

I/22070/2021

To

Senior Environmental Engineer,  
IT Cell, HSPCB, Panchkula

**Sub:- Special Monitoring of Ambient Air and Noise during Deepwali Festival 2020 in 09 cities of Haryana from 10.11.2020 to 23.11.2019.**

Kindly refer on the subject cited above.

Please find enclosed herewith the results of Special Monitoring of Ambient Air Quality data and Noise during Deepawali Festival 2020 carried out in 09 prominent districts of Haryana from 10.11.2020 to 23.11.2020 for information.

In this connection, you are requested to upload the results of Diwali Monitoring, 2020 on the website of the board as per the directions of worthy Chief Secretary, Govt. of Haryana dated 11.11.2020.

**DA/as above**

Digitally signed by DR.  
RAJESH GARHIA  
Date:Mon Feb 22 13:00:46 IST  
2021  
Reason: Approved

**Sr. Scientist (HQ)  
For Member**

**Secretary**

## REPORT ON

# Monitoring of Ambient Air and Noise During Deepawali Festival in the State of Haryana.

09 cities

(Panchkula, Ambala, Karnal, Panipat, Sonapat, Gurugram, Faridabad, Hisar and Rohtak)

**Duration**

**10.11.2020 to 23.11.2020.**



HSPCB

**HARYANA STATE POLLUTION CONTROL BOARD, C-11,**

**SECTOR -6, PANCHKULA**

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## **MONITORING OF AMBIENT AIR AND NOISE MONITORING DURING DEEPAWALI SEASON IN THE STATE OF HARYANA.**

Haryana State Pollution Control Board has organized a monitoring program to assess and identify the pollution levels in terms of Noise and Ambient Air quality in the state of Haryana. The program is chartered to gauge the pollution in the 09 districts of Haryana during the Deepawali season especially contaminated due to use of Fire crackers and increased vehicular movement. The Hon'ble Supreme Court of India vide order dated 23.10.2018 passed in WP(Civil) No. 728 of 2015 directed that the Central Pollution Control Board (CPCB) and respective State Pollution Control Boards / Pollution Control Committees (SPCBs/PCCs) of the States and Union Territories shall carry out short-term monitoring in their cities for 14 days (for the parameters namely, Aluminum, Barium, Iron apart from the regulatory parameters against the short-term Ambient Air Quality Criteria values (AAQCVs) proposed by CPCB with regard to bursting of firecrackers.

### **MONITORING PLAN**

Like previous year, as per pattern of CPCB, HSPCB is coordinating ambient air and noise level monitoring during Deepawali Festival this year also with various SPCBs/PCCs. The noise monitoring programme for pre-Deepawali and Deepawali day is as per Part-I. The scope of air quality monitoring during this year Deepwali is planned as mentioned in Part-II below.

#### **Part-I: Noise Monitoring**

This year, the festival of Deepawali falls on 14th November, 2020 (Saturday), Therefore, to conduct the Noise Monitoring (on Pre-Deepawali day i.e. 12.11.2020, Deepawali day on 14.11.2020 and Post Deepawali day on 16.11.2020 ).

## **Part-II: Ambient air quality monitoring.**

In addition to the general parameters like PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>2</sub> and metals (Pb, Ni & As in PM<sub>10</sub>) selected metals/elements (Pb, Ni As, Al, Ba, Fe, Sr in PM<sub>2.5</sub>) are required to be monitored to assess the impact of firecracker bursting during Deepawali festival.

For analysis of regulatory parameters like PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>2</sub> and metals (Pb, Ni & As in PM<sub>10</sub>) the CPCB Guidelines Volume I may be adopted. For Metal/Elements analysis in PM<sub>2.5</sub> (PTFE Filter), EDXRF is the best option; however, other suitable method (ICP-MS/ICP-AES) may also be adopted.

### **MONITORING SCHEDULE**

Hon'ble Supreme Court and the instructions issued by CPCB, the HSPCB has decided that the Board will collect samples and will monitor the noise and ambient air quality pollution during the 14 days commencing from 10<sup>th</sup> November to 23<sup>th</sup> November, 2020) & Noise Monitoring (on Pre-Deepawali day i.e. 12.11.2020, Deepawali day on 14.11.2020 and Post Deepawali day on 16.11.2020 )in 09 cities i.e. Panchkula, Ambala, Karnal, Panipat, Sonapat, Gurugram, Faridabad, Hisar and Rohtak **(at 02 location i.e. Residential and commercial in each city)** for general parameters like PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>2</sub> & metals (Pb, Ni & As in PM<sub>10</sub>) and selected metals/elements (Al, Ba, Sr & Fe in PM<sub>2.5</sub>) as per format of CPCB.

**AMBIENT AIR QUALITY MONITORING REPORT****SUMMARY**

The following is the summary of results at a glance

Average Trace metals concentration

S/N	Location	Metals in PM <sub>10</sub>			Metals in PM <sub>2.5</sub>						
		Pb (µg/m <sup>3</sup> )	Ni (µg/m <sup>3</sup> )	As (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (µg/m <sup>3</sup> )	As (µg/m <sup>3</sup> )	Al (µg/m <sup>3</sup> )	Ba (µg/m <sup>3</sup> )	Fe (µg/m <sup>3</sup> )	Sr (µg/m <sup>3</sup> )
1	Vita Milk Plant Ambala City Haryana	0.155	ND	ND	.0885	ND	ND	0.116	ND	9.790	ND
2	Regional Office, Hspcb Bahadurgarh Jhajjar	0.0985	ND	ND	0.085	ND	ND	0.080	ND	9.693	ND
3	Sarvodaya Hospital & Research Center sec.-8 Faridabad	0.242	ND	ND	0.308	ND	ND	0.465	ND	9.384	ND
4	HSPCB Building, Sector-16a, Faridabad,	0.308	ND	ND	0.335	ND	ND	0.477	ND	11.915	ND
5	The Villas, Phase II, Sector-25, Gurugram,	0.403	ND	ND	0.305	ND	ND	0.269	ND	12.051	ND
6	L-17/3,Dlf,Phase-II,IffcoChowk,MGRoad, Gurugram	0.912	ND	ND	0.740	ND	ND	0.594	ND	19.691	ND
7	Saini Sweets, Hisar Delhi Road, Hisar,	0.532	ND	ND	0.506	ND	ND	0.31	ND	12.91	ND
8	Arogyam Hospital, Near Viswas School, U.E. Hisar,	0.105	ND	ND	0.0971	ND	ND	0.09	ND	9.98	ND
9	Ward No.-05, Near Shani Mandir, Indri, Karnal	0.115	ND	ND	0.106	ND	ND	0.139	ND	5.295	ND
10	3 <sup>rd</sup> Floor, Sco-80-81, Namastey Chowk, Karnal, Above Reginal Office, Hspcb, Karnal, Haryana	0.190	ND	ND	0.198	ND	ND	0.747	ND	12.77	ND
11	H.No.-392p, Sector-23, Panchkula, Haryana	0.133	ND	ND	0.0807	ND	ND	0.107	ND	13.93	ND
12	Roof Of HSPCB Office Sco No. 55 Sector-25, Panipat,	0.142	ND	ND	0.125	ND	ND	0.290	ND	12.44	ND
13	NFL Guest House Roof (Resideantal Area), Panipat, Haryana	0.1	ND	ND	0.0678	ND	ND	0.144	ND	8.048	ND
14	House No.230/14, Sai Dass Colony, Rohtak,	0.493	ND	ND	0.395	ND	ND	0.504	ND	11.61	ND
15	Asian Paints Ltd. Plot No.-1, Sector-30b, IMT Rohtak,	0.511	ND	ND	0.42	ND	ND	0.407	ND	17.29	ND
16	HSPCB Office Building Star Complex, Opposite Civil Hospital Sonapat, Haryana	0.185	ND	ND	0.136	ND	ND	0.085	ND	8.887	ND

## RESULTS OF AMBIENT AIR AND NOISE MONITORING DURING DEEPAWALI SEASON IN THE STATE OF HARYANA.

### 1. CITY – AMBALA

- **Latitude & Longitude:** Ambala city is one of the largest cities in Haryana state, located at 30° 22' 41.4480" N and 76° 46' 36.1020" E. It has an average elevation of 275m (902 ft.) above mean sea level.
- **Climate:** The climate in Ambala is warm and temperate. In winter, there is much more rainfall in Ambala than in summer. The average annual temperature in Ambala is 24.5 °C. The rainfall here averages 919 mm.
- **Population:** As of 2011 India census, Ambala had a population of 207,934 consisting of 112,840 males and 95,094 females, a ratio of 843.
- **Major Land Use:** The major portion of Land is covered under Agriculture which is 66.40%. The forest cover is 4.60%. Ambala is accommodating 26.6% of the total Built up of Haryana Sub region (Sarsoha et. al., 2017).

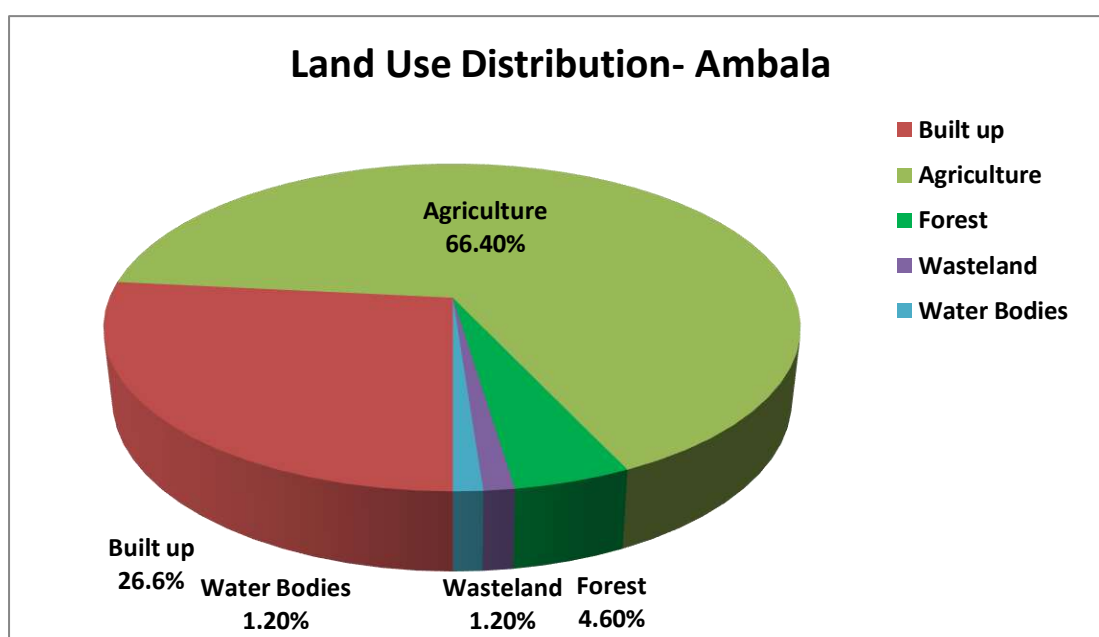


Figure 1: Land Use Distribution of Ambala

#### MONITORING LOCATIONS

##### Description of Monitoring Site

Two sites have been selected for monitoring:

S. No.	Name of the Location	Zone	Latitude	Longitude
1.	Milk Producers Union Limited, Jasmeet Nagar, Ambala, Haryana 134003 (For AAQ monitoring)	Commercial	N30°23.054'	E076°47.366'
2.	Mehar Patti, Ambala, Haryana. (For AAQ monitoring)	Residential	N30°23.123'	E076°47.363'

### Results of Noise Level monitoring at Ambala

Location : A	Pre-Deepawali Day (12.11.2020)			Deepawali Day (14.11.2020)			After Deepawali Day (16.11.2020)		
Time duration	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
18:00 to 19:00 Hr	65.7	81.6	73.8	76.9	92.1	81.7	62.1	80.5	74.2
19:00 to 20:00 Hr	61.9	83.9	77.2	78.2	93.7	86.3	65.3	86.2	77.3
20:00 to 21:00 Hr	58.3	80.3	72.1	79.1	95.2	89.5	70.2	91.3	79.2
21:00 to 22:00 Hr	53.2	79.2	70.3	80.3	99.3	91.2	65.7	82.3	73.1
22:00 to 23:00 Hr	52.7	80.7	69.1	82.9	100.6	92.7	59.1	79.9	70.2
23:00 to 24:00 Hr	50.8	77.3	67.2	78.2	91.8	87.3	57.2	77.3	69.7

Location : B	Pre-Deepawali Day (12.11.2020)			Deepawali Day (14.11.2020)			After Deepawali Day (16.11.2020)		
Time duration	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
18:00 to 19:00 Hr	57.2	72.5	67.2	56.1	76.2	68.2	56.1	76.2	67.2
19:00 to 20:00 Hr	59.8	74.3	68.3	69.2	84.5	77.5	59.2	79.1	68.1
20:00 to 21:00 Hr	55.2	70.8	63.9	72.4	101.3	89.2	61.7	81.2	70.3
21:00 to 22:00 Hr	51.8	69.2	60.7	83.1	104.2	92.7	57.3	77.1	66.2
22:00 to 23:00 Hr	50.2	67.3	59.5	79.3	100.5	88.5	55.1	73.2	64.1
23:00 to 24:00 Hr	48.7	60.9	57.3	76.2	95.3	84.2	51.1	68.2	60.2

Location : C	Pre-Deepawali Day (12.11.2020)			Deepawali Day (14.11.2020)			After Deepawali Day (16.11.2020)		
Time duration	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
18:00 to 19:00 Hr	44.2	59.2	51.8	43.8	60.1	50.9	38.1	57.1	46.2
19:00 to 20:00 Hr	46.7	61.3	53.2	45.2	61.3	52.8	40.1	58.3	47.1
20:00 to 21:00 Hr	49.1	62.9	57.1	48.3	64.7	55.7	41.7	60.2	49.3
21:00 to 22:00 Hr	47.1	60.3	55.2	49.7	70.2	59.2	42.3	61.1	50.1
22:00 to 23:00 Hr	42.3	59.7	54.1	50.9	73.2	57.1	39.2	53.7	45.2
23:00 to 24:00 Hr	39.7	56.2	48.2	41.9	62.1	53.2	37.8	51.1	42.1

**Results of Ambient Air Quality Monitoring (Ambala )**

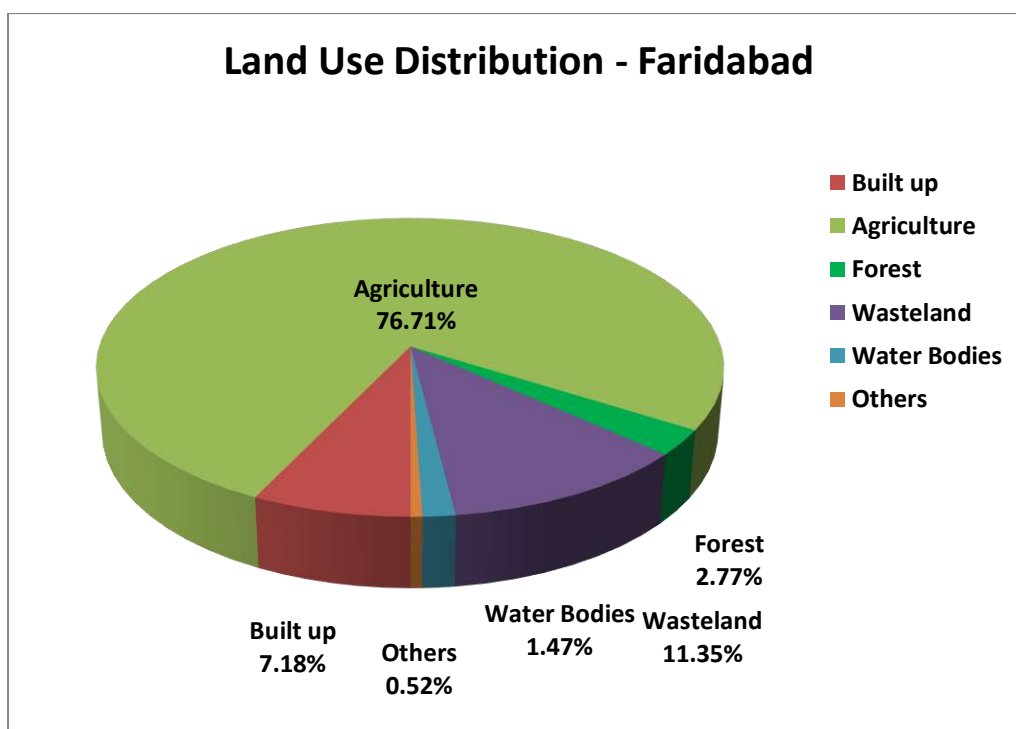
Name of the Location	VITA MILK PLANT, AMBALA CITY, HARYANA													
Dates	Regulatory Parameters							Proposed New Parameters						
	SO2 (µg/ m3)	NO2 (µg/ m3)	PM10 (µg/ m3)	PM2.5 (µg/ m3)	Metals in PM10			Metals / Elements in PM2.5						
					Pb (µg/ m3)	Ni (µg/ m3)	As (µg/ m3)	Pb (µg/ m3)	Ni (µg/ m3)	As (µg/ m3)	Al (µg/ m3)	Ba (µg/ m3)	Fe (µg/m 3)	Sr (µg/m3)
10.11.2020	5.09	7.31	176.45	..	0.22	ND	ND	0.10	ND	ND	ND	ND	08.72	ND
11.11.2020	5.94	7.75	130.11	..	0.20	ND	ND	0.13	ND	ND	0.20	ND	10.52	ND
12.11.2020	6.82	8.34	168.38	..	0.26	ND	ND	0.12	ND	ND	0.25	ND	11.88	ND
13.11.2020	5.41	7.60	155.48	..	0.32	ND	ND	0.18	ND	ND	0.29	ND	12.72	ND
14.11.2020	5.62	7.47	364.37	..	0.46	ND	ND	0.29	ND	ND	0.36	ND	18.42	ND
15.11.2020	5.89	7.92	159.77	..	0.34	ND	ND	0.24	ND	ND	0.17	ND	11.32	ND
16.11.2020	6.41	8.67	142.51	..	0.10	ND	ND	0.07	ND	ND	ND	ND	8.74	ND
17.11.2020	6.55	8.79	117.00	..	ND	ND	ND	0.04	ND	ND	ND	ND	5.45	ND
18.11.2020	6.94	8.84	112.99	..	0.07	ND	ND	ND	ND	ND	ND	ND	7.14	ND
19.11.2020	7.36	9.12	77.79	..	ND	ND	ND	ND	ND	ND	ND	ND	9.42	ND
20.11.2020	7.70	9.39	112.67	..	ND	ND	ND	ND	ND	ND	ND	ND	8.10	ND
21.11.2020	7.90	9.51	48.91	..	0.09	ND	ND	0.06	ND	ND	0.14	ND	12.46	ND
22.11.2020	8.04	9.68	48.79	..	ND	ND	ND	0.05	ND	ND	0.10	ND	10.25	ND
23.11.2020	7.24	10.16	23.25	..	0.10	ND	ND	0.08	ND	ND	0.12	ND	12.45	ND
<b>*All values (24 Hourly Avg.) are in µg/m<sup>3</sup>.</b>														

Name of the Location	Mehar Patti, Ambala, Haryana.													
Dates	Regulatory Parameters							Proposed New Parameters						
	SO2 (µg/ m3)	NO2 (µg/ m3)	PM10 (µg/ m3)	PM2.5 (µg/ m3)	Metals in PM10			Metals / Elements in PM2.5						
					Pb (µg/ m3)	Ni (µg/m 3)	As (µg/ m3)	Pb (µg/m 3)	Ni (µg/ m3)	As (µg/ m3)	Al (µg/ m3)	Ba (µg/ m3)	Fe (µg/m 3)	Sr (µg/ m3)
10.11.2020	9.70	84.99	269.56	118.15	-	-	-	-	-	-	-	-	-	-
11.11.2020	11.11	80.35	297.52	122.61	-	-	-	-	-	-	-	-	-	-
12.11.2020	13.35	80.85	343.10	150.42	-	-	-	-	-	-	-	-	-	-
13.11.2020	12.91	81.13	362.45	160.18	-	-	-	-	-	-	-	-	-	-
14.11.2020	11.94	73.67	320.34	186.86	-	-	-	-	-	-	-	-	-	-
15.11.2020	9.98	22.71	147.27	67.16	-	-	-	-	-	-	-	-	-	-
16.11.2020	6.64	29.21	62.85	24.81	-	-	-	-	-	-	-	-	-	-
17.11.2020	14.12	35.78	179.45	51.92	-	-	-	-	-	-	-	-	-	-
18.11.2020	17.68	40.26	222.87	67.65	-	-	-	-	-	-	-	-	-	-
19.11.2020	15.63	29.89	274.36	91.47	-	-	-	-	-	-	-	-	-	-
20.11.2020	25.06	18.02	146.02	56.83	-	-	-	-	-	-	-	-	-	-
21.11.2020	27.46	11.94	160.65	49.99	-	-	-	-	-	-	-	-	-	-
22.11.2020	18.38	10.99	295.90	78.55	-	-	-	-	-	-	-	-	-	-
23.11.2020	5.40	18.77	377.30	104.28	-	-	-	-	-	-	-	-	-	-
<b>*All values (24 Hourly Avg.) are in µg/m<sup>3</sup>.</b>														



## 2. CITY – FARIDABAD

- **Latitude & Longitude:** Faridabad is located at 28°23'43.4508" N and 77°18'55.0512" E. It has an average elevation of 206 m (676 ft.).
- **Climate:** Faridabad's climate is a local steppe climate. At an average temperature of 34.2 °C, June is the hottest month of the year. At 14.4 °C on average, January is the coldest month of the year. The rainfall here averages 604 mm.
- **Population:** As of 2011 India census, Faridabad had a population of 1,404,653 out of which males were 750,446 and females were 654,207.
- **Land Use:** The major portion of Land is covered under Agriculture which is 76.71%. The forest cover is 2.77%. Faridabad is accommodating 7.18 % of the total Built up of Haryana Sub region (Scott Wilson, India. Interim Report –II, 2017).



**Figure 1: Land Use Distribution of Faridabad**

MONITORING LOCATIONS  
**Description of Monitoring Sites**  
 Two sites have been selected for monitoring:

S. No.	Name of the Location	Zone	Latitude	Longitude
1.	Sarvodaya Hospital, YMCA Road, Sector-8, Near ESI Hospital, Block A, Faridabad, Haryana 121006 (for AAQ Monitoring)	Commercial	N28°22.054'	E077°20.182'
2.	HSPCB BUILDING, SECTOR-16A, FARIDABAD, HARYANA (for AAQ Monitoring)	Residential	N28°23.580'	E077°17.416'

**Results of Noise Level monitoring at Faridabad**

Location : A	Pre-Deepawali Day (12.11.2020)			Deepawali Day (14.11.2020)			After Deepawali Day (16.11.2020)		
Time duration	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
18:00 to 19:00 Hr	44	60	52	57	70	63.5	39	60	49.5
19:00 to 20:00 Hr	50	62	56	60	79	69.5	55	60	57.5
20:00 to 21:00 Hr	42	59	50.5	70	89	79.5	38	58	48
21:00 to 22:00 Hr	45	62	53.5	68	82	75	40	50	45
22:00 to 23:00 Hr	44	65	54.5	62	79	70.5	41	55	48
23:00 to 24:00 Hr	40	58	49	60	80	70	36	52	44

Location : Sarvodya Hospital, Faridabad.	Pre-Deepawali Day (12.11.2020)			Deepawali Day (14.11.2020)			After Deepawali Day (16.11.2020)		
Time duration	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
18:00 to 19:00 Hr	42	63	52.5	58	73	65.5	41	62	51.5
19:00 to 20:00 Hr	53	60	56.5	64	82	73	54	58	56
20:00 to 21:00 Hr	41	60	50.5	74	92	83	39	59	49
21:00 to 22:00 Hr	42	58	50	68	86	77	38	47	42.5
22:00 to 23:00 Hr	44	61	52.5	65	80	72.5	40	58	49
23:00 to 24:00 Hr	38	62	50	66	85	75.5	37	56	46.5

**Results of Ambient Air Quality Monitoring (Faridabad )**

Name of the Location	HSPCB, Faridabad Region, Opp. Hewo Appmt., Sector-16A, Faridabad.													
Dates	Regulatory Parameters							Proposed New Parameters						
	SO2 (µg/ m3)	NO2 (µg/ m3)	PM10 (µg/ m3)	PM2.5 (µg/ m3)	Metals in PM10			Metals / Elements in PM2.5						
					Pb (µg/ m3)	Ni (µg/ m3)	As (µg/ m3)	Pb (µg/ m3)	Ni (µg/ m3)	As (µg/ m3)	Al (µg/ m3)	Ba (µg/ m3)	Fe (µg/m 3)	Sr (µg/m3)
10.11.2020	16.55	36.51	472.9	341.6	0.34	ND	ND	0.52	ND	ND	0.46	ND	13.45	ND
11.11.2020	22.05	41.45	237.8	158.3	0.39	ND	ND	0.36	ND	ND	0.49	ND	12.56	ND
12.11.2020	17.63	30.27	265.4	170.8	0.41	ND	ND	0.47	ND	ND	0.38	ND	17.45	ND
13.11.2020	10.70	82.87	166.63	112.5	0.57	ND	ND	0.51	ND	ND	0.58	ND	16.47	ND
14.11.2020	26.01	91.13	867.3	595.8	0.68	ND	ND	0.58	ND	ND	0.67	ND	21.25	ND
15.11.2020	7.52	28.59	341.7	241.6	0.61	ND	ND	0.66	ND	ND	0.62	ND	17.94	ND
16.11.2020	11.88	28.74	204.7	87.5	0.48	ND	ND	0.39	ND	ND	0.55	ND	14.52	ND
17.11.2020	12.77	43.21	157.1	104.1	0.32	ND	ND	0.28	ND	ND	0.47	ND	10.63	ND
18.11.2020	12.16	62.12	167.5	120.8	0.17	ND	ND	0.22	ND	ND	0.36	ND	13.65	ND
19.11.2020	16.20	87.42	198.7	145.8	ND	ND	ND	0.15	ND	ND	0.38	ND	10.85	ND
20.11.2020	16.16	72.88	218.8	150	ND	ND	ND	0.12	ND	ND	0.44	ND	7.48	ND
21.11.2020	15.66	50.21	175.5	129.1	0.12	ND	ND	0.16	ND	ND	0.47	ND	7.32	ND
22.11.2020	13.70	61.96	204.4	154.1	0.09	ND	ND	0.17	ND	ND	0.38	ND	9.45	ND
23.11.2020	19.52	82.83	288.9	191.6	0.14	ND	ND	0.10	ND	ND	0.44	ND	7.12	ND
<b>*All values (24 Hourly Avg.) are in µg/m<sup>3</sup>.</b>														

Name of the Location	Sarvodaya Hospital & Research Center, YMCA Road, Near ESI Hospital, Sector-8, Faridabad.													
Dates	Regulatory Parameters							Proposed New Parameters						
	SO2 (µg/ m3)	NO2 (µg/ m3)	PM10 (µg/ m3)	PM2.5 (µg/ m3)	Metals in PM10			Metals / Elements in PM2.5						
					Pb (µg/ m3)	Ni (µg/ m3)	As (µg/ m3)	Pb (µg/ m3)	Ni (µg/ m3)	As (µg/ m3)	Al (µg/ m3)	Ba (µg/ m3)	Fe (µg/m 3)	Sr (µg/m3)
10.11.2020	12.27	66.29	408	487.5	0.19	ND	ND	0.24	ND	ND	0.23	ND	8.48	ND
11.11.2020	23.37	48.15	194.9	183.3	0.23	ND	ND	0.36	ND	ND	0.38	ND	7.26	ND
12.11.2020	22.01	40.80	190.1	170.8	0.45	ND	ND	0.35	ND	ND	0.48	ND	8.11	ND
13.11.2020	15.91	97.52	180.1	183.3	0.56	ND	ND	0.47	ND	ND	0.56	ND	10.48	ND
14.11.2020	28.69	107.09	694.6	620.8	0.77	ND	ND	0.58	ND	ND	0.94	ND	14.18	ND
15.11.2020	18.16	64.61	207.9	245.8	0.62	ND	ND	0.59	ND	ND	0.62	ND	12.89	ND
16.11.2020	13.84	34.07	114.2	112.5	0.24	ND	ND	0.17	ND	ND	0.48	ND	10.62	ND
17.11.2020	15.63	52.20	105.8	87.5	0.11	ND	ND	0.27	ND	ND	0.56	ND	9.15	ND
18.11.2020	17.27	83.52	161.9	137.5	ND	ND	ND	0.34	ND	ND	0.63	ND	11.58	ND
19.11.2020	20.69	105.07	174.8	158.3	ND	ND	ND	0.19	ND	ND	0.42	ND	7.48	ND
20.11.2020	19.48	73.99	166.6	145.8	ND	ND	ND	0.27	ND	ND	0.31	ND	8.65	ND
21.11.2020	18.84	61.89	172.8	120.8	0.13	ND	ND	ND	ND	ND	0.29	ND	8.19	ND
22.11.2020	18.2	76.36	153.4	137.5	0.09	ND	ND	0.28	ND	ND	0.26	ND	6.46	ND
23.11.2020	27.55	100	207.4	212.5	ND	ND	ND	0.21	ND	ND	0.35	ND	7.85	ND
<b>*All values (24 Hourly Avg.) are in µg/m<sup>3</sup>.</b>														

### 3. CITY – GURGAON

- **Latitude & Longitude:** Gurgaon is located at 28° 27' 27.0828" N and 77° 1' 34.8384" E. It has an average elevation of 226 meters (741 feet).
- **Climate:** Gurgaon experiences a monsoon-influenced Composite climate. The season experiences heat indices easily breaking 43 °C (109 °F). Winters are cold and foggy with few sunny days, and with a December daytime average of 3 °C (37 °F). The average annual rainfall is approximately 714mm (28.1 in).
- **Population:** According to the 2011 Census of India, the Gurgaon municipal corporation area has an estimated population of 876,900.
- **Land Use:** Gurgaon has maximum area under built up area i.e. 18% of the total area of the district which is much higher than any district of the sub-region. It indicates the urbanization and industrialization in the district is maximum (Scott Wilson, India. Interim Report –II, 2017).

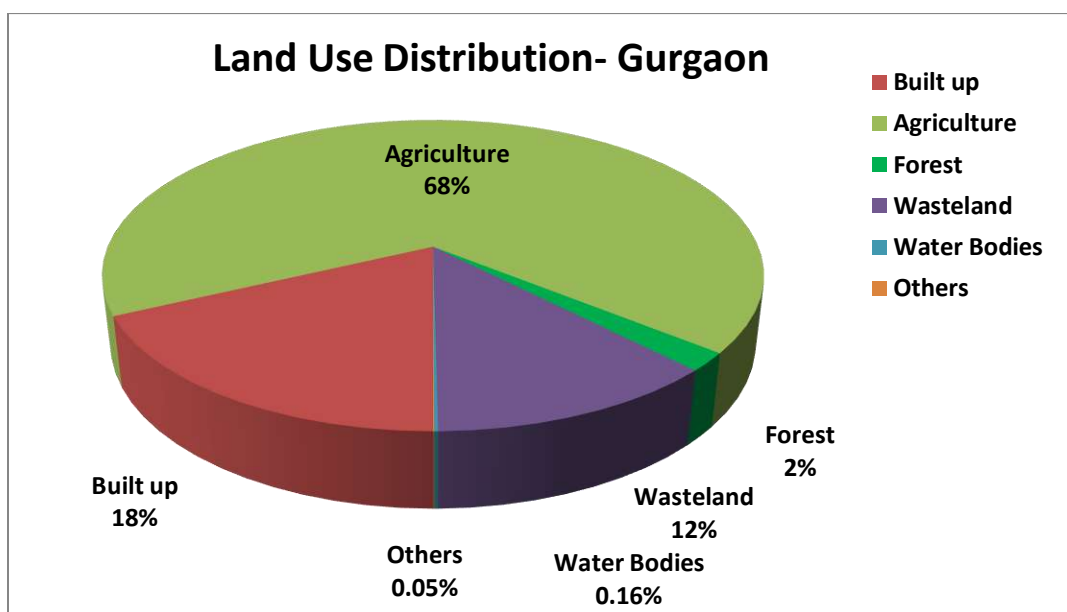


Figure 1: Land Use Distribution of Gurgaon

#### MONITORING LOCATIONS Description of Monitoring Sites

Two sites have been selected for monitoring:

S. No.	Name of the Location	Zone	Latitude	Longitude
1.	THE VILLAS, PHASE-II, SECTOR-25, GURUGRAM, HARYANA (for AAQ Monitoring)	Commercial	N28°28.734'	E077°04.371'
2.	L-17/3, DLF PHASE-II, IFFCO CHOWK, MG ROAD, GURUGRAM, HARYANA (for AAQ Monitoring)	Residential	N28°28.948'	E077°05.058'

**Results of Noise Level monitoring at Gurugram**

<b>Location :</b> <b>Commercial Area</b>	<b>Pre-Deepawali Day (12.11.2020)</b>			<b>Deepawali Day (14.11.2020)</b>			<b>After Deepawali Day (16.11.2020)</b>		
<b>Time duration</b>	<b>Lmin</b>	<b>Lmax</b>	<b>Leq dB(A)</b>	<b>Lmin</b>	<b>Lmax</b>	<b>Leq dB(A)</b>	<b>Lmin</b>	<b>Lmax</b>	<b>Leq dB(A)</b>
18:00 to 19:00 Hr	55.2	71.8	68.2	58.4	78.1	67.2	54.1	69.1	67.1
19:00 to 20:00 Hr	57.3	71.6	67.5	56.2	77.9	69.8	54.6	72.6	66.4
20:00 to 21:00 Hr	54.1	72.1	68.9	57.5	78.2	70.2	57.1	70.8	68.1
21:00 to 22:00 Hr	52.8	69.2	65.1	61.9	75.9	70.8	51.8	71.5	66.9
22:00 to 23:00 Hr	59.1	72.4	68.1	57.9	74.4	70.3	55.1	72.1	69.4
23:00 to 24:00 Hr	56.1	69.4	67.8	56.4	78.2	69.9	53.5	71.4	67.1

<b>Location :</b> <b>Residential Area</b>	<b>Pre-Deepawali Day (12.11.2020)</b>			<b>Deepawali Day (14.11.2020)</b>			<b>After Deepawali Day (16.11.2020)</b>		
<b>Time duration</b>	<b>Lmin</b>	<b>Lmax</b>	<b>Leq dB(A)</b>	<b>Lmin</b>	<b>Lmax</b>	<b>Leq dB(A)</b>	<b>Lmin</b>	<b>Lmax</b>	<b>Leq dB(A)</b>
18:00 to 19:00 Hr	52.7	72.4	67.2	59.4	74.7	68.1	55.1	72.1	66.4
19:00 to 20:00 Hr	51.9	71.5	66.1	54.2	78.1	69.7	51.1	73.1	63.1
20:00 to 21:00 Hr	55.4	71.1	68.4	62.1	79.2	68.1	52.8	70.8	66.1
21:00 to 22:00 Hr	53.9	72.6	66.4	53.7	76.9	67.6	55.4	70.6	65.1
22:00 to 23:00 Hr	58.1	71.2	67.1	56.7	78.1	65.8	53.7	71.4	68.9
23:00 to 24:00 Hr	57.2	72.2	64.5	55.6	75.6	66.1	52.4	70.2	65.4

**Results of Ambient Air Quality Monitoring (Gurugram )**

Name of the Location	THE VILLAS, PHASE II, SECTOR-25, GURUGRAM, HARYANA													
Dates	Regulatory Parameters							Proposed New Parameters						
	SO <sub>2</sub> (µg/ m <sup>3</sup> )	NO <sub>2</sub> (µg/ m <sup>3</sup> )	PM <sub>10</sub> (µg/ m <sup>3</sup> )	PM <sub>2.5</sub> (µg/ m <sup>3</sup> )	Metals in PM <sub>10</sub>			Metals / Elements in PM <sub>2.5</sub>						
					Pb (µg/ m <sup>3</sup> )	Ni (µg/ m <sup>3</sup> )	As (µg/ m <sup>3</sup> )	Pb (µg/ m <sup>3</sup> )	Ni (µg/ m <sup>3</sup> )	As (µg/ m <sup>3</sup> )	Al (µg/ m <sup>3</sup> )	Ba (µg/ m <sup>3</sup> )	Fe (µg/m <sup>3</sup> )	Sr (µg/m <sup>3</sup> )
10.11.2020	3.16	57.6	347	186	0.42	ND	ND	0.28	ND	ND	0.35	ND	9.74	ND
11.11.2020	2.1	39.1	290	158	0.54	ND	ND	0.42	ND	ND	0.32	ND	10.36	ND
12.11.2020	3.8	54.9	387	224	0.51	ND	ND	0.41	ND	ND	0.47	ND	13.65	ND
13.11.2020	3.4	56.1	386	205	0.69	ND	ND	0.52	ND	ND	0.52	ND	12.45	ND
14.11.2020	19.6	36.8	401	343	0.79	ND	ND	0.62	ND	ND	0.55	ND	14.65	ND
15.11.2020	2.4	5.5	122	57	0.62	ND	ND	0.47	ND	ND	0.36	ND	17.46	ND
16.11.2020	2.7	6.1	129	51	0.45	ND	ND	0.39	ND	ND	0.35	ND	12.65	ND
17.11.2020	2.9	4.9	132	47	0.28	ND	ND	0.21	ND	ND	0.21	ND	14.32	ND
18.11.2020	4.06	8.1	82	72	0.29	ND	ND	0.18	ND	ND	0.18	ND	10.85	ND
19.11.2020	3.6	21.8	201	94	0.18	ND	ND	0.27	ND	ND	0.29	ND	11.97	ND
20.11.2020	3.1	11.7	141	85	0.24	ND	ND	0.32	ND	ND	ND	ND	9.46	ND
21.11.2020	3.3	8.3	188	110	0.24	ND	ND	ND	ND	ND	ND	ND	9.25	ND
22.11.2020	5.4	13.6	199	119	0.18	ND	ND	0.19	ND	ND	ND	ND	10.55	ND
23.11.2020	4.8	9.6	166	86	0.22	ND	ND	ND	ND	ND	0.17	ND	11.36	ND

\*All values (24 Hourly Avg.) are in µg/m<sup>3</sup>.

Name of the Location	L-17/3, DLF PHASE-II, IFFCO CHOWK, MG ROAD, GURUGRAM, HARYANA													
Dates	Regulatory Parameters							Proposed New Parameters						
	SO <sub>2</sub> (µg/ m <sup>3</sup> )	NO <sub>2</sub> (µg/ m <sup>3</sup> )	PM <sub>10</sub> (µg/ m <sup>3</sup> )	PM <sub>2.5</sub> (µg/ m <sup>3</sup> )	Metals in PM <sub>10</sub>			Metals / Elements in PM <sub>2.5</sub>						
					Pb (µg/ m <sup>3</sup> )	Ni (µg/ m <sup>3</sup> )	As (µg/ m <sup>3</sup> )	Pb (µg/ m <sup>3</sup> )	Ni (µg/ m <sup>3</sup> )	As (µg/ m <sup>3</sup> )	Al (µg/ m <sup>3</sup> )	Ba (µg/ m <sup>3</sup> )	Fe (µg/m <sup>3</sup> )	Sr (µg/m <sup>3</sup> )
10.11.2020	3.7	53.0	150	117	0.58	ND	ND	0.47	ND	ND	0.72	ND	15.78	ND
11.11.2020	2.3	38.7	332	182	0.65	ND	ND	0.78	ND	ND	0.58	ND	16.35	ND
12.11.2020	3.7	56.9	394	235	0.66	ND	ND	0.58	ND	ND	0.56	ND	20.75	ND
13.11.2020	3.5	66.3	405	199	1.12	ND	ND	0.88	ND	ND	0.69	ND	24.85	ND
14.11.2020	47.2	71.5	447	368	1.42	ND	ND	0.95	ND	ND	0.74	ND	23.99	ND
15.11.2020	2.6	5.9	128	61	1.08	ND	ND	0.86	ND	ND	0.85	ND	22.14	ND
16.11.2020	4.1	6.7	137	92	0.87	ND	ND	0.65	ND	ND	0.73	ND	18.64	ND
17.11.2020	4.6	7.3	116	59	0.65	ND	ND	0.66	ND	ND	0.56	ND	15.66	ND
18.11.2020	3.8	6.7	95	69	0.77	ND	ND	0.82	ND	ND	0.44	ND	20.47	ND
19.11.2020	3.06	22.1	175	98	1.10	ND	ND	0.94	ND	ND	0.49	ND	22.46	ND
20.11.2020	6.8	10.7	127	78	1.23	ND	ND	0.86	ND	ND	0.57	ND	20.84	ND
21.11.2020	3.8	13.0	200	121	1.02	ND	ND	0.79	ND	ND	0.36	ND	16.56	ND
22.11.2020	3.7	17.3	190	105	0.77	ND	ND	0.55	ND	ND	0.55	ND	18.72	ND
23.11.2020	5.6	9.9	179	92	0.86	ND	ND	0.58	ND	ND	0.48	ND	18.47	ND

\*All values (24 Hourly Avg.) are in µg/m<sup>3</sup>.

#### 4. CITY – HISAR

- **Latitude & Longitude:** Hisar is located at 29.09°N 75.43°E in western Haryana. It has an average elevation of 215 m (705 ft) above mean sea level.
- **Climate:** Hisar has a continental climate, with very hot summers and relatively cool winters. The maximum daytime temperature during the summer varies between 40 and 46 °C. During winter, its ranges between 1.5 and 4 °C. Annual average maximum and minimum temperature is 32.3 °C (90.1 °F) and 15.4 °C (59.7 °F), respectively. Relative humidity varies from 5 to 100%.
- **Population:** According to the 2011 census of India, Hisar has a population of 301,249 and is currently the 141<sup>st</sup>-most populated city in India. Males constitute 54% of the population and females 46%, with 844 females per thousand males.
- **Land Use:**The major portion of Land is covered under Agriculture which is 76%. (Malik, 2012).

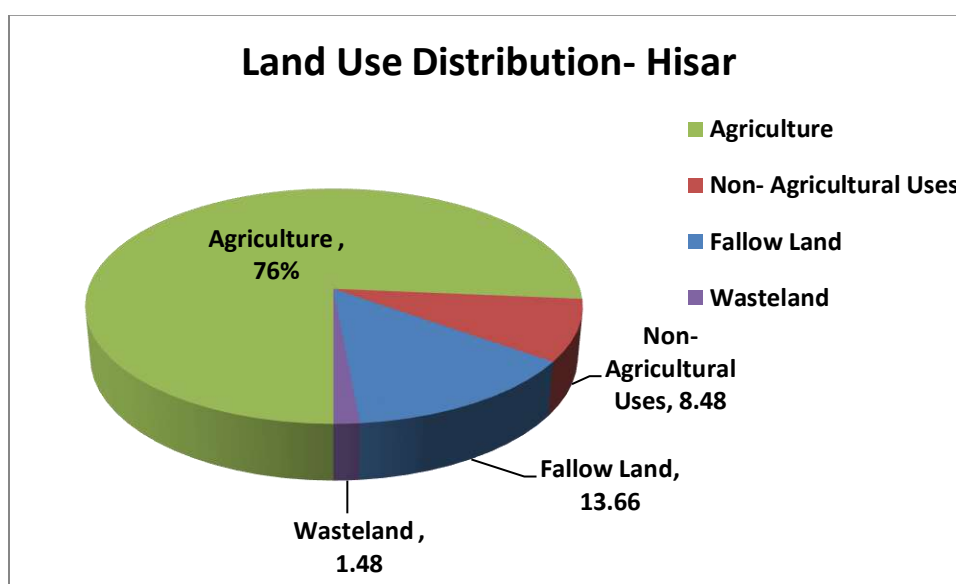


Figure 1: Land Use Distribution of Hisar

#### MONITORING LOCATIONS Description of Monitoring Sites

Two sites have been selected for monitoring:

S. No.	Name of the Location	Zone	Latitude	Longitude
1.	SAINI SWEETS, HISAR DELHI ROAD, HISAR, HARYANA(for AAQ Monitoring)	Commercial	N29°08.463'	E075°44.704'
2.	AROYAM HOSPITAL, NEAR VISWAS SCHOOL, U.E. HISAR, HARYANA(for AAQ Monitoring)	Residential	N29°13.836'	E075°74.441'

**Results of Noise Level monitoring at Hisar**

Location : HSPCB Office, Urban Estate-II, Hisar	Pre-Deepawali Day (12.11.2020)			Deepawali Day (14.11.2020)			After Deepawali Day (16.11.2020)		
	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
18:00 to 19:00 Hr	31.6	41.5	36.55	36.5	49.3	42.9	30.8	40.3	35.55
19:00 to 20:00 Hr	29.2	54.3	41.75	27.3	57.8	42.55	28.5	52.8	40.65
20:00 to 21:00 Hr	27.8	59.7	43.75	25.9	61.2	43.55	26.9	52.6	42.75
21:00 to 22:00 Hr	30.4	56.1	43.25	26.4	63.1	44.75	30.1	55.7	42.9
22:00 to 23:00 Hr	28.1	51.5	39.8	26.1	59.4	42.75	27.3	51.2	39.25
23:00 to 24:00 Hr	26.7	43.8	35.25	24.4	54.6	39.5	25.8	43.2	34.5

Location : ITI Chowk, Tosham Road, Hisar	Pre-Deepawali Day (12.11.2020)			Deepawali Day (14.11.2020)			After Deepawali Day (16.11.2020)		
	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
18:00 to 19:00 Hr	34.5	48.1	41.3	38.6	62.5	50.55	33.7	42.2	40.45
19:00 to 20:00 Hr	29.6	56.5	43.05	39.8	62.9	51.35	29.4	55.8	42.6
20:00 to 21:00 Hr	31.4	50.8	41.1	38.9	66.3	52.6	31.1	49.7	40.4
21:00 to 22:00 Hr	31.9	58.1	45.0	27.5	72.9	50.2	31.5	57.5	44.5
22:00 to 23:00 Hr	30.7	57.3	44.0	40.1	70.6	55.35	29.8	56.8	43.3
23:00 to 24:00 Hr	34.9	44.5	39.7	38.2	58.7	48.45	34.5	44.2	39.35



**Results of Ambient Air Quality Monitoring (Hisar)**

Name of the Location	<b>SAINI SWEETS, HISAR DELHI ROAD, HISAR, HARYANA</b>													
Dates	Regulatory Parameters							Proposed New Parameters						
	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	Metals in PM <sub>10</sub>			Metals / Elements in PM <sub>2.5</sub>						
					Pb (µg/m <sup>3</sup> )	Ni (µg/m <sup>3</sup> )	As (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (µg/m <sup>3</sup> )	As (µg/m <sup>3</sup> )	Al (µg/m <sup>3</sup> )	Ba (µg/m <sup>3</sup> )	Fe (µg/m <sup>3</sup> )	Sr (µg/m <sup>3</sup> )
10.11.2020	34	72.6	431.6	334.8	0.42	ND	ND	0.38	ND	ND	0.26	ND	10.74	ND
11.11.2020	66	74.6	287.0	215.2	0.58	ND	ND	0.63	ND	ND	0.29	ND	12.66	ND
12.11.2020	37.3	76	433.3	273.8	0.55	ND	ND	0.51	ND	ND	0.33	ND	12.84	ND
13.11.2020	35.6	74.6	535.8	425.5	0.78	ND	ND	0.66	ND	ND	0.41	ND	14.36	ND
14.11.2020	60.3	69	545.6	409.7	0.82	ND	ND	0.68	ND	ND	0.47	ND	18.74	ND
15.11.2020	27.3	42.6	294.5	204.3	0.76	ND	ND	0.79	ND	ND	0.41	ND	16.42	ND
16.11.2020	11.3	31.3	86.1	62.5	0.69	ND	ND	0.56	ND	ND	0.38	ND	12.65	ND
17.11.2020	16.6	29.3	100.8	72.4	0.28	ND	ND	0.18	ND	ND	0.35	ND	9.56	ND
18.11.2020	16.6	48.6	215.8	113.0	0.37	ND	ND	0.42	ND	ND	0.22	ND	12.84	ND
19.11.2020	28.6	56.6	291.6	193.4	0.35	ND	ND	0.41	ND	ND	0.28	ND	15.36	ND
20.11.2020	23.3	49.3	226.6	154.7	0.42	ND	ND	0.37	ND	ND	0.29	ND	11.74	ND
21.11.2020	25.3	38.6	190.9	130.9	0.51	ND	ND	0.48	ND	ND	0.19	ND	9.87	ND
22.11.2020	20.0	58.0	263.8	131.4	0.48	ND	ND	0.55	ND	ND	0.24	ND	10.13	ND
23.11.2020	44.0	34.0	236.0	192.9	0.44	ND	ND	0.47	ND	ND	0.22	ND	12.85	ND

\*All values (24 Hourly Avg.) are in µg/m<sup>3</sup>.

Name of the Location	<b>AROYAM HOSPITAL, NEAR VISWAS SCHOOL, U.E. HISAR, HARYANA</b>													
Dates	Regulatory Parameters							Proposed New Parameters						
	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	Metals in PM <sub>10</sub>			Metals / Elements in PM <sub>2.5</sub>						
					Pb (µg/m <sup>3</sup> )	Ni (µg/m <sup>3</sup> )	As (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (µg/m <sup>3</sup> )	As (µg/m <sup>3</sup> )	Al (µg/m <sup>3</sup> )	Ba (µg/m <sup>3</sup> )	Fe (µg/m <sup>3</sup> )	Sr (µg/m <sup>3</sup> )
10.11.2020	28.6	69.3	417.2	311.5	ND	ND	ND	ND	ND	ND	0.17	ND	7.48	ND
11.11.2020	64	72	278.3	191.9	0.19	ND	ND	0.10	ND	ND	0.11	ND	6.25	ND
12.11.2020	33.3	77.3	417.6	257.9	0.27	ND	ND	0.14	ND	ND	ND	ND	8.33	ND
13.11.2020	32.0	72	519.6	401.7	0.28	ND	ND	0.22	ND	ND	0.14	ND	10.47	ND
14.11.2020	53.3	60.6	526.0	391.8	0.31	ND	ND	0.24	ND	ND	0.22	ND	17.48	ND
15.11.2020	28.6	38.6	285.8	186.5	0.17	ND	ND	0.19	ND	ND	0.14	ND	13.66	ND
16.11.2020	9.6	39.5	76.9	53.5	ND	ND	ND	0.09	ND	ND	0.11	ND	12.85	ND
17.11.2020	13.3	27.3	73.4	61.5	ND	ND	ND	0.09	ND	ND	ND	ND	10.48	ND
18.11.2020	13.3	48	203.6	97.7	ND	ND	ND	ND	ND	ND	ND	ND	10.77	ND
19.11.2020	24.6	56	277.1	183.5	ND	ND	ND	ND	ND	ND	0.14	ND	8.56	ND
20.11.2020	21.3	44.6	212.9	145.8	0.11	ND	ND	ND	ND	ND	0.11	ND	7.26	ND
21.11.2020	26.6	37.3	181.6	119.5	0.14	ND	ND	0.17	ND	ND	ND	ND	7.99	ND
22.11.2020	18.6	59.3	250.5	179.5	ND	ND	ND	0.12	ND	ND	ND	ND	8.46	ND
23.11.2020	21.3	64.6	231.3	152.7	ND	ND	ND	ND	ND	ND	0.12	ND	9.68	ND

\*All values (24 Hourly Avg.) are in µg/m<sup>3</sup>.

## 5. CITY – KARNAL

- **Latitude & Longitude:** Karnal is located at 29° 41' 8.2644" N and 76° 59' 25.9692", at an elevation of 253 meters height (830 ft).
- **Climate:** The prevailing climate in Karnal is known as a local steppe climate. During the year there is little rainfall. The average annual temperature is 24.4 °C in Karnal. In a year, the average rainfall is 766 mm.
- **Population:** As per provisional reports of Census India, population of Karnal in 2011 is 286,827; of which male and female are 151,287 and 135,540 respectively.
- **Land Use:** The major portion of Land is covered under Agriculture which is 81.96%. The forest cover is 0.41%. Karnal is accommodating 5.69 % of the total Built up of Haryana Sub region (Malik, 2017).

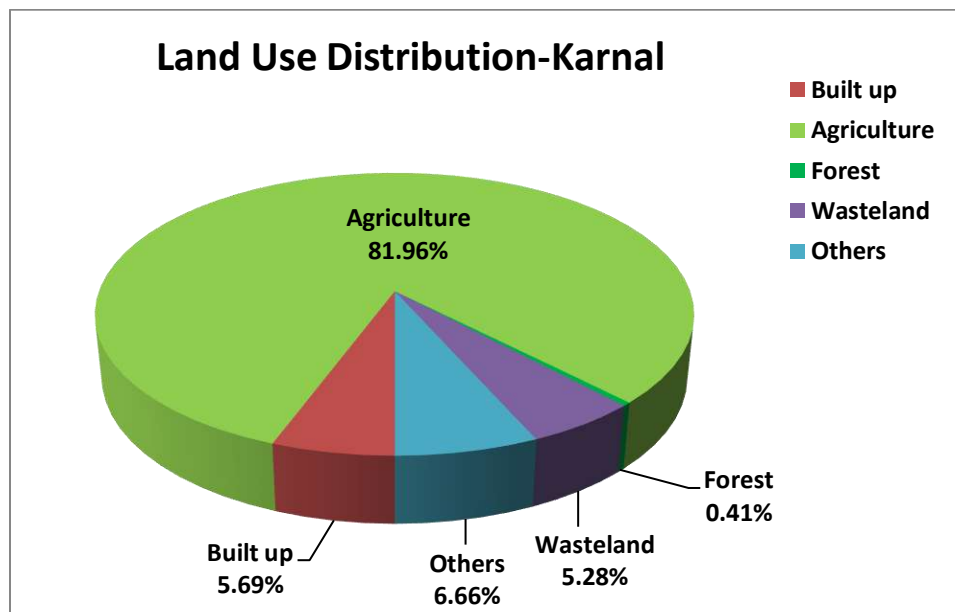


Figure 1: Land Use Distribution of Karnal

### MONITORING LOCATIONS

#### Description of Monitoring Sites

Two sites have been selected for monitoring:

S. No.	Name of the Location	Zone	Latitude	Longitude
1.	DAYANAND COLONY, MODEL TOWN, KARNAL, HARYANA (for AAQ Monitoring)	Commercial	N29°41.247'	E077°00.156'
2.	PARASRAM DHARAMSALA NEAR KALPANA CHAWLA MEDICAL COLLEGE, KARNAL, HARYANA (for AAQ Monitoring)	Residential	N29°41.522'	E076°59.316'

**Results of Noise Level monitoring at Karnal**

Location: A 3rd floor, SCO- 80-81, Above Punjab National Bank, Namastey Chowk, Karnal	Pre-Deepawali Day (08.11.2020)			Deepawali Day (14.11.2020)			After Deepawali Day (16.11.2020)		
	Time duration	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)	Lmin	Lmax
18:00 to 19:00 Hr	46.0	54.0	50.5	49.0	59.0	54.5	-	-	-
19:00 to 20:00 Hr	46.5	52.9	50.0	50.0	60.0	56.0	-	-	-
20:00 to 21:00 Hr	43.0	54.0	48.5	52.0	61.0	58.0	-	-	-
21:00 to 22:00 Hr	41.5	52.5	47.0	55.1	60.0	59.4	-	-	-
22:00 to 23:00 Hr	40.0	50.0	45.5	54.5	60.5	58.5	-	-	-
23:00 to 24:00 Hr	43.0	47.5	45.0	52.0	54.5	55.1	-	-	-

Location: B Model Town, Dayanand Colony, Karnal	Pre-Deepawali Day (08.11.2020)			Deepawali Day (14.11.2020)			After Deepawali Day (16.11.2020)		
	Time duration	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)	Lmin	Lmax
18:00 to 19:00 Hr	44.5	49.5	50.0	42.5	54.0	48.5	-	-	-
19:00 to 20:00 Hr	45.0	50.1	48.0	45.1	60.0	53.5	-	-	-
20:00 to 21:00 Hr	47.5	51.9	50.1	48.5	64.9	55.4	-	-	-
21:00 to 22:00 Hr	46.2	53.8	45.5	50.0	65.0	57.2	-	-	-
22:00 to 23:00 Hr	41.5	50.0	46.2	51.0	61.5	56.5	-	-	-
23:00 to 24:00 Hr	40.5	48.5	44.5	45.5	58.8	52.5	-	-	-

Location: C Bus Stand, Karnal	Pre-Deepawali Day (08.11.2020)			Deepawali Day (14.11.2020)			After Deepawali Day (16.11.2020)		
	Time duration	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)	Lmin	Lmax
18:00 to 19:00 Hr	46.7	52.5	50.2	48.5	58.8	53.5	-	-	-
19:00 to 20:00 Hr	43.1	53.1	48.7	50.0	60.0	55.6	-	-	-
20:00 to 21:00 Hr	41.8	52.4	48.5	52.5	61.8	58.8	-	-	-
21:00 to 22:00 Hr	40.5	50.5	48.7	55.4	62.8	59.2	-	-	-
22:00 to 23:00 Hr	44.1	51.2	45.9	54.1	60.5	57.5	-	-	-
23:00 to 24:00 Hr	42.5	50.8	47.6	49.5	55.4	51.8	-	-	-

**Results of Ambient Air Quality Monitoring (Karnal)**

Name of the Location	<b>WARD NO.-05, NEAR SHANI MANDIR, INDRI, KARNAL, HARYANA</b>													
Dates	Regulatory Parameters							Proposed New Parameters						
	SO2 (µg/ m3)	NO2 (µg/ m3)	PM10 (µg/ m3)	PM2.5 (µg/ m3)	Metals in PM10			Metals / Elements in PM2.5						
					Pb (µg/ m3)	Ni (µg/ m3)	As (µg/ m3)	Pb (µg/ m3)	Ni (µg/ m3)	As (µg/ m3)	Al (µg/ m3)	Ba (µg/ m3)	Fe (µg/m 3)	Sr (µg/m3)
10.11.2020	14.52	51.18	175.75	86.14	0.11	ND	ND	0.15	ND	ND	0.13	ND	5.46	ND
11.11.2020	15.86	32.28	168.85	115.48	0.08	ND	ND	0.10	ND	ND	0.09	ND	8.47	ND
12.11.2020	23.52	29.83	126.32	91.48	0.14	ND	ND	0.12	ND	ND	0.12	ND	4.25	ND
13.11.2020	19.65	28.10	218.20	129.98	0.24	ND	ND	0.22	ND	ND	0.28	ND	6.45	ND
14.11.2020	39.50	31.65	485.22	197.50	0.39	ND	ND	0.34	ND	ND	0.44	ND	10.43	ND
15.11.2020	25.39	16.69	131.64	92.01	0.26	ND	ND	0.18	ND	ND	0.21	ND	9.33	ND
16.11.2020	8.21	14.21	51.89	33.09	0.10	ND	ND	0.14	ND	ND	0.14	ND	5.54	ND
17.11.2020	12.94	14.40	68.30	36.31	ND	ND	ND	ND	ND	ND	ND	ND	2.58	ND
18.11.2020	19.30	20.87	95.16	46.25	ND	ND	ND	ND	ND	ND	ND	ND	4.15	ND
19.11.2020	19.40	18.95	127.33	80.42	0.08	ND	ND	ND	ND	ND	0.16	ND	3.47	ND
20.11.2020	18.72	13.72	97.53	65.81	0.12	ND	ND	0.16	ND	ND	0.19	ND	5.54	ND
21.11.2020	30.04	15.06	76.23	47.44	ND	ND	ND	ND	ND	ND	ND	ND	4.56	ND
22.11.2020	18.00	16.59	96.05	70.46	0.10	ND	ND	0.08	ND	ND	ND	ND	4.14	ND
23.11.2020	18.41	37.29	195.02	125.22	ND	ND	ND	ND	ND	ND	0.19	ND	5.22	ND

\*All values (24 Hourly Avg.) are in µg/m<sup>3</sup>.

Name of the Location	<b>3<sup>rd</sup> FLOOR, SCO-80-81, NAMASTEY CHOWK, KARNAL, ABOVE REGINAL OFFICE, HSPCB, KARNAL, HARYANA</b>													
Dates	Regulatory Parameters							Proposed New Parameters						
	SO2 (µg/ m3)	NO2 (µg/ m3)	PM10 (µg/ m3)	PM2.5 (µg/ m3)	Metals in PM10			Metals / Elements in PM2.5						
					Pb (µg/ m3)	Ni (µg/ m3)	As (µg/ m3)	Pb (µg/ m3)	Ni (µg/ m3)	As (µg/ m3)	Al (µg/ m3)	Ba (µg/ m3)	Fe (µg/m 3)	Sr (µg/m3)
10.11.2020	..	..	..	..	0.25	ND	ND	0.22	ND	ND	0.28	ND	13.47	ND
11.11.2020	..	..	..	..	0.29	ND	ND	0.18	ND	ND	0.48	ND	9.56	ND
12.11.2020	..	..	..	..	0.25	ND	ND	0.29	ND	ND	1.32	ND	12.45	ND
13.11.2020	5.16	6.95	173.17	0.03	0.35	ND	ND	0.31	ND	ND	1.29	ND	17.43	ND
14.11.2020	5.36	7.38	279.42	..	0.47	ND	ND	0.38	ND	ND	1.87	ND	19.67	ND
15.11.2020	..	..	..	..	0.39	ND	ND	0.28	ND	ND	1.59	ND	14.36	ND
16.11.2020	6.01	8.03	350.69	..	0.24	ND	ND	0.17	ND	ND	0.48	ND	12.22	ND
17.11.2020	6.41	8.76	379.04	..	0.10	ND	ND	0.24	ND	ND	0.36	ND	9.47	ND
18.11.2020	..	..	..	..	ND	ND	ND	0.36	ND	ND	0.45	ND	10.77	ND
19.11.2020	..	..	..	..	ND	ND	ND	ND	ND	ND	0.37	ND	11.63	ND
20.11.2020	..	..	..	..	0.11	ND	ND	0.09	ND	ND	0.51	ND	10.54	ND
21.11.2020	..	..	..	..	ND	ND	ND	0.14	ND	ND	0.38	ND	14.17	ND
22.11.2020	..	..	..	..	0.08	ND	ND	ND	ND	ND	0.45	ND	12.65	ND
23.11.2020	..	..	..	..	0.14	ND	ND	0.12	ND	ND	0.64	ND	10.47	ND

\*All values (24 Hourly Avg.) are in µg/m<sup>3</sup>.

## 6. CITY – PANCHKULA

- **Latitude & Longitude:** Hisar is located at 30.69°52.02'N 76.85°41.72'E . It has an average elevation of 337m (1106ft) above mean sea level.
- 
- **Climate:** Panchkula district has a sub-tropical continental monsoon climate having, hot summers, cool winters, good monsoon rainfall. It has great variation in temperature (-1 °C to 43 °C). Sometimes winter frost occurs during December and January. The district also receives winter rains from the western disturbance. The rainfall is mostly received in the monsoon.
- **Population:** According to the 2011 Census of India, the population is estimated to total 210,000 people.
- **Land Use:** The major portion of land is covered under Forest which is 46.97%. The agricultural land is 36%. Panchkula is accommodating 3.23 % of the total Built up of Haryana Sub region (NSRA,1995).

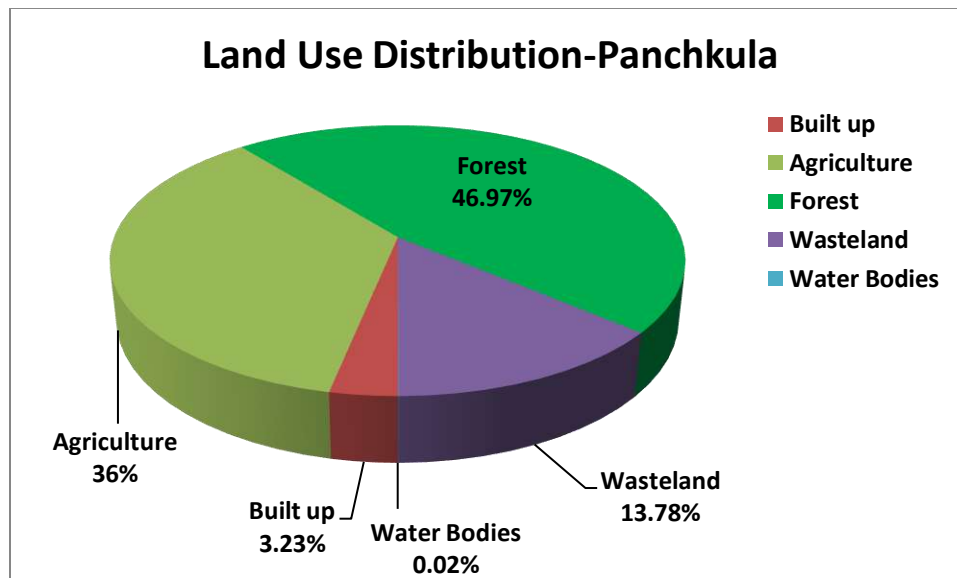


Figure 1: Land Use Distribution of Panchkula

### MONITORING LOCATIONS Description of Monitoring Sites

Two sites have been selected for monitoring:

S. No.	Name of the Location	Zone	Latitude	Longitude
1.	H.No.392P, SECTOR-23, PANCHKULA, HARYANA (for AAQ Monitoring)	Commercial	N30°40.181'	E076°53.135'
2.	HSPCB, SECTOR -6, PANCHKULA, HARYANA (for AAQ Monitoring)	Residential	N30°41.592'	E076°51.036'

**Results of Noise Level monitoring at Panchkula.**

Location : A	Pre-Deepawali Day (12.11.2020)			Deepawali Day (14.11.2020)			After Deepawali Day (16.11.2020)		
Time duration	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
18:00 to 19:00 Hr	29.3	77.1	55.2	35.6	89.0	76.1	30.9	84.3	71.5
19:00 to 20:00 Hr	23.5	80.2	61.6	25.8	72.0	50.6	20.9	67.3	45.7
20:00 to 21:00 Hr	34.6	97.6	71.6	48.9	76.3	66.4	44.0	71.6	61.6
21:00 to 22:00 Hr	20.5	84.6	58.3	49.8	93.2	71.3	44.9	89.6	66.6
22:00 to 23:00 Hr	32.7	76.1	57.2	45.9	88.8	68.6	41.0	83.9	63.8
23:00 to 24:00 Hr	20.5	82.7	51.2	44.4	86.6	63.6	39.7	81.8	58.8

Location : B	Pre-Deepawali Day (12.11.2020)			Deepawali Day (14.11.2020)			After Deepawali Day (16.11.2020)		
Time duration	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
18:00 to 19:00 Hr	51.9	83.4	63.5	54.6	91.2	68.8	51.6	88.6	64.8
19:00 to 20:00 Hr	49.4	76.0	59.4	40.6	96.5	72.7	39.6	92.6	68.7
20:00 to 21:00 Hr	49.8	94.3	70.3	55.2	101.6	82.8	51.5	98.8	78.8
21:00 to 22:00 Hr	33.9	89.6	62.0	49.1	106	87.1	45.3	102	82.1
22:00 to 23:00 Hr	36.4	67.5	51.9	54.5	104.2	77.3	50.5	100.2	72.3
23:00 to 24:00 Hr	32.5	90.3	58.8	65.2	109.1	83.2	61.2	105.1	78.2

Location : C	Pre-Deepawali Day (12.11.2020)			Deepawali Day (14.11.2020)			After Deepawali Day (16.11.2020)		
Time duration	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
18:00 to 19:00 Hr	40.9	82.4	62.3	41.8	105.8	76.6	35.8	101.7	72.6
19:00 to 20:00 Hr	43.7	91.4	68.2	26.3	86.4	60.9	20.3	83.2	56.9
20:00 to 21:00 Hr	30.6	85.2	62.3	47.6	105.1	83.7	42.1	99.2	79.6
21:00 to 22:00 Hr	29.1	74.2	61.4	60.8	103.9	77.9	56.4	99.8	71.7

**Results of Ambient Air Quality Monitoring Panchkula**

Name of the Location	H.No.-392P, SECTOR-23, PANCHKULA, HARYANA													
Dates	Regulatory Parameters							Proposed New Parameters						
	SO2 (µg/ m3)	NO2 (µg/ m3)	PM10 (µg/ m3)	PM2.5 (µg/ m3)	Metals in PM10			Metals / Elements in PM2.5						
					Pb (µg/ m3)	Ni (µg/ m3)	As (µg/ m3)	Pb (µg/ m3)	Ni (µg/ m3)	As (µg/ m3)	Al (µg/ m3)	Ba (µg/ m3)	Fe (µg/m 3)	Sr (µg/m3)
10.11.2020	..	..	..	..	0.14	ND	ND	0.08	ND	ND	0.08	ND	12.74	ND
11.11.2020	4.75	6.88	207.58	4.75	0.16	ND	ND	0.11	ND	ND	0.11	ND	15.63	ND
12.11.2020	5.09	7.31	176.45	5.09	0.22	ND	ND	0.14	ND	ND	0.09	ND	14.65	ND
13.11.2020	5.94	7.75	130.11	5.94	0.29	ND	ND	0.22	ND	ND	0.16	ND	15.98	ND
14.11.2020	6.82	8.34	200.38	6.82	0.32	ND	ND	0.29	ND	ND	0.24	ND	19.78	ND
15.11.2020	7.40	8.77	133.59	7.40	0.26	ND	ND	0.17	ND	ND	0.18	ND	17.95	ND
16.11.2020	7.64	8.91	123.17	7.64	0.12	ND	ND	0.07	ND	ND	0.10	ND	14.62	ND
17.11.2020	7.91	9.56	112.88	7.91	ND	ND	ND	ND	ND	ND	0.14	ND	15.33	ND
18.11.2020	8.21	10.14	39.96	8.21	ND	ND	ND	ND	ND	ND	ND	ND	12.78	ND
19.11.2020	8.28	9.71	65.72	8.28	0.10	ND	ND	0.05	ND	ND	0.16	ND	11.85	ND
20.11.2020	7.84	8.77	51.14	7.84	0.14	ND	ND	ND	ND	ND	0.14	ND	10.46	ND
21.11.2020	7.87	9.02	58.71	7.87	ND	ND	ND	ND	ND	ND	ND	ND	13.48	ND
22.11.2020	8.15	9.24	44.00	8.15	ND	ND	ND	ND	ND	ND	0.11	ND	10.11	ND
23.11.2020	8.62	9.53	58.08	8.62	0.12	ND	ND	ND	ND	ND	ND	ND	9.78	ND

\*All values (24 Hourly Avg.) are in µg/m<sup>3</sup>.

Name of the Location	HSPCB, SECTOR -6, PANCHKULA, HARYANA													
Dates	Regulatory Parameters							Proposed New Parameters						
	SO2 (µg/ m3)	NO2 (µg/ m3)	PM10 (µg/ m3)	PM2.5 (µg/ m3)	Metals in PM10			Metals / Elements in PM2.5						
					Pb (µg/ m3)	Ni (µg/ m3)	As (µg/ m3)	Pb (µg/ m3)	Ni (µg/ m3)	As (µg/ m3)	Al (µg/ m3)	Ba (µg/ m3)	Fe (µg/m 3)	Sr (µg/m3)
10.11.2020	3.42	19.05	N/A	72.70	-	-	-	-	-	-	-	-	-	-
11.11.2020	3.76	19.72	N/A	109.04	-	-	-	-	-	-	-	-	-	-
12.11.2020	4.43	18.34	N/A	116.64	-	-	-	-	-	-	-	-	-	-
13.11.2020	3.42	10.04	N/A	113.44	-	-	-	-	-	-	-	-	-	-
14.11.2020	12.28	18.31	N/A	131.85	-	-	-	-	-	-	-	-	-	-
15.11.2020	8.03	20.43	N/A	80.47	-	-	-	-	-	-	-	-	-	-
16.11.2020	9.19	21.24	N/A	18.01	-	-	-	-	-	-	-	-	-	-
17.11.2020	9.37	21.43	N/A	43.87	-	-	-	-	-	-	-	-	-	-
18.11.2020	9.12	21.71	N/A	59.28	-	-	-	-	-	-	-	-	-	-
19.11.2020	9.27	21.84	N/A	84.11	-	-	-	-	-	-	-	-	-	-
20.11.2020	9.32	23.08	N/A	78.40	-	-	-	-	-	-	-	-	-	-
21.11.2020	9.12	23.50	N/A	70.31	-	-	-	-	-	-	-	-	-	-
22.11.2020	9.34	23.50	N/A	78.57	-	-	-	-	-	-	-	-	-	-
23.11.2020	10.27	21.80	N/A	69.77	-	-	-	-	-	-	-	-	-	-

\*All values (24 Hourly Avg.) are in µg/m<sup>3</sup>.

## 7. CITY - PANIPAT

- **Latitude & Longitude:** Panipat is located at 29° 23' 56.1408" N and 76° 58' 37.4916" E. It has an average elevation of 219 metres (718 feet).
- **Climate:** The climate of Panipat district is of subtropical type *i.e.* very hot in summer and very cold during winters. The average annual temperature is 24.6 °C & average Annual rain fall is 672 mm.
- **Population:** As per provisional data of the 2018 census, the city had a population of 873375.
- **Land Use:** The major portion of Land is covered under Agriculture which is 83.61%. The forest cover is 3.29%. Built up: Panipat is accommodating 6.61% of the total Built up of Haryana Sub region (Scott Wilson, India. Interim Report –II, 2017).

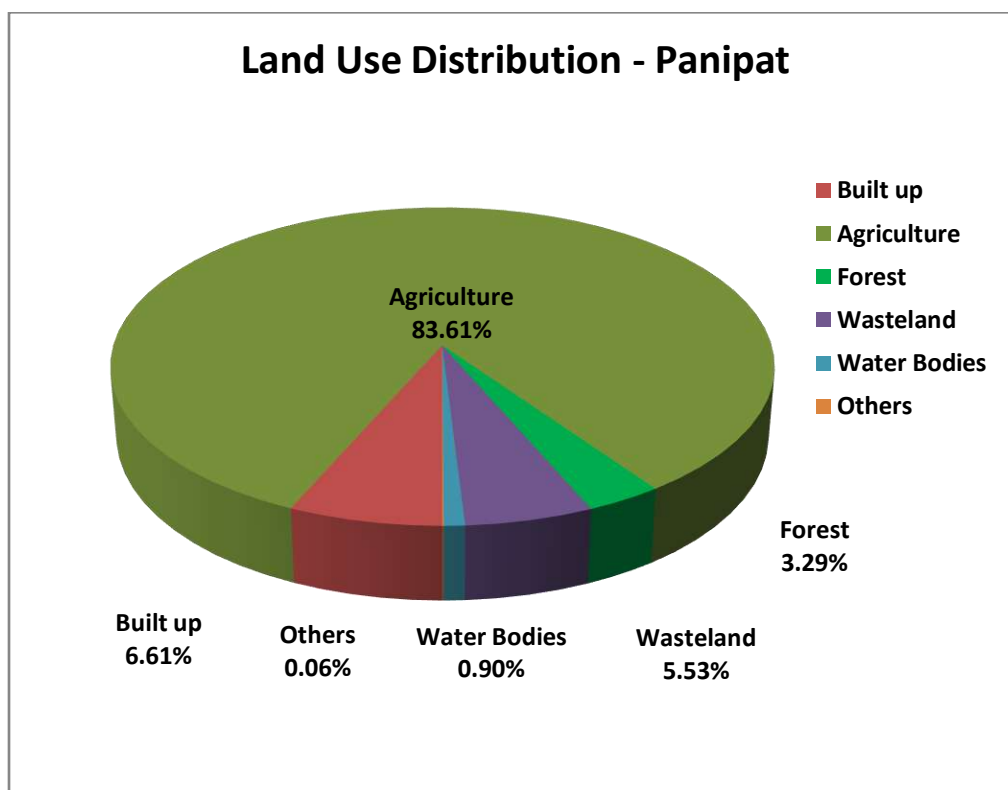


Figure 1: Land Use Distribution of Panipat

S. No.	Name of the Location	Zone	Latitude	Longitude
1.	COMMERCIAL COMPLEX, SECTOR-25, PANIPAT, HARYANA (for AAQ Monitoring)	Commercial	29.3715° N	76.9810° E
2.	SECTOR-18, PANIPAT, HARYANA (for AAQ Monitoring)	Residential	29.4363° N	76.9773° E



**Results of Noise Level monitoring at Panipat.**

Location : NFL, West, Panipat	Pre-Deepawali Day (12.11.2020)			Deepawali Day (14.11.2020)			After Deepawali Day (16.11.2020)		
	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
18:00 to 19:00 Hr	65.2	67	66.1	72.5	74	73.25	65.1	66.1	65.6
19:00 to 20:00 Hr	65.1	66.5	65.8	71.5	73.5	72.5	64.7	65.2	64.95
20:00 to 21:00 Hr	63.2	65.4	64.3	70.2	72.2	71.2	63	64.7	63.85
21:00 to 22:00 Hr	62.5	64.1	63.3	68.5	70.3	69.4	62.5	63.1	62.8
22:00 to 23:00 Hr	62.0	63.5	62.75	66.1	69.2	67.65	60.1	62	61.05
23:00 to 24:00 Hr	60	61	60.5	62	65.1	63.55	58	59.2	58.6

Location : Vikas Nagar, Panipat	Pre-Deepawali Day (12.11.2020)			Deepawali Day (14.11.2020)			After Deepawali Day (16.11.2020)		
	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
18:00 to 19:00 Hr	68.2	72.2	70.2	70.5	75.2	72.85	65.2	66.1	65.65
19:00 to 20:00 Hr	65.1	71.2	68.15	69.2	74.6	71.9	64.7	65.2	64.95
20:00 to 21:00 Hr	64.7	70.9	67.8	68.7	72.5	70.6	63.3	64.7	64
21:00 to 22:00 Hr	63.5	69.2	66.35	66.8	71.2	69	62.5	63.1	62.8
22:00 to 23:00 Hr	62.8	68.5	65.65	65	70.2	67.6	60.1	62.5	61.3
23:00 to 24:00 Hr	61.4	65.4	63.4	64.2	69.2	66.7	58.3	59.2	58.75

Location : NFL, East, Panipat	Pre-Deepawali Day (12.11.2020)			Deepawali Day (14.11.2020)			After Deepawali Day (16.11.2020)		
	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
18:00 to 19:00 Hr	58.2	62.1	60.15	60.2	63.5	61.85	62.3	65.2	63.75
19:00 to 20:00 Hr	57.1	61.9	59.5	59.7	62.8	61.25	61.8	64.2	63
20:00 to 21:00 Hr	56.5	60.1	58.3	59.2	61.9	60.55	60.2	63.8	62
21:00 to 22:00 Hr	56.0	60.0	58	58.4	60.1	59.25	59.2	62.3	60.75
22:00 to 23:00 Hr	55.4	59.2	57.3	56.2	58.1	57.15	58.7	61.2	59.95
23:00 to 24:00 Hr	54.9	58.7	56.8	55.2	58.2	56.7	57.9	59.3	58.6

**Results of Ambient Air Quality Monitoring (Panipat)**

Name of the Location	ROOF OF HSPCB OFFICE SCO NO. 55 SECTOR-25, PANIPAT, HARYANA													
Dates	Regulatory Parameters							Proposed New Parameters						
	SO2 (µg/ m3)	NO2 (µg/ m3)	PM10 (µg/ m3)	PM2.5 (µg/ m3)	Metals in PM10			Metals / Elements in PM2.5						
					Pb (µg/ m3)	Ni (µg/ m3)	As (µg/ m3)	Pb (µg/ m3)	Ni (µg/ m3)	As (µg/ m3)	Al (µg/ m3)	Ba (µg/ m3)	Fe (µg/m 3)	Sr (µg/m3)
10.11.2020	25.12	107.14	192.92	107.30	0.14	ND	ND	0.11	ND	ND	0.22	ND	11.54	ND
11.11.2020	43.83	32.96	291.37	60.24	0.16	ND	ND	0.13	ND	ND	0.34	ND	10.26	ND
12.11.2020	36.00	214.33	318.02	78.91	0.24	ND	ND	0.17	ND	ND	0.28	ND	14.63	ND
13.11.2020	31.40	160.50	352.14	186.29	0.33	ND	ND	0.24	ND	ND	0.47	ND	15.28	ND
14.11.2020	21.16	25.38	338.55	141.78	0.41	ND	ND	0.32	ND	ND	0.52	ND	18.74	ND
15.11.2020	16.60	48.03	94.79	26.87	0.38	ND	ND	0.22	ND	ND	0.44	ND	16.35	ND
16.11.2020	27.65	82.10	123.99	28.10	0.21	ND	ND	0.14	ND	ND	0.38	ND	13.58	ND
17.11.2020	57.46	124.91	152.73	33.03	ND	ND	ND	0.09	ND	ND	0.42	ND	10.47	ND
18.11.2020	86.86	123.65	245.18	60.46	ND	ND	ND	0.11	ND	ND	0.25	ND	12.66	ND
19.11.2020	134.35	80.13	178.80	37.12	ND	ND	ND	0.08	ND	ND	0.22	ND	9.45	ND
20.11.2020	24.40	89.73	162.99	42.18	0.12	ND	ND	0.14	ND	ND	0.28	ND	11.27	ND
21.11.2020	5.23	102.77	260.13	43.59	ND	ND	ND	ND	ND	ND	ND	ND	10.45	ND
22.11.2020	*	*	*	*	ND	ND	ND	ND	ND	ND	ND	ND	9.66	ND
23.11.2020	49.13	244.55	297.94	66.47	ND	ND	ND	ND	ND	ND	0.25	ND	9.87	ND

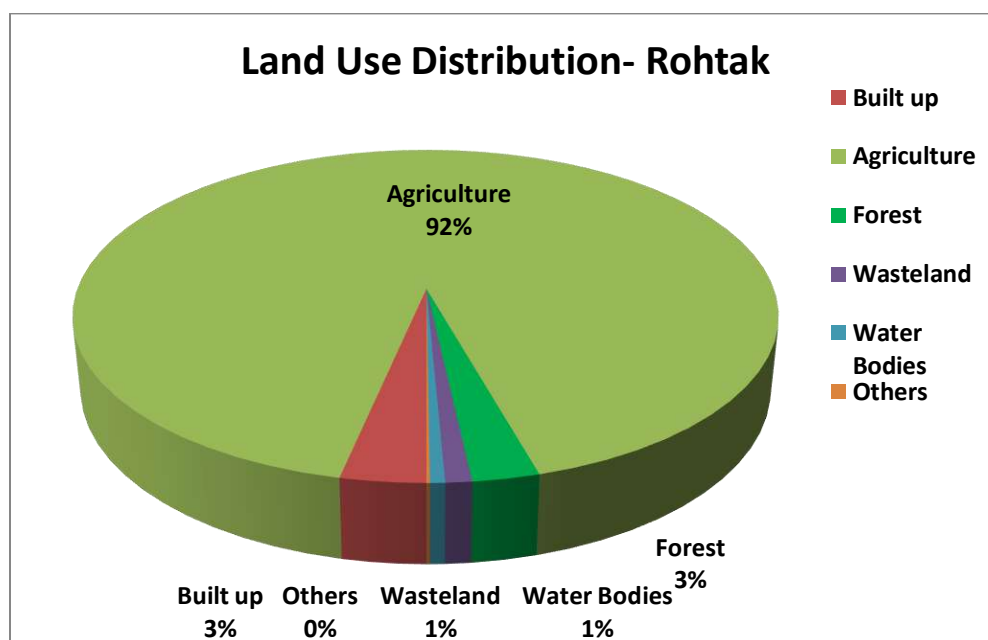
\*All values (24 Hourly Avg.) are in µg/m<sup>3</sup>.

Name of the Location	NFL GUEST HOUSE ROOF (RESIDEANTAL AREA), PANIPAT, HARYANA													
Dates	Regulatory Parameters							Proposed New Parameters						
	SO2 (µg/ m3)	NO2 (µg/ m3)	PM10 (µg/ m3)	PM2.5 (µg/ m3)	Metals in PM10			Metals / Elements in PM2.5						
					Pb (µg/ m3)	Ni (µg/ m3)	As (µg/ m3)	Pb (µg/ m3)	Ni (µg/ m3)	As (µg/ m3)	Al (µg/ m3)	Ba (µg/ m3)	Fe (µg/m 3)	Sr (µg/m3)
10.11.2020	7.00	8.82	533.28	0.12	0.10	ND	ND	ND	ND	ND	ND	ND	6.47	ND
11.11.2020	..	..	..	..	0.12	ND	ND	ND	ND	ND	0.19	ND	8.36	ND
12.11.2020	6.78	7.99	300.23	0.11	0.17	ND	ND	0.10	ND	ND	0.24	ND	11.43	ND
13.11.2020	..	..	..	..	0.26	ND	ND	0.14	ND	ND	0.22	ND	13.56	ND
14.11.2020	7.00	8.32	579.92	0.12	0.32	ND	ND	0.19	ND	ND	0.35	ND	15.22	ND
15.11.2020	..	..	..	..	0.26	ND	ND	0.20	ND	ND	0.31	ND	11.58	ND
16.11.2020	7.20	8.62	180.84	0.10	0.17	ND	ND	0.14	ND	ND	0.22	ND	9.45	ND
17.11.2020	..	..	..	..	ND	ND	ND	0.09	ND	ND	0.17	ND	8.63	ND
18.11.2020	12.81	47.23	649.46	296.17	ND	ND	ND	ND	ND	ND	0.14	ND	4.22	ND
19.11.2020	3.31	10.90	612.54	335.68	ND	ND	ND	ND	ND	ND	0.18	ND	5.65	ND
20.11.2020	14.54	1.02	593.99	326.84	ND	ND	ND	0.09	ND	ND	ND	ND	4.18	ND
21.11.2020	12.56	0.66	550.14	284.55	ND	ND	ND	ND	ND	ND	ND	ND	3.56	ND
22.11.2020	2.74	0.56	607.22	347.05	ND	ND	ND	ND	ND	ND	ND	ND	4.82	ND
23.11.2020	7.09	9.02	505.50	0.03	ND	ND	ND	ND	ND	ND	ND	ND	5.55	ND

\*All values (24 Hourly Avg.) are in µg/m<sup>3</sup>.

## 8. CITY – ROHTAK

- **Latitude & Longitude:** Rohtak is located at 28° 53' 43.8540"N and 76° 36' 23.8068"E. It has an average elevation of 224 metres (735 feet).
- **Climate:** Average annual rainfall in Rohtak city is 458.5mm (18.0 inch). In summer from April to July, the day temperature generally remains between 30 °C and 40 °C occasionally going up to 48 °C on a few days.
- **Population:** As of the 2011 census, Rohtak had a population of 373,133.
- **Land Use:** The major portion of Land is covered under Agriculture which is 92.26 %. The forest cover is 2.63%. Rohtak is accommodating 3.35% of the total Built up of Haryana Sub region (Scott Wilson, India. Interim Report –II, 2017).



**Figure 1: Land Use Distribution of Rohtak**

### MONITORING LOCATIONS

#### Description of Monitoring Sites

Two sites have been selected for monitoring:

S. No.	Name of the Location	Zone	Latitude	Longitude
1.	Maharishi Dayanand University campus, Rohtak, Haryana	Commercial	N28°53.093'	E076°36.883'
2.	Community Centre, sector-14, Rohtak, Haryana	Residential	N28°53.727'	E076°36.543'

**Results of Noise Level monitoring at Rohtak**

Location : Community Centre, Sector- 14, Rohtak	Pre-Deepawali Day (12.11.2020)			Deepawali Day (14.11.2020)			After Deepawali Day (16.11.2020)		
	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
18:00 to 19:00 Hr	59.7	64.2	62.0	60.9	69.7	65.6	59.2	65.3	62.3
19:00 to 20:00 Hr	62.7	68.5	65.6	66.9	72.8	72.7	62.1	68.9	65.5
20:00 to 21:00 Hr	67.8	73.1	70.5	65.2	81.8	77.3	67.9	73.4	70.7
21:00 to 22:00 Hr	63.4	68.1	64.2	75.8	81.9	78.3	63.0	68.6	65.8
22:00 to 23:00 Hr	57.8	66.7	62.7	71.8	76.3	74.8	57.1	66.9	62.0
23:00 to 24:00 Hr	56.3	60.3	56.4	65.7	72.4	68.6	56.6	60.1	58.4

Location : MDU, Univ. Rohtak	Pre-Deepawali Day (12.11.2020)			Deepawali Day (14.11.2020)			After Deepawali Day (16.11.2020)		
	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
18:00 to 19:00 Hr	59.7	64.2	62.0	60.9	69.7	65.6	59.5	63.9	61.7
19:00 to 20:00 Hr	62.7	68.5	65.6	66.9	72.8	72.7	62.2	68.7	65.5
20:00 to 21:00 Hr	67.8	73.1	70.5	65.2	81.8	77.3	67.1	72.8	69.9
21:00 to 22:00 Hr	63.4	68.1	64.2	75.8	81.9	78.3	63.1	68.4	65.8
22:00 to 23:00 Hr	57.8	66.7	62.7	71.8	76.3	74.8	57.3	66.5	61.9
23:00 to 24:00 Hr	56.3	60.3	56.4	65.7	72.4	68.6	56.7	60.5	58.6

Location : Sai Das Colony, Rohtak	Pre-Deepawali Day (12.11.2020)			Deepawali Day (14.11.2020)			After Deepawali Day (16.11.2020)		
	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
18:00 to 19:00 Hr	59.7	64.2	62.0	60.9	69.7	65.6	60.0	64.5	62.3
19:00 to 20:00 Hr	62.7	68.5	65.6	66.9	72.8	72.7	62.1	68.9	65.5
20:00 to 21:00 Hr	67.8	73.1	70.5	65.2	81.8	77.3	67.2	73.5	70.4
21:00 to 22:00 Hr	63.4	68.1	64.2	75.8	81.9	78.3	61.9	68.3	65.1
22:00 to 23:00 Hr	57.8	66.7	62.7	71.8	76.3	74.8	57.1	66.9	62.0
23:00 to 24:00 Hr	56.3	60.3	56.4	65.7	72.4	68.6	56.8	60.8	58.8

**Results of Ambient Air Quality Monitoring (Rohtak)**

Name of the Location	HOUSE NO.230/14, SAI DASS COLONY, ROHTAK, HARYANA													
Dates	Regulatory Parameters							Proposed New Parameters						
	SO2 (µg/ m3)	NO2 (µg/ m3)	PM10 (µg/ m3)	PM2.5 (µg/ m3)	Metals in PM10			Metals / Elements in PM2.5						
					Pb (µg/ m3)	Ni (µg/ m3)	As (µg/ m3)	Pb (µg/ m3)	Ni (µg/ m3)	As (µg/ m3)	Al (µg/ m3)	Ba (µg/ m3)	Fe (µg/m 3)	Sr (µg/m3)
10.11.2020	---	---	---	---	0.78	ND	ND	0.62	ND	ND	0.44	ND	10.77	ND
11.11.2020	30.6	22	96.6	30.6	0.51	ND	ND	0.42	ND	ND	0.56	ND	12.65	ND
12.11.2020	42	26	297.4	42	0.66	ND	ND	0.52	ND	ND	0.58	ND	9.85	ND
13.11.2020	32	27.3	190.3	32	0.78	ND	ND	0.62	ND	ND	0.39	ND	14.65	ND
14.11.2020	46	32.6	215.7	46	0.95	ND	ND	0.79	ND	ND	0.47	ND	13.96	ND
15.11.2020	30	24.6	107.5	30	0.62	ND	ND	0.51	ND	ND	0.65	ND	14.78	ND
16.11.2020	28	24.6	105.8	28	0.65	ND	ND	0.42	ND	ND	0.22	ND	12.52	ND
17.11.2020	36	23.3	75.7	36	0.38	ND	ND	0.44	ND	ND	0.38	ND	9.46	ND
18.11.2020	24	26	178.2	24	0.24	ND	ND	0.12	ND	ND	0.48	ND	8.70	ND
19.11.2020	31.3	24.6	223.9	31.3	0.14	ND	ND	0.11	ND	ND	0.65	ND	8.21	ND
20.11.2020	38.6	25.3	178.8	38.6	0.32	ND	ND	0.33	ND	ND	0.52	ND	10.47	ND
21.11.2020	34	20	226.2	34	0.28	ND	ND	0.25	ND	ND	0.84	ND	12.61	ND
22.11.2020	27.3	18	168.9	27.3	0.33	ND	ND	0.17	ND	ND	0.51	ND	11.76	ND
23.11.2020					0.27	ND	ND	0.21	ND	ND	0.37	ND	12.24	ND

\*All values (24 Hourly Avg.) are in µg/m<sup>3</sup>.

Name of the Location	ASIAN PAINTS LTD. PLOT NO.-1, SECTOR-30B, IMT, ROHTAK, HARYANA													
Dates	Regulatory Parameters							Proposed New Parameters						
	SO2 (µg/ m3)	NO2 (µg/ m3)	PM10 (µg/ m3)	PM2.5 (µg/ m3)	Metals in PM10			Metals / Elements in PM2.5						
					Pb (µg/ m3)	Ni (µg/ m3)	As (µg/ m3)	Pb (µg/ m3)	Ni (µg/ m3)	As (µg/ m3)	Al (µg/ m3)	Ba (µg/ m3)	Fe (µg/m 3)	Sr (µg/m3)
10.11.2020	12.78	65.04	N/A	303.11	0.84	ND	ND	0.52	ND	ND	0.52	ND	16.54	ND
11.11.2020	18.19	50.95	N/A	183.59	0.79	ND	ND	0.47	ND	ND	0.41	ND	21.81	ND
12.11.2020	16.35	35.93	N/A	139.10	0.63	ND	ND	0.52	ND	ND	0.62	ND	22.63	ND
13.11.2020	17.53	33.65	N/A	273.02	0.42	ND	ND	0.25	ND	ND	0.51	ND	20.75	ND
14.11.2020	16.39	41.27	N/A	347.40	0.47	ND	ND	0.49	ND	ND	0.48	ND	16.47	ND
15.11.2020	13.87	40.43	N/A	175.65	0.51	ND	ND	0.46	ND	ND	0.33	ND	18.45	ND
16.11.2020	14.18	26.49	N/A	47.31	0.55	ND	ND	0.38	ND	ND	0.38	ND	12.63	ND
17.11.2020	17.53	32.28	N/A	68.17	0.59	ND	ND	0.55	ND	ND	0.45	ND	10.45	ND
18.11.2020	16.76	34.08	N/A	87.10	0.66	ND	ND	0.48	ND	ND	0.27	ND	18.63	ND
19.11.2020	24.02	33.84	N/A	136.48	0.18	ND	ND	0.40	ND	ND	0.34	ND	20.44	ND
20.11.2020	24.43	49.43	N/A	105.02	0.48	ND	ND	0.32	ND	ND	0.22	ND	17.46	ND
21.11.2020	15.23	55.56	N/A	103.88	0.32	ND	ND	0.14	ND	ND	0.26	ND	15.63	ND
22.11.2020	22.87	58.88	N/A	141.58	0.35	ND	ND	0.46	ND	ND	0.50	ND	14.52	ND
23.11.2020	22.23	43.01	N/A	125.83	0.37	ND	ND	0.44	ND	ND	0.41	ND	15.68	ND

\*All values (24 Hourly Avg.) are in µg/m<sup>3</sup>.

**AMBIENT AIR QUALITY MONITORING REPORT**

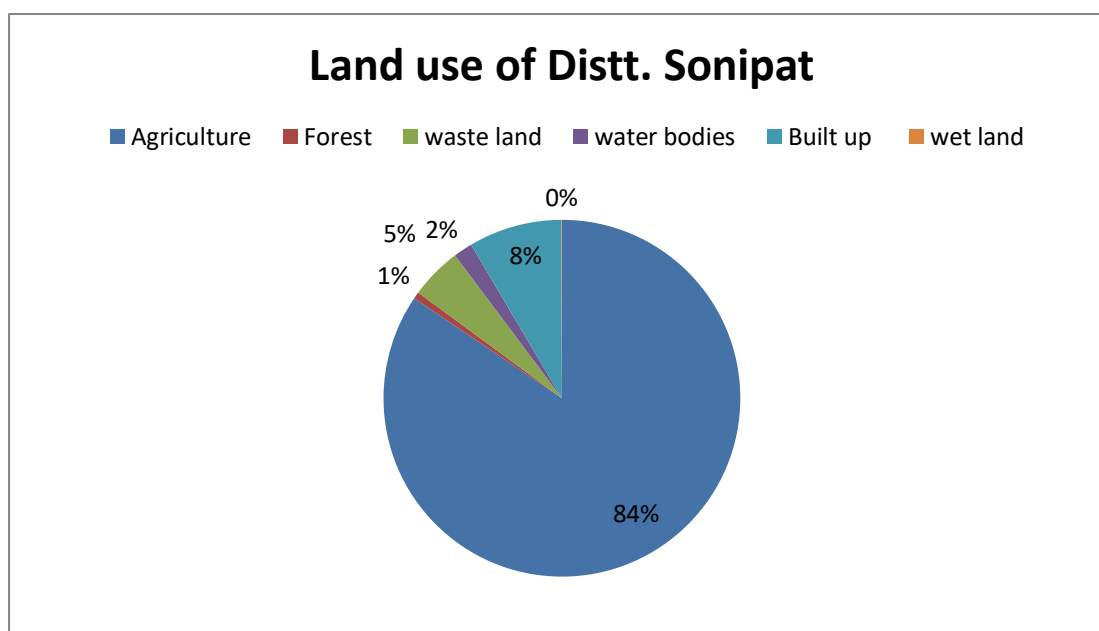
Name of the Location: REGIONAL OFFICE, HSPCB BAHADURGARH JHAJJAR, HARYANA										
Date	Regulatory Parameters			Proposed New Parameters						
	Metals in PM <sub>10</sub>			Metals Elements in PM <sub>2.5</sub>						
	Pb ( $\mu\text{g}/\text{m}^3$ )	Ni ( $\mu\text{g}/\text{m}^3$ )	As ( $\mu\text{g}/\text{m}^3$ )	Pb ( $\mu\text{g}/\text{m}^3$ )	Ni ( $\mu\text{g}/\text{m}^3$ )	As ( $\mu\text{g}/\text{m}^3$ )	Al ( $\mu\text{g}/\text{m}^3$ )	Ba ( $\mu\text{g}/\text{m}^3$ )	Fe ( $\mu\text{g}/\text{m}^3$ )	Sr ( $\mu\text{g}/\text{m}^3$ )
10/11/2020	0.18	ND	ND	0.09	ND	ND	ND	ND	7.48	ND
11/11/2020	0.12	ND	ND	0.14	ND	ND	0.14	ND	9.63	ND
12/11/2020	0.16	ND	ND	0.22	ND	ND	0.11	ND	9.44	ND
13/11/2020	0.21	ND	ND	0.27	ND	ND	0.18	ND	11.47	ND
14/11/2020	0.34	ND	ND	0.24	ND	ND	0.21	ND	13.65	ND
15/11/2020	0.18	ND	ND	0.11	ND	ND	0.15	ND	12.55	ND
16/11/2020	0.11	ND	ND	0.12	ND	ND	ND	ND	10.78	ND
17/11/2020	ND	ND	ND	ND	ND	ND	ND	ND	8.63	ND
18/11/2020	ND	ND	ND	ND	ND	ND	0.14	ND	9.45	ND
19/11/2020	0.08	ND	ND	ND	ND	ND	ND	ND	8.11	ND
20/11/2020	ND	ND	ND	ND	ND	ND	0.09	ND	6.43	ND
21/11/2020	ND	ND	ND	ND	ND	ND	0.11	ND	9.05	ND
22/11/2020	ND	ND	ND	ND	ND	ND	ND	ND	10.16	ND
23/11/2020	ND	ND	ND	ND	ND	ND	ND	ND	8.88	ND

All Values (24 hourly Avg.) are in( $\mu\text{g}/\text{m}^3$ )

**\*\*End of Report\*\***

## 9. CITY – SONIPAT

- **Latitude & Longitude:** The latitude of Sonipat, Haryana, India is 28.928774, and the longitude is 77.091278. Sonipat, ).
- **Climate:** The average annual **temperature** is 24.9 °C in **Sonipat**. About 653 mm of precipitation falls annually..
- **Population:** As of the 2011 census, Sonipat had a population of 1,450,001.
- **Land Use:** It covers an area of 1955.64 hectares i.e. 58.15 percent of the city area followed by built up area, open/bare land and water bodies i.e. 31.70 percent, 5.40 percent and 4.75 percent respectively.



### Results of Noise Level monitoring at Sonipat.

Location: <b>Star Complex, Opp. General Hospital, Delhi Road, Sonipat</b>	Pre-Deepawali Day (12.11.2020)			Deepawali Day (14.11.2020)			After Deepawali Day (16.11.2020)		
	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
18:00 to 19:00 Hr	42.8	71	61	53.7	89.2	70	-	-	-
19:00 to 20:00 Hr	47.3	73.5	59	55.2	92.2	71.3	-	-	-
20:00 to 21:00 Hr	41	64.8	58.5	57.8	96.9	69.8	-	-	-
21:00 to 22:00 Hr	37.3	63.5	55.3	58.4	98.1	67.9	-	-	-
22:00 to 23:00 Hr	33.5	61	47.5	56.2	92.7	69.4	-	-	-
23:00 to 24:00 Hr	31.8	62.5	44.5	51.1	89.7	68.5	-	-	-

Location: House No. 134, Sector-15, Sonipat	Pre-Deepawali Day (12.11.2020)			Deepawali Day (14.11.2020)			After Deepawali Day (16.11.2020)		
	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
18:00 to 19:00 Hr	40.3	66.2	56.9	53.2	81.3	62.5	-	-	-
19:00 to 20:00 Hr	37.4	66.7	50.2	54.3	79.6	64.3	-	-	-
20:00 to 21:00 Hr	35.1	58.7	46.2	52.1	82.3	66.5	-	-	-
21:00 to 22:00 Hr	34.2	59.2	42.3	49.9	80.9	63.8	-	-	-
22:00 to 23:00 Hr	34.7	58.7	39.1	44.3	70.9	59.8	-	-	-
23:00 to 24:00 Hr	34.2	57.1	37.4	41.2	69.6	54.5	-	-	-



**Results of Ambient Air Quality Monitoring (Sonipat)**

Name of the Location	<b>HSPCB OFFICE BUILDING STAR COMPLEX, OPPOSITE CIVIL HOSPITAL SONIPAT, HARYANA</b>													
Dates	Regulatory Parameters							Proposed New Parameters						
	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	Metals in PM <sub>10</sub>			Metals / Elements in PM <sub>2.5</sub>						
					Pb (µg/m <sup>3</sup> )	Ni (µg/m <sup>3</sup> )	As (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (µg/m <sup>3</sup> )	As (µg/m <sup>3</sup> )	Al (µg/m <sup>3</sup> )	Ba (µg/m <sup>3</sup> )	Fe (µg/m <sup>3</sup> )	Sr (µg/m <sup>3</sup> )
10.11.2020	6.65	7.09	43.44	0.03	0.24	ND	ND	0.17	ND	ND	0.11	ND	7.45	ND
11.11.2020	7.13	8.04	90.82	0.04	0.22	ND	ND	0.19	ND	ND	0.12	ND	6.48	ND
12.11.2020	7.54	8.75	78.17	0.05	0.29	ND	ND	0.14	ND	ND	0.14	ND	8.64	ND
13.11.2020	7.77	9.23	86.55	0.04	0.32	ND	ND	0.22	ND	ND	0.17	ND	11.40	ND
14.11.2020	7.80	9.24	101.03	0.03	0.41	ND	ND	0.37	ND	ND	0.18	ND	14.62	ND
15.11.2020	5.04	6.06	10.90	Rainy	0.35	ND	ND	0.21	ND	ND	0.14	ND	12.65	ND
16.11.2020	8.03	9.32	53.45	0.02	0.33	ND	ND	0.14	ND	ND	0.11	ND	11.69	ND
17.11.2020	7.47	8.44	31.88	0.04	0.18	ND	ND	0.10	ND	ND	0.10	ND	9.78	ND
18.11.2020	7.02	7.49	47.95	0.03	ND	ND	ND	0.11	ND	ND	ND	ND	7.62	ND
19.11.2020	7.28	7.89	74.48	0.04	ND	ND	ND	0.08	ND	ND	ND	ND	4.85	ND
20.11.2020	6.98	7.33	55.93	0.03	0.11	ND	ND	ND	ND	ND	ND	ND	8.65	ND
21.11.2020	7.36	7.89	64.43	0.04	0.14	ND	ND	0.10	ND	ND	ND	ND	5.24	ND
22.11.2020	7.13	7.41	50.32	0.12	ND	ND	ND	ND	ND	ND	0.13	ND	8.11	ND
23.11.2020	7.65	8.45	34.63	0.04	ND	ND	ND	0.08	ND	ND	ND	ND	7.24	ND

\*All values (24 Hourly Avg.) are in µg/m<sup>3</sup>.

Name of the Location	<b>Ambient Air Quality Monitoring House No. 134, Sector 15, Sonapat</b>													
Dates	Regulatory Parameters							Proposed New Parameters						
	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	Metals in PM <sub>10</sub>			Metals / Elements in PM <sub>2.5</sub>						
					Pb (µg/m <sup>3</sup> )	Ni (µg/m <sup>3</sup> )	As (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (µg/m <sup>3</sup> )	As (µg/m <sup>3</sup> )	Al (µg/m <sup>3</sup> )	Ba (µg/m <sup>3</sup> )	Fe (µg/m <sup>3</sup> )	Sr (µg/m <sup>3</sup> )
10.11.2020	5.79	6.06	52.90	0.03	0.50	ND	ND	0.18	ND	ND	0.11	ND	5.20	ND
11.11.2020	5.97	6.54	47.73	0.04	0.47	ND	ND	0.15	ND	ND	ND	ND	4.90	ND
12.11.2020	6.35	7.25	73.60	0.05	0.49	ND	ND	0.17	ND	ND	0.15	ND	5.12	ND
13.11.2020	6.57	7.81	119.62	0.03	0.60	ND	ND	0.23	ND	ND	ND	ND	4.87	ND
14.11.2020	6.83	8.05	96.91	0.02	0.51	ND	ND	0.18	ND	ND	0.18	ND	6.80	ND
15.11.2020	4.14	5.35	9.83	0.04	0.57	ND	ND	0.21	ND	ND	0.26	ND	6.25	ND
16.11.2020	7.02	8.12	39.64	0.02	0.63	ND	ND	0.35	ND	ND	0.34	ND	7.18	ND
17.11.2020	7.21	8.84	40.85	0.04	0.71	ND	ND	0.40	ND	ND	0.46	ND	9.16	ND
18.11.2020	7.62	8.21	24.81	0.05	1.06	ND	ND	0.43	ND	ND	0.90	ND	11.20	ND
19.11.2020	7.88	8.60	29.64	0.08	0.86	ND	ND	0.37	ND	ND	0.67	ND	8.15	ND
20.11.2020	7.65	8.21	48.70	0.07	0.71	ND	ND	0.32	ND	ND	0.54	ND	7.25	ND
21.11.2020	7.58	8.53	61.74	0.03	0.62	ND	ND	0.30	ND	ND	0.60	ND	8.36	ND
22.11.2020	7.77	9.01	469.24	0.15	0.68	ND	ND	0.29	ND	ND	0.48	ND	6.27	ND
23.11.2020	8.48	10.44	64.57	0.03	0.53	ND	ND	0.24	ND	ND	0.36	ND	4.40	ND

\*All values (24 Hourly Avg.) are in µg/m<sup>3</sup>.