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EXHIBIT F

Proposed Surface Water Quality Standards Improvements

DEP is proposing revisions to the Massachusetts Surface Water Quality Standards, 314 CMR 4.00. These revisions are a result of DEP's periodic review of the Standards.

- Definitions 314 CMR 4.02: - Definitions of the following terms are added to help clarify the regulations: best available treatment technology, best management practices, best professional judgment, biological integrity, criteria, cultural eutrophication, highest and best practical treatment, natural background conditions, total maximum daily load and use attainability analysis. Other definitions are clarified, including the definition of lakes and ponds, which is revised, in part, to clarify the distinction between wetlands and lakes and ponds.
- Compliance schedules 314 CMR 4.03(1)(b): Language is added explaining why and when compliance schedules may be included in NPDES permits.
- TMDLs 314 CMR 4.03(1)(c): A provision is added stating the Department's authority to develop and enforce compliance with TMDLs and TMDL implementation plans.
- Mixing zones 314 CMR 4.03(2): This provision is revised to state that there shall be no lethality to organisms "passing through" the mixing zone.
- Hydrologic conditions 314 CMR 4.03(3): Language is added providing that for rivers and streams, human health based criteria are applied at the harmonic mean flow to be consistent with EPA's Â§304(a) water quality criteria guidance on how this criteria should be interpreted. In addition, we are requiring that flows be maintained or restored to protect uses when DEP issues a 401 certification for an activity subject to a FERC license.
- National Goal Uses, Partial Uses and Variances 314 CMR 4.03(4): The UAA demonstration of substantial and widespread economic and social impact is modified to allow for consideration of cost of living or other circumstances particular to an affected area. Variances are explained in more detail.
- Protection of Special Resource Waters 314 CMR 4.04(4): Provisions are added pertaining to Special Resource Waters, a new tier of antidegradation waters, in response to EPA's request for a provision on Outstanding National Resource Waters and pursuant to the federal regulations, 40 CFR Â§131.12(a)(4). The new language provides that no permanent degradation of such waters from new or increased discharges may be allowed and that special resource waters are assigned at DEP's discretion.
- Antidegradation Implementation Procedure 314 CMR 4.04(6): A provision is added that references the implementation procedure. This puts the public on notice of DEP's Antidegradation Implementation Procedure.
- Site specific criteria 314 CMR 4.05(2): Language is added explaining DEP's authority to establish site-specific criteria. The language provides that site-specific criteria may be more or less stringent than existing criteria provided that uses are protected, site specific criteria may be established in a TMDL or otherwise, and any less stringent site specific criteria will be adopted as Standards revisions.
- Habitat for critical functions for all Classes - 314 CMR 4.05(3)(a); 314 CMR 4.05(3)(b) 314 CMR 4.05(3)(c); 314 CMR 4.05(4)(a); 314 CMR 4.05(4)(b); 314 CMR 4.05(4)(c): Under each class, language is added making it explicit that the designated use of aquatic and wildlife habitat includes habitat for â€œreproduction, migration, growth and other critical functions.â€
- DO criteria for all Classes 314 CMR 4.05(3)(a)1; 314 CMR 4.05(3)(b)1; 314 CMR 4.05(3)(c)1; 314 CMR 4.05(4)(a)1; 314 CMR 4.05(4)(b)1; 314 CMR 4.05(4)(c)1: The revisions require natural seasonal and daily variations that are necessary to protect uses to be maintained. Currently, the Standards require maintenance of both natural seasonal and daily variations, regardless of whether the variations are necessary to protect uses. It is the program's view that the WQS may allow for some variation from seasonal or daily conditions, provided that uses are not impaired. The revised language reflects this.

- Temperature criteria for Class A and B waters 314 CMR 4.05(3)(a)2; 314 CMR 4.05 (3)(b)2: Language is added to protect cold water aquatic communities in waters with naturally occurring temperatures above 68Â°. In such waters, natural seasonal and daily variations must be maintained. In other waters, the revisions require natural seasonal and daily variations necessary to protect uses to be maintained. Currently, the Standards require maintenance of both natural seasonal and daily variations, regardless of whether the variations are necessary to protect uses. As is the case with DO, it is the program's view that the WQS should allow for some variation from seasonal or daily conditions, provided that uses are not impaired.
- Temperature criteria for Class B, C, SA, SB and SC waters - 314 CMR 4.05(3)(b)2; 314 CMR 4.05(3)(c)2; 314 CMR 4.05(4)(a)2; 314 CMR 4.05(4)(b)2; 314 CMR 4.05 (4)(c)2: Language is added to clarify that relative to Â§316(a) thermal variances, alternative effluent limits must be revisited with permit renewal and the permittee must demonstrate that alternative limitations remain protective. Also, we have clarified that a 316(a) waiver for thermal discharges is allowed for Class B and C inland waters. Relative to cooling water intake structures (CWIS) regulated by EPA under Â§316(b), language is added clarifying DEP's authority to condition CWIS to assure compliance of with the WQS.
- Bacteria criteria for all Classes 314 CMR 4.05(3)(a)4; 314 CMR 4.05(3)(b)4; 314 CMR 4.05(3)(c)4; 314 CMR 4.05(4)(a)4; 314 CMR 4.05(4)(b)4; 314 CMR 4.05(4) (c)4: Several scientific studies have demonstrated that E. coli and Enterococci are better indicators than coliform of potential human health effects of bacteria from certain recreational uses such as swimming. The criteria are revised to adopt these as indicators for such recreational uses, consistent with Guidance and regulations promulgated by EPA and with DPH regulations for bathing beaches. Fecal coliform criteria are maintained for â€œuntreatedâ€ public water supplies, consistent with the SDWA, and for designated shellfishing areas, consistent with DMF and FDA requirements.
- Nutrients/Control of Eutrophication 314 CMR 4.05(5)(c): Cultural eutrophication now is addressed in the narrative nutrient criteria. The resulting provision is expanded to ensure that all surface waters, not just lakes and ponds, are protected from excessive nutrients. Further, DEP's authority to require the most appropriate treatment, including, where necessary, HBPT for POTWs and BAT for non POTWs, is stated.
- Pollutants 314 CMR 4.05(5)(e): The toxics provisions are revised to incorporate EPA's latest section 304(a) recommended criteria, which apply except where DEP adopts site specific criteria or where naturally occurring concentrations are higher. The Department's role in setting human health risk levels for toxics is clarified and limited to where EPA has not set such levels.
- Cold Water 314 CMR 4.06(1)(d)7: Language is added requiring protection of cold water fish populations and their habitat that exist in waters that are not designated as cold waters.
- Stressed Basins 314 CMR 4.06(1)(d)13: A new provision is added stating that stormwater discharge permittees in high or medium stressed basins, as identified by the MWRC, shall be required to minimize loss of recharge.
- Active and Inactive Reservoirs 314 CMR 4.06(3): A new provision is added stating that reservoirs approved by the DWP as a source of PWS are Class A, ORW, regardless of whether they are listed in the tables to the Standards. This is to ensure that such waters are protected as public water supplies under the Standards.
- Tributaries to PWS - 314 CMR 4.06(7): A provision is added to clarify that tributaries to PWS include waters from which water is manually diverted to a Class A PWS.

Revisions to the Tables and Figures to the Standards

- Newly listed Class A waters Several waters are newly listed as Class A, public water supplies. Although such waters are DEP approved public water supplies, they currently are not listed in the WQS as public water supplies.
- Class A to Class B A handful of waters, which are listed as Class A public water supplies, are not DEP approved public water supplies. These waters either have been abandoned officially as public water supplies or DEP has no record of their use or approval as PWS. Accordingly, they either are being removed from the tables or being changed to Class B. The ones that no longer will be listed in the tables will fall under the WQS general provision on unlisted inland waters, which provides that such waters are Class B.
- Newly listed ORWs - Numerous waters, which are not listed in the tables as ORWs, but are listed as ORWs in the Department's document *Designated Outstanding Resource Waters of Massachusetts 1995*, are being listed in the tables as ORWs.
- Open and restricted shellfishing areas - Currently, shellfishing areas are listed in the

tables either as open (O) or restricted (R). These notations are deleted from the tables (as well as from the text of the Standards) because the Division of Marine Fisheries does not use these terms for shellfishing areas. Instead, DMF uses the terms Approved, Conditionally Approved, Restricted and Conditionally Restricted. Moreover, whether a particular area that is designated for shellfishing is Approved or Conditionally Approved, or Restricted or Conditionally Restricted, on any given day or time depends on the actual water quality at that time. It, therefore, is not appropriate to include a shellfishing area's Approved or Restricted status in the WQS.

- Site-specific criteria A table of site-specific criteria is added. These site-specific criteria include numeric phosphorus criteria for numerous lakes and ponds, numeric copper criteria for several river segments, and numeric nitrogen criteria for numerous waters on Cape Cod.
- CSOs - The CSO status of various waters is updated to reflect where CSOs have been eliminated and where others have been identified. Additionally, the SB(CSO) and B(CSO) status of Boston Inner Harbor, a segment of the Mystic River and the entire length of Muddy River, is reflected in the tables.
- Other revisions - Waterbody name corrections, spelling corrections, segment delineation corrections and watershed corrections are made. Additionally, the basin names are revised to be consistent with the five year basin cycle.
- Figures/Maps The maps are improved overall and the basin delineations are revised to be consistent with the five year basin cycle.