

7400 Watershed Assessment Section

7411 TMDLs for the Shellpot Creek Delaware

1.0 Introduction and Background

- 1.1 Water quality monitoring performed by the Department of Natural Resources and Environmental Control (DNREC) has shown that the Shellpot Creek is impaired by high levels of bacteria and elevated levels of the nutrients nitrogen and phosphorous, and that the designated uses are not fully supported by water quality in the stream.
- 1.2 Section 303(d) of the Federal Clean Water Act (CWA) requires states to develop a list (303(d) List) of waterbodies for which existing pollution control activities are not sufficient to attain applicable water quality criteria and to develop Total Maximum Daily Loads (TMDLs) for pollutants or stressors causing the impairment. A TMDL sets a limit on the amount of a pollutant that can be discharged into a waterbody and still protect water quality. TMDLs are composed of three components, including Waste Load Allocations (WLAs) for point source discharges, Load Allocations (LAs) for nonpoint sources, and a Margin of Safety (MOS).

DNREC listed Shellpot Creek on several of the State's 303(d) Lists and proposes the following Total Maximum Daily Load regulation for nitrogen, phosphorous and Enterococcus bacteria.

2.0 Total Maximum Daily Loads (TMDLs) Regulation for the Shellpot Creek Delaware

Article 1. The nonpoint source nitrogen load from the area south of Business Route 13 shall be reduced by 35% (from the 2000-2003 baseline). This shall result in reducing the yearly-average total nitrogen load from 19.2 pounds per day to 12.5 pounds per day.

Article 2. The nonpoint source nitrogen load from the area north of Business Route 13 shall be capped at the 2000-2003 baseline level. This shall result in a yearly-average total nitrogen load of 89.4 pounds per day.

Article 3. The nonpoint source phosphorous load from the area south of Business Route 13 shall be reduced by 35% (from the 2000-2003 baseline). This shall result in reducing the yearly-average total phosphorous load from 2.0 pounds per day to 1.3 pound per day.

Article 4. The nonpoint source phosphorous load from the area north of Business Route 13 shall be capped at the 2000-2003 baseline level. This shall result in a yearly-average total phosphorous load of 5.7 pounds per day.

Article 5. The nonpoint source bacteria load shall be reduced by 74% from the 1998-2004 baseline level. This shall result in reducing a yearly-mean bacteria load from 3.7E+10 CFU per day to 9.0E+9 CFU per day.

Article 6. The bacteria load from Wilmington CSO 31 shall be reduced by 28% from the 1998-2004 baseline level. This shall result in reducing a yearly-mean bacteria load from 5.4E+10 CFU per day to 3.9E+10 CFU per day.

Article 7. Based upon water quality model runs and assuming implementation of reductions identified by Articles 1 through 6, DNREC has determined that, with an adequate margin of safety, water quality standards will be met in Shellpot Creek.

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Article 8. Implementation of this TMDLs Regulation shall be achieved through development and implementation of a Pollution Control Strategy. The Strategy will be developed by DNREC in concert with a Shellpot Creek Tributary Action Team, other stakeholders, and the public.

9 DE Reg. 1002 (12/01/05)