



OSTP Mound Design Worksheet <1% Slope



1. SYSTEM SIZING:

Project ID: _____

v 05.13.14

- A. Design Flow : GPD
- B. Soil Loading Rate: GPD/ft²
- C. Depth to Limiting Condition: ft
- D. Percent Land Slope: %
- E. Design Media Loading Rate: GPD/ft²
- F. Mound Absorption Ratio:

TABLE IXa				
LOADING RATES FOR DETERMINING BOTTOM ABSORPTION AREA AND ABSORPTION RATIOS USING PERCOLATION TESTS				
Percolation Rate (MPI)	Treatment Level C		Treatment Level A, A-2, B ₁	
	Absorption Area Loading Rate (gpd/ft ²)	Mound Absorption Ratio	Absorption Area Loading Rate (gpd/ft ²)	Mound Absorption Ratio
<0.1	-	1	-	1
0.1 to 5	1.2	1	1.6	1
0.1 to 5 (fine sand and loamy fine sand)	0.6	2	1	1.6
6 to 15	0.78	1.5	1	1.6
16 to 30	0.6	2	0.78	2
31 to 45	0.5	2.4	0.78	2
46 to 60	0.45	2.6	0.6	2.6
61 to 120	-	5	0.3	5.3
>120	-	-	-	-

Table I				
MOUND CONTOUR LOADING RATES:				
Measured Perc Rate	← OR →	Texture - derived mound absorption ratio		Contour Loading Rate:
≤ 60mpi		1.0, 1.3, 2.0, 2.4, 2.6	→	≤12
61-120 mpi	← OR →	5.0	→	≤12
≥ 120 mpi*		>5.0*	→	≤6*

*Systems with these values are not Type I systems. Contour Loading Rate (linear loading rate) is a recommended value.

2. DISPERSAL MEDIA SIZING

A. Calculate Dispersal Bed Area: Design Flow (1.A) ÷ Design Media Loading Rate (1.E) = ft²

GPD ÷ GPD/ft² = ft²

If a larger dispersal media area is desired, enter size: ft²

B. Enter Dispersal Bed Width: ft *Can not exceed 10 feet.*

C. Calculate Contour Loading Rate: Bed Width (2.B) X Design Media Loading Rate (1.E)

ft² X GPD/ft² = gal/ft *Can not exceed Table 1*

D. Calculate Minimum Dispersal Bed Length: Dispersal Bed Area (2.A) ÷ Bed Width (2.B) = Bed Length

ft² ÷ ft = ft

3. ABSORPTION AREA SIZING

A. Calculate Absorption Width: Bed Width (2.B) X Mound Absorption Ratio (1.F) = Absorption Width

ft X = ft

B. For slopes from 0 to 1%, the Absorption Width is measured from the bed equally in both directions.

Absorption Width Beyond the Bed: Absorption Width (3.A) - Bed Width (2.B) ÷ 2 = Width beyond Bed

(ft - ft) ÷ 2 = ft

4. DISTRIBUTION MEDIA: ROCK

A. Media Volume: Media Depth below and above pipe X Length X Width

$$\boxed{} \text{ ft} \times \boxed{} \text{ ft} \times \boxed{} \text{ ft} = \boxed{} \text{ ft}^3 \div 27 = \boxed{} \text{ yd}^3$$

5. DISTRIBUTION MEDIA: REGISTERED TREATMENT PRODUCTS: CHAMBERS AND EZFLOW

A. Enter Dispersal Media:

B. Enter the Component: Length: ft Width: ft Depth: ft

C. Number of Components per Row = Bed Length divided by Component Length (Round up)

$$\boxed{} \text{ ft} \div \boxed{} \text{ ft} = \boxed{} \text{ components/row}$$

D. Actual Bed Length = Number of Components/row X Component Length:

$$\boxed{} \text{ components} \times \boxed{} \text{ ft} = \boxed{} \text{ ft}$$

E. Number of Rows = Bed Width divided by Component Width

$$\boxed{} \text{ ft} \div \boxed{} \text{ ft} = \boxed{} \text{ rows} \text{ Adjust width so this is a whole number.}$$

F. Total Number of Components = Number of Components per Row X Number of Rows

$$\boxed{} \times \boxed{} = \boxed{} \text{ components}$$

6. MOUND SIZING

A. Calculate Clean Sand Lift: 3 feet minus Depth to Limiting Condition = Clean Sand Lift (1 ft minimum)

$$3.0 \text{ ft} - \boxed{} \text{ ft} = \boxed{} \text{ ft} \quad \text{Design Sand Lift (optional): } \boxed{} \text{ ft}$$

B. Upslope Mound Height = Clean Sand Lift + Depth of Media + Depth of Cover (1 ft)

$$\boxed{} \text{ ft} + \boxed{} \text{ ft} + 1.0 \text{ ft} = \boxed{} \text{ ft}$$

C. Berm Width = Upslope Mound Height (4.B) X 4 (4 is recommended, but could be 3-12)

$$\boxed{} \text{ ft} \times \boxed{} \text{ ft} = \boxed{} \text{ ft}$$

D. Total Landscape Width = Berm Width + Dispersal Bed Width + Berm Width

$$\boxed{} \text{ ft} + \boxed{} \text{ ft} + \boxed{} \text{ ft} = \boxed{} \text{ ft}$$

E. Additional Berm Width necessary for absorption - Absorption Width - Total Landscape Width

$$\boxed{} \text{ ft} - \boxed{} \text{ ft} = \boxed{} \text{ ft} \quad \text{if number is negative } (<0), \text{ value is ZERO}$$

F. Final Berm Width = Additional Berm Width + Berm Width

$$\boxed{} \text{ ft} + \boxed{} \text{ ft} = \boxed{} \text{ ft}$$

G. Total Mound Width = Final Berm Width + Dispersal Bed Width + Final Berm Width

$$\boxed{} \text{ ft} + \boxed{} \text{ ft} + \boxed{} \text{ ft} = \boxed{} \text{ ft}$$

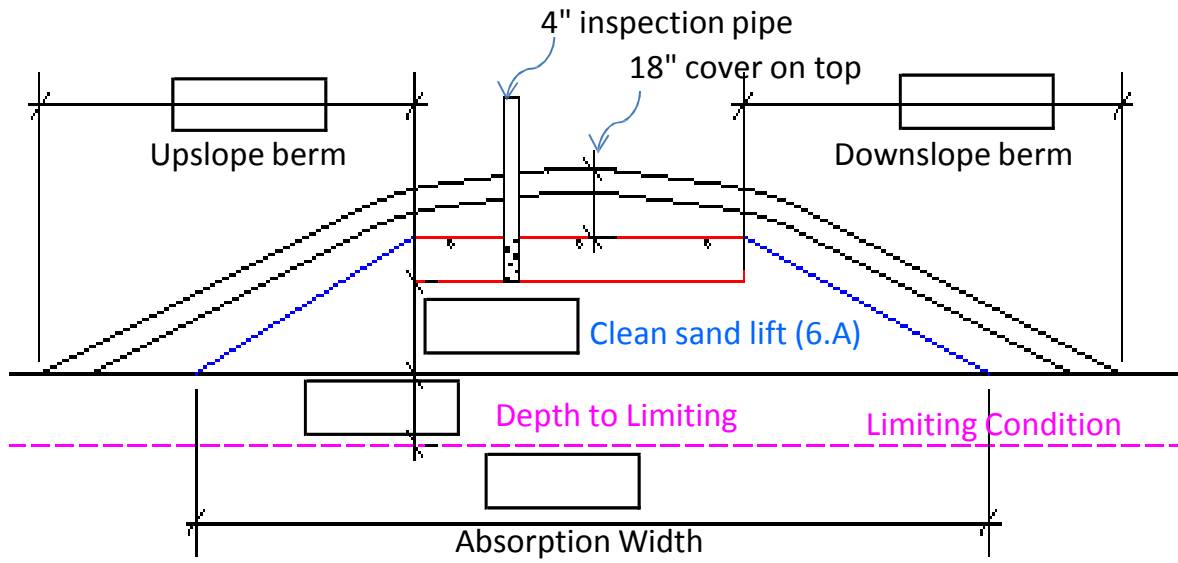
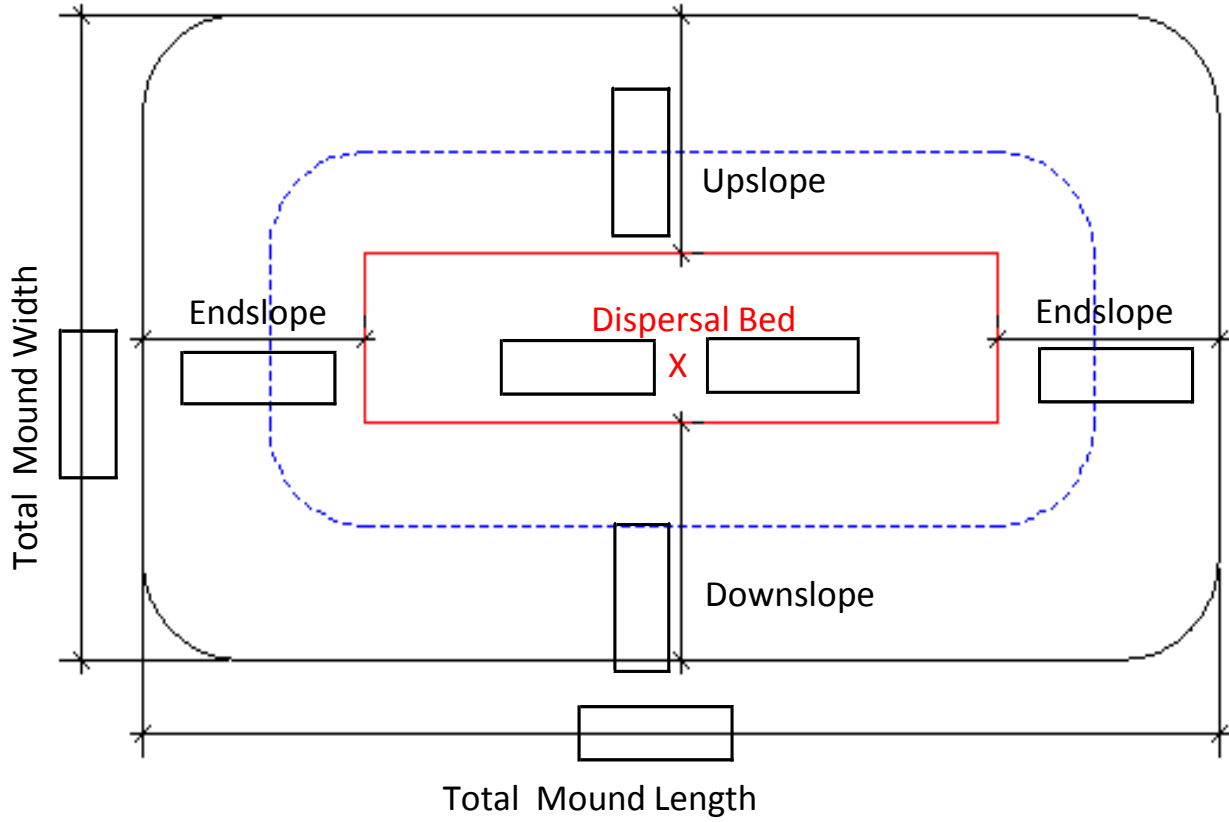
H. Total Mound Length = Final Berm Width + Dispersal Bed Length + Final Berm Width

$$\boxed{} \text{ ft} + \boxed{} \text{ ft} + \boxed{} \text{ ft} = \boxed{} \text{ ft}$$

I. Setbacks from the Bed: Absorption Width - Dispersal Bed Width divided by 2

$$\left(\boxed{} \text{ ft} - \boxed{} \right) / 2 = \boxed{} \text{ ft}$$

7. MOUND DIMENSIONS



Comments: