period.</p>
<p>Chemical: 1,2-dichloroethylene CAS #540-59-0</p> <p><u>Aquatic Life Criteria:</u> Acute criterion: 8.8 mg/l Chronic criterion: 0.98 mg/l</p> <p>Date criteria derived: November 18, 2008</p> <p>Applicable waterbodies: Not used during this period.</p>
<p>Chemical: Methylene Chloride CAS #75-09-2</p> <p><u>Aquatic Life Criteria:</u> Acute criterion: 10,803 ug/l Chronic criterion: 1,200 ug/l</p> <p><u>Human Health Non-threshold Criteria:</u> Public and food processing water supply: 47 ug/l Non-drinking water: 2,600 ug/l</p> <p>Date criteria derived: June 20, 2006</p> <p>Applicable waterbodies: Not used during this period.</p>
<p>Chemical: Thallium CAS #7440-28-0</p> <p><u>Aquatic Life Criteria:</u> Acute criterion: 54 ug/l Chronic criterion: 15 ug/l</p> <p><u>Human Health Threshold Criteria:</u> Public and food processing water supply: 1.3 ug/l Non-drinking water: 3.7 ug/l</p> <p>Date criteria derived: June 20, 2006; revised November 18, 2008</p>

ATTACHMENT B

ILLINOIS REGISTER

ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF PUBLIC INFORMATION

LISTING OF DERIVED WATER QUALITY CRITERIA

Applicable waterbodies: Not used during this period.	
Chemical: Vinyl Chloride	CAS #75-01-4
<u>Aquatic Life Criteria:</u>	
Acute criterion: 8,380 ug/l	Chronic criterion: 931 ug/l
<u>Human Health Non-threshold Criteria:</u>	
Public and food processing water supply: 0.25 ug/l	
Non-drinking water: 14.4 ug/l	
Date criteria derived: June 20, 2006	
Applicable waterbodies: Not used during this period.	

For additional information concerning these criteria or the derivation process used in generating them, please contact:

Brian Koch
Illinois Environmental Protection Agency
Division of Water Pollution Control
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276
217-558-2012

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STATE OF ILLINOIS
Pollution Control Board

ORIGINAL

STATE OF ILLINOIS)
)
COUNTY OF SANGAMON)

PROOF OF SERVICE

I, the undersigned, on oath state that I have served the attached Post-Hearing Comments of the Illinois Environmental Protection Agency of the Illinois Environmental Protection Agency to whom they are directed, by placing a copy of each in an envelope addressed to:

John Therriault, Assistant Clerk
Pollution Control Board
James R. Thompson Center
100 W. Randolph, Ste. 11-500
Chicago, Illinois 60601
(Overnight Mail)

Kathleen Crowley, Hearing Officer
Pollution Control Board
James R. Thompson Center
100 W. Randolph, Ste 11-500
Chicago, Illinois 60601
(Overnight Mail)

Andrew Armstrong
Office of the Attorney General
James R. Thompson Center
100 W. Randolph, 12th Floor
Chicago, IL 60601
(1st Class)

IL. Dept. of Natural Resources
One Natural Resources Way
Springfield, IL 62702-1271
(1st Class)

Christine Zeman
City of Springfield, Office of Public Utilities
800 E. Monroe, 4th Floor, Municipal Bldg
Springfield, IL 62757-0001
(1st Class))

and mailing them from Springfield, Illinois on 8-18-11, with sufficient postage affixed as indicated above.

Cindy Wolfe

SUBSCRIBED AND SWORN TO BEFORE ME

This Aug day of 18, 2011

Brenda Boelner

Notary Public

