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TITLE 327 WATER POLLUTION CONTROL BOARD

FIRST NOTICE OF COMMENT PERIOD

#03-128(WPCB)

DEVELOPMENT OF AMENDMENTS TO RULES CONCERNING E. COLI CRITERIA AND IMPLEMENTATION PROCEDURES

PURPOSE OF NOTICE

The Indiana Department of Environmental Management (IDEM) is soliciting public comment on amendments to 327 IAC 2, water quality standards, and 327 IAC 5, NPDES and pretreatment programs concerning E. coli criteria and implementation procedures. IDEM seeks comment on the affected citations listed and any other provisions of Title 327 that may be affected by this rulemaking.

CITATIONS AFFECTED: 327 IAC 2; 327 IAC 5.

AUTHORITY: IC 13-18-2-1; IC 13-18-3-1; IC 13-18-3-2; IC 3-18-3-11; IC 13-18-4.

SUBJECT MATTER AND BASIC PURPOSE OF RULEMAKING

Basic Purpose and Background

This rulemaking will review and consider additions and modifications to Title 327 concerning E. coli criteria and implementation procedures. Federal rules require states to develop, adopt, and implement ambient water quality criteria for bacteria in order to protect against excessive risk to humans of gastrointestinal illnesses in waters used for recreational activities.

In 1990, Indiana adopted E. coli bacteriological criteria for all waters with 125 cfu/100ml (colony forming units) as a monthly average, and a single sample daily maximum value of 235 cfu/100 ml. The 1997 Great Lakes Basin rulemaking continued to apply the 125/235 E. coli criteria to the Great Lakes Basin portion of the state. These criteria only apply for the months of April through October.

Among the issues that this rulemaking may consider include the following:

A. Recreation use designation and associated criteria.

(1) Adoption of different risk levels.

(2) Adoption of a secondary contact use designation.

(3) Clarification or change of state definition of "full body contact" to U.S. EPA's definition of "primary contact recreation."

In May 2002, U.S. EPA released a draft implementation guidance document for the 1986 ambient water quality criteria for bacteria. This guidance would allow states to use different risk levels for primary contact recreation use. Specifically the draft guidance will allow the states to use risk levels ranging from eight (8) illnesses per thousand (1,000) swimmers to fourteen (14) illnesses per thousand (1,000) swimmers. It is unclear whether the guidance when finalized will allow the range to extend to fourteen (14) illnesses per thousand (1,000) swimmers; U.S. EPA may restrict the range from eight (8) to ten (10) illness per thousand (1,000) swimmers. Currently U.S. EPA expects to issue the final guidance in May 2003. (The current version of the draft guidance may be accessed at <http://www.epa.gov/waterscience/standards/bacteria>; see page 82 for a table containing the risk levels and the associated criteria.) It should be noted that the risk levels used by U.S. EPA are based only on studies on adult humans age eighteen (18) and older and not on children; additionally the risk levels were based only on gastrointestinal illnesses. IDEM is seeking input into the factors IDEM should use to classify water bodies into categories with different risk-based criteria. Factors might include frequency of use, type of use, physical factors limiting access, public input, downstream impacts and bacterial persistence in the water body.

B. Consideration of other organisms or approaches in addition to E. coli to protect against pathogen borne illnesses.

Other organisms could be used as indicators of the presence of pathogens in surface waters.

C. Consistent application of the E. coli criteria throughout the state.

Rules for dischargers within the Great Lakes Basin require the E. coli criteria to be applied end of pipe with no mixing zone. Outside the Great Lakes Basin, IDEM is required to apply the E. coli criteria after consideration of a mixing zone.

D. Change in the definition of "recreational season" and adoption of year-round disinfection requirements instead of only seasonal requirements.

Indiana currently requires wastewater treatment facilities to disinfect their discharges to meet the E. coli criteria only during the “recreational season” defined as the months of April through October. The one (1) current exception is for dischargers on the Ohio River where Ohio River Valley Water Sanitation Commission (ORSANCO) requirements are such that year round disinfection is required. Historically, E. coli and other fecal coliforms were thought to have a very limited ability to survive outside the intestinal tract once they were released into the environment. Thus, the seasonal disinfection requirements were thought to be protective of human health during the recreational season and also would not result in impacts during the recreational season from the periods when disinfection was not occurring. Recent studies from Purdue University scientists and other researchers have indicated that E. coli may have a longer life span in the environment than previously thought raising questions as to whether the definition of recreational season needs to be revised and the criteria applied year-round.

E. Implementation of E. coli criteria.

U.S. EPA’s 2002 draft guidance document allows for greater flexibility in implementing bacteriological criteria. The guidance recommends using both a daily maximum and monthly average for bathing beaches but seems to allow for more flexibility for other waters used for primary contact recreation. Indiana currently applies the 125 cfu/100 ml monthly average and 235 cfu/100 ml daily maximum criteria to all waters. (See 327 IAC 2-1-6(d) and 327 IAC 2-1.5-8(e).) IDEM might consider alternative ways to determine compliance with the E. coli criteria, such as allowing a certain percentage of samples to exceed the criteria. IDEM may also consider how the criteria apply during wet weather.

F. Establishment of technology-based effluent limits.

When establishing permit limits, IDEM is required to include the more stringent of the applicable water quality-based limit or the technology-based limit. IDEM has included water quality-based limits for E. coli in permits since 1990; because these have been considered to be fairly stringent, IDEM has not considered how a technology-based limit would apply. However, due to a recent court ruling, IDEM now has to consider whether a mixing zone is appropriate for dischargers outside the Great Lakes basin when establishing water quality-based limits. If a mixing zone is granted, it may be that the water quality-limit is no longer very stringent. Therefore, IDEM is considering establishing a technology-based limit (based on best conventional technology) and determining whether that would be more stringent than the water quality-based limit.

G. Other E. coli testing methodologies.

There are other testing methodologies for E. coli available in addition to the one cited in the current rules. Should IDEM allow the use of other testing methodologies for E. coli?

H. E. coli effluent limits for waste stabilization lagoons.

In the past, the office of water quality has granted a waiver from E. coli limits to minor municipal waste water treatment plants whose treatment consists of a waste stabilization lagoon (WSL) system. The waiver was based on 327 IAC 5-10-6(a), where disinfection is not required for multi-celled waste stabilization ponds. The assumption in the past has been that waste stabilization ponds with greater than ninety (90) days retention time are adequately designed for the natural attrition of bacteria. Current evidence, both national studies and accumulated effluent data from WSL’s, does not support the assumption that a ninety (90) day retention period is sufficient to ensure a natural attrition of bacteria. An automatic waiver is also inconsistent with OWQ’s current Reasonable Potential to Exceed (RPE) policy in the non-Great Lakes System and with the RPE rule in the Great Lakes System.

Alternatives to be Considered within the Rulemaking

IDEM is interested in input regarding the above E. coli issues. An alternative to each of these issues is to leave existing rules unchanged.

Applicable Federal Law

The Clean Water Act and U.S. EPA regulations require states to adopt water quality standards for waters within the state. 33 U.S.C. § 1251(a)(2); 33 U.S.C. § 1313; 40 CFR § 131; 40 CFR § 132. A water quality standard consists of: (1) the use(s) to be made of (designated for) the waters; (2) the criteria adopted to protect those uses; and (3) an antidegradation policy to protect existing uses and high quality waters. States adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. In the recreational context, this means that water quality standards must provide for recreation in and on the water. If a state wishes to change a designated use or the water quality criteria associated with that use, it must follow the procedures set forth in 33 U.S.C. § 1313; 40 CFR § 131 and 40 CFR § 132 (for waters located within the Great Lakes system).

Several provisions of the Clean Water Act and U.S. EPA regulations also apply to the establishment of effluent limitations in NPDES permits. These include requirements to issue permits with conditions necessary to ensure compliance with water quality standards and technology-based limitations, as well as provisions relating to antidegradation and antibacksliding. Applicable provisions of federal law include: 33 U.S.C. § 1311; 33 U.S.C. § 1313; 33 U.S.C. § 1342; 40 CFR § 133; 40 CFR § 122.44; 40 CFR § 131.12; and 40 CFR § 132.

Potential Fiscal Impact

There are issues proposed in this notice where there will either be a neutral cost (for example, establishment of technology-based

effluent limits), cost savings (for example, implementation of less stringent E. coli criteria), and potential cost increase (for example, E. coli effluent limits for waste stabilization lagoons and year-round disinfection).

Public Participation and Workgroup Information

An external workgroup has been established to discuss issues involved in this rulemaking. The workgroup is a cross-section of stakeholders and IDEM staff.

The workgroup meetings are ongoing. The workgroup has met on November 19, 2002, January 15, 2003, March 28, 2003, and May 7, 2003. The minutes from these meetings, calendar of future meetings, and other information regarding this workgroup can be viewed at IDEM's triennial Web site at <http://in.gov/idem/water/planbr/wqs/review/trirev.html>.

If you wish to provide comments to the workgroup on the rulemaking, attend meetings, or have suggestions related to the workgroup process, please contact Kiran Verma, Rules Section, Office of Water Quality at (317) 234-0986 or (800) 451-6027 (in Indiana). Please provide your name, phone number, and e-mail address, if applicable, where you can be contacted. The public is also encouraged to submit comments and questions to members of the workgroup who represent their particular interests in the rulemaking.

STATUTORY AND REGULATORY REQUIREMENTS

IC 13-14-8-4 requires the board to consider the following factors in promulgating rules:

- (1) All existing physical conditions and the character of the area affected.
- (2) Past, present, and probable future uses of the area, including the character of the uses of surrounding areas.
- (3) Zoning classifications.
- (4) The nature of the existing air quality or existing water quality, as the case may be.
- (5) Technical feasibility, including the quality conditions that could reasonably be achieved through coordinated control of all factors affecting the quality.
- (6) Economic reasonableness of measuring or reducing any particular type of pollution.
- (7) The right of all persons to an environment sufficiently uncontaminated as not to be injurious to human, plant, animal, or aquatic life or to the reasonable enjoyment of life and property.

REQUEST FOR PUBLIC COMMENTS

At this time, IDEM solicits the following:

- (1) The submission of alternative ways to achieve the purpose of the rule.
- (2) The submission of suggestions for the development of draft rule language.

Mailed comments should be addressed to:

#03-128(WPCB) E. coli Criteria and Implementation Procedures
Larry Wu, Chief
Rules Development Section
Office of Water Quality
Indiana Department of Environmental Management
P.O. Box 6015
Indianapolis, Indiana 46206-6015.

Hand delivered comments will be accepted by the IDEM receptionist on duty at the twelfth floor reception desk, Office of Water Quality, Indiana Government Center-North, 100 North Senate Avenue, Indianapolis, Indiana.

Comments may be submitted by facsimile at the IDEM fax number: (317) 232-8406, Monday through Friday, between 8:15 a.m. and 4:45 p.m. Please confirm the timely receipt of faxed comments by calling the Rules Section at (317) 233-8903.

COMMENT PERIOD DEADLINE

Comments must be postmarked, faxed, or hand delivered by July 30, 2003.

Additional information regarding this action may be obtained from Kiran Verma, Rules Section, Office of Water Quality, (317) 234-0986 or (800) 451-6027 (in Indiana).

Mary Ellen Gray
Deputy Assistant Commissioner
Office of Water Quality