

Impact of Diwali and Firecrackers

Time considered – 24 hours from 8AM on 24th Oct to 8 AM on 25th Oct

Diwali is a festival of lights. In North India, Diwali has become synonymous with high Air pollution because of bursting of fire crackers and other meteorological factors. This is the time that the Air Quality starts deteriorating in the Northern part of India with the advent of the winter season. Diwali and fire crackers go back a long way. Crackers have always been burst in large numbers by people on this occasion to express their joy and celebration. However, past few years, in view of the increasing pollution in NCR region, the supreme court has placed restriction on bursting of crackers including a complete ban in 2022. The Delhi Government in fact, criminalized bursting of crackers with a 6-month jail and a fine. Although there has been increasing awareness on environmental impacts due to bursting of crackers and may families foregoing this mode of celebration, still crackers were burst in large numbers through out the Diwali night in Delhi and other places. The following data attempts to provide a brief glimpse into the impact of bursting of crackers as measured by Portable air quality monitors installed by Environics Trust. The monitors have been installed in Korba, Ranchi and Delhi.

1. City Wise AQI – for 24 hrs period. Delhi beats the other cities in this parameter by a big margin with AQI in Delhi falling in the very poor category

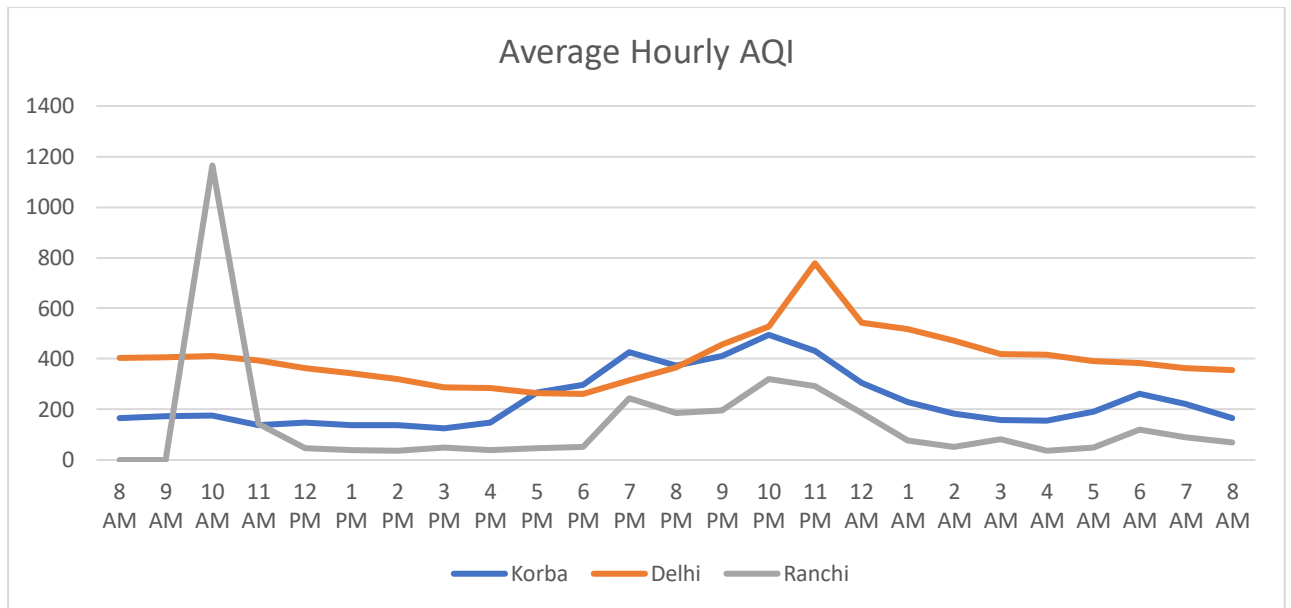
	AQI	AQI Category
Korba	229	Poor
Delhi	388	Very Poor
Ranchi	122	Moderately Polluted

2. Max AQI, time Interval and location. The table shows the Max AQI measured within a 15 minute time interval. Korba leads in this parameter with AQI reaching upto a whopping 4600. There is no chart for such high values. Even Delhi and Ranchi recorded Max AQI over 1000 which can be very hazardous.

	Interval	Location	Value
Korba	Oct/24/2022 23:30	Near Gud Deva Coal Siding	4600
Delhi	Oct/24/2022 23:00	Neb Sarai	1325
Ranchi	Oct/24/2022 10:45	College Road, Ranchi	1165

3. Hourly City Wise AQI – Table and Chart

	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	12 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM
Korba	166	173	175	139	149	137	138	125	148	268	297	427	374	411	495	431	305	230	183	159	155	191	261	221	166
Delhi	403	406	411	393	364	343	320	288	286	264	261	316	367	456	529	778	543	518	472	418	418	392	384	363	350
Ranchi	-	-	1165	143	48	39	36	50	38	46	52	244	186	196	320	291	186	78	52	82	36	48	121	91	60

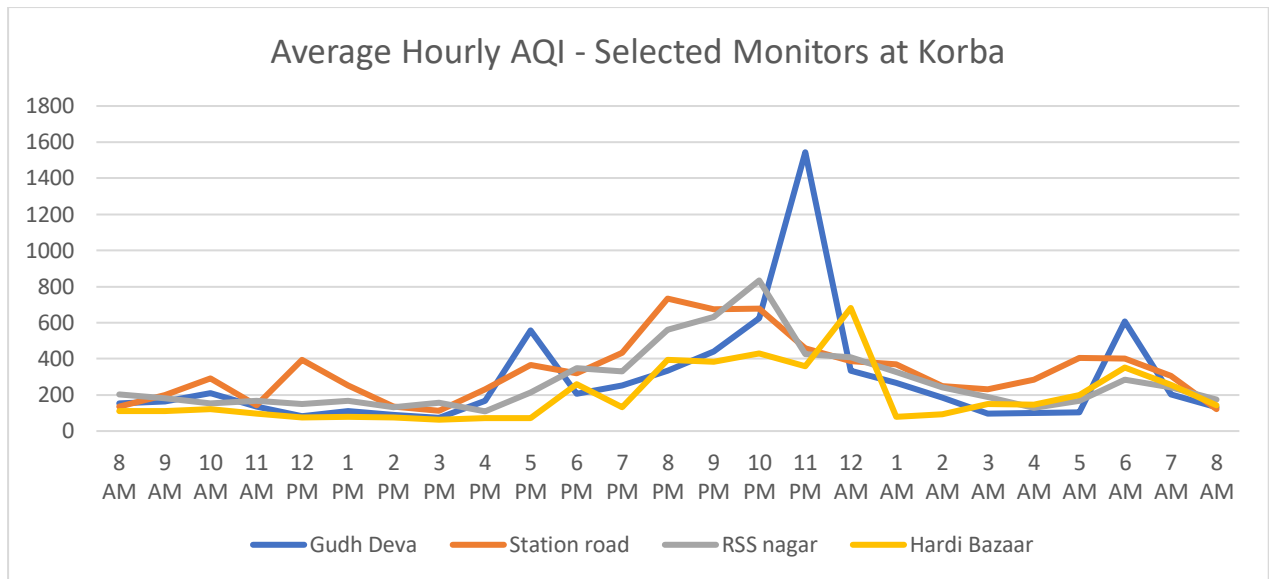


The hourly data shows that the AQI started increasing after 6 PM on 24th October and started decreasing after 2 AM on 25th October. The data shows a brief 8 hrs interval when the AQI deteriorated quite a lot in these 8 hrs. because of the bursting of crackers. However, the impact started dissipating post 2 AM when the AQI again became dependent on the base load factors in different locations. Although the impact is observed only for a few hrs, it is quite severe and hence care needs to be maintained. AQI going up to a maximum of 4600 (Although for a short duration) is very bad for the health and can have severe impacts.

Considering hourly intervals in this 24 hour period, the number of intervals where AQI was more than 200 in different cities is shown in below table. At Delhi, AQI was above 200 throughout the day while Korba had 11 such intervals and not surprisingly 9 of them between 5 PM and 1 AM.

Location	No of Intervals – AQI >200
Korba	11
Delhi	24
Ranchi	4

4. Hourly data trend- selected monitors – 4 monitors at Korba



The data again shows an increasing trend around 6 PM which normalizes after 3 PM at all locations.

The data shows a short-term impact due to bursting of fire crackers. With increased awareness, the number of crackers being burst has gone down but still a large number of burst every year. However, crackers are not the only reason for high air pollution in North India. Other factors like vehicular and industrial emissions, construction dust, road dust, burning of biomass etc are reasons which are prevalent throughout the year and need to be tackled at all times and not just remembered when Air Pollution becomes poor. Taking care of our environment should become second nature to all of us and the government need to take immediate and strict action against all polluters not withstanding any political or economic reasons. Air Pollution impacts everyone and not just the common masses.