DIFFUSION OF POINT SOURCE POLLUTION

Stack height (m)			30			Gas exit velocity (m/s)			6	
Stack diameter (m)			2			Gas exit temperature (C)			200	
Emission rate (g/s)	Q		10			Ambient Temperature			20	

Atmospheric						1 = Very Unstable		4 = Neutral	
Condition		4				2 = Moderately Unstable		5 = Somewhat stable	
Category:						3 = Slight unstable		6 = Stable	

| Wind | | Effective Ht | Estimated Concentration of Ground-Level Pollution (mmg/m3) | | | | | | | | | |
| Veloc | | Stack | on Plume Centerline at Selected Distances (km) from Source | | | | | | | | | |
u		H_{eff}	0	0.5	0.8	1.5	3	5	10	20	35	60	100
1		250.3176	0	0	0	0	1	5	9	8	6	4	2
3		103.4392	0	0	3	22	26	19	10	5	3	1	1
5		74.06352	0	3	23	38	25	15	7	3	2	1	1
7		61.47395	0	13	38	38	20	11	5	2	1	1	0
9		54.47974	0	22	43	35	17	9	4	2	1	1	0
11		50.02887	0	29	44	31	14	8	3	1	1	0	0
13		46.94751	0	32	43	28	13	7	3	1	1	0	0
15		44.68784	0	34	41	25	11	6	2	1	1	0	0
17		42.95986	0	35	39	23	10	5	2	1	0	0	0
19		41.59566	0	35	37	21	9	5	2	1	0	0	0

3D Plot

60

40

DIFFUS

g/m3)

50

45

40

Wind velocity

Distance downwind

- 40-60
- 20-40
- 0-20

Concentration (mm)

Concentratio n 20 0

0 0.8 3 10 35 100

1
13

35
30
25
20
15
10
5
0

0   0.5   0

SCRATCH AREA

473		gas exit temperature in degrees Kelvin
293		ambient temperature in degrees Kelvin
22		}
98		} interim values for calculating effective stack height
220		}
0		}

Lateral and Vertical Disperson Coefficients for Each Stability Category

Lat-eral	1		0	107	169	308	579	898	1556	2540	3630	4989	6633
	2		0	78	123	224	421	653	1131	1848	2640	3628	4824
	3		0	54	85	154	289	449	778	1270	1815	2495	3317
	4		0	39	62	112	210	327	566	924	1320	1814	2412
	5		0	29	46	84	158	245	424	693	990	1361	1809
	6		0	20	31	56	105	163	283	462	660	907	1206

Lateral Lookup	σ_y		0	39	62	112	210	327	566	924	1320	1814	2412
Ver-	1		0	100	160	300	600	1000	2000	4000	7000	####	20000
ti-	2		0	60	96	180	360	600	1200	2400	4200	7200	12000
cal	3		0	38	59	105	190	283	462	716	990	1331	1746
	4		0	23	32	50	77	103	150	216	287	377	488
	5		0	13	19	31	47	60	75	86	91	95	97
	6		0	7	10	17	25	32	40	46	49	51	52
Vertical Lookup	σ_z		0	23	32	50	77	103	150	216	287	377	488

LEGEND			
Your Formula goes here			
Cells to be filled with that formula			
Values changed by the user			
Lookup values needed in the formula			
Values you will need in your formula			

ION OF POINT-SOURCE POLLUTION USING A GAUSSIAN DISTRIBUTION

1

3

Distance from source (km)

Legend: 5, 7, 9, 11, 13, 15, 17, 19