AIR QUALITY MONITORING @ 40 FEET HEIGHT – Report Date: 18.12.2022
(BASED ON US-EPA AQI STANDARDS AND THE DAYALBAGH AQI COLOUR CODE)
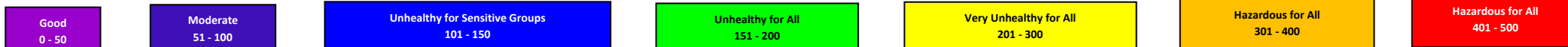
Permissible Limits (24 Hour Mean): PM_{10} = 150; $PM_{2.5}$ = 35, all units are in $\mu g/m^3$ Sampling Duration = 24 hrs (9:00 AM to 9:00 AM)

Today: 17-12-2022 to 18-12-2022 from 9:00 a.m. to 9:00 a.m. **Yesterday:** 16-12-2022 to 17-12-2022 from 9:00 a.m. to 9:00 a.m.

LOCATION	DAYALBAGH (TIME WEIGHTED AVERAGE DATA)											LOCATION	SANJAY PLACE AND AVAS VIKAS (ARITHMETIC MEAN DATA)										
	AQI				Meteorological Parameters								AQI				Meteorological Parameters						
	$PM_{2.5}$		PM_{10}					T °C					$PM_{2.5}$		PM_{10}					T °C			
	Today	Yesterday	Today	Yesterday	RH %	WS m/s	WD	Max	Min	SR W/m²	RF mm		Today	Yesterday	Today	Yesterday	RH %	WS m/s	WD	Max	Min	SR W/m²	RF mm
4 / 97	162 (18%↑)	156	81 (28%↑)	68	70	0.5	WNW	25.7	8.6	122	0	Sanjay Place	171 (1%↓)	172	136 (3%↓)	140	61	1.1	WNW	24.4	11.7	133	0
3 / 34	124 (13%↑)	110	50 (15%↑)	44	70	0.5	WNW	25.7	8.6	122	0	Avas Vikas	162 (2%↓)	163	88 (8%↓)	94	70	0.5	NE	27.1	10.1	64	0
Science Faculty	137 (21%↑)	115	47 (18%↑)	68	70	0.5	WNW	25.7	8.6	122	0												

Views of AQI Research Group: Concentrations of Particulate matter have increased at all sites of Dayalbagh due to stagnant meteorological conditions associated with moderate Relative Humidity, low Wind Speed and decrease in Temperature. The Air Quality Index w.r.t. $PM_{2.5}$ remains in the *Unhealthy for All* category at Vidyut Nagar and in the *Unhealthy for Sensitive Groups* category at Prem Nagar and Science Faculty while w.r.t. PM_{10} it remains in the *Good* category at Prem Nagar and Science Faculty and in the *Moderate* category at Vidyut Nagar. At Vidyut Nagar, at the SPHEEHA Tree Plantation site trimming of grass is being carried out for the past two days which might have resulted in elevated levels of particulate matter here.
Concentrations of Particulate Matter have marginally changed at Sanjay Place and Avas Vikas, Bodla. The Air Quality Index w.r.t $PM_{2.5}$ at both these sites remains in the *Unhealthy for All* category while w.r.t PM_{10} it remains in the *Moderate* category at Avas Vikas, Bodla and in the *Unhealthy for Sensitive Groups* category at Sanjay Place.

Values in parentheses indicate the percentage change in the pollutant concentrations with respect to yesterday. ↑indicates increase while ↓ indicates decrease in pollutant concentrations. Percentage change has not been shown w.r.t. AQI values as the breakpoints for the different categories are not evenly distributed.

Good 0 - 50	Moderate 51 - 100	Unhealthy for Sensitive Groups 101 - 150	Unhealthy for All 151 - 200	Very Unhealthy for All 201 - 300	Hazardous for All 301 - 400	Hazardous for All 401 - 500

NOTE: 1 A continuing study conducted as part of **Dayalbagh Sigma Six Qualities and Values Model** implementation.
2 DEI is using United States Environmental Protection Agency (USEPA) methodology and online calculators to calculate AQI. For fair comparison with UPPCB Sanjay Place Weather Station readings, their $PM_{2.5}$ concentration readings are fed in USEPA online calculator for AQI calculation.
3 Formula for AQI calculation for a Pollutant –

$$I = \frac{I_{high} - I_{low}}{C_{high} - C_{low}} * (C - C_{low}) + I_{low}$$

where: I = Air Quality Index; C = Pollutant Concentration ($PM_{2.5}$); C_{low} = Concentration Breakpoint ≤C; C_{high} = Concentration Breakpoint ≥C; I_{low} = Index Break point corresponding to C_{low}; I_{high} = Index Breakpoint corresponding to C_{high}; *Multiplication Sign

Communicated by Dr. Anita Lakhani, Professor, Department of Chemistry, Faculty of Science, Dayalbagh Educational Institute, Dayalbagh, Agra.