

Text, tables and graphs proposed for addition to Appendix 1: TMDLS Expressed as Daily Load in the Connecticut Statewide Total Maximum Daily Load Analysis for Bacteria Impaired Waters

Estuarine and Marine Shellfishing Waters - Figure and Table 4 show TMDLs for these waters based on the geometric mean criterion for direct consumption of shellfish of 14 fecal coliform units per 100mL. These daily load calculations for Class A coastal waters are based on the daily replacement volume, which is the volume of the waterbody that is exchanged each day.

Figure 4: Estuarine and marine daily loads based on Fecal coliform salt water geometric mean water quality standards (GM WQS) for direct consumption of shellfish.

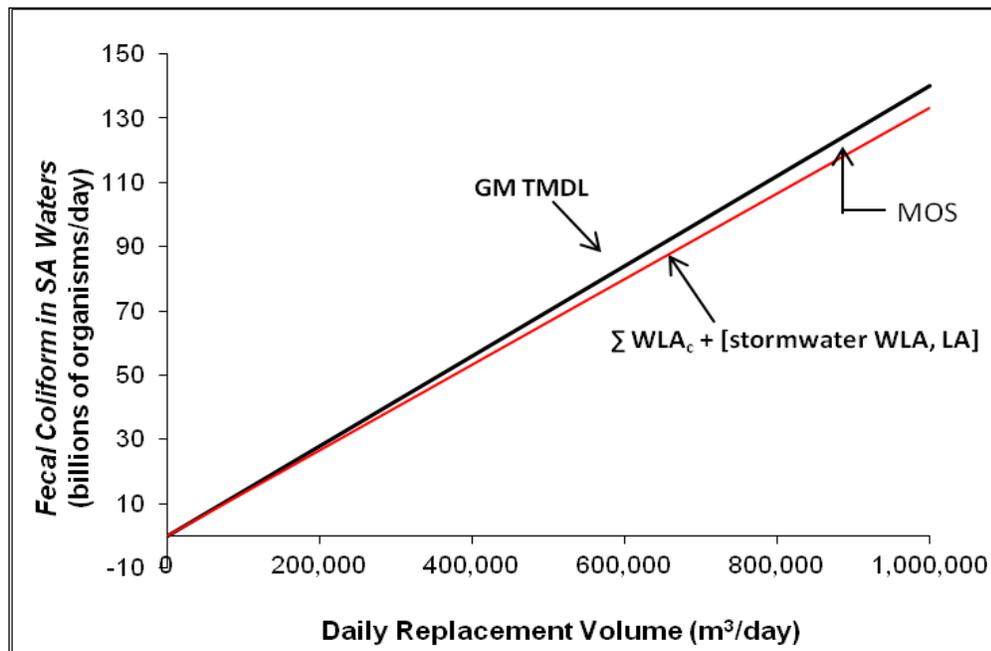


Table 4: Fecal coliform estuarine and marine daily loads based on geometric mean water quality standards (GM WQS) for direct consumption of shellfish.

Daily Replacement Volume (m ³ / day)	Geometric Mean WQS (count / 100 mL)	TMDL (10 ⁹ count / day)	MOS (10 ⁹ count / day)	LA and WLA (10 ⁹ count / day)
1000	14	0.14	0.007	0.13
5000	14	0.70	0.035	1
10000	14	1.4	0.07	1
50000	14	7	0.35	7
100000	14	14	0.70	13
500000	14	70	3.50	67
1000000	14	140	7.00	133

Formula:

$$\text{TMDL (} 10^9 \text{ organisms / day)} = \text{Water Quality Standard (count / 100 mL)} \times \text{Daily Replacement Volume (m}^3 \text{ / day)} \times 10 \text{ (100 mL / L)} \times 1000 \text{ (L / m}^3 \text{)} \times 1/10^9$$

Where: WQS = 14 count / 100mL Fecal coliform

$$\text{Daily Replacement volume} = (\text{Annual flushing rate}/365) \times \text{Waterbody Volume (m}^3\text{)}$$

Annual Flushing Rate = number of times per year the waterbody's volume is exchanged

Abbreviations:

GM WQS = Geometric Mean Water Quality Standard; TMDL = Total Maximum Daily Load

WLA = Waste Load Allocations; LA = Load Allocation.

MOS = Margin of Safety – set equal to 5% of GM WQS.

mL = milliliter; L = Liter, m³ = cubic meter

Figure and Table 5 show TMDLs for these waters based on the geometric mean criterion for indirect consumption of shellfish of 88 fecal coliform units per 100mL. These daily load calculations for Class SB coastal waters are based on the daily replacement volume, which is the volume of the waterbody that is exchanged each day.

Figure 5: Estuarine and marine daily loads based on Fecal coliform salt water geometric mean water quality standards (GM WQS) for indirect consumption of shellfish.

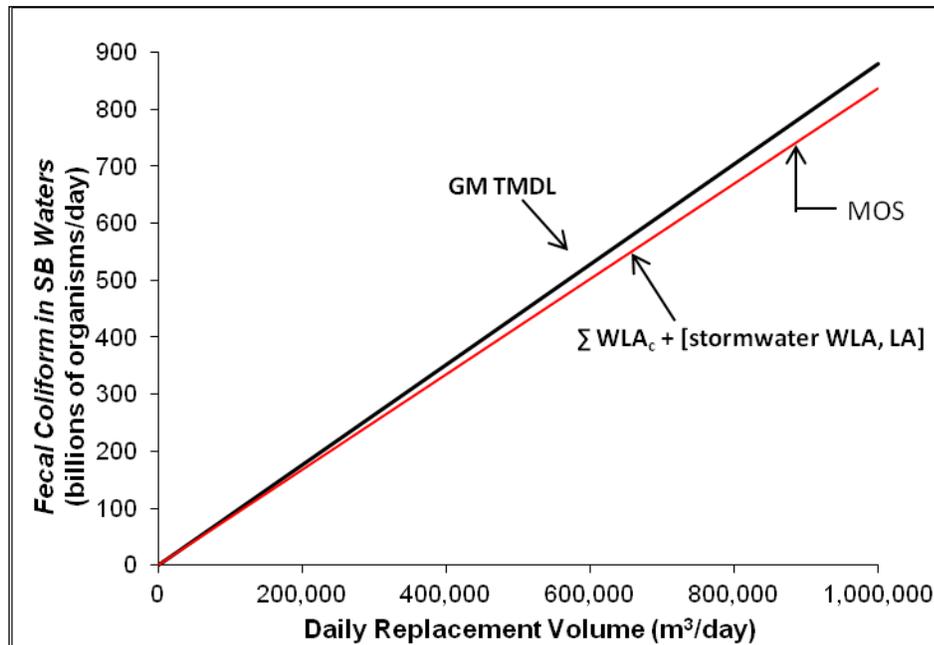


Table 5: Fecal coliform estuarine and marine daily loads based on geometric mean water quality standards (GM WQS) for indirect consumption of shellfish.

Daily Replacement Volume (m ³ / day)	Geometric Mean WQS (count / 100 mL)	TMDL (10 ⁹ count / day)	MOS (10 ⁹ count / day)	LA and WLA (10 ⁹ count / day)
1000	88	0.88	0.044	0.84
5000	88	4.40	0.22	4.2
10000	88	8.8	0.44	8.4
50000	88	44	2	42
100000	88	88	4	84
500000	88	440	22	418
1000000	88	880	44	836

Formula:

TMDL (10⁹ organisms / day) = Water Quality Standard (count / 100 mL) x Daily Replacement Volume (m³ / day) x 10 (100 mL / L) x 1000 (L / m³) x 1/10⁹

Where: WQS = 88 count / 100mL Fecal coliform

Daily Replacement volume = (Annual flushing rate/365) x Waterbody Volume (m³)

Annual Flushing Rate = number of times per year the waterbody's volume is exchanged

Abbreviations:

GM WQS = Geometric Mean Water Quality Standard; TMDL = Total Maximum Daily Load

WLA = Waste Load Allocations; LA = Load Allocation.

MOS = Margin of Safety – set equal to 5% of GM WQS.

mL = milliliter; L = Liter, m³ = cubic meter