Minnesota Pollution Control Agency

OSTP Mound Materials Worksheet

University of Minnesota

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A. Calculate *Bed* (rock) *Volume*: *Bed Length* (2.C) X *Bed Width* (2.B) X *Depth* = *Volume* (ft^3)

[ ] ft X [ ] ft X 1.0 = [ ] ft^3

Divide ft^3 by 27 ft^3/yd^3 to calculate cubic yards:

[ ] ft^3 ÷ 27 = [ ] yd^3

Add 20% for constructability: [ ] yd^3 X 1.2 = [ ] yd^3

B. Calculate *Clean Sand Volume:*

Volume Under Rock bed: *Average Sand Depth* x *Media Width* x *Media Length* = cubic feet

[ ] ft X [ ] ft X [ ] ft = [ ] ft^3

For a Mound on a slope from 0-1%

Volume from Length = ((Upslope Mound Height - 1) X Absorption Width Beyond Bed X Media Bed Length)

[ ] ft - 1) X [ ] X [ ] ft = [ ]

Volume from Width = ((Upslope Mound Height - 1) X Absorption Width Beyond Bed X Media Bed Width)

[ ] ft - 1) X [ ] X [ ] ft = [ ]

Total Clean Sand Volume: *Volume from Length* + *Volume from Width* + *Volume Under Media*

[ ] ft^3 + [ ] ft^3 + [ ] ft^3 = [ ] ft^3

For a Mound on a slope greater than 1%

Upslope Volume: ((*Upslope Mound Height - 1*) x 3 x *Bed Length*) ÷ 2 = cubic feet

(([ ] ft - 1) X 3.0 ft X [ ]) ÷ 2 = [ ] ft^3

Downslope Volume: ((*Downslope Height - 1*) x Downslope Absorption Width x *Media Length*) ÷ 2 = cubic feet

(([ ] ft - 1) X [ ] ft X [ ]) ÷ 2 = [ ] ft^3

Endslope Volume: (*Downslope Mound Height - 1*) x 3 x *Media Width* = cubic feet

([ ] ft - 1) X 3.0 ft X [ ] ft = [ ] ft^3

Total Clean Sand Volume: *Upslope Volume* + *Downslope Volume* + *Endslope Volume* + *Volume Under Media*

[ ] ft^3 + [ ] ft^3 + [ ] ft^3 + [ ] ft^3 = [ ] ft^3

Divide ft^3 by 27 ft^3/yd^3 to calculate cubic yards: [ ] ft^3 ÷ 27 = [ ] yd^3

Add 20% for constructability: [ ] yd^3 X 1.2 = [ ] yd^3

C. Calculate *Sandy Berm Volume:*

Total Berm Volume (approx): ((Avg. Mound Height - 0.5 ft topsoil) x Mound Width x Mound Length) ÷ 2 = cubic feet

([ ] - 0.5)ft X [ ] ft X [ ]) ÷ 2 = [ ] ft^3

Total Mound Volume - Clean Sand volume -Rock Volume = cubic feet

[ ] ft^3 - [ ] ft^3 - [ ] ft^3 = [ ] ft^3

Divide ft^3 by 27 ft^3/yd^3 to calculate cubic yards: [ ] ft^3 ÷ 27 = [ ] yd^3

Add 20% for constructability: [ ] yd^3 x 1.2 = [ ] yd^3

D. Calculate *Topsoil Material Volume: Total Mound Width X Total Mound Length X .5 ft*

[ ] ft X [ ] ft X 0.5 ft = [ ] ft^3

Divide ft^3 by 27 ft^3/yd^3 to calculate cubic yards: [ ] ft^3 ÷ 27 = [ ] yd^3

Add 20% for constructability: [ ] yd^3 x 1.2 = [ ] yd^3