File Name: Enter Dust

Nature of dust release (Plume or Puff)   Plume

Average Density of dust particles (ρ) (g/cc):   2   Wind velocity (m/s):   7

Height of release or kicked up dust (H) (m):   2   Initial upward velocity of dust (m/s):   4

Diameter of Puff/Plume released (m):   10   Puff Quantity (kg)/ Plume Rate (kg/s) of dust release 20

Sr. No.	Diameter (D) range of dust released (µm=10^-6m)	Average Diameter (Dp) of particle size range dust released (µm=10^-6m)	Percent Composition of Dust by weight in the total dust released (% Comp.)	Mass (m) of dust size range in the total dust release (kg)	Rate of dust settlement in cm/s	Time (t) (s) to settle dust of each size group from time of	Distance (D) of dust settlement from release point (m)	Lateral spread (m) Day*	Night*
1	<=1 µm (SPM-Does not settle)	<1 µm	0.0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	>1 to <=10 µm	5 µm	20.0	240.0	0.151	13.5099	104.5693	25.17	11.26
3	>10 to <=20 µm	15 µm	25.0	300.0	1.362	1.4978	20.4846	9.80	6.42
4	>20 to <=30 µm	25 µm	35.0	420.0	3.782	0.5394	13.7758	8.39	5.99
5	>30 to <=40 µm	35 µm	0.0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6	>40 to <=50 µm	45 µm	20.0	240.0	12.255	0.1665	11.1655	7.82	5.82
7	>50 to <=60 µm	55 µm	0.0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
8	>60 to <=70 µm	60 µm	0.0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
9	>70 to <=80 µm	75 µm	0.0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
10	>80 to <=90 µm	85 µm	0.0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
11	>90 to <=100 µm	95 µm	0.0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
12	>100 µm (Rapidly settling)	>100 µm	0.0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

*NOTE: Lateral spread During Day
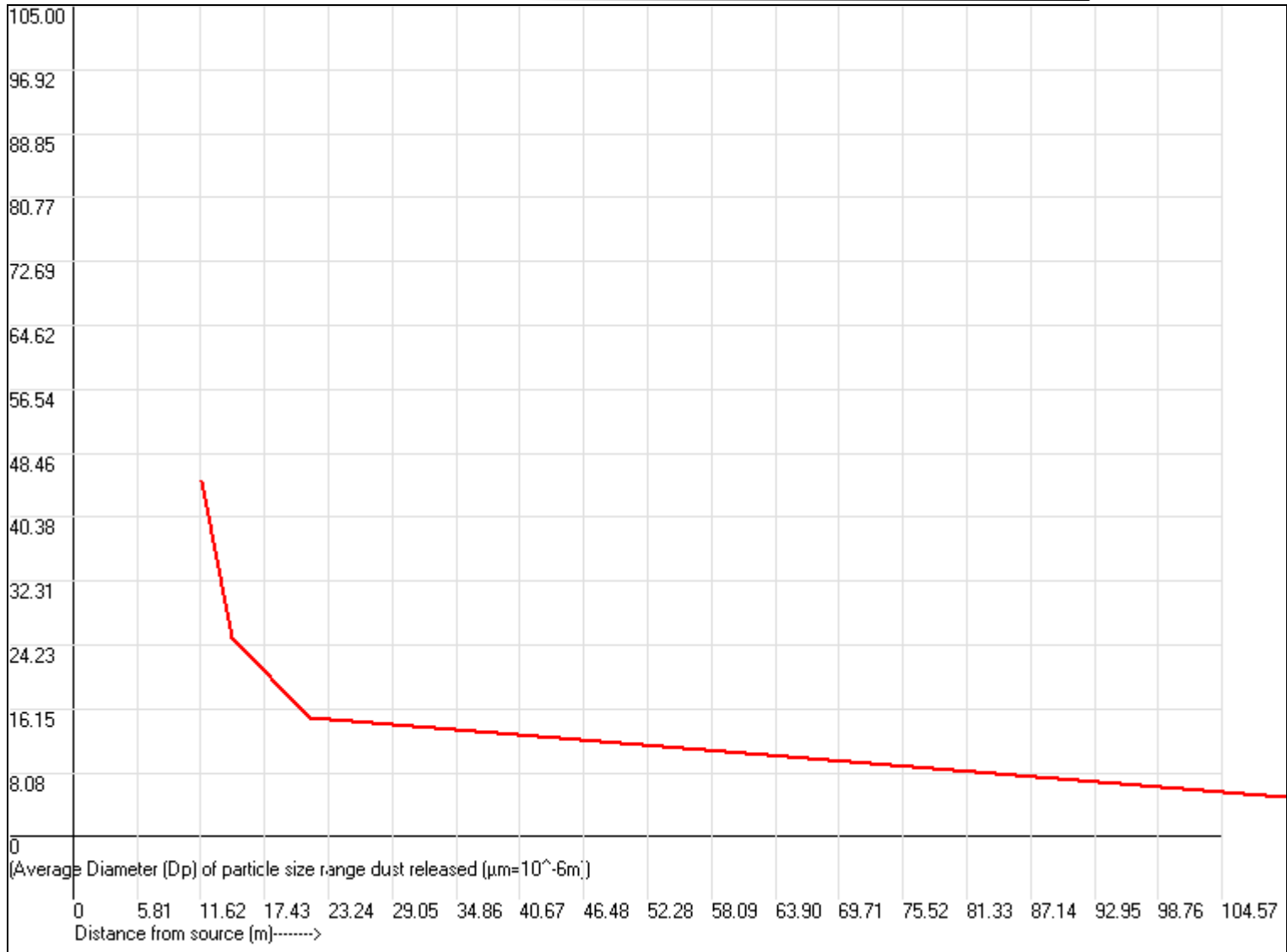Assuming B Stability class and During Nigh
Assuming E Stability class

NOTE: <=1 µm SPM settles very far at N.A. (m) so not plotted.

HAMS-GPS : Dust settlement mapping

Reference: Enter Dust

[Licensed to : HAMSAGARS]

Dust dispersion settlement graph

Note: In case of Dust dispersion, each graph shows settlement distance according to particle size according to wind velocity in different directions. Finer the dust longer it takes to settle and vise-versa.

(Average Diameter (Dp) of particle size range dust released (μm=10^-6m))

Distance from source (m)-------->

HAMS-GPS : Dust settlement mapping
Reference: Enter Dust
[Licensed to : HAMSAGARS]
Scale:- 1 : 12.68 m

Source point

Rate of dust settlement: 12.255 cm/s [Max.dist. 11.17]
Rate of dust settlement: 3.782 cm/s [Max.dist. 13.78]

Rate of dust settlement: 1.362 cm/s [Max.dist. 20.48]

Rate of dust settlement: 0.151 cm/s [Max.dist. 104.57]

N
W   E
S