STATE OF NEW HAMPSHIRE

Inter-Department Communication

DATE: September 23, 2009

FROM: Paul Currier, P.E., Administrator
Watershed Management Bureau

AT (OFFICE): Department of
Environmental Services, Water Division

SUBJECT: Explanation of Decision: Deletion of "as naturally occurs" narrative criteria for certain parameters in Class A waters

TO: Water Quality Standards Advisory Committee

CC: Gregg Comstock
Harry Stewart
Phil Trowbridge
Bob Estabrook

This memo is in accordance with the Water Quality Standards Advisory Committee (WQSAC) Terms of Reference provision that "Where consensus doesn't exist, DES will explain its decisions in light of the discussions of the committee."

The current Surface Water Quality Regulations, Env-Wq 1700, provide that, in Class A waters, there shall be "none unless naturally occurring" or "as naturally occurs" for the following parameters; benthic deposits; oil and grease; color; turbidity; slicks odors and surface floating solids; temperature; nitrogen; phosphorus, and; pH. In order to apply this narrative criterion, DES needs to have a quantitative method to estimate the naturally occurring value for each of these parameters. The rules define naturally occurring conditions as "conditions which exist in the absence of human influences". WQSAC has discussed this issue off and on since early 2004, without consensus. At the meeting on 10/28/2008, DES presented a table (attached) with three options. There was discussion, but again no consensus on which option would be best. In fact, there is not consensus among DES staff as to which option would be best.

Therefore, to move forward in a way that allows DES to make clear, science-based decisions based on the regulations, we have decided to remove the "naturally occurs" provision for those parameters where we have no consensus-based methodology for quantitatively estimating what the naturally occurring value would be. These parameters are: Benthic deposits; Oil and grease; color; Turbidity, Temperature, Nitrogen, Phosphorus, and pH. The proposed rule changes would make narrative criteria for these parameters the same for class A and class B waters.

In order to continue to afford enhanced protection to class A waters, which was the intent of the "naturally occurs" provisions, we propose to add the provision that:

> "Proposed new or increased activities affecting class A waters that the department determines could result in degradation of water quality shall be considered significant for the purposes of antidegradation review."

Attachment

Alternative approaches to addressing the "naturally occurring" provisions for Class A waters in Env-Wq 1700 Summary Table		
Approach	**Explanation**	**Pros & cons**
Naturally occurring conditions equal existing conditions.	The intent of the regulations is to allow only natural levels of specific pollutants into Class A surface waters. All waterbodies have been impacted to some extent by humans. In most cases, human impacts result in an increase in pollutant concentrations compared to natural conditions. In other words, the existing concentrations for most parameters can only be worse than natural concentrations. Under this approach, all Class A waters should have no remaining assimilative capacity. Therefore, at a minimum, pollutant loads to Class A waters should not increase above existing values.	Pro: Protects Class A waters from any further degradation, similar to the protection for an Outstanding Resource Water. Con: This would be a broad reinterpretation of Class A water quality standards. It would possibly be unacceptable to developers and perhaps municipalities as well. Con: A change of this magnitude should be done by rule, and not by guidance.
Naturally occurring conditions equal some percentile of conditions in reference (or minimally impacted by human influences) waters	The concept is based on the protocol used by EPA to develop recommended nutrient criteria. The 75th percentile value of reference lakes or the 25th percentile value of all lakes is considered to be a "reference" value, which represents a naturally occurring condition, or as close as we can measure.	Pro: Provides a quantitative method for applying the naturally occurring criteria Con: Provides little if any additional protection to Class A waters above Class B. Con: Does not accomplish the intent of the regulations
Delete naturally occurring provisions from the rules for pH, Color, and turbidity Leave the naturally occurring provision for nutrients, and focus on a concise definition	Remove the naturally occurring phrase from selected parameters (e.g., pH, color and turbidity) for Class A waters. Develop a translator for "as naturally occurs" for phosphorus and nitrogen in lakes, in conjunction with ongoing development of numeric nutrient criteria	Pro: Removes the difficulty of defining "naturally occurring" for parameters that are not particularly sensitive to human disturbance. Pro: Consistent with nutrient criteria development. Could use the EPA approach for %ile of reference population or general population Con: Provides little if any additional protection to Class A waters above Class B. Con: Does not accomplish the intent of the regulations