BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL

PRINCIPAL BENCH, NEW DELHI

ORIGINAL APPLICATION No. 1016/2019

IN THE MATTER OF:-

UTKARSH PANWAR **APPLICANT**

VS.

CPCB & ORS. **RESPONDENTS**

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(AJAY AGGARWAL)
SCIENTIST -E
CENTRAL POLLUTION CONTROL BOARD
PARIVESH BHAWAN, EAST ARJUN NAGAR,
DELHI-110032

DATE: 16.03.2020
PLACE: DELHI

A

Report with reference to the Hon'ble NGT order dated 5/03/2020, in the matter of O.A. No. 1016 of 2019; Utkarsh Panwar Vs CPCB & Ors.

The Hon'ble NGT vide its order dated 5.03.2020 in the matter of O.A. No. 1016 of 2019; Utkarsh Panwar Vs CPCB & Ors directed as under:

> *"In view of the above, it is necessary to look at the relevant data at different locations '24 hourly' and 'monthly average' during the relevant months. Since such data is maintained by the CPCB/PCBs, the CPCB may collect such data for corresponding months of March, April, May and June in the year 2019 and furnish the same before the next date. The break-up of location of the brick kilns District-wise may also be furnished to consider as to which of the brick kilns can be allowed after verification that such brick kilns are actually working on 'Zig-Zag' technology, pending further assessment of the carrying capacity by the CPCB, as already directed earlier vide order dated 06.02.2020".*

In compliance of the aforesaid order, the following details are submitted for NCR-districts located in Uttar Pradesh, Haryana and Rajasthan:

1.0 District-wise break-up of locations of Zig-Zag type brick kilns in NCR Region:

Only Zig zag type brick kilns are permitted in NCR regions. As per information provided by the concerned SPCBs, there are total 2697 Zig-Zag type brick kilns in NCR-districts of Haryana, Uttar Pradesh and Rajasthan, out of which 1543, 1024 and 130 brick kilns are located in Haryana, Uttar Pradesh and Rajasthan, respectively. The district-wise break-up of locations of Zig-Zag brick kilns is given in **Table-1.**

Table-1: District-wise break-up of Zig-Zag type brick kilns in NCR Region		
Haryana		
Sl. No.	District Name	Total no. of Zig-Zag type brick kilns
1	Bhiwani	142
2	Faridabad (Ballabgarh)	85
3	Gurugram	6
4	Jhajjhar	387
5	Jind	111
6	Karnal	92
7	Mahendragarh	42
8	Nuh (Mehwat)	62
9	Palwal	110
10	Panipat	87
11	Rewari	76
12	Rohtak	49
13	Sonipat	265
14	Charkhi-Dadri	29
	Total	**1543**
Uttar Pradesh		
Sl. No.	District Name	Total no. of Zig-Zag type brick kilns
1	Baghpat	340
2	Bulandshahr	200
3	Gautam Budh Nagar	65
4	Ghaziabad	71
5	Hapur	52
6	Muzaffarnagar	146
7	Shamli	80
8	Meerut	70
	Total	**1024**
Rajasthan		
Sl. No.	District Name	Total no. of Zig-Zag type brick kilns
1	Alwar	70
2	Bharatpur	60
	Total	**130**
	Grand Total	**2697**

2.0 Ambient Air Quality Data of NCR Districts w.r.t. PM_{10} and $PM_{2.5}$:

It was directed by Hon'ble NGT to provide the relevant data at different locations for 24 hourly and monthly average during March, April, May, June for the year 2019. Accordingly, the ambient air quality data w.r.t. PM_{10} and $PM_{2.5}$ for the NCR districts of the States of Haryana, Uttar Pradesh and Rajasthan, is given as under:

2.1 State of Haryana:

The district-wise 24 hourly range and monthly average data for PM_{10} and $PM_{2.5}$ for the State of Haryana for the period March-June, 2019, along with prescribed standards and number of Zig-Zag type brick kilns is summarized in Table-2. No CAAQM (Continuous Ambient Air Quality Monitoring) stations were available in Charkhi-Dadari district.

Table-2

NCR-DISTRICTS OF STATE OF HARYANA

Month	Bhiwani		Faridabad		Gurugram		Jhajjhar		Jind		Karnal		Mahendragarh	
	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
March, 2019														
Range: Minimum	63	37	129	55	84	40	68	36	80	34	79	37	44	35
Maximum	124	77	380	152	270	99	177	94	220	95	223	79	163	92
Monthly average	88	52	261	84	165	65	112	63	129	59	128	53	110	58
April, 2019														
Range: Minimum	40	25	69	28	111	24	41	22	55	23	53	46	45	28
Maximum	232	124	453	167	437	155	280	133	283	112	292	149	252	129
Monthly average	128	74	301	99	257	89	161	72	174	62	185	90	167	71
May, 2019														
Range: Minimum	57	43	157	49	103	49	67	35	70	30	105	51	67	28
Maximum	301	157	560	279	491	230	320	153	354	189	281	155	282	116
Monthly average	130	89	312	99	223	97	170	73	191	79	174	100	138	59
June, 2019														
Range: Minimum	51	38	99	37	70	36	62	24	75	23	52	22	51	38
Maximum	216	136	556	145	279	200	308	95	321	82	265	166	363	144
Monthly average	122	79	262	78	187	75	140	50	190	59	166	94	133	66
Prescribed Standards: Annual	**100**	**60**	**100**	**60**	**100**	**60**	**100**	**60**	**100**	**60**	**100**	**60**	**100**	**60**
24 hours	**60**	**40**	**60**	**40**	**60**	**40**	**60**	**40**	**60**	**40**	**60**	**40**	**60**	**40**
No. of Zig-Zag Brick Kilns	**142**		**85**		**6**		**387**		**111**		**92**		**42**	

Note: "NM" Data not monitored, "NA" Inadequate data/data not available, PM_{10} and $PM_{2.5}$ values are in $\mu g/m^3$

Table-2 (Contd)

NCR DISTRICTS OF STATE OF HARYANA												
Month	**Nuh(Mehwat)**		**Palwal**		**Panipat**		**Rewari**		**Rohtak**		**Sonipat**	
	PM_{10}	**$PM_{2.5}$**	**PM_{10}**	**$PM_{2.5}$**	**PM_{10}**	**$PM_{2.5}$**	**PM_{10}**	**$PM_{2.5}$**	**PM_{10}**	**$PM_{2.5}$**	**PM_{10}**	**$PM_{2.5}$**
March, 2019												
Range:												
Minimum	60	34	76	37	50	22	75	39	NM	27	63	36
Maximum	181	87	226	99	175	63	287	108	NM	85	202	90
Monthly average	107	54	139	67	104	40	134	68	NM	58	111	57
April, 2019												
Range:												
Minimum	73	37	50	22	88	23	114	37	NM	26	75	28
Maximum	228	87	338	188	312	63	324	96	NM	318	340	171
Monthly average	176	60	234	120	184	41	190	69	NM	80	189	74
May, 2019												
Range:												
Minimum	70	36	83	57	116	29	101	42	NM	35	77	37
Maximum	293	107	355	224	389	124	410	105	NM	357	420	186
Monthly average	145	62	187	115	237	64	192	67	NM	100	195	88
June, 2019												
Range:												
Minimum	65	36	107	32	73	21	85	30	NM	26	54	35
Maximum	255	88	372	159	249	84	364	83	NM	180	314	196
Monthly average	128	57	202	89	148	52	195	57	NM	77	192	77
Prescribed Standards:												
Annual	**100**	**60**	**100**	**60**	**100**	**60**	**100**	**60**	**100**	**60**	**100**	**60**
24 hours	**60**	**40**	**60**	**40**	**60**	**40**	**60**	**40**	**60**	**40**	**60**	**40**
No. of Zig-Zag Brick Kilns	**62**		**110**		**87**		**76**		**49**		**265**	

Note: "NM" Data not monitored, "NA" Inadequate data/data not available, PM_{10} and $PM_{2.5}$ values are in $\mu g/m^3$

2.2 State of Uttar Pradesh:

The district-wise 24 hourly range and monthly average data for PM_{10} and $PM_{2.5}$ for the State of Uttar Pradesh for the period March-June, 2019, along with prescribed standards and number of Zig-Zag type brick kilns is summarized in **Table-3**. No CAAQM stations were available in Meerut & Shamli districts.

Table-3

NCR DISTRICTS OF STATE OF UTTAR PRADESH

Month	Baghpat		Bulandshahr		Gautam Budh Nagar		Ghaziabad		Hapur		Muzaffarnagar	
	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
March, 2019												
Range:												
Minimum	103	47	119	56	124	38	135	46	79	36	103	44
Maximum	267	154	254	124	307	134	351	173	294	107	235	137
Monthly average	161	84	185	88	189	82	216	94	168	66	152	83
April, 2019												
Range:												
Minimum	101	39	54	23	58	27	87	30	75	20	79	36
Maximum	432	183	424	129	366	136	440	160	397	116	354	210
Monthly average	263	90	223	84	250	85	307	99	246	62	223	99
May, 2019												
Range:												
Minimum	118	46	132	51	132	43	153	57	136	25	127	35
Maximum	528	222	434	117	450	155	586	196	496	106	344	141
Monthly average	294	96	248	78	255	81	328	105	287	57	216	87
June, 2019												
Range:												
Minimum	104	38	82	22	77	22	80	20	NA	NA	55	29
Maximum	549	97	285	79	462	97	409	113	NA	NA	278	89
Monthly average	263	68	175	54	219	59	253	66	NA	NA	173	63
Prescribed Standards:												
Annual	**100**	**60**	**100**	**60**	**100**	**60**	**100**	**60**	**100**	**60**	**100**	**60**
24 hours	**60**	**40**	**60**	**40**	**60**	**40**	**60**	**40**	**60**	**40**	**60**	**40**
No. of Zig-Zag Brick Kilns	340		200		65		71		52		146	

Note: "NM" Data not monitored, "NA" Inadequate data/data not available, PM_{10} and $PM_{2.5}$ values are in $\mu g/m^3$

2.3 State of Rajasthan:

The district-wise 24 hourly range and monthly average data for PM_{10} and $PM_{2.5}$ for the State of Rajasthan for the period March-June, 2019, along with prescribed standards and number of Zig-Zag type brick kilns is summarized in **Table-4**. No CAAQM stations were available in Bharatpur district.

Table-4		
NCR DISTRICTS OF RAJASTHAN		
Month	**Alwar**	
	PM_{10}	**$PM_{2.5}$**
March, 2019		
Range: **Minimum** **Maximum**	43 250	18 100
Monthly average	137	66
April, 2019		
Range: **Minimum** **Maximum**	108 382	45 134
Monthly average	209	85
May, 2019		
Range: **Minimum** **Maximum**	99 303	43 168
Monthly average	190	81
June, 2019		
Range: **Minimum** **Maximum**	63 235	28 147
Monthly average	154	67
Prescribed Standards: **Annual** **24 hours**	**100** **60**	**60** **40**
No. of Zig-Zag Brick Kilns	70	

Note: "NM" Data not monitored, "NA" Inadequate data/data not available, PM_{10} and $PM_{2.5}$ values are in $\mu g/m^3$

2.4 The district-wise 24 hourly values alongwith monthly averages for PM_{10} values for the months of March, 2019, April, 2019, May, 2019 and June-2019, for NCR Districts of Haryana, Uttar Pradesh and Rajasthan, have been given at **Annexures-1, 2, 3 & 4,** respectively. The graphical presentation of 24 hourly PM_{10} values against the 24 hourly prescribed standards is also shown at **Annexure-5.**

2.5 The district-wise 24 hourly values alongwith monthly averages for $PM_{2.5}$ values for the months of March, 2019, April, 2019, May, 2019 and June-2019, for NCR Districts of Haryana, Uttar Pradesh and Rajasthan, have been given at **Annexures-6, 7, 8 & 9**, respectively.

The above information is submitted in compliance of Hon'ble NGT order.

(Ajay Aggarwal)
Scientist 'E', IPC-V Division

Date 16.03.2020

Annexure-1

PM_{10} Monthly Average Values (in µg/m^3) of Delhi-NCR CAAQM Stations : March-2019

State	Haryana													Uttar Pradesh						Rajasthan
NCR-Districts	Bhiwani	Faridabad	Gurugram	Jhajjhar	Jind	Karnal	Mahendraghar	Nuh(Mewat)	Palwal	Panipat	Rewari	Rohtak	Sonipat	Baghpat	Bulandshahr	Gautam Budhnagar	Ghaziabad	Hapur	Muzaffarnagar	Alwar
1-Mar-19	82	261	177	110	115	124	102	92	167	68	169	NM	75	159	179	205	231	155	129	130
2-Mar-19	63	169	121	100	104	152	76	111	125	90	287	NM	113	192	124	139	172	144	167	104
3-Mar-19	74	129	84	83	95	83	44	61	84	NA	108	NM	88	123	119	135	177	79	103	43
4-Mar-19	65	228	127	79	80	79	70	65	76	50	75	NM	63	103	134	170	171	107	112	44
5-Mar-19	73	380	NA	74	92	82	101	60	94	NA	81	NM	64	114	180	164	170	117	113	115
6-Mar-19	78	368	139	117	110	94	134	76	151	59	121	NM	77	132	195	200	226	146	120	116
7-Mar-19	81	375	182	106	138	106	129	102	133	96	133	NM	103	161	NA	225	232	154	145	131
8-Mar-19	81	253	167	103	118	146	93	132	196	147	145	NM	118	170	211	220	211	177	156	170
9-Mar-19	78	230	138	87	99	103	87	94	141	81	103	NM	115	135	156	158	184	141	135	132
10-Mar-19	79	217	165	127	112	117	99	95	152	118	105	NM	97	149	206	187	207	147	147	133
11-Mar-19	118	199	138	119	114	144	116	151	149	110	NA	NM	153	170	NA	169	213	161	NA	125
12-Mar-19	90	210	142	96	132	135	100	97	140	87	125	NM	112	150	142	150	170	142	NA	148
13-Mar-19	118	371	270	177	182	223	163	181	226	175	204	NM	175	241	254	303	302	245	NA	250
14-Mar-19	74	363	179	117	89	126	113	121	159	80	121	NM	140	163	157	201	185	161	NA	202
15-Mar-19	75	NA	126	68	95	87	74	68	92	72	NA	NM	88	114	129	135	135	NA	NA	147
16-Mar-19	78	NA	143	100	125	103	84	89	115	107	116	NM	85	128	163	173	186	146	134	177
17-Mar-19	77	NA	158	107	135	103	127	97	127	115	129	NM	93	135	208	190	200	169	139	237
18-Mar-19	92	NA	184	141	151	127	124	106	138	141	134	NM	98	152	234	218	248	195	168	171
19-Mar-19	107	240	249	175	150	182	129	127	143	157	136	NM	174	202	241	240	293	190	199	145
20-Mar-19	117	211	238	134	185	195	148	147	157	149	133	NM	202	267	189	212	279	187	182	170
21-Mar-19	70	134	183	92	92	99	92	101	135	75	102	NM	95	131	128	124	138	109	117	95
22-Mar-19	80	280	123	73	98	115	91	82	98	58	85	NM	80	131	NA	125	158	131	125	81
23-Mar-19	83	244	102	78	104	120	91	87	105	66	91	NM	79	128	NA	127	156	131	123	119
24-Mar-19	84	212	160	86	103	111	105	91	132	74	96	NM	81	117	NA	143	168	160	136	119
25-Mar-19	81	210	159	86	134	128	93	86	120	84	120	NM	95	162	177	169	196	168	166	137
26-Mar-19	88	243	147	93	127	117	119	103	130	86	143	NM	92	143	193	166	196	167	141	67
27-Mar-19	103	263	183	153	220	121	149	119	153	160	144	NM	103	184	216	215	274	216	175	193
28-Mar-19	112	337	216	165	180	138	150	142	171	135	176	NM	133	220	238	307	351	249	203	95
29-Mar-19	116	355	245	175	197	167	162	172	205	149	211	NM	155	234	253	301	321	294	235	107
30-Mar-19	124	303	152	151	183	173	145	168	175	131	164	NM	175	241	199	222	301	263	213	169
31-Mar-19	97	258	136	107	138	159	104	NA	126	85	NA	NM	116	154	190	170	212	181	172	152
Minimum	**63**	**129**	**84**	**68**	**80**	**79**	**44**	**60**	**76**	**50**	**75**	**NM**	**63**	**103**	**119**	**124**	**135**	**79**	**103**	**43**
Maximum	**124**	**380**	**270**	**177**	**220**	**223**	**163**	**181**	**226**	**175**	**287**	**NM**	**202**	**267**	**254**	**307**	**351**	**294**	**235**	**250**
Average	**88**	**261**	**165**	**112**	**129**	**128**	**110**	**107**	**139**	**104**	**134**	**NM**	**111**	**161**	**185**	**189**	**216**	**168**	**152**	**137**

Note:

"NA" Inadequate data/data not available

"NM" Data not nonitored

All parameters are in µg/m^3

No CAAQM stations were available , during the afore-said period, in the four NCR districts, namely, Meerut & Shamli districts (U.P.), Charkhi-Dadari district (Haryana) and Bharatpur district (Rajasthan).

Annexure-2

PM_{10} Monthly Average Values (in µg/m^3) of Delhi-NCR CAAQM Stations : April-2019

State	Haryana													Uttar Pradesh						Rajasthan
NCR-Districts	Bhiwani	Faridabad	Gurugram	Jhajjhar	Jind	Karnal	Mahendraghar	Nuh(Mewat)	Palwal	Panipat	Rewari	Rohtak	Sonipat	Baghpat	Bulandshahr	Gautam Budhnagar	Ghaziabad	Hapur	Muzaffarnagar	Alwar
1-Apr-19	120	253	161	110	154	149	159	95	138	106	129	NM	116	180	208	199	240	192	185	135
2-Apr-19	109	271	201	118	130	148	183	130	164	116	148	NM	127	207	250	242	287	222	219	134
3-Apr-19	101	252	111	165	158	174	154	163	159	135	183	NM	121	251	283	265	286	250	240	145
4-Apr-19	128	341	275	208	144	181	199	181	225	139	226	NM	167	264	244	302	355	289	287	182
5-Apr-19	149	344	280	208	166	200	190	213	222	178	202	NM	169	286	238	322	404	300	354	241
6-Apr-19	166	334	346	221	208	256	152	217	243	267	184	NM	NA	378	277	366	440	343	301	192
7-Apr-19	232	280	312	280	196	NA	252	212	260	274	NA	NM	317	373	224	265	296	253	292	216
8-Apr-19	229	337	311	204	238	292	209	188	232	291	226	NM	273	319	206	302	365	253	255	212
9-Apr-19	143	247	255	189	171	192	157	180	184	199	185	NM	209	314	208	287	320	225	233	188
10-Apr-19	104	289	204	126	138	153	163	191	238	93	164	NM	139	207	216	236	275	225	211	179
11-Apr-19	116	337	218	148	192	233	163	194	226	NA	195	NM	159	219	244	229	270	226	201	179
12-Apr-19	83	296	224	127	133	209	193	228	292	116	189	NM	149	215	227	233	257	223	198	245
13-Apr-19	88	269	174	118	139	227	141	165	179	88	161	NM	150	211	204	182	237	187	201	188
14-Apr-19	93	261	230	115	117	NA	156	179	NA	89	176	NM	159	193	197	197	229	187	161	237
15-Apr-19	105	316	270	163	168	169	201	205	328	NA	238	NM	162	254	243	265	330	252	256	284
16-Apr-19	83	NA	NA	70	69	92	126	NA	111	NA	114	NM	89	112	88	102	138	80	128	NA
17-Apr-19	40	69	NA	41	55	53	45	NA	50	NA	NA	NM	90	101	54	58	87	75	79	NA
18-Apr-19	59	199	138	69	69	92	56	NA	139	92	122	NM	75	134	104	151	198	126	NA	192
19-Apr-19	76	277	178	104	105	103	112	73	150	130	141	NM	95	166	156	164	224	242	160	127
20-Apr-19	82	290	176	143	170	158	147	92	218	171	151	NM	126	188	182	240	322	241	201	155
21-Apr-19	106	303	233	147	155	132	137	118	281	170	148	NM	182	234	200	240	313	271	184	285
22-Apr-19	123	369	279	163	163	160	151	165	337	186	198	NM	190	278	257	277	363	233	208	234
23-Apr-19	146	NA	297	210	232	223	210	184	338	208	200	NM	231	293	279	250	338	271	251	254
24-Apr-19	155	321	361	203	236	264	162	217	320	282	225	NM	318	374	NA	278	365	313	267	264
25-Apr-19	184	261	317	187	276	223	231	202	247	232	206	NM	261	243	268	273	323	218	200	222
26-Apr-19	149	323	328	183	225	202	185	157	255	239	207	NM	267	305	NA	271	340	263	204	219
27-Apr-19	179	453	437	199	283	224	202	196	337	312	NA	NM	340	393	424	307	431	382	241	382
28-Apr-19	NA	359	NA	200	275	246	186	195	309	NA	249	NM	274	397	NA	285	385	336	225	206
29-Apr-19	169	332	293	201	229	197	196	203	324	260	324	NM	246	366	315	308	354	315	250	108
30-Apr-19	194	390	322	223	237	218	189	197	287	218	253	NM	274	432	NA	349	363	397	272	180
Minimum	**40**	**69**	**111**	**41**	**55**	**53**	**45**	**73**	**50**	**88**	**114**	**NM**	**75**	**101**	**54**	**58**	**87**	**75**	**79**	**108**
Maximum	**232**	**453**	**437**	**280**	**283**	**292**	**252**	**228**	**338**	**312**	**324**	**NM**	**340**	**432**	**424**	**366**	**440**	**397**	**354**	**382**
Average	**128**	**301**	**257**	**161**	**174**	**185**	**167**	**176**	**234**	**184**	**190**	**NM**	**189**	**263**	**223**	**250**	**307**	**246**	**223**	**209**

Note:

"NA" Inadequate data/data not available

"NM" Data not nonitored

All parameters are in µg/m^3

No CAAQM stations were available , during the afore-said period, in the four NCR districts, namely, Meerut & Shamli districts (U.P.), Charkhi-Dadari district (Haryana) and Bharatpur district (Rajasthan).

Annexure-3

PM_{10} Monthly Average Values (in µg/m^3) of Delhi-NCR CAAQM Stations : May-2019

State	Haryana													Uttar Pradesh						Rajasthan
NCR-Districts	Bhiwani	Faridabad	Gurugram	Jhajjhar	Jind	Karnal	Mahendraghar	Nuh(Mewat)	Palwal	Panipat	Rewari	Rohtak	Sonipat	Baghpat	Bulandshahr	Gautam Budhnagar	Ghaziabad	Hapur	Muzaffarnagar	Alwar
1-May-19	176	368	387	201	207	174	176	208	297	155	227	NM	246	379	349	330	399	357	258	248
2-May-19	179	NA	262	NA	167	NA	NA	174	224	162	156	NM	169	299	233	272	298	276	148	173
3-May-19	96	272	158	NA	129	127	NA	91	166	129	151	NM	116	191	NA	170	229	237	172	143
4-May-19	130	314	230	168	183	138	NA	121	183	158	164	NM	170	259	249	217	295	277	203	198
5-May-19	117	349	233	NA	277	221	123	126	220	247	177	NM	206	380	NA	262	416	351	221	190
6-May-19	161	454	266	NA	295	182	158	150	262	236	NA	NM	240	437	306	304	458	459	221	215
7-May-19	214	560	336	315	294	194	189	186	355	247	309	NM	335	528	434	450	586	479	238	298
8-May-19	239	496	460	314	354	216	282	266	340	327	350	NM	343	498	420	419	556	496	254	271
9-May-19	301	497	491	318	347	281	269	293	313	389	410	NM	420	499	401	414	557	490	335	244
10-May-19	145	395	278	219	200	257	167	171	218	260	179	NM	284	365	NA	385	439	432	288	178
11-May-19	148	396	347	234	273	215	186	239	290	306	306	NM	209	318	331	346	413	323	214	303
12-May-19	NA	390	402	320	321	208	192	248	301	285	311	NM	277	397	NA	417	521	482	206	216
13-May-19	NA	271	167	169	191	174	130	132	153	276	169	NM	185	295	228	273	337	271	224	141
14-May-19	NA	NA	146	133	116	110	102	104	122	NA	124	NM	141	239	158	180	217	152	158	114
15-May-19	NA	157	152	147	116	159	192	156	159	225	179	NM	139	240	156	191	245	172	246	99
16-May-19	148	269	226	180	204	235	84	180	211	322	208	NM	199	271	215	252	316	185	273	181
17-May-19	66	211	188	126	167	211	105	136	140	300	NA	NM	241	394	NA	245	300	285	344	179
18-May-19	64	166	118	71	83	109	75	70	83	126	110	NM	77	118	132	133	160	149	159	127
19-May-19	93	219	139	108	142	172	114	88	98	229	140	NM	123	186	NA	174	234	203	196	248
20-May-19	129	297	186	129	190	190	128	111	136	289	NA	NM	158	255	NA	225	289	238	234	250
21-May-19	89	269	159	122	157	160	106	109	118	212	NA	NM	188	223	NA	185	231	230	196	190
22-May-19	163	301	178	165	186	191	121	87	127	254	125	NM	177	299	226	249	366	308	226	140
23-May-19	NA	265	149	117	180	203	112	NA	107	284	110	NM	215	247	237	220	259	263	237	121
24-May-19	57	215	112	67	70	105	67	91	115	163	121	NM	105	124	135	132	153	136	127	151
25-May-19	58	207	103	75	90	109	NA	77	90	135	101	NM	96	138	NA	134	168	154	138	141
26-May-19	60	178	126	97	100	124	84	93	121	116	114	NM	105	162	171	165	196	169	141	190
27-May-19	70	217	144	124	112	130	98	100	127	176	218	NM	120	195	158	182	244	192	158	153
28-May-19	74	304	154	118	126	118	107	97	134	176	152	NM	132	195	206	196	239	189	156	161
29-May-19	99	339	172	143	169	150	108	125	162	243	190	NM	142	NA	225	243	284	260	187	223
30-May-19	139	359	NA	193	231	171	127	151	178	296	173	NM	195	296	NA	290	357	380	226	214
31-May-19	155	360	NA	212	248	196	132	165	246	385	201	NM	305	402	NA	335	413	NA	322	238
Minimum	**57**	**157**	**103**	**67**	**70**	**105**	**67**	**70**	**83**	**116**	**101**	**NM**	**77**	**118**	**132**	**132**	**153**	**136**	**127**	**99**
Maximum	**301**	**560**	**491**	**320**	**354**	**281**	**282**	**293**	**355**	**389**	**410**	**NM**	**420**	**528**	**434**	**450**	**586**	**496**	**344**	**303**
Average	**130**	**312**	**223**	**170**	**191**	**174**	**138**	**145**	**187**	**237**	**192**	**NM**	**195**	**294**	**248**	**255**	**328**	**287**	**216**	**190**

Note:

"NA" Inadequate data/data not available

"NM" Data not nonitored

All parameters are in µg/m^3

No CAAQM stations were available , during the afore-said period, in the four NCR districts, namely, Meerut & Shamli districts (U.P.), Charkhi-Dadari district (Haryana) and Bharatpur district (Rajasthan).

Annexure-4

PM_{10} Monthly Average Values (in µg/m^3) of Delhi-NCR CAAQM Stations :June-2019

State	Haryana													Uttar Pradesh						Rajasthan
NCR-Districts	Bhiwani	Faridabad	Gurugram	Jhajjhar	Jind	Karnal	Mahendraghar	Nuh(Mewat)	Palwal	Panipat	Rewari	Rohtak	Sonipat	Baghpat	Bulandshahr	Gautam Budhnagar	Ghaziabad	Hapur	Muzaffarnagar	Alwar
1-Jun-19	138	275	NA	177	231	219	136	NA	227	200	199	NM	236	355	228	252	281	NA	218	177
2-Jun-19	133	219	NA	152	215	169	131	NA	189	165	188	NM	207	279	NA	231	263	NA	184	157
3-Jun-19	153	290	NA	196	321	241	147	NA	208	200	245	NM	252	325	285	288	370	NA	196	192
4-Jun-19	128	187	NA	145	186	135	154	NA	158	106	158	NM	163	236	NA	174	212	NA	169	164
5-Jun-19	139	252	NA	148	190	212	139	NA	146	190	170	NM	200	253	200	233	271	NA	198	187
6-Jun-19	118	273	NA	141	182	161	138	NA	152	NA	191	NM	201	299	148	207	224	NA	173	216
7-Jun-19	106	226	NA	119	156	119	111	NA	149	163	158	NM	144	220	122	166	199	NA	181	179
8-Jun-19	108	276	NA	145	170	167	106	NA	204	134	205	NM	167	294	178	242	308	NA	168	210
9-Jun-19	127	318	NA	155	176	158	140	NA	240	141	221	NM	209	313	NA	270	352	NA	155	176
10-Jun-19	208	386	NA	223	243	191	217	NA	277	152	271	NM	246	388	NA	324	370	NA	235	186
11-Jun-19	189	422	NA	308	231	218	141	NA	372	172	364	NM	272	549	NA	462	409	NA	278	222
12-Jun-19	154	267	275	169	209	214	211	NA	281	141	NA	NM	143	221	NA	260	247	NA	96	129
13-Jun-19	121	203	163	114	231	176	80	NA	182	148	NA	NM	194	239	NA	185	216	NA	231	101
14-Jun-19	134	321	212	143	178	148	120	NA	252	122	206	NM	172	234	NA	259	268	NA	187	203
15-Jun-19	159	394	273	180	265	216	136	NA	284	174	240	NM	245	353	NA	336	368	NA	235	168
16-Jun-19	NA	160	157	75	109	147	76	NA	150	NA	85	NM	128	150	NA	130	167	NA	151	63
17-Jun-19	51	185	NA	69	130	160	74	NA	200	161	119	NM	123	206	NA	137	176	NA	163	127
18-Jun-19	67	199	NA	62	106	100	51	94	173	82	104	NM	54	104	99	128	156	NA	108	101
19-Jun-19	110	188	NA	120	189	213	64	65	172	174	NA	NM	169	226	137	186	248	NA	199	80
20-Jun-19	86	176	NA	111	132	126	97	96	182	119	NA	NM	137	233	135	160	186	NA	175	140
21-Jun-19	88	241	NA	123	153	137	180	125	209	119	174	NM	168	232	195	197	211	NA	183	162
22-Jun-19	87	180	70	102	157	122	96	118	235	112	NA	NM	185	203	149	163	175	NA	100	141
23-Jun-19	84	103	97	73	133	83	81	87	175	93	113	NM	127	137	82	101	96	NA	55	100
24-Jun-19	53	99	81	68	75	52	NA	82	175	73	89	NM	118	116	84	77	80	NA	79	95
25-Jun-19	66	145	126	84	134	86	NA	78	107	102	118	NM	195	183	102	135	141	NA	92	73
26-Jun-19	71	263	140	85	133	117	106	78	132	112	151	NM	205	176	163	180	183	NA	107	107
27-Jun-19	216	345	248	187	240	229	363	255	230	187	271	NM	259	322	265	288	291	NA	175	235
28-Jun-19	189	366	245	173	318	203	183	221	194	171	284	NM	312	320	264	272	296	NA	208	185
29-Jun-19	139	348	279	194	306	265	129	182	200	249	302	NM	314	472	254	296	276	NA	268	167
30-Jun-19	NA	556	246	166	194	203	131	187	193	180	248	NM	217	263	240	270	265	NA	215	190
Minimum	**51**	**99**	**70**	**62**	**75**	**52**	**51**	**65**	**107**	**73**	**85**	**NM**	**54**	**104**	**82**	**77**	**80**	**NA**	**55**	**63**
Maximum	**216**	**556**	**279**	**308**	**321**	**265**	**363**	**255**	**372**	**249**	**364**	**NM**	**314**	**549**	**285**	**462**	**409**	**NA**	**278**	**235**
Average	**122**	**262**	**187**	**140**	**190**	**166**	**133**	**128**	**202**	**148**	**195**	**NM**	**192**	**263**	**175**	**219**	**253**	**NA**	**173**	**154**

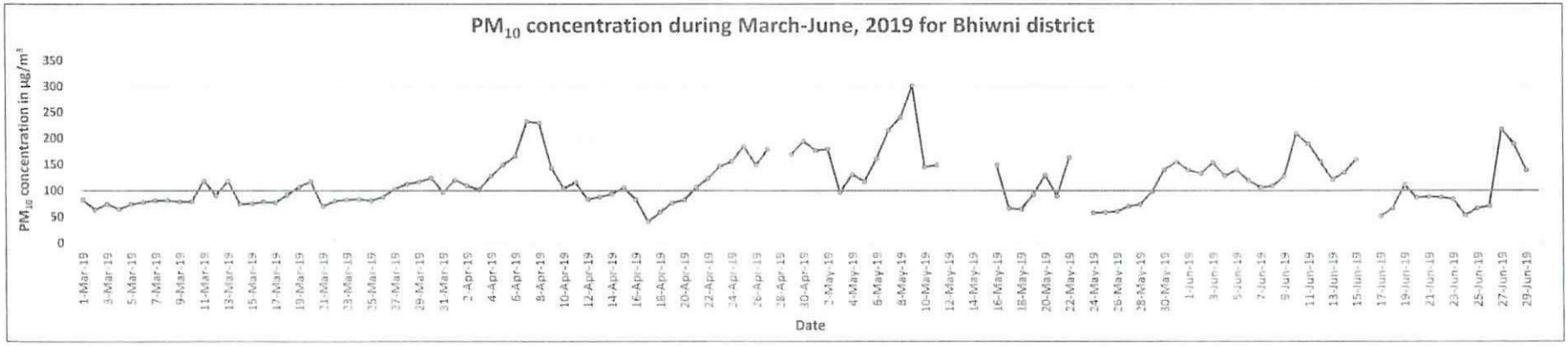
Note:

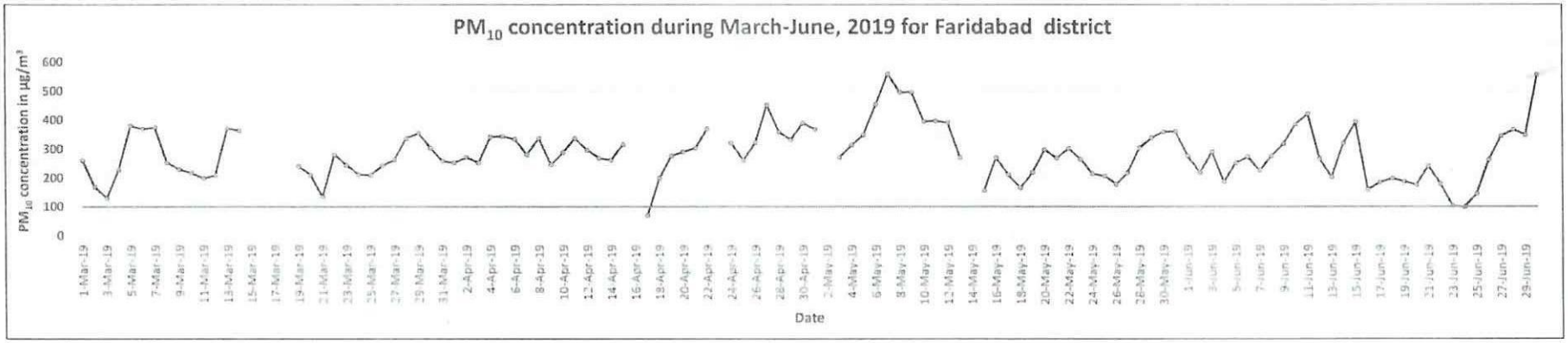
"NA" Inadequate data/data not available

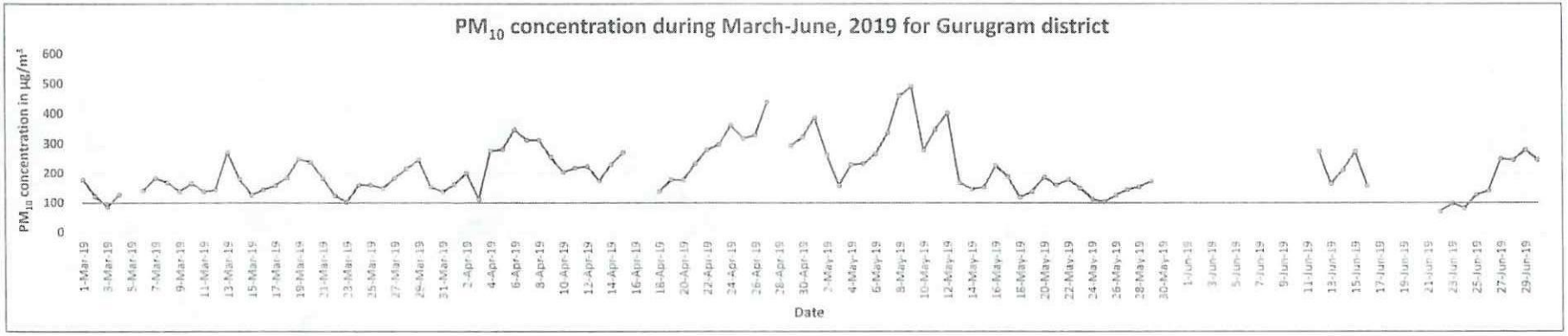
"NM" Data not nonitored

All parameters are in µg/m^3

No CAAQM stations were available , during the afore-said period, in the four NCR districts, namely, Meerut & Shamli districts (U.P.), Charkhi-Dadari district (Haryana) and Bharatpur district (Rajasthan).


PM10 concentration during March-June, 2019 for Bhiwni district
PM10 concentration in µg/m³
Date


PM10 concentration during March-June, 2019 for Faridabad district
PM10 concentration in µg/m³
Date


PM10 concentration during March-June, 2019 for Gurugram district
PM10 concentration in µg/m³
Date

PM10 concentration during March-June, 2019 for Jhajjhar district
PM10 concentration in µg/m3
Date

PM10 concentration during March-June, 2019 for Jind district
PM10 concentration in µg/m3
Date

PM10 concentration during March-June, 2019 for Karnal district
PM10 concentration in µg/m3
Date

PM10 concentration during March-June, 2019 for Mahendraghari district
PM10 concentration in µg/m3
Date

PM10 concentration during March-June, 2019 for Nuh(Mewat) district
PM10 concentration in µg/m3
Date

PM10 concentration during March-June, 2019 for Palwal district
PM10 concentration in µg/m3
Date

PM10 concentration during March-June, 2019 for Panipat district
PM10 concentration in µg/m³
Date

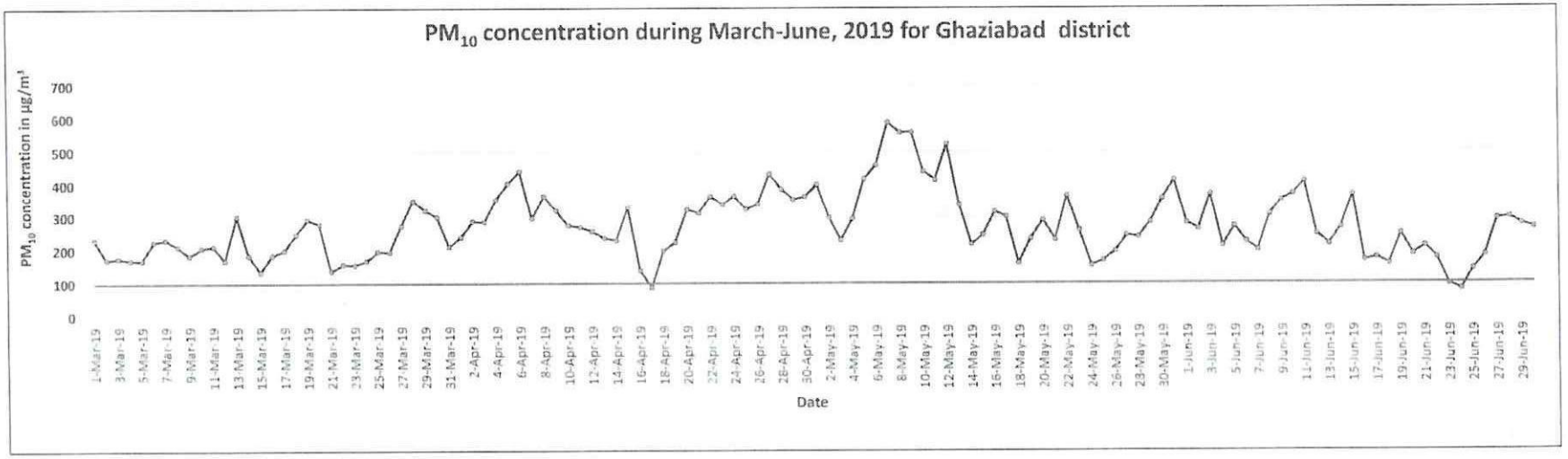
PM10 concentration during March-June, 2019 for Rewari district
PM10 concentration in µg/m³
Date

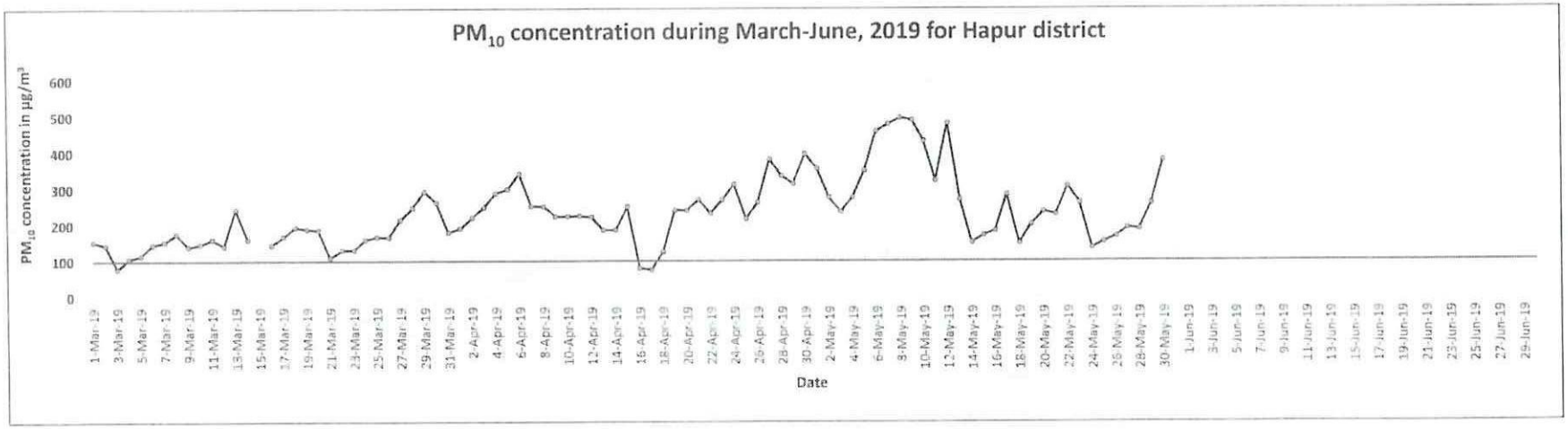
PM10 concentration during March-June, 2019 for Sonipat district
PM10 concentration in µg/m³
Date

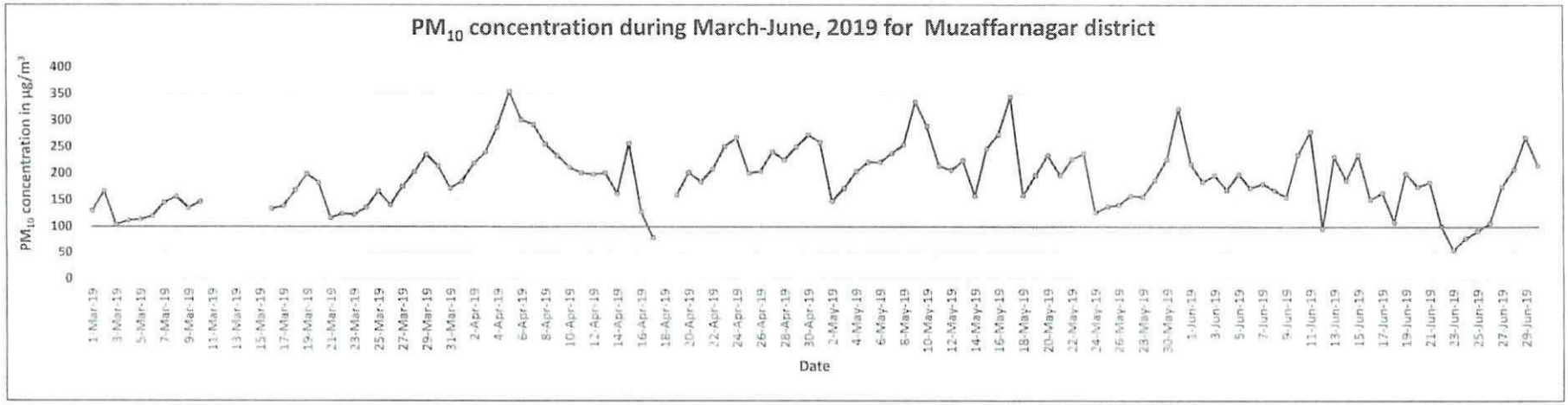
PM10 concentration during March-June, 2019 for Baghpat district
PM10 concentration in µg/m3
Date

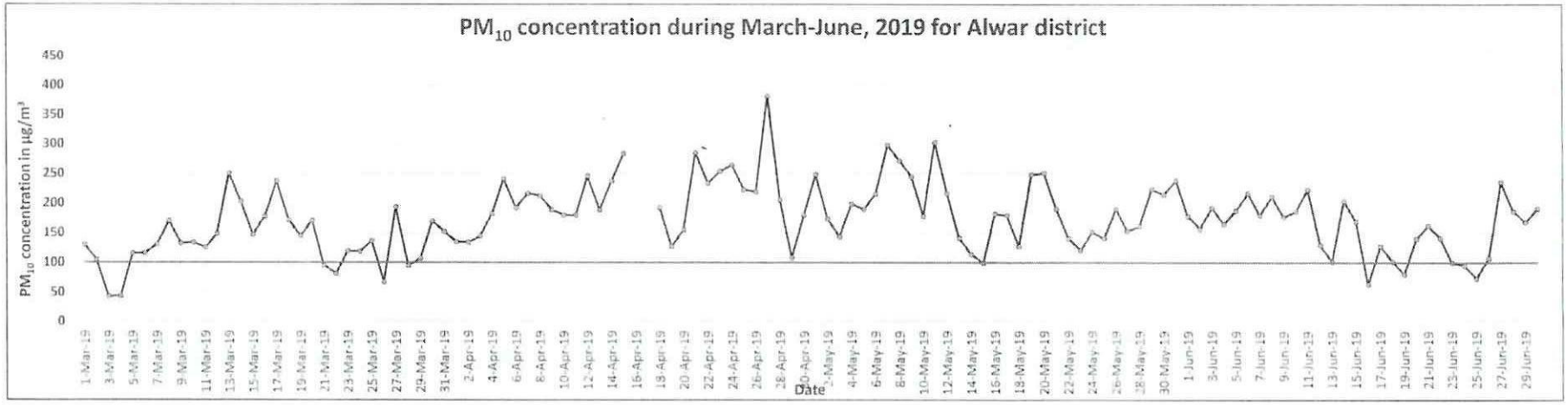
PM10 concentration during March-June, 2019 for Bulandshahr district
PM10 concentration in µg/m3
Date

PM10 concentration during March-June, 2019 for Gautam Budh Nagar district
PM10 concentration in µg/m3
Date


PM10 concentration during March-June, 2019 for Ghaziabad district
PM10 concentration in µg/m³
Date


PM10 concentration during March-June, 2019 for Hapur district
PM10 concentration in µg/m³
Date


PM10 concentration during March-June, 2019 for Muzaffarnagar district
PM10 concentration in µg/m³
Date


PM10 concentration during March-June, 2019 for Alwar district
PM10 concentration in µg/m³
Date

Annexure-6

$PM_{2.5}$ Monthly Average Values (in µg/m^3) of Delhi-NCR CAAQM Stations : March-2019

State	Haryana													Uttar Pradesh						Rajasthan
NCR-Districts	Bhiwani	Faridabad	Gurugram	Jhajjhar	Jind	Karnal	Mahendraghar	Nuh(Mewat)	Palwal	Panipat	Rewari	Rohtak	Sonipat	Baghpat	Bulandshahr	Gautam Budhnagar	Ghaziabad	Hapur	Muzaffarnagar	Alwar
1-Mar-19	48	94	68	71	61	55	60	53	89	41	65	74	57	94	102	94	110	95	77	72
2-Mar-19	37	72	58	76	64	76	60	73	78	56	81	70	83	154	95	93	116	96	116	62
3-Mar-19	46	58	40	62	56	41	35	44	50	44	43	52	61	81	71	83	95	50	68	18
4-Mar-19	43	78	60	56	45	40	54	45	52	33	49	85	47	77	84	100	99	64	73	23
5-Mar-19	44	89	48	43	44	38	45	35	57	32	49	64	40	75	85	85	78	54	66	65
6-Mar-19	39	91	58	70	55	40	58	43	69	35	78	75	49	76	91	87	105	63	70	57
7-Mar-19	43	103	71	68	57	45	56	53	71	36	71	49	56	92	NA	105	116	67	81	66
8-Mar-19	44	82	66	63	55	58	57	67	91	39	70	47	59	90	95	96	100	72	81	86
9-Mar-19	49	75	49	53	43	50	48	49	66	37	51	66	50	68	73	65	78	58	66	69
10-Mar-19	51	78	52	67	49	50	47	50	72	39	58	70	51	79	90	82	87	59	81	61
11-Mar-19	61	68	62	57	53	55	42	64	70	42	NA	67	62	78	NA	71	73	61	NA	55
12-Mar-19	45	68	56	55	60	45	48	51	67	35	84	61	43	61	60	55	61	52	NA	61
13-Mar-19	68	152	96	91	73	79	83	87	98	63	100	47	78	112	116	123	129	93	NA	94
14-Mar-19	48	131	74	78	44	55	81	65	78	39	71	40	49	85	77	92	95	61	NA	88
15-Mar-19	47	56	51	44	52	42	60	38	49	27	NA	46	41	72	68	61	63	49	NA	69
16-Mar-19	49	63	69	65	60	43	61	50	58	33	65	65	45	75	76	77	87	53	74	74
17-Mar-19	48	66	67	69	66	48	68	52	63	36	77	59	56	81	102	86	97	61	75	100
18-Mar-19	55	79	80	80	71	56	61	50	70	45	76	66	60	79	108	100	116	76	94	66
19-Mar-19	64	95	78	73	69	72	59	60	73	52	78	80	71	101	109	97	114	64	112	54
20-Mar-19	60	92	96	67	95	79	71	60	76	59	65	62	90	123	90	101	115	67	94	77
21-Mar-19	40	58	79	61	37	38	65	56	73	29	66	27	56	65	56	57	63	36	53	46
22-Mar-19	46	59	46	36	34	37	41	35	37	22	39	40	36	48	NA	38	46	40	44	34
23-Mar-19	48	59	44	38	40	46	43	34	39	26	42	43	38	47	NA	41	50	44	51	50
24-Mar-19	49	76	43	49	43	45	51	38	57	30	44	67	42	53	NA	55	62	54	63	54
25-Mar-19	48	80	56	48	62	62	46	42	49	38	53	67	54	78	78	72	84	62	102	63
26-Mar-19	54	86	51	52	59	51	54	45	55	36	65	51	53	74	82	67	79	60	76	62
27-Mar-19	63	90	72	83	84	54	57	53	72	42	81	69	56	92	103	82	114	77	94	87
28-Mar-19	70	126	92	89	82	59	67	61	81	49	88	44	79	120	118	128	173	86	113	87
29-Mar-19	77	130	99	94	83	72	92	74	99	58	108	44	83	110	124	134	155	107	137	95
30-Mar-19	68	98	74	69	73	71	67	82	77	53	85	65	89	106	80	87	115	95	110	86
31-Mar-19	48	55	57	44	54	54	49	NA	52	30	NA	42	44	49	56	42	50	56	74	72
Minimum	**37**	**55**	**40**	**36**	**34**	**37**	**35**	**34**	**37**	**22**	**39**	**27**	**36**	**47**	**56**	**38**	**46**	**36**	**44**	**18**
Maximum	**77**	**152**	**99**	**94**	**95**	**79**	**92**	**87**	**99**	**63**	**108**	**85**	**90**	**154**	**124**	**134**	**173**	**107**	**137**	**100**
Average	**52**	**84**	**65**	**63**	**59**	**53**	**58**	**54**	**67**	**40**	**68**	**58**	**57**	**84**	**88**	**82**	**94**	**66**	**83**	**66**

Note:

"NA" Inadequate data/data not available

"NM" Data not nonitored

All parameters are in µg/m^3

No CAAQM stations were available , during the afore-said period, in the four NCR districts, namely, Meerut & Shamli districts (U.P.), Charkhi-Dadari district (Haryana) and Bharatpur district (Rajasthan).

Annexure-7

$PM_{2.5}$ Monthly Average Values (in µg/m^3) of Delhi-NCR CAAQM Stations : April-2019

State	Haryana													Uttar Pradesh						Rajasthan
NCR-Districts	Bhiwani	Faridabad	Gurugram	Jhajjhar	Jind	Karnal	Mahendraghar	Nuh(Mewat)	Palwal	Panipat	Rewari	Rohtak	Sonipat	Baghpat	Bulandshahr	Gautam Budhnagar	Ghaziabad	Hapur	Muzaffarnagar	Alwar
1-Apr-19	58	65	54	54	56	51	48	38	51	30	55	48	45	62	71	63	78	65	86	61
2-Apr-19	61	98	83	65	53	67	68	45	80	33	61	58	62	99	119	98	116	82	120	77
3-Apr-19	57	94	75	86	71	63	66	49	69	32	71	67	69	121	129	106	120	91	132	75
4-Apr-19	88	120	101	108	70	84	87	53	118	41	91	78	93	126	129	136	160	97	162	85
5-Apr-19	87	122	117	102	73	90	98	60	115	33	78	74	82	116	106	114	151	101	210	134
6-Apr-19	82	142	132	104	87	114	70	63	107	43	63	89	NA	149	120	135	154	116	143	95
7-Apr-19	124	122	155	133	105	NA	129	79	113	49	NA	318	171	183	84	102	105	72	115	113
8-Apr-19	102	105	115	86	112	115	78	55	124	51	63	162	104	96	74	93	109	64	108	68
9-Apr-19	86	93	100	95	68	76	64	64	100	46	79	83	100	130	103	112	132	72	129	89
10-Apr-19	58	91	91	75	53	66	81	67	138	34	73	59	66	80	101	92	106	68	112	91
11-Apr-19	56	88	88	60	53	76	79	63	136	NA	65	57	60	75	98	82	92	64	101	91
12-Apr-19	44	82	68	54	42	64	59	71	133	27	73	51	49	74	72	71	79	57	65	114
13-Apr-19	47	60	62	47	44	78	50	54	98	26	56	50	58	59	72	53	68	48	80	81
14-Apr-19	44	61	62	44	38	119	52	54	NA	25	49	49	54	54	58	53	57	44	55	74
15-Apr-19	66	98	112	62	51	125	86	75	127	NA	77	79	53	65	70	75	76	63	70	93
16-Apr-19	43	NA	41	26	26	88	46	NA	53	NA	37	30	28	39	28	31	31	22	48	68
17-Apr-19	25	28	24	22	23	46	28	NA	22	NA	NA	26	30	54	23	27	30	20	36	78
18-Apr-19	38	67	52	42	32	50	42	NA	53	23	43	33	39	68	64	65	90	34	65	96
19-Apr-19	50	82	66	60	42	47	52	37	75	32	56	43	49	81	88	70	92	66	87	53
20-Apr-19	39	116	73	65	79	67	66	44	110	34	72	52	58	81	90	98	118	65	120	62
21-Apr-19	NA	167	80	75	61	59	65	47	133	38	67	66	73	96	82	91	122	66	101	109
22-Apr-19	46	139	94	86	58	66	72	59	176	38	81	66	78	95	91	102	127	53	106	89
23-Apr-19	111	92	94	87	72	114	85	69	178	43	81	79	82	98	92	85	111	65	120	89
24-Apr-19	118	95	94	75	75	149	75	80	188	49	76	120	100	114	NA	81	100	63	114	100
25-Apr-19	112	86	97	69	80	122	101	67	137	63	79	91	87	92	68	78	90	44	91	88
26-Apr-19	94	91	102	73	63	103	80	59	153	56	75	77	80	74	NA	80	94	49	71	81
27-Apr-19	98	94	97	57	64	116	79	63	171	53	NA	93	66	68	69	63	74	47	66	79
28-Apr-19	NA	114	106	70	67	137	74	67	173	NA	78	102	64	64	NA	70	81	43	60	72
29-Apr-19	121	113	119	82	68	126	83	87	187	61	96	103	95	84	83	92	103	50	89	45
30-Apr-19	114	117	124	87	69	135	80	63	173	63	80	114	150	99	NA	101	110	56	105	80
Minimum	**25**	**28**	**24**	**22**	**23**	**46**	**28**	**37**	**22**	**23**	**37**	**26**	**28**	**39**	**23**	**27**	**30**	**20**	**36**	**45**
Maximum	**124**	**167**	**155**	**133**	**112**	**149**	**129**	**87**	**188**	**63**	**96**	**318**	**171**	**183**	**129**	**136**	**160**	**116**	**210**	**134**
Average	**74**	**99**	**89**	**72**	**62**	**90**	**71**	**60**	**120**	**41**	**69**	**80**	**74**	**90**	**84**	**85**	**99**	**62**	**99**	**85**

Note:

"NA" Inadequate data/data not available

"NM" Data not nonitored

All parameters are in µg/m^3

No CAAQM stations were available , during the afore-said period, in the four NCR districts, namely, Meerut & Shamli districts (U.P.), Charkhi-Dadari district (Haryana) and Bharatpur district (Rajasthan).

Annexure-8

$PM_{2.5}$ Monthly Average Values (in µg/m^3) of Delhi-NCR CAAQM Stations : May-2019

State	Haryana													Uttar Pradesh						Rajasthan
NCR-Districts	Bhiwani	Faridabad	Gurugram	Jhajjhar	Jind	Karnal	Mahendraghar	Nuh(Mewat)	Palwal	Panipat	Rewari	Rohtak	Sonipat	Baghpat	Bulandshahr	Gautam Budhnagar	Ghaziabad	Hapur	Muzaffarnagar	Alwar
1-May-19	99	113	144	79	61	146	69	76	181	55	87	87	111	88	87	99	113	56	83	94
2-May-19	86	94	90	NA	49	NA	NA	74	106	46	66	74	84	62	51	61	57	25	35	65
3-May-19	70	97	69	107	47	78	NA	44	96	43	54	53	59	69	NA	53	67	37	60	72
4-May-19	76	91	95	99	60	84	NA	49	122	42	64	80	75	73	74	72	83	42	66	62
5-May-19	77	102	96	NA	120	118	55	107	163	77	78	104	107	120	NA	83	128	53	88	52
6-May-19	100	97	125	NA	143	109	66	94	201	75	NA	117	180	170	102	102	152	76	77	58
7-May-19	119	126	124	122	130	115	77	80	224	87	81	146	156	164	117	128	149	87	111	73
8-May-19	143	125	161	114	157	123	116	87	177	104	88	192	186	222	112	120	169	95	109	62
9-May-19	157	128	152	102	134	155	105	93	160	109	90	173	160	172	92	95	125	87	140	56
10-May-19	81	109	101	53	69	123	53	58	111	94	49	105	93	80	NA	89	103	78	98	56
11-May-19	105	132	142	95	118	144	94	99	161	84	98	157	96	114	105	121	149	64	87	168
12-May-19	153	157	230	153	189	129	76	107	171	124	105	357	129	146	NA	155	196	85	98	95
13-May-19	123	120	94	96	102	96	58	51	102	68	59	115	88	95	83	125	128	53	83	94
14-May-19	91	279	78	68	65	73	45	42	88	NA	55	81	79	86	66	79	101	38	72	66
15-May-19	90	113	74	66	52	84	85	65	99	59	60	95	79	113	73	86	107	43	95	43
16-May-19	96	107	96	72	91	123	38	66	109	77	72	100	93	96	66	82	95	45	120	71
17-May-19	57	77	72	42	59	109	47	48	66	77	NA	93	88	72	NA	71	82	106	99	61
18-May-19	49	49	60	42	46	72	28	40	57	47	43	NA	48	64	63	56	64	41	79	74
19-May-19	72	65	84	63	66	104	48	43	70	53	63	58	75	90	NA	73	96	48	107	146
20-May-19	90	81	90	60	68	118	57	48	87	60	NA	73	74	104	NA	80	102	55	111	139
21-May-19	70	76	83	60	64	97	46	50	82	56	NA	62	68	78	NA	66	72	48	93	91
22-May-19	114	83	83	65	83	109	44	45	85	60	60	92	80	93	72	66	104	61	95	58
23-May-19	68	81	79	62	69	103	42	NA	82	68	50	72	89	105	78	79	106	55	96	58
24-May-19	43	60	54	39	30	51	32	62	76	29	48	35	37	49	57	45	64	36	53	79
25-May-19	44	59	49	36	34	68	NA	36	64	30	42	39	39	46	NA	43	59	30	55	80
26-May-19	51	61	64	NA	41	67	44	41	82	38	52	39	53	59	65	59	75	34	66	109
27-May-19	60	65	76	35	45	75	50	43	88	41	71	49	41	57	60	62	88	37	60	77
28-May-19	63	78	72	47	45	67	48	41	88	33	60	49	42	49	65	55	74	37	56	80
29-May-19	82	83	91	53	67	77	55	54	106	43	81	83	57	68	72	70	99	60	84	102
30-May-19	107	91	129	62	76	91	61	59	120	55	67	105	58	79	NA	66	87	86	95	81
31-May-19	114	98	131	72	81	97	61	60	146	84	78	108	95	98	NA	85	109	NA	141	88
Minimum	**43**	**49**	**49**	**35**	**30**	**51**	**28**	**36**	**57**	**29**	**42**	**35**	**37**	**46**	**51**	**43**	**57**	**25**	**35**	**43**
Maximum	**157**	**279**	**230**	**153**	**189**	**155**	**116**	**107**	**224**	**124**	**105**	**357**	**186**	**222**	**117**	**155**	**196**	**106**	**141**	**168**
Average	**89**	**99**	**97**	**73**	**79**	**100**	**59**	**62**	**115**	**64**	**67**	**100**	**88**	**96**	**78**	**81**	**105**	**57**	**87**	**81**

Note:

"NA" Inadequate data/data not available

"NM" Data not nonitored

All parameters are in µg/m^3

No CAAQM stations were available , during the afore-said period, in the four NCR districts, namely, Meerut & Shamli districts (U.P.), Charkhi-Dadari district (Haryana) and Bharatpur district (Rajasthan).

Annexure-9

$PM_{2.5}$ Monthly Average Values (in µg/m^3) of Delhi-NCR CAAQM Stations :June-2019

State	Haryana													Uttar Pradesh						Rajasthan
NCR-Districts	Bhiwani	Faridabad	Gurugram	Jhajjhar	Jind	Karnal	Mahendraghar	Nuh(Mewat)	Palwal	Panipat	Rewari	Rohtak	Sonipat	Baghpat	Bulandshahr	Gautam Budhnagar	Ghaziabad	Hapur	Muzaffarnagar	Alwar
1-Jun-19	95	93	106	63	81	95	68	NA	146	64	62	106	88	82	63	72	86	NA	67	93
2-Jun-19	99	71	91	55	82	84	70	NA	106	58	74	90	80	76	NA	68	73	NA	72	86
3-Jun-19	89	68	101	49	70	86	71	NA	100	53	63	101	55	52	41	46	50	NA	49	76
4-Jun-19	79	65	87	51	63	75	76	NA	75	46	61	83	62	71	NA	55	65	NA	73	75
5-Jun-19	102	89	97	57	69	100	75	NA	88	67	70	95	83	77	65	67	74	NA	81	81
6-Jun-19	79	77	104	62	55	90	71	NA	95	NA	58	78	71	68	55	54	59	NA	67	75
7-Jun-19	77	74	78	52	62	73	58	NA	86	84	55	72	70	78	61	64	69	NA	79	76
8-Jun-19	80	98	89	57	61	90	57	NA	128	64	64	70	79	91	73	86	102	NA	69	147
9-Jun-19	91	106	115	78	62	84	75	NA	134	68	82	78	99	95	NA	94	113	NA	54	107
10-Jun-19	94	124	149	67	74	91	99	NA	150	60	73	104	91	97	NA	87	90	NA	85	82
11-Jun-19	92	145	200	95	79	128	94	NA	159	61	83	180	113	82	NA	97	93	NA	89	84
12-Jun-19	82	54	76	52	51	166	86	NA	102	39	NA	85	45	50	NA	48	46	NA	31	44
13-Jun-19	74	55	66	43	58	92	38	NA	74	56	NA	76	140	70	NA	48	54	NA	88	43
14-Jun-19	75	76	72	51	50	117	72	NA	112	46	56	67	196	78	NA	63	62	NA	63	82
15-Jun-19	87	74	79	55	65	142	73	NA	106	57	59	107	128	73	NA	66	69	NA	58	73
16-Jun-19	NA	39	68	31	42	62	NA	NA	39	NA	31	48	51	38	NA	33	36	NA	44	28
17-Jun-19	38	47	45	25	39	67	38	NA	60	36	33	44	50	38	NA	34	36	NA	39	40
18-Jun-19	53	55	NA	35	49	97	43	64	58	32	39	37	35	49	51	46	66	NA	44	42
19-Jun-19	77	72	53	48	62	156	41	39	55	56	NA	71	70	62	52	59	66	NA	71	35
20-Jun-19	61	75	64	34	46	95	49	54	62	44	NA	67	53	79	57	56	61	NA	77	50
21-Jun-19	67	93	72	57	61	94	75	63	71	49	61	67	64	80	79	73	82	NA	76	66
22-Jun-19	66	66	47	45	60	79	58	65	89	45	NA	62	60	67	53	57	58	NA	59	61
23-Jun-19	59	38	47	29	47	33	63	40	43	29	36	45	40	39	22	27	21	NA	29	47
24-Jun-19	39	37	36	24	23	22	56	36	32	21	30	26	36	38	22	22	20	NA	31	34
25-Jun-19	54	64	58	45	45	63	78	41	53	39	46	43	82	64	43	53	52	NA	51	35
26-Jun-19	57	93	68	44	53	78	44	51	81	42	53	54	66	69	64	70	74	NA	54	54
27-Jun-19	136	107	82	58	59	114	144	88	103	54	74	98	57	66	64	72	69	NA	62	90
28-Jun-19	117	89	74	47	70	107	52	62	82	49	54	88	69	66	57	55	58	NA	62	69
29-Jun-19	85	132	84	52	80	116	48	65	88	70	56	90	86	88	50	62	61	NA	83	74
30-Jun-19	NA	84	74	45	60	123	49	68	87	56	56	70	77	57	48	57	60	NA	79	84
Minimum	38	37	36	24	23	22	38	36	32	21	30	26	35	38	22	22	20	NA	29	28
Maximum	136	145	200	95	82	166	144	88	159	84	83	180	196	97	79	97	113	NA	89	147
Average	79	78	75	50	59	94	66	57	89	52	57	77	77	68	54	59	66	NA	63	67

Note:

"NA" Inadequate data/data not available

"NM" Data not nonitored

All parameters are in µg/m^3

No CAAQM stations were available , during the afore-said period, in the four NCR districts, namely, Meerut & Shamli districts (U.P.), Charkhi-Dadari district (Haryana) and Bharatpur district (Rajasthan).

ANNEXURE-10

Item Nos. 01& 02 Court No. 1

BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI

Original Application No. 1016/2019
(I.A. No. 750/2019, I.A. No.752/2019, I.A. No. 753/2019, I.A. No. 754/2019, I.A. No. 764/2019, I.A. No. 765/2019, I.A. No. 766/2019, I.A. No. 767/2019, I.A. No. 21/2020, I.A. No. 22/2020, I.A. No. 37/2020, I.A. No. 60/2020& I.A. No. 61/2020 I.A. No. 113/2020 I.A. No. 115/2020 I.A. No. 121/2020)

WITH

Execution Application No. 07/2020
In
Original Application No. 1016/2019

(With report dated 04.03.2020)

Utkarsh Panwar — Applicant(s)

Versus

Central Pollution Control Board & Ors. — Respondent(s)

With

Utkarsh Panwar — Applicant(s)

Versus

Rahul Sharma, Deputy Commissioner Rohtak & Ors. — Respondent(s)

Date of hearing: 05.03.2020

CORAM: **HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON**
HON'BLE MR. JUSTICE S. P. WANGDI, JUDICIAL MEMBER
HON'BLE DR. NAGIN NANDA, EXPERT MEMBER

For Applicant(s): Ms. Pooja Dhar, Advocate

For Respondent(s): Mr. Rajkumar, Advocate for CPCB
Mr. Pradeep Misra, Mr. Daleep Dhyani, Advocates for UPPCB
Mr. Sanjay Upadhyay, Mr. Salik Shafique, Advocates in I.A NO. 115/2020 and I.A No. 763 to 766/2019
Mr. S.P Singh, Sr. Advocate with Mr. Raunak Parekh, Advocate in I.A No. 372020
Mr. Rohit Sharma, Advocate in I.A No. 113/2020

Mr. Neeraj Kumar Jain with Mr. Aniket Jain, Advocates in I.A No. 60/2020
Mr. Sumit Gehlawat, Advocate in I.A NO. 750/2019 and I.A No. 754/2019
Mr. Rahul Khurana, Advocate for HSPCB

ORDER

1. Question for consideration is permissibility of brick kilns run by 'Zig-Zag' technology in NCR till level of air pollution becomes normal. Other brick kilns are already prohibited by the order of the Environment Pollution (Prevention and Control) Authority (EPCA) vide order dated 01.11.2019. According to the applicant, even brick kilns run by 'Zig-Zag' technology add to PM 2.5 and contribute about 10% of the air pollution in the NCR. Since the air pollution level in the NCR was beyond norms, such brick kilns were required to be prohibited till the air quality improves.

2. Vide order dated 15.11.2019, a report was sought from CPCB about the impact of running of brick kilns in NCR, including those run by 'Zig-Zag' technology. The report filed on 13.12.2019 furnished by the CPCB was considered by this Tribunal on 18.12.2019 to the effect that even the brick kilns operated by the 'Zig-Zag' technology had adverse impact on air quality, including fugitive dust emissions. The Tribunal, vide order dated 18.12.2019, directed as follows:

> "4. *In view of the above, while CPCB may conduct further study for assessment of different types of brick kilns with reference to source emissions from different types of fuels, having regard to the conclusion that average fugitive SPM values are almost same in FCBTK and Zig-Zag brick kilns, the interim order directing closure of brick kilns in NCR will continue till the next date.* ***Thereafter, brick kilns in NCR may be allowed only consistent with the carrying capacity and siting criteria, subject to***

GRAP, consent conditions and background concentration of ambient air quality."

3. The matter was last considered on 06.02.2020 in the light of report of the CPCB dated 28.01.2020. It was observed:

> *"3. Since brick kilns can be permitted only after ascertaining the carrying capacity as above,* ***let a report about carrying capacity of the NCR region in above terms be furnished by CPCB*** *before the next date by e-mail at judicial-ngt@gov.in."*

4. In view of the above, a report has been filed by the CPCB on 04.03.2020 as follows:

> *"As per information provided by SPCBs, there are total 3278, 2854 and 19003 brick kilns in Haryana, Punjab and Uttar Pradesh respectively, out of which 1918, 701 and 1343 brick kilns have been converted to Zig-Zag technology. With regard to NCR regions, out of 2187, 2216 and 251 brick kilns in Haryana, Uttar Pradesh and Rajasthan respectively,* ***1504, 1032 and 127 brick kilns have been converted to Zig-Zag technology****.*
>
> *Brick Kilns based on Zig-Zag technology using agro-residues are located only in NCR districts.*
>
> *Different types of activities with potential of air pollution, including operation of brick kilns in Delhi-NCR are regulated through a Graded Response Action Plan (GRAP) by Environmental Pollution Control Authority.* ***As per GRAP, Brick kilns in NCR are required to be shut under severe conditions i.e. when $PM_{2.5}$ and/or PM_{10} concentration goes beyond 250 µg/m³ and/or 430 µg /m³ respectively.***
>
> *In view of the expected higher concentration of PM emissions during winter months, brick kilns in the NCR regions were kept closed during this period as per directions of EPCA.* ***However, now, looking into the forecast of favourable meteorological conditions and expected improvement in the air quality, Environmental Pollution Control Authority (EPCA) has directed that operation of those brick kilns in NCR districts, which have converted to Zig-zag technology, be allowed, vide letter No. EPCA-R/2020/L-09 dated February 14, 2020*** *(Copy enclosed as Annexure-I).*

Further, air quality data of 2019 in NCR, was examined. Analysis indicated that ***$PM_{2.5}$*** *concentration in summer months (March-June) is lower (****Average 80 µg /m³)*** *in comparison to winter months (Average 173 µg /m³). Similarly,* ***PM_{10}*** *concentration in summer months (March-June) is lower (****Average 219 µg /m³)*** *in comparison to winter months (Average 283 µg /m3).*

The past data of 2019 w.r.t. PM_{10} & $PM_{2.5}$ concentration in Delhi, is summarized in ***Table 1:***

Table 1 : *Monthly data of CAAQMs w.r.t. PM Concentration for 2019, in Delhi*

Month	$PM_{2.5}$, µg/m³	PM_{10}, µg/m³
January	203	322
February	122	215
March	83	184
April	83	236
May	89	247
June	63	209
July	47	143
August	35	85
September	40	98
October	128	247
November	202	312
December	209	316

Therefore, in view of submission that 65 Nos brick kilns are proposed to be monitored in both NCR and Non-NCR regions, involving total 585 stack emissions' samples, in compliance of the directions of Hon'ble NGT in the matter of O.A. No. 1016/2019 and O.A. No. 1088/2018, it is humbly prayed as under:

I. *Brick Kilns based on Zig-Zag technology using agro-residues are located only in NCR districts and if these are to be monitored to assess the performance of brick kilns operating on agro-residues, under comparable situations, the Zig-Zag type brick kilns in NCR regions, which are presently closed, may have to be made operational, to facilitate monitoring.*

II. *Atleast 04 months' time period may be granted to CPCB, for Monitoring of 65 brick kilns in NCR and Non-NCR regions and submission of report covering* ***i) Impact of brick kilns operation on loss/degradation of top soil, ii) study involving Carrying Capacity Assessment of brick kilns with adequate samples in terms of number of brick kilns and days for which monitoring be conducted, iii) Evaluation of the performance of brick kilns against the background concentration and carrying capacity of the area and iv) Impact on Brick Kilns operation on ambient air, in the matters of O.A. No. 1016/2019 and O.A. No. 1088/2018, after commencement of operation of brick kilns in NCR regions."***

5. We have heard learned Counsel for the CPCB and for the brick kilns, including those who have filed applications for being implead as party in pursuance of order of Hon'ble Supreme Court dated 20.02.2020 in *C.A. No. 1733-35/2020.*

6. Learned Counsel for the CPCB submitted that having regard to the data of air quality, even though as per GRAP brick kilns are to be mandatorily shut throughout NCR only under 'severe conditions', no polluting activity, including brick kilns, can be permitted beyond 'carrying capacity' and air quality norms under the Air (Prevention and Control of Pollution) Act, 1981. On the other hand, the stand of the brick kilns is that unless the conditions are '*severe*' to attract GRAP and unless prohibited by EPCA, 'Zig-Zag' technology brick kilns have right to operate irrespective of the air quality norms. Reliance has also been placed on norms for brick kilns under Schedule-I, Sr. No. 74 of Environment (Protection), Rules 1986. Alternatively, it is submitted that at such locations where air quality is within norms, brick kilns may be allowed. By way of example, it is stated that the ambient air quality data at Alwar, as on 18.02.2020, is within norms.

7. We do not find any merit in the contention that only in 'severe' conditions brick kilns can be prohibited even if the air quality is beyond permissible norms and the area has no assimilative or supportive capacity. Emission norms of individual brick kilns is not a conclusive factor for dealing with the issue, if the carrying capacity of the area does not allow the brick kilns in question. However, we do need to consider the submission that where air

quality is within the norms and there is carrying capacity, brick kiln can be allowed.

8. In view of the above, it is necessary to look at the relevant data at different locations '24 hourly' and 'monthly average' during the relevant months. Since such data is maintained by the CPCB/PCBs, the CPCB may collect such data for corresponding months of March, April, May and June in the year 2019 and furnish the same before the next date. The break-up of location of the brick kilns District-wise may also be furnished to consider as to which of the brick kilns can be allowed after verification that such brick kilns are actually working on 'Zig-Zag' technology, pending further assessment of the carrying capacity by the CPCB, as already directed earlier vide order dated 06.02.2020.

List for further consideration on 17.03.2020.

Adarsh Kumar Goel, CP

S. P. Wangdi, JM

Dr. Nagin Nanda, EM

March 05, 2020
Original Application No. 1016/2019
and other connected matters
AK