



Central Pollution Control Board, Delhi
Deepawali Monitoring Report: 2016

Press Release

**Monitoring of Ambient Air & Noise Monitoring conducted
by CPCB: 2016**

Deepawali Monitoring:

This year, the CPCB has attempted to coordinate monitoring of ambient noise levels at more than 200 locations and ambient air quality at about 170 locations across the country. The compiled data shall be published as CPCB does every year.

In Delhi, Ambient Noise was monitored at 16 locations and Ambient Air Quality at 11 locations. The monitoring was carried out in two phases, Pre-Deepawali on October 24, 2016 and Deepawali on October 30, 2016.

Observations:

1. The Sound Level (Manual : 06.00 p.m. to 12.00 Night)

In general, there was no significant increase in ambient sound level except at Mayur Vihar Phase-II (Residential area). The highest sound level observed at Okhla (Commercial area).

S.No.	Monitoring Stations	Pre-Deepawali Day		Deepawali Day	
		05.11.15	24.10.16	11.11.15	30.10.16
1	Lajpat Nagar (R)	61	55	76	76
2	Mayur Vihar Ph-II (R)	60	59	79	80 ↑
3	Pitam Pura (R)	55	43	74	ID
4	Kamla Nagar (R)	61	60	86	74
5	Janakpuri (R)	58	59 ↑	79	75
6	Okhla (I)	66	74 ↑	86	86

Note : All values are in Leq dB(A) ID = indicates insufficient data

2. The Sound Level (Automatic)

There was no increase in any location with respect to sound level both times during day & night time, as compared to previous year.

S.No.	Monitoring Stations	Pre-Deepawali Day				Deepawali Day				Standards	
		05.11.2015		24.10.2016		11.11.2015		30.10.2016		Day Time	Night Time
		Day Time	Night Time	Day Time	Night Time	Day Time	Night Time	Day Time	Night Time		
1	Anand Vihar (C)	68	63	66	62	69	70	68	68	65	55
2	Punjabi Bagh (R)	60	55	59	49	66	71	60	58	55	45
3	CPCB HQ (C)	67	57	66	57	67	68	64	61	65	55
4	Civil Lines (C)	62	60	61	59	64	66	61	62	65	55
5	DCE, Bawana (S)	77	80	54	50	66	71	56	55	50	40
6	Dilshad Garden (S)	53	48	54↑	49↑	65	67	57	55	50	40
7	ITO (C)	74	68	71	66	73	70	70	67	65	55
8	Mandir Marg (S)	60	46	60	45	60	60	54	51	50	40
9	NSIT, Dwarka (S)	56	52	57↑	53↑	63	62	58	57	50	40
10	R.K. Puram (S)	63	52	61	51	67	65	61	57	50	40

Note : All values are in Leq dB(A)

3. Ambient Air Quality (06.00 a.m. to 06.00 a.m.)

As compared to previous year, the data of PM₁₀ was found to increase in all places, while PM_{2.5} has increased at Janakpuri. The concentration of pollutants with respect to PM₁₀, PM_{2.5}, SO₂ and NO₂ were found have increased on the Deepawali day.

Locations	05.11.2015				24.10.2016			
	SO ₂	NO ₂	PM ₁₀	PM _{2.5}	SO ₂	NO ₂	PM ₁₀	PM _{2.5}
ITO	14	78	166	NM	9	83↑	203↑	104
Pitampura	21	72	161	117	10	58	368↑	102
Janakpuri	12	45	119	84	16↑	71↑	213↑	96↑
Parivesh Bhawan	38	62	166	96	17	89↑	324↑	84

Note : All values are in µg/m³, NM = Indicates Not measured

Locations	11.11.2015				30.10.2016			
	SO ₂	NO ₂	PM ₁₀	PM _{2.5}	SO ₂	NO ₂	PM ₁₀	PM _{2.5}
ITO	22	57	531	NM	16	77 ↑	878 ↑	797
Pitampura	19	27	460	435	16	43↑	1297↑	1238↑
Janakpuri	18	25	554	459	45↑	65↑	902↑	842↑
Parivesh Bhawan	36	41	593	474	110↑	141↑	1183↑	958↑

Note : All values are in µg/m³, NM = indicates Not measured

4. Ambient Air Quality (Automatic: 06.00 a.m. to 06.00 a.m.)

At IHBAS, Dilshad Garden, there was increase in pollutants concentrations viz. PM_{2.5}, SO₂, NO₂ & CO. At DMS, Shadipur, there was increase in pollutants concentrations viz. PM_{2.5}, SO₂, NO₂ & CO. At NSIT, Dwarka, there was increase in pollutants concentrations viz. PM_{2.5}, NO₂, CO, Ozone & Benzene.

Pollutants	Pre-Deepawali Day		Deepawali Day	
	05.11.15	24.10.16	11.11.15	30.10.16
PM _{2.5}	78	119↑	192	602↑
SO ₂	5	5	9	40↑
NO ₂	63	85↑	64	94↑
CO	222	1119↑	736	983↑
Ammonia	37	18	33	27

Note : All values are in µg/m³

Pollutants	Pre-Deepawali Day		Deepawali Day	
	05.11.15	24.10.16	11.11.15	30.10.16
PM _{2.5}	108	62	121	474↑
SO ₂	3	16↑	25	94↑
NO ₂	60	63↑	49	102↑
CO	333	1148↑	993	1596↑
Ozone	5	24↑	39	32

Note : All values are in µg/m³

Pollutants	Pre-Deepawali Day		Deepawali Day	
	05.11.15	24.10.16	11.11.15	30.10.16
PM _{2.5}	191	118	99	457↑
SO ₂	9	21↑	30	11
NO ₂	27	33↑	33	35↑
CO	980	660	698	908↑
Ozone	14	40↑	16	62↑
Benzene	1	1	1	2↑

Note : All values are in µg/m³

The real-time automatic ambient air quality stations operated by DPCC, shows increase in pollutants level at all locations. The motoring data of pre-Deepawali monitoring and Deepawali monitoring are presented in the following stations.

Pollutants	Pre-Deepawali Day	Deepawali Day
	24.10.16	30.10.16
PM ₁₀	346	454↑
PM _{2.5}	144	285↑
SO ₂	39	73↑
NO ₂	77	103↑
NH ₃	31	108↑

Note : All values are in µg/m³

Pollutants	Pre-Deepawali Day	Deepawali Day
	24.10.16	30.10.16
PM ₁₀	236	428↑
PM _{2.5}	92	296↑
SO ₂	12	20↑
NO ₂	53	72↑
CO	1659	2093↑
NH ₃	15	23↑

Note : All values are in µg/m³

Table 4(f): Air Pollutants Profile (Online) at Punjabi Bagh during Deepawali Day		
Pollutants	Pre-Deepawali Day	Deepawali Day
	24.10.16	30.10.16
PM ₁₀	236	779↑
PM _{2.5}	108	402↑
SO ₂	16	68↑
NO ₂	74	125↑
CO	2002	3524↑
Ozone	56	102↑
NH ₃	35	71↑
Benzene	1	2↑
Note : All values are in µg/m ³		

Table 4(g): Air Pollutants Profile (Online) at Anand Vihar during Deepawali Day		
Pollutants	Pre-Deepawali Day	Deepawali Day
	24.10.16	30.10.16
PM ₁₀	644	1084↑
PM _{2.5}	178	430↑
SO ₂	21	68↑
NO ₂	111	106
Ozone	21	69↑
NH ₃	44	108↑
Note : All values are in µg/m ³		

Table 5(a): Meteorological Profile at East Arjun Nagar, Delhi										
Date	Wind Speed (m/sec.)			WD	Temperature (°C)			RH (%)		
	Avg.	Min.	Max.		Avg.	Min.	Max.	Avg.	Min.	Max.
24.10.2016	2.6	1	4.3	SW,W	28.4	22.6	33.7	38.9	25.5	55
25.10.2016	2.5	0.7	4.6	W,SW	27.8	23.9	32.1	43.5	32	57.6
26.10.2016	1.6	0.5	2.6	W,SW&NW	28	23.2	32.9	44	28.6	59.5
27.10.2016	2.1	1.3	4	W,SW,NW	27	22.6	31.9	41.7	26.2	62.1
28.10.2016	1.7	0.6	2.9	W,SW	26.4	22.2	31.6	42.5	26.1	56.3
29.10.2016	1.2	0.6	2.5	E	25.5	21.3	31.5	50.2	28	70
30.10.2016	1.3	0.5	2.5	E,SE	24.8	20.3	30.1	56.9	34.6	73
Min.	1.2				24.8	20.3	30.1	38.9	25.5	55
Max.	2.6				28.4	23.9	33.7	56.9	34.6	73
Mean	1.8				26.8	22.3	32.0	45.4	28.7	61.9

Table 5(b): Meteorological Profile at East Arjun Nagar, Delhi											
Date	Mixing Height					Pressure (mb)			Solar Radiation (W/m ²) 6.00 a.m. to 6.00p.m.		
	Avg.	Min.	Max.	Day Avg.	Night Avg.	Avg.	Min.	Max.	Avg.	Min.	Max.
24.10.2016	657	215	1791	1048	266	981.3	979.6	981.5	288	7	557
25.10.2016	706	230	1706	1066	247	982.1	980.4	983.6	301	8	560
26.10.2016	596	200	1575	889	304	985.3	983.5	986.9	259	5	495
27.10.2016	537	180	1452	819	255	987.2	985.4	989.7	268	6	484
28.10.2016	530	105	1600	892	172	985	983.5	987.6	263	5	477
29.10.2016	455	125	1219	703	207	986.2	984.6	987.8	199	4	416
30.10.2016	492	90	1749	832	152	988.3	986.4	989.7	220	4	452
Min.	455	90	1219	703	152	981.3	979.6	981.5	199	4	416
Max.	706	230	1791	1066	304	988.3		989.7	301	8	560
Mean	568	164	1585	893	229	985	983	987	257	5.6	491.6
Day Time : 06:00 a.m. to 06.00 p.m.						Night Time : 06:00 p.m. to 06:00 a.m.					

Overall Observation

Mean wind speed on Deepawali day in this year was 1.3 m/s where as last year mean wind speed was 3.4 m/s. In this year the mean mixing height on Deepawali day was 492 meters while in last year it was 590 meters with mixing height in the Deepawali night was 152 meters in comparison with last year's 324 meters. Lower wind speed and mixing height caused to have lower dispersive capacity in atmosphere leading to higher concentration of pollutants.

The level of pollutants has increased significantly in all places irrespective of parameters attributed to unfavorable meteorological conditions during the entire period. Lower mixing height attributes to lesser vertical distribution of pollutants. Lower temperature coupled with lesser wind speed attributes to stagnation of pollutants. This is due to cooling of earth surface and the air closer to the ground tends to cool down as well as further if the wind speed is also along with lower mixing height/making less area for dispersion/ dilution, the pollutants remains suspended else to the ground for longer duration till day of the governing factor changes its characteristics.

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