AIR QUALITY MONITORING @ 40 FEET HEIGHT – Report Date: 19.12.2022

(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 µg/m^3 Sampling Duration = 24 hrs (9:00 AM to 9:00 AM)

Today: 18-12-2022 to 19 -12-2022 from 9:00 a.m. to 9:00 a.m. **Yesterday:** 17 -12-2022 to 18-12-2022 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/m^2	RF mm		Today	Yesterday	Today	Yesterday	RH %	WS m/s	WD	Max	Min	SR W/m^2	RF mm
4 / 97	166 (10%↑)	162	86 (7%↑)	81	74	0.4	WNW	25.4	9.3	106	0	Sanjay Place	182 (21%↑)	171	140 (3%↑)	136	69	1.0	WNW	23.4	11.3	108	0
3 / 34	160 (60%↑)	124	65 (53%↑)	50	74	0.4	WNW	25.4	9.3	106	0												
Science Faculty	162 (52%↑)	137	62 (51%↑)	47	74	0.4	WNW	25.4	9.3	122	0	Avas Vikas	180 (47%↑)	162	114 (38%↑)	88	80	0.5	ENE	25.4	10.0	59	0

Views of AQI Research Group: Concentrations of Particulate matter have further increased at all sites of Dayalbagh due to stagnant meteorological conditions associated with increase in Relative Humidity, low Wind Speed and low Temperature. The Air Quality Index w.r.t. $PM_{2.5}$ is in the *Unhealthy for All* category while w.r.t. PM_{10} it is in the *Moderate* category at all sites of Dayalbagh.

Average Visibility yesterday was 2.2.Kms, it dropped to 1.3 Kms today.

Concentrations of Particulate Matter have also increased 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 is in the *Unhealthy for Sensitive Groups* category at both sites.

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.