ESTIMATING SEDIMENT ACCUMULATION IN PONDS AND SEDIMENT BASINS

Job Name _____ Watershed Size (acres) _____ (Limited to 250 acres)

Site No. _____ Computed by _____

County _____ Date _____

Location ____1/4 Sec. _____ T. _____ R. Conditions: Present or Future (Circle one)

I. AVERAGE ANNUAL SEDIMENT YIELD

EI= _____ R= _____		Soil Type, Slope, Length, Crop Sequence, Tillage Method	Soil Loss Factors				Soil Loss (t/ac/yr)	Area (acres)	Sed. Yield (tons/yr)
			LS	K	P	C			
Sheet Erosion	Cropland								
	Pasture or Woods								
	Construction Area								
	Idle								
	Other								

A. Sheet Erosion Delivered/Year = Delivery Rate (_____) X Sed. Yield _____ = _____ Tons/yr
(Use 0.35 to 0.55) (tons/yr)

NON-SHEET EROSION	SEDIMENT YIELD (tons/yr)
Gully Erosion	
Streambank Erosion	
Total	

B. Non-Sheet Erosion Delivered/Year = Delivery Rate (_____) X Total _____ = _____ Tons/yr
(Use 0.80 to 0.90) (tons/yr)

TOTAL EROSION DELIVERED/YEAR = (A) + (B) = _____ Tons/yr

II. EXPECTED DESIGN SEDIMENT VOLUME

Total Tons Delivered/Year _____ X 0.90 = _____ Tons/yr X _____ Years = _____Tons
(Trap Efficiency) (Design Years)

Sediment Storage = _____ Tons X _____ Ac-ft/ton = _____ Acre-Feet

For Sediment Basins: _____ Acre-Feet X 1.5 [1/] = _____ Acre-Feet

Conversion Table	
lb/ft^3	ac-ft/ton
50	0.00092 – Most Soils
55	0.00084
60	0.00077
65	0.00071
70	0.00066 – Sand or Gravel

[1/] Correction factor to account for reduced trap efficiency as sediment accumulation approaches maximum design capacity.