AIR QUALITY MONITORING @ 40 FEET HEIGHT – Report Date: 21.12.2022 (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: 20-12-2022 to 21 -12-2022 from 9:00 a.m. to 9:00 a.m. Yesterday: 19 -12-2022 to 20-12-2022 from 9:00 a.m. to 9:00 a.m.

$ \begin{array}{c c c c c c c c c c c c c c c c c c c $							BAGH						L	SANJAY PLACE AND AVAS VIKAS											
C C <thc< th=""> <thc< th=""> <thc< th=""></thc<></thc<></thc<>	L	(TIME WEIGHTED AVERAGE DATA)											-		(ARITHMETIC MEAN DATA)										
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	0	AQI					Mete	arame	ters		С	AQI				Meteorological Parameters									
0 NTodayYesterdayTodayYesterdayRH %WS m/sWDMa xMin xSR w/m²R mN rTodayYesterdayTodayYesterdayRH %WS %W m/sMin wSR wR/m mN rTodayYesterdayTodayYesterdayRH %WS %W m/sMin wSR wR/m m4 / 97157 (9%)16071 (20%)83760.4WNW25. 69.6111 0Sanjay Place166 (3%)166 (13%)117 (13%)106670.9SE24.011.82403 / 34154 (3%)15565 (13%)64760.4WNW25. 69.6111 0Avas vikas174 (13%)1760.6670.9SE24.011.8240Science Faculty15815862 (2%)61760.4WNW25. 69.6111 0761760.5ESE25.211.5600Vikes00760.5ESE25.211.56000	A T I O	PM2.5		PM10										PM _{2.5}		PM 10									
$\frac{4/97}{(9\%_1)} = \frac{160}{20} = \frac{120}{(20\%_1)} = \frac{83}{83} = \frac{76}{6} = \frac{0.4}{0.4} = \frac{WNW}{6} = \frac{9.6}{9.6} = \frac{111}{10} = \frac{0}{Place} = \frac{166}{(0\%_1)} = \frac{117}{(13\%_1)} = \frac{106}{10} = \frac{67}{0.9} = \frac{0.9}{5} = \frac{24.0}{11.8} = \frac{11.8}{24} = \frac{0.9}{10} = \frac{11.8}{(13\%_1)} = \frac{11.8}{10} = \frac{11.8}{10} = \frac{11.8}{10} = \frac{11.8}{(13\%_1)} = \frac{11.8}{10} =$		Today	Yesterday	Today	Yesterday			WD		Min		F m		Today	Yesterday	Today	Yesterday				Max	Min	W /	RF m m	
$3/34$ 155 00 64 76 0.4 WNW 6 9.6 111 0 $Avas$ 174 176 95 106 76 0.5 ESE 25.2 11.5 0.6 111 0 $Avas$ 174 176 95 106 76 0.5 ESE 25.2 11.5 0.6 111 0 $Avas$ 174 176 95 106 76 0.5 ESE 25.2 11.5 60 00 Views of AQI Research Group:to stable and stagnant meteorological conditions. The Air Quality Index w.r.t. PM ₂₅ remains in the Unhealthy for All category while w.r.t. PM ₁₀ it remains in the Moderate category at all sites of Dayalbagh. A visibility meter has been installed at roof of Science Faculty. Average Visibility yesterday was 1.2 Kms, it improved to 1.3 Kms today. Concentrations of PM ₁₀ have increased at 3Snaj Place while both sized particulate matter have decreased at 4vas Vikas, Bodla. To Quality Index w.r.t PM ₂₅ at both these sites remains in the Unhealthy for Sensitive Groups category at anjay Place and has improved to the Moderate category at anjay Place while both sized particulate matter have decreased at 4vas Vikas, Bodla. Values in parentheses indicate the percentage change in the pollutant concentrations with respect to yesterday. \uparrow indicates increase while \downarrow indicates decrease in pollutant concentrations. Precentage change has not been shown w.r.t. AQI values as the breakpoints for the different	4 / 97		160		83	76	0.4	WNW		9.6	111	0			166		106	67	0.9	SE	24.0	11.8	24	0	
Science Faculty 158 (0%) 158 62 (2%) 61 76 0.4 WNW 25. 6 9.6 111 0 Vikas 176 13%.1 106 76 0.5 ESE 25.2 11.5 60 0 Views of AQI Research Group: Concentrations of Particulate matter have slightly changed at all sites of Dayalbagh probably due to stable and stagnant meteorological conditions. The Air Quality Index w.r.t. PM _{2.5} remains in the Unhealthy for All category while w.r.t. PM ₁₀ it remains in the Moderate category at all sites of Dayalbagh. A visibility meter has been installed at roof of Science Faculty. Average Visibility yesterday was 1.2 Kms, it improved to 1.3 Kms today. Concentrations of PM ₁₀ have increased at Sanjay Place while both sized particulate matter have decreased at Avas Vikas, Bodla. The Unhealthy for All category while w.r.t PM _{2.5} at both these sites remains in the Unhealthy for All category while w.r.t PM _{2.5} at both these sites remains in the Unhealthy for All category to pastive Groups category at sanjay Place and has improved to the Moderate category at ville w.r.t PM _{2.5} at both these sites remains in the Unhealthy for All category to pastive Groups category at sanjay Place and has improved to the Moderate category to paster	3 / 34		155		64	76	0.4	WNW		9.6	111	0											<u> </u>		
to stable and stagnant meteorological conditions. The Air Quality Index w.r.t. PM _{2.5} remains in the <i>Unhealthy for All</i> category while w.r.t. PM ₁₀ it remains in the <i>Moderate</i> category at all sites of Dayalbagh. A visibility meter has been installed at roof of Science Faculty. Average Visibility yesterday was 1.2 Kms, it improved to 1.3 Kms today. Concentrations of PM ₁₀ have increased at Sanjay Place while both sized particulate matter have decreased at Avas Vikas, Bodla. The Air Quality Index w.r.t PM _{2.5} at both these sites remains in the <i>Unhealthy for All</i> category while w.r.t PM ₁₀ it remains in the <i>Unhealthy for Sensitive</i> <i>Groups</i> category at sanjay Place and has improved to the Moderate category at Avas Vikas, Bodla. Values in parentheses indicate the percentage change in the pollutant concentrations with respect to yesterday. <i>\indicates increase while</i> ↓ <i>indicates decrease in pollutant concentrations. Percentage change has not been shown w.r.t.</i> AQI values as the breakpoints for the different			158		61	76	0.4	WNW		9.6	111	0			176		106	76	0.5	ESE	25.2	11.5	60	0	
Good Moderate Unhealthy for Sensitive Groups Unhealthy for All Very Unhealthy for All Hazardous for All Hazardous for All	to stable and it remains in t A visibility me Concentratior Quality Index <i>Groups</i> catego <i>Values in pare</i> <i>indicates decr</i> <i>categories ar</i>																								

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 -

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

where: I = Air Quality Index; C = Pollutant Concentration (PM_{2.5}); C_{low} = Concentration Breakpoint \leq C; C_{high} = Concentration Breakpoint \geq 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.