



Central Pollution Control Board  
Delhi 110032

## Press Release

### **Ambient Air and Noise Pollution Levels - Deepawali, 2013**

#### **Background**

Like previous years, the Central Pollution Control Board, Delhi has conducted an in-depth Ambient Air quality and Noise monitoring for the city of Delhi during celebration of Deepawali festival for the year 2013 (November 3, 2013) to see the overall impact of bursting crackers on Ambient Air Environment.

#### **Executive Summary**

Intensive ambient air monitoring was carried out at selected seven (07) locations and ambient noise monitoring was undertaken at nine (09) locations across the Delhi City (Manual) and real time ambient noise level monitoring at 35 locations in 7 metro cities.

The **findings of the monitoring** are summarized below:

**Noise level** during Deepawali, 2013 in Delhi (Manual) showed a decreasing trend as compared to Deepawali 2012 (November 13, 2012) at four locations namely Lajpat Nagar, East Arjun Nagar, Pitampura & ITO (Pragati Maidan) and slightly increasing trends at other five locations namely Mayapuri Phase II, Kamla Nagar, Ansari Nagar and Connaught Place.

**Air pollution levels** during 2013 Deepawali Day (November 3, 2013) with respect to SO<sub>2</sub> and NO<sub>2</sub> showed a decreasing trend except at one location and increasing trend was observed for PM<sub>10</sub> as compared to Deepawali, 2012 (November 13, 2012), which can be attributed to lower mixing height, wind speed during this year:

- a. Slight increase in 24 hourly average temperature was observed (21°C) on November 03, 2013 as compared to **20.2°C** on November 13, 2012.
- b. Lower mixing height of 197 meter was recorded in the night of November 03 and 04, 2013 as compared to 211 meter on November 13, 2012. However the 24 hour mixing height on Deepawali day 2013 was found to be higher (548 meter) as compared to that in 2012 (432 meter)
- c. Decreased average wind speed of 0.36m/sec was recorded during this Deepawali day (03 November, 2013) as compared to wind speed of 0.43 m/sec. in 2012. Calm conditions were observed in the evening hours which impacted the dispersion of pollutants which is evident from the higher PM<sub>10</sub> concentration recorded at all

- stations during 10 PM – 6.00 AM (on 3<sup>rd</sup> November, 2013)
- d. The humidity profile 68% on November 13, 2012 & 69.6% during this Deepawali day (November 03, 2013) did not show any appreciable change.
  - e. Lower night time mixing height and the stable meteorological condition impacted the dispersion of pollutants resulting in higher concentration of pollutants.

## Report

### Ambient Air & Noise Pollution Levels - Deepawali 2013

The Central Pollution Control Board has conducted Ambient **Air quality & Noise** monitoring at various locations in Delhi on the occasion of Deepawali festival, 2013 to see the impact of bursting of crackers on environment. The following investigations were conducted:

1. The Ambient noise level monitoring was carried out at **Nine** locations in Delhi namely Lajpat Nagar, MayurVihar (Phase – II), PitamPura, Kamla Nagar, Dilshad Garden, East Arjun Nagar, Ansari Nagar (AIIMS), Connaught Place and PragatiMaidan between 18.00 hours & 24.00 hours (during Deepawali celebration hours) on November 3, 2013. Ambient Noise level monitoring data for Pre-Deepawali background monitoring was carried out at same locations & time on October 29, 2013. The manual data for Delhi is presented in **Table – 1**.
2. Round-the-clock Ambient Air quality monitoring was carried out on November 3, 2013 (Deepawali day) at **Seven** monitoring stations of CPCB namely PragatiMaidan Metro Station, Pitampura, Siri Fort, Janakpuri, Nizamuddin, ShahzadaBagh, and Shahdara. The air quality data is presented in **Table -2**
3. Meteorological profile (temperature, relative humidity, wind speed, wind direction and mixing height) was also monitored and the data is presented at **Table-3** Average temperature on November 3, 2013 was 21<sup>o</sup>C as compared to 20<sup>o</sup>C in 2012; relative humidity was 69 % in 2013 as compared to 68 % in 2012. Night time Mixing height decreased from 211 meters (2012) to 197 meters (2013). However 24 hour average mixing height increased from 432(2012) to 548 meters in 2013

### Findings of Ambient Air Quality Monitoring

#### Sulphur dioxide (SO<sub>2</sub>):

Sulphur dioxide concentration on Deepawali day 2013 decreased at five locations, while the values increased at two locations as compared to Deepawali day 2012 during Deepawali day, 2013. SO<sub>2</sub> concentration ranged between 5 and 56 µg/m<sup>3</sup> as compared to 3 and 63 µg/m<sup>3</sup> during Deepawali day in 2012. SO<sub>2</sub> levels have been found within the prescribed standard of 80 µg/m<sup>3</sup> at all the locations.

#### Nitrogen dioxide (NO<sub>2</sub>):

Nitrogen dioxide concentration on Deepawali day in 2013 showed a minimal trend decreased at the monitored locations as compared to Deepawali day 2012. NO<sub>2</sub> values during Deepawali day 2013 ranged between 26 & 87 µg/m<sup>3</sup> as compared to 44 and 85 µg/m<sup>3</sup> in 2012. The NO<sub>2</sub> levels are within the prescribed standard of 80 µg/m<sup>3</sup> at six locations except ShahzadaBagh.

### **Particulate Matter (PM<sub>10</sub>):**

PM<sub>10</sub> levels have shown an increasing trend at all the locations on Deepawali day, 2013 as compared to 2012. RSPM values during Deepawali day, 2013 ranged between 796 and 1138 µg/m<sup>3</sup> as compared to 748 and 951 µg/m<sup>3</sup> during Deepawali, 2012.

Increased PM<sub>10</sub> values in general may be attributed to adverse meteorological conditions, i.e. low night time temperature, low mixing height and low wind speed.

### **Findings of Ambient Noise Level Monitoring – Deepawali, 2013**

- The ambient noise level at all the locations on Deepawali day, 2013 (November 3, 2013) have increased as compared to normal day (October 29, 2013).
- **Noise level** during Deepawali, 2013 in Delhi (Manual) showed a decreasing trend as compared to Deepawali 2012 (November 13, 2012) at four locations and slightly increasing trends at other five locations.
- The maximum Noise Level was found at MayurVihar Phase II [83dB(A)] followed by Kamla Nagar and Ansari Nagar [81 dB(A)].

### **Real Time Ambient Noise Level**

The real time ambient noise monitoring levels at 35 locations in 7 metro cities are given in Table-4.

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**Table- 1:**  
**Ambient Noise Level at different places in Delhi**  
**during Normal & Deepawali days in the year 2012-2013**

S. No.	Location	Average Noise Level in dB (A) Leq.			
		Normal Day		Deepawali Day	
		2012	2013	2012	2013
01.	Lajpat Nagar (R)	58	56↓	81	79↓
02.	East Arjun Nagar (R)	57	59↑	74	72↓
03.	MayurVihar Phase – II (R)	48	60↑	73	83↑
04.	PitamPura (R)	56	61↑	75	73↓
05.	Kamla Nagar (R)	61	63↑	80	81↑
06.	Dilshad Garden (R)	58	59↑	78	80↑
07.	Ansari Nagar) (R)	58	56↓	76	81↑
08.	Connaught Place (C)	64	69↑	69	74↑
09.	I.T.O (C)	70	67↓	71	69↓

Monitoring time: **1800 hours to 2400 hours.**

R – Residential, C – Commercial

Deepawali Day 2013 – November 3, 2013 Normal day: October 29, 2013

Deepawali Day 2012 – November 13, 2013, Normal day: November 6, 2012

**Table-2**  
**Ambient Air Quality at Various Locations (NAMP) during**  
**Deepawali 2012 & 2013**

Sl. No.	Day→ Parameter→ Year→	Normal Day (Pre-Deepawali)						Deepawali Day					
		SO <sub>2</sub>		NO <sub>2</sub>		PM <sub>10</sub>		SO <sub>2</sub>		NO <sub>2</sub>		PM <sub>10</sub>	
		2012	2013	2012	2013	2012	2013	2012	2013	2012	2013	2012	2013
01.	PragatiMaidan / ITO*	24	5↓	130	137↑	537	412↓	13	11↓	85	52↓	795	1097↑
02.	Pitampura (R)	7	4↓	58	78↑	648	380↓	17	18↑	58	31↓	776	952↑
03.	Sirifort (R)	23	4↓	77	79↑	529	345↓	19	10↓	67	29↓	760	875↑
04.	Janakpuri (R)	5	4↓	53	51↓	477	250↓	63	56↓	69	35↓	951	969↑
05.	Nizamuddin (R)	4	4=	50	56↑	457	163↓	25	5↓	69	26↓	748	796↑
06.	ShahazadaBagh (I)	4	4=	61	59↓	497	441↓	13	40↑	64	87↑	820	1138↑
07.	Shahdara (I)	4	4=	64	61↓	452	416↓	20	10↓	44	33↓	928	1116↑
	<i>Concentration Range for Delhi (above stations)</i>	4-24	4-5	53-130	51-137	452-648	163-441	13-63	5-56	44-85	26-87	748-951	796-1138
	<i>Ambient Air quality Standards (24 Hrs.)</i>	<b>80</b>		<b>80</b>		<b>100</b>		<b>80</b>		<b>80</b>		<b>100</b>	

*All values are in microgram per cubic meter*

Normal Day 2013: October 29, 2013 (Tuesday);

Deepawali Day 2013: November 3, 2013 (Sunday)

- Station shifted from ITO to PragatiMaidan Metro Station in 2012

**Table-3**  
**METEOROLOGICAL INFORMATION**  
**DEEPAWALI, 2012 & 2013**

Day→	Normal Day						Deepawali Day					
	24 Hourly Avg.		Maximum*		Minimum*		24 Hourly Avg.		Maximum*		Minimum*	
Year→	2012	2013	2012	2013	2012	2013	2012	2013	2012	2013	2012	2013
Mixing Height (Mtrs.)	399	464↑	1303	1346↑	100	95↓	432	548↑	1155	1431↑	140	165↑
Wind Speed(m/s)	0.43	0.19↓	0.47	0.75↑	0.36	0.00↓	0.43	0.36↓	0.47	1.27↑	0.37	0.00↓
Temperature (°C)	21.1	23.1↑	26.9	33.6↑	17.1	16.1↓	20.2	21↑	26.5	30.5↑	14.4	14.5=
Relative Humidity (%)	71	78.6↑	92	99.9↑	51	37.8↓	68	69.6↑	92	95.5↑	46	32.8↓

**Table 4: Ambient Noise Monitoring during Deepawali in Metro Cities**

S N	City	Stations	2011 Leq (24 hrs)	2012 Leq (24hrs)	2013 Leq (24hrs)	Increasing Trend	Decreasing Trend/ No change
1.	Bangalore	Nisarga Bhawan	60	51	59	↑	
2.		ParisarBhwa n	64	62	61		↓
3.		BTM	65	63	62		↓
4.		Marathalli	57	55	61	↑	
5.		Pineeya	59	57	56		↓
6.	Chennai	Triplicane	69	63	65	↑	
7.		T. Nagar	69	70	69		↓
8.		Guindy	75	74	69		↓
9.		Perambur	75	86	65		↓

10.		EyeHospital	65	60	66	↑	
11.	<b>Delhi</b>	NSIT	64	56	58	↑	
12.		CPCB	61	58	62	↑	
13.		DCE	53	50	52	↑	
14.		Dilshad Garden	57	49	56	↑	
15.		ITO(Pragati Maidan)	74	74	73		↓
16.	<b>Hyderabad</b>	Abits	71	70	70		-
17.		Jeedimetla	61	61	60		↓
18.		Jubilee Hills	-	54	55	↑	
19.		Punjagutta	75	76	76		-
20.		Zoo	-	52	55	↑	
21.	<b>Kolkata</b>	Head Quarter (WBPCB)	60	59	63	↑	
22.		New Market (Municipal Corporation)	64	64	65	↑	



23.		Patauli	57	54	53		↓
24.		SSKM Hospital	59	59	61	↑	
25.		Golpark	64	64	75	↑	
26.	<b>Lucknow</b>	Indira Nagar	54	51	58	↑	
27.		PGI Hospital	-	54	60	↑	
28.		Gomti Nagar	-	60	66	↑	
29.		HajratGanj	68	69	68		↓
30.		Talkatora Industrial Area	59	61	60		↓
31.		<b>Mumbai</b>	Acworth Hospital (ASHP)	64	64	64	
32.	Bandra		69	69	68		↓
33.	Thane (TMCO)		62	59	64	↑	
34.	Vashi Hospital		66	65	65		-
35.	MPCB, HQ		64	66	66		-

<b>Note:-All values are measured in Leq [dB(A)]</b>		<b>18</b>	<b>17</b> <b>(No change-5)</b>
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