



Air Quality Monthly Report

May, 2024



Department of Environment
Ministry of Environment Forest and Climate Change, Bangladesh.

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Introduction:

Department of Environment (DoE), Bangladesh has been established a countrywide air quality monitoring (AQM) network. The continuous monitoring of 6 (six) criteria pollutants ($PM_{2.5}$, PM_{10} , SO_2 , CO, NO_x and O_3) is being done by 31(thirty one) Continuous Air Monitoring Stations (CAMS) and Compact Continuous Air Monitoring Stations (C-CAMS) located in the divisional and industrial districts of the country; The network encompasses all the regions of the country - Dhaka, Narayanganj Gazipur, Savar, Mymensing, Narsindi in the center, Chittagong in the south-east. Khulna Cumilla and Barisal in the south, Rajshahi in the west, and Sylhet in the north-east regions, Rangpur in the north west of the country. And C-CAMS are located in Faridpur, Jashore, Satkhira, Bagerhat, Gopalganj, Tangail, Bogura, Tongi, BUET campus, Brahmanbaria, Feni, Noakhali, BSRM(Chattogram), Cox's-Bazar, Nagor Bhaban, Dhaka. The data and information generated from those stations are automatically collected in the central server and are disseminated through DoE website. Air Quality Index (AQI) for each city is calculated and published online daily for notifying the public about the status of air quality in their respective city.

Quality Assurance/Quality Control (QA/QC) methods and procedures are implemented with full documentation and are validated through an international certified calibration reference laboratory. Forms and log sheets document every activity in the air monitoring stations and document all maintenance, calibration, operation and other activities such as all visits to the stations. This monthly report provides an overview and analysis of air quality monitoring data in Bangladesh for the month wise monitoring results.

The report summarizes the data available at the Thirty one (31) air monitoring stations in Bangladesh.

Standards of Ambient Air Quality

The Government of Bangladesh has enacted Air Pollution (Control) Rules – 2022 with ambient air quality standards. This report establishes the Air Quality Index (AQI) followed by USEPA guideline to evaluate air pollution.

Table 1 National Ambient Air Quality Standards (NAAQS) for Bangladesh

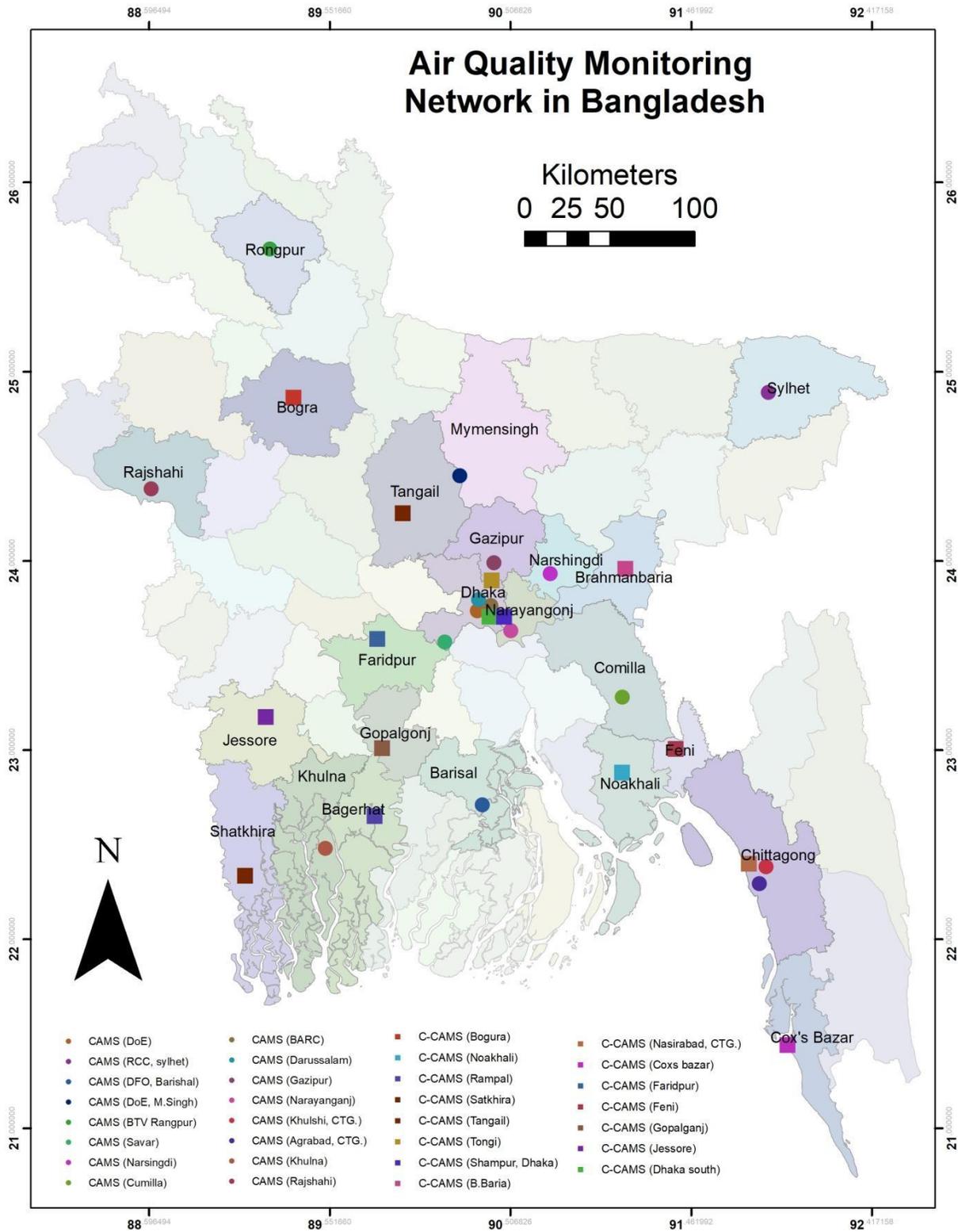
Pollutant	Limit Value	Averaging time
CO	5 mg/m ³	8 hours ^a
	20 mg/m ³	1 hour ^a
Pb	0.25 µg/m ³	Annual
	0.50 µg/m ³	24 hours
NO _x	40 µg/m ³	Annual
	80 µg/m ³	24 hours
PM ₁₀	50 µg/m ³	Annual ^b
	150 µg/m ³	24 hours ^c
PM _{2.5}	35 µg/m ³	Annual
	65 µg/m ³	24 hours
O ₃	180 µg/m ³	1 hour ^d
	100 µg/m ³	8 hours
SO ₂		Annual
	80 µg/m ³	24 hours ^a

Table 2 Air quality index (AQI) in Bangladesh

Air quality index (AQI)	Category		Colour
	In English	In Bangla	
0-50	Good	ভালো	Green
51-100	Moderate	মোটামুটি	Yellow Green
101-150	Caution	সতর্কতামূলক	Yellow
151-200	Unhealthy	মোটামুটি অস্বাস্থ্যকর	Orange
201-300	Very Unhealthy	খুব অস্বাস্থ্যকর	Red
301-500	Extremely Unhealthy/Hazardous	অত্যন্ত অস্বাস্থ্যকর	Purple

Location Map of Air Monitoring Station

Figure 1 Locations Map of Continuous Air Monitoring Stations (CAMS) under Department of Environment in Bangladesh.



Station Information

Table 3 Overview of the locations and capacity of the CAMS

City	ID	Location	Latitude/ Longitude	Monitoring Capacity	Year of Est.	Type	Inlet & Met tower Height(m)
Dhaka	CAMS-1	Dept of Environment	23°.77'73.94"N 90°.37'26.03"E	PM ₁₀ , PM _{2.5} , SO ₂ , CO, O ₃ & NO _x with Meteorological Parameters	2012	UB/Res	4.8 & 8
	CAMS-2	Farmgate	23°.75'94.10"N 90°.38'86.79"E		2008	Rd/Com	8.8 & 11
	CAMS-3	Darussalam	23°.78'07.75"N 90°.35'54.10"E		2012	UB/Com	8.8 & 11
Gazipur	CAMS-4	Gazipur	23°.99'41.28"N 90°.42'23.15"E		2012	SUB	8.8 & 11
Narayanganj	CAMS-5	Narayanganj	23°.62'60.79"N 90°.50'72.00"E		2012	UB industry	8.8 & 11
Chattogram	CAMS-6	TV Station, Khulshi	22°.36'04.87"N 91°.80'04.54"E		2006	UB1	4.8 & 7
	CAMS-7	Agrabad	22°.32'30.20"N 91°.80'23.36"E		2012	UB/Res	8.8 & 11
Khulna	CAMS-8	Boyra	22°.83'57.75"N 89°.52'90.56"E		2008	UB	6.8 & 10
Rajshahi	CAMS-9	Sapura	24°.38'33.20"N 88°.60'80.07"E		2008	Rd/Res	6.8 & 10
Sylhet	CAMS-10	Red Crecent Campus	24°.88'83.34"N 91°.86'73.47"E		2012	Rd/UB/Res	13.8 & 15
Barishal	CAMS-11	DFO Office Campus	22°.71'02.87"N 90°.36'25.98"E		2012	UB/Res	6.8 & 10
Mymensingh	CAMS-12	DoE Office, Divisional Headquarter	24°.76'24.58"N 90°.40'21.02"E		2019	UB	8.8 & 11
Rangpur	CAMS-13	BTV Rangpur Station	25°.74'73.71"N 89°.22'89.31"E		2019	UB	8.8 & 11
Savar	CAMS-14	Atomic Energy Research Institute	23°.95'37.04"N 90°.27'97.94"E		2019	SUB	10.8 & 14
Narsingdi	CAMS-15	Sadar Upazila Complex	23°.93'24.56"N 90°.71'65.98"E		2019	SUB	8.8 & 11
Cumilla	CAMS-16	Court Area	23°.47'29.88"N 91°.18'06.71"E		2019	UB	8.8 & 11

UB: Urban; Rd: Road; Res: residential; Com: Commercial; SUB: Suburban; Rural: Rural

Table 4 Overview of the locations and capacity of the C-CAMS

City	ID	Location	Lat/Lon	Year of Est.	Type	Monitoring Capacity	Inlet & Met tower Height(m)
Faridpur	C-CAMS-17	Sadar, Faridpur (Municipal Office)	23°.60'64.11"N 89°.83'88.19"E		SUB		9 & 11
Jashore	C-CAMS-18	Sadar, Jashore (circuit house)	23°.16'22.16"N 89°.20'63.70"E		SUB		12 & 14
Satkhira	C-CAMS-19	Shyamnagar, Satkhira	22°.31'59.96"N 89°.04'31.70"E		Rural		5.2 & 7.2
Bagerhat	C-CAMS-20	Rampal, Bagerhat (Maytree Super Thermal Power Project)	22°.59'60.86"N 89°.55'37.20"E		Rural/Industrial		5.7 & 7.7
Gopalganj	C-CAMS-21	Sadar, Gopalganj	23°.00'88.53"N 89°.82'91.60"E		SUB		22 & 24
Tangail	C-CAMS-22	Sadar, Tangail (DoE office)	24°.24'97.96"N 89°.92'93.57"E		SUB		15 & 17
Bogura	C-CAMS-23	Sadar, Bogura (DoE Office)	24°.86'17.79"N 89°.36'11.46"E		SUB		9 & 11
Tongi	C-CAMS-24	BSCIC, Tongi, Gazipur	23°.89'41.74"N 90°.41'12.10"E		Com/Industrial	PM ₁₀ , PM _{2.5} , SO ₂ , CO, O ₃ & NO _x with Meteorological Parameters	18 & 20
BUET	C-CAMS-25	Department of Chemical Engineering, BUET, Dhaka	23°.72'75.91"N 90°.39'27.97"E	2020	UB		10 & 12
Brahmanbaria	C-CAMS-26	Sadar, B.Baria (municipal Office)	23°.97'43.71"N 91°.10'97.69"E		SUB		18 & 20
Feni	C-CAMS-27	Sadar, Feni (DoE Office)	23°.00'62.97"N 91°.38'13.05"E		SUB		18 & 20
Noakhali	C-CAMS-28	Maijdi Bazar, Noakhali (DoE Office)	22°.88'11.48"N 91°.09'69.66"E		SUB		15 & 17
Chattogram BSRM	C-CAMS-29	BSRM, Nasirabad, Chattogram	22°.37'28.38"N 91°.81'80.54"E		UB/Industrial		12 & 14
Cox's-Bazar	C-CAMS-30	Saymon Road, Sadar, Cox's-Bazar (DoE Office)	21°.44'22.08"N 91°.97'10.83"E		SUB		9 & 11
Nagor Bhaban, Dhaka	C-CAMS-31	Nagar Bhaban, DSCC, Dhaka	23°.72'40.75"N 90°.40'91.42"E		UB/Com		13 & 15

UB: Urban; Rd: Road; Res: residential; Com: Commercial; SUB: Suburban; Rural: Rural

Summary of Components

Month of May, 2024

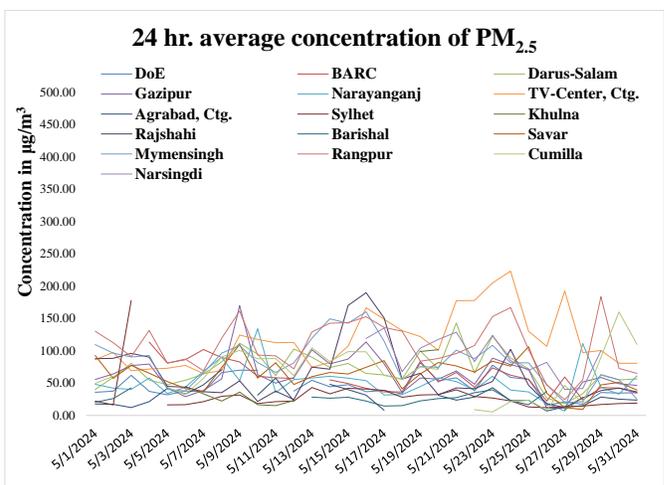
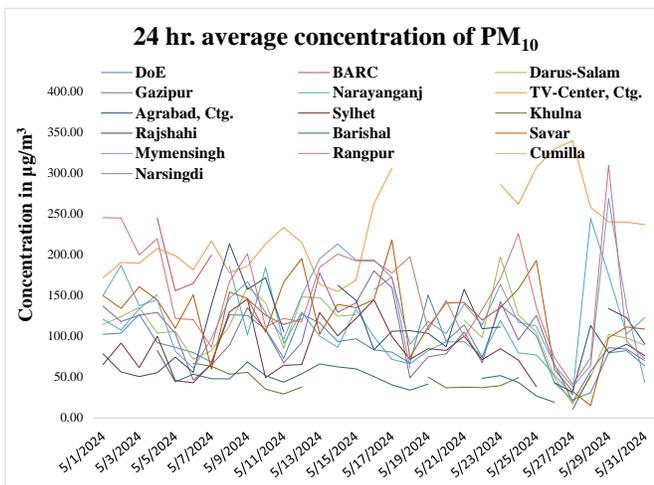
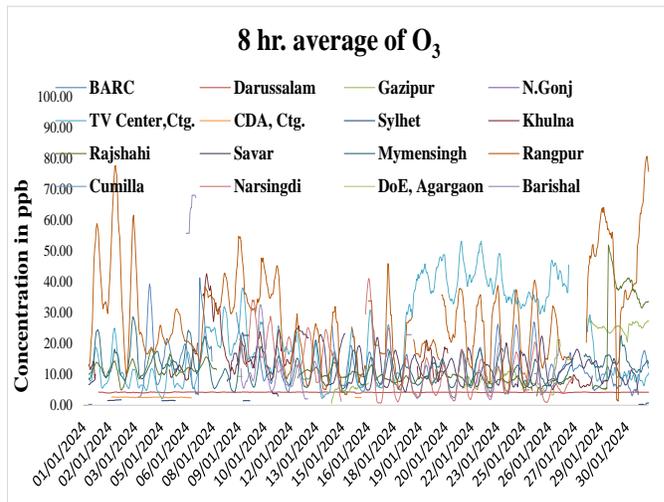
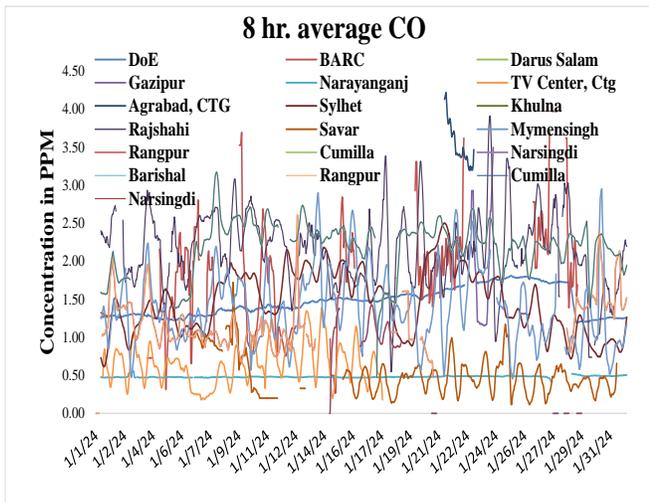
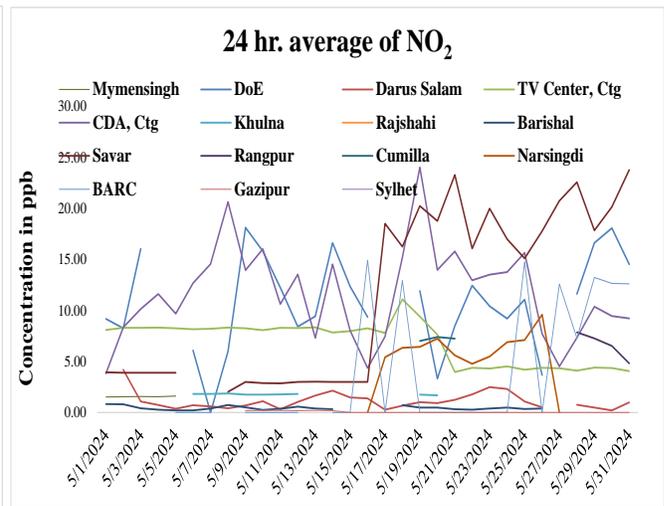
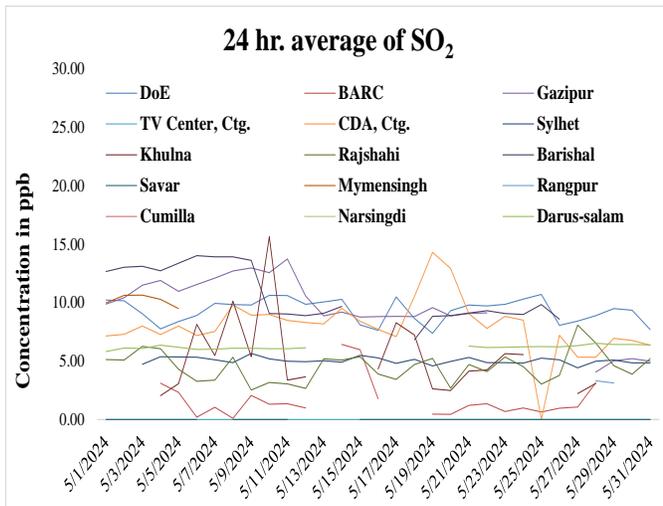
Table 5 Summary of components_ Month of May, 2024

Parameter	Summary	DoE	BARC	Darus-sala	Gazipur	Narayangan	TV-Station	Agrabad, C	Sylhet	Khulna	Rajshahi	Barisal	Savar	Mymensingh	Rangpur	Cumilla	Narshingdi
SO2-24 hr	Average	9.3	1.7	6.2	10.7	DNA	DNA	8.3	5.0	5.4	4.5	10.7	4.5	10.2	3.2	DNA	106.1
	Max	10.7	6.4	6.5	25.1	DNA	DNA	14.3	5.6	15.6	8.1	14.0	26.6	10.6	3.3	DNA	122.5
	Min	7.4	0.1	5.8	4.1	DNA	DNA	5.3	4.4	2.0	2.5	6.8	0.2	9.5	3.1	DNA	69.0
	Excedance(Days)	0.0	0.0	0.0	0.0	DNA	DNA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	DNA	6.0
	Data capture(%)	100.0	71.0	74.2	96.8	DNA	DNA	96.8	93.5	67.7	100.0	74.2	87.1	16.1	6.5	DNA	19.4
NO2-24 hr	Average	13.2	30.13	1.1	0.2	DNA	6.9	11.6	DNA	1.8	3.5	0.4	11.5	1.6	6.6	7.2	38.6
	Max	30.8	40.81	4.2	0.2	DNA	11.1	24.0	DNA	2.4	4.1	0.8	23.8	1.6	7.9	7.4	98.9
	Min	3.7	18.68	0.2	0.2	DNA	4.0	3.8	DNA	1.7	2.9	0.2	2.0	1.5	4.8	7.0	7.6
	Excedance(Days)	0.0	0.00	0.0	0.0	DNA	0.0	0.0	DNA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0
	Data capture(%)	83.9	80.65	93.5	74.2	DNA	100.0	100.0	DNA	35.5	6.5	74.2	93.5	16.1	12.9	9.7	41.9
CO-8hr	Average	1.5	1.8	DNA	3.5	0.5	0.7	15.7	1.5	DNA	2.4	DNA	0.5	1.4	1.3	2.2	1.3
	Max	1.8	3.7	DNA	8.3	0.6	1.4	32.7	2.5	DNA	9.1	DNA	1.7	3.0	15.5	3.2	3.9
	Min	1.2	0.3	DNA	1.2	0.4	0.2	3.2	0.6	DNA	0.5	DNA	0.1	0.5	0.5	0.5	0.9
	Excedance(Hour)	0.0	0.0	DNA	23.0	0.0	0.0	42.0	0.0	DNA	32.0	DNA	0.0	0.0	3.0	0.0	0.0
	Data capture(%)	96.9	40.6	DNA	8.7	95.2	52.7	10.8	99.1	DNA	97.7	DNA	69.4	96.4	58.9	88.8	14.1
O3-8hr	Average	DNA	11.9	4.2	13.2	0.3	21.4	2.6	1.3	15.9	12.4	14.13	12.0	12.0	27.8	DNA	12.0
	Max	DNA	41.4	4.4	28.6	0.3	53.2	2.8	1.9	42.7	52.0	68.15	24.0	28.6	80.8	DNA	41.2
	Min	DNA	2.3	3.8	0.6	0.3	2.1	2.4	0.2	5.7	3.0	1.84	3.0	4.3	1.4	DNA	0.7
	Excedance(Hour)	DNA	0.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	2.0	14.00	0.0	0.0	65.0	DNA	0.0
	Data capture(%)	DNA	80.0	97.3	35.9	0.7	96.1	15.5	8.2	33.1	80.6	26.21	64.8	96.1	95.0	DNA	55.1
PM2.5-24hr	Average	45.2	59.6	70.9	63.8	51.6	115.5	29.0	30.2	37.9	62.2	28.3	62.3	82.2	107.1	64.7	95.4
	Max	81.3	113.5	142.8	169.8	134.2	223.2	70.7	177.8	101.6	189.9	59.5	109.5	160.3	183.7	160.0	135.4
	Min	15.5	22.0	17.8	11.2	6.6	64.6	6.8	12.0	8.1	12.1	14.4	8.9	19.6	24.2	5.1	40.1
	Excedance(Days)	5.0	9.0	16.0	12.0	4.0	30.0	1.0	1.0	2.0	11.0	0.0	15.0	22.0	28.0	13.0	13.0
	Data capture(%)	96.8	87.1	100.0	100.0	100.0	100.0	87.1	96.8	38.7	100.0	58.1	100.0	100.0	100.0	90.3	48.4
PM10-24hr	Average	92.6	159.0	109.2	100.9	111.1	238.7	102.4	84.6	44.1	115.7	49.6	126.3	131.8	154.2	DNA	155.6
	Max	150.4	244.7	197.5	180.0	244.4	408.0	213.1	145.6	67.1	133.9	82.6	217.8	269.0	309.3	DNA	231.1
	Min	22.1	114.4	17.2	20.2	28.5	154.8	31.6	38.3	10.1	90.6	19.3	15.1	38.4	41.2	DNA	61.5
	Excedance(Days)	1.0	4.0	2.0	3.0	5.0	26.0	5.0	0.0	0.0	0.0	0.0	8.0	9.0	15.0	DNA	3.0
	Data capture(%)	100.0	25.8	83.9	100.0	90.3	83.9	87.1	83.9	51.6	9.7	67.7	100.0	100.0	100.0	DNA	12.9
Solar rad. 1hr	Average	204.65	226.87	179.6	60.4	DNA	518.2	178.9	4.41	252.4	771.2	140.1	369.1	249.2	328.5	242.6	298.4
	Max	645.52	786.9	1015.6	673.5	DNA	554.8	781.8	5.02	984.6	802.1	805.6	905.9	931.8	963.4	907.9	931.3
	Min	21.43	0.1	980.1	0.3	DNA	231.3	9.1	3.58	1.2	743.8	8.4	0.1	0.0	0.1	0.0	0.0
	Data capture(%)	94.22	57	93	84	DNA	96	89	98.79	67	97	80	12.2	66.1	59.5	57.7	20.7
Relative Hum	Average	63.47	70.9	68.9	DNA	DNA	58.1	74.7	39.71	82.3	91.6	80.8	60.6	82.8	75.7	63.0	50.9
	Max	91.49	100.0	99.4	DNA	DNA	91.9	99.7	39.87	89.4	98.2	86.8	99.4	99.4	99.7	100.0	74.9
	Min	25.17	27.0	22.2	DNA	DNA	57.1	39.8	39.59	67.8	89.3	60.7	15.1	15.1	23.8	15.2	21.8
	Data capture(%)	94.22	62.6	99.2	DNA	DNA	95	88	98.79	74	97	80	17.9	94.9	97.2	6.7	33.1
Ambient Tem	Average	34.78	27.7	26.3	17.94	DNA	18.7	28.7	DNA	31.4	32.5	32.0	29.5	28.6	27.9	28.8	29.3
	Max	42.99	35.2	34.4	38.80	DNA	31.6	43.0	DNA	39.6	42.9	43.0	38.7	38.8	37.6	36.3	35.5
	Min	23.51	21.1	7.9	7.66	DNA	11.5	7.1	DNA	21.5	23.2	19.8	13.6	20.3	21.1	20.7	22.7
	Data capture(%)	38.44	73.9	42	0.54	DNA	96	59	DNA	74	96	79	18.7	93.8	93.5	80.2	32.3
Rainfall 1hr	Average	DNA	DNA	0.3	0.3	DNA	DNA	DNA	DNA	DNA	1.45	0.4	0.27	0.55	0.04	0.02	0.22
	Max	DNA	DNA	0.8	0.8	DNA	DNA	DNA	DNA	DNA	4.39	1.1	0.48	3.92	0.07	0.03	0.72
	Min	DNA	DNA	0.2	0.0	DNA	DNA	DNA	DNA	DNA	0.51	0.0	0.05	0.01	0.01	0.01	0.03
	Data capture(%)	DNA	DNA	97	15	DNA	DNA	DNA	DNA	DNA	1.75	65	0.27	3.23	1.75	1.34	0.54

CAMS= Continuous Air Monitoring Station, NAAQS=National Ambient Air Quality Standard, a=Refurbishment CAMS, PM= Particulate Matter

DNA= Data Not Available

Table 6 Graphical representation of Gaseous and Particulate matter.



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