

an estimated runoff coefficient, sediment loading rate, and wet sediment density, and an appropriate safety factor. See **Appendix A - Basis of Sediment Removal Interval Equation** for further details about the equation..

An interim certification or acknowledgement as described above shall only be obtained for the MTD if the computed required sediment removal interval is at least six months.

The required sediment removal interval of the tested MTD shall be computed by the following equation:

$$\text{Required Sediment Removal Interval (Months)} = \frac{(50\% \text{ of MTD's Maximum Sediment Storage Volume})}{(40.4)(\text{MTFR})(\text{TSS Removal Efficiency})}$$

Documentation of any maintenance that occurs on the MTD during the laboratory testing process, including frequency, reason for maintenance, and amount of sediment removed must be submitted as part of the verification review.

H. Submission Requirements for MTD Verification and Certification or Acknowledgement

- 1. Pre-Laboratory Testing Submittal**
 - a. Basis of Maximum Conveyance and Maximum Treatment Flow Rates
 - b. Basis of Maximum Sediment Storage Depth and Volume
 - c. Basis of Effective Treatment Area
 - d. Maximum Conveyance and Treatment Flow Rate Determinations and Equations

- 2. Post-Laboratory Testing Submittal**
 - a. Schematic drawings and photographs of lab testing setup.
 - b. Detailed drawings of the MTD tested in the lab, indicating constants or variables in different sizes of the same MTD
 - c. Comparison of Requirements Vs. Actual Values for the following:
 - Flow Rates
 - Concentrations
 - Water Temperatures
 - Specific Gravity
 - Particle Size Distribution including plot of both required and actual values.
 - d. Comparison of times that influent and effluent samples were taken for each flow rate and influent concentration starting from the time of initiation of flow into the MTD.
 - e. All raw measurements and data from lab testing.
 - f. Methods/devices used to determine particle size distributions and the results of such determinations.
 - g. All pertinent computations, including average influent and effluent concentrations, load rates, average removal efficiencies for each flow and concentration, weighted removal efficiency for each concentration, final MTD annual TSS removal rate, and sediment removal interval.

Appendix A: Basis of Sediment Removal Interval Equation

Constants

62.4	LBS/CF Density of Water
2.65	Specific Gravity of Dry Sediment
2	Wet Sediment Bulking Factor
50%	Maximum Available Sediment Storage Volume
400	LBS/Acre Sediment Loading Rate
3.2	Inches per Hour Maximum Stormwater Quality Storm Rainfall Intensity for 10 Minutes
0.90	MTD Drainage Area Runoff Coefficient
10	Minute MTD Drainage Area Time of Concentration

Volume of Sediment per Acre per Year:

Density of Dry Sediment	= (62.4 LBS/CF)(2.65)	= 165 LBS/CF
Density of Wet Sediment	= (165 LBS/CF)/2 Bulking Factor	= 82.5 LBS/CF
Annual Sediment Volume per Acre	= (400 LBS/Acre)/(82.5 LBS/CF)	= 4.85 CF/Acre
Apply Safety Factor	= (4.85 CF/Acre)(2 Safety Factor)	= 9.70 CF/Acre
MTD Drainage Area in Acres	= MTFR/((3.2 Inches/Hour)(0.9))	= (0.347)(MTFR)

$$\begin{aligned} \text{Annual Sediment Volume Captured} &= (9.70 \text{ CF/Acre})(0.347)(\text{MTFR})(\text{TSS Removal Efficiency}) \\ &= (3.366)(\text{MTFR})(\text{TSS Removal Efficiency}) \end{aligned}$$

$$\begin{aligned} \text{Required Sediment Removal Interval (Years)} \\ &= \frac{(50\% \text{ of MTD's Maximum Sediment Storage Volume})}{(3.366)(\text{MTFR})(\text{TSS Removal Efficiency})} \end{aligned}$$

$$\begin{aligned} \text{Required Sediment Removal Interval (Months)} \\ &= \frac{(50\% \text{ of MTD's Maximum Sediment Storage Volume})}{(3.366)(\text{MTFR})(\text{TSS Removal Efficiency})(12)} \end{aligned}$$

$$\begin{aligned} \text{Required Sediment Removal Interval (Months)} \\ &= \frac{(50\% \text{ of MTD's Maximum Sediment Storage Volume})}{(40.4)(\text{MTFR})(\text{TSS Removal Efficiency})} \end{aligned}$$