BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
CENTRAL ZONAL BENCH AT BHOPAL

ORIGINAL APPLICATION NO. 67/2022

Ram Dass

Applicant

Versus

State of Rajasthan & Ors.

Respondent

INDEX

S.No.	Particulars	Page No.
1.	Memo of compliance report	2-3
	Documents	
2.	**Annexure-R/1** - Photo copy of the office order dated 08.03.2023	4-5
3.	**Annexure-R/2** - Photo copy of the yearly average of 10 CAAQMS from January, 2022 to December, 2022 (Collectively)	6-16
4.	**Annexure-R/3** - Photo copy of the MoU between RSPCB and MNIT, Jaipur	17-25

PLACE :: BHOPAL
DATE :: 16.03.2023

ROHIT SHARMA (ADVCOATE)
COUNSEL FOR THE RESPONDENT
RAJASTHAN STATE POLLUTION CONTROL BOARD

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
CENTRAL ZONAL BENCH AT BHOPAL

ORIGINAL APPLICATION NO. 67/2022

Ram Dass

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Versus

State of Rajasthan & Ors.

Respondent

COMPLIANCE REPORT OF THE HON'BLE TRIBUNAL ORDER DATED 23.02.2023 ON BEHALF OF RAJASTHAN STATE POLLUTION CONTROL BOARD.

MAY IT PLEASE THIS HON'BLE TRIBUNAL:

The humble answering-respondent most respectfully submit the compliance report as under:-

1. That the Hon'ble Tribunal by order dated 23.02.2023, directed as follows:-

"List it on 17th March, 2023. In the meantime RSPCB & CPCB should file the latest report of air quality and carrying capacity."

2. That in compliance of the directions passed by the Hon'ble Tribunal, the answering respondent vide office order dated 08.03.2023, has deployed its officials to carry out 24 hourly ambient air monitoring (w.r.t. PM10 & PM2.5) at 04 locations at Anupgarh and Suratgarh for 02 days. The photo copy of the office order dated 08.03.2023 is annexed herewith and marked as **Annexure-R/1**.

3. That the answering respondent is having Continuous Ambient Air Quality Monitoring Stations (CAAQMS) operational at various locations in the cities Jaipur, Alwar, Bhiwadi, Ajmer, Udaipur, Kota, Pali, Jodhpur (Total-10 Nos). The statement of annual average of parameters being monitored

at the CAAQMS from January, 2022 to December, 2022 is annexed herewith and marked as **Annexure-R/2 (Collectively).**

4. That the answering respondent has entered into an Memorandum of Understanding (MoU) with Malviya National Institute of Technology, Jaipur (MNIT, Jaipur) for 'Estimating Carrying Capacity of Ambient Air in Alwar and Bharatpur District of Rajasthan'. The report from MNIT is awaited. The photo copy of the MoU between RSPCB and MNIT, Jaipur is annexed herewith and marked as **Annexure-R/3**.

Prayer

It is, therefore, most humbly prayed that in view of submission mentioned herein above the compliance report on behalf of RSPCB may kindly be taken on record.

PLACE :: BHOPAL
DATE :: 16.03.2023

HUMBLE RESPONDENT
THROUGH HIS COUNSELS

(Rohit Sharma)
ADVOCATE

R/1
98

Rajasthan State Pollution Control Board

Headquarter, 4, Institutional Area, JhalanaDoongri, Jaipur-302004
Phone : 0141-2716804, 2716907 e-mail : member-secretary@rpcb.nic.in
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Office Order

In compliance to the Hon'ble NGT (CZ) order dated 23.02.2023 in the matter of OA No. 67/ 2022 Ram Dass V/s State of Rajasthan &Ors. teams of following State Board's Officers are being constituted to carry out 24 hourly ambient air quality monitoring (w.r.t. PM_{10} & $PM_{2.5}$) at 04 locations at Anupgarh and Suratgarh for 2 days.

The details of teams deployed for ambient air quality monitoring is as follows:

S. No.	Name and designation of officer	Concerned Regional Office	Logistics and Instruments to be carried from concerned Regional Laboratories
1.	Sh. Giriraj Kumar Songara, SSO	Chittorgarh	01 RDS with gaseous attachment, 01 $PM_{2.5}$ sampler, 2 DG sets with all required accessories.
2.	Sh. Yashpal Meena, SO	Pali	01 RDS with gaseous attachment, 01 $PM_{2.5}$ sampler, 2 DG sets with all required accessories.
3.	Sh. Devendra Singh Bikundia, SO	Jodhpur	01 RDS with gaseous attachment, 01 $PM_{2.5}$ sampler, 2 DG sets with all required accessories.
4.	Sh. Daya Ram, SO	Sikar	01 RDS with gaseous attachment, 01 $PM_{2.5}$ sampler, 2 DG sets with all required accessories.
5.	Sh. Dara Singh, SO	Sikar	

All the concerned Regional Officers are directed to depute above persons for monitoring along with Logistics (Including dedicated vehicle) and required instruments as mentioned above. Concerned Regional Officers are also requested to direct the concerned Accountant to provide advance payment to the officer, if needed. All teams will report to Regional Office, Hanumangarh by 10.03.2023, positively and start working on 11.03.2023, onwards in supervision of CPCB team. Regional Officer, RSPCB, Hanumangarh will provide lodging & boarding support to the monitoring teams. All teams are directed to deposit their collected samples to Regional Laboratory, RSPCB, Sikar by 13.03.2023, positively.

Regional Officer, RSPCB, Bikaner & Lab In-charge, Bikaner are directed to make necessary arrangements (i.e. electricity, solutions for SO_2 & NO_X, field assistant etc.) for the monitoring team. In addition to above, please also arrange 01 RDS with gaseous attachment, 01 $PM_{2.5}$ sampler, 2 DG sets with all required accessories for the monitoring teams.

Regional Officer, RSPCB, Sikar & Laboratory in-charge, Sikar are directed to provide pre-weighted filter papers for the monitoring teams, receive the collected samples, carry out analysis and issue analysis results by 15.03.2023.

This bears approval of competent authority.

(B. Praveen)
Member Secretary

Continued ...

F.11(691) RSPCB/Lab 6028-6048 Date: 08/03/2023

Copy to following for information & necessary action:-

1. PS to Chairperson, RSPCB, Jaipur.
2. PS to Member Secretary, RSPCB, Jaipur.
3. Regional Director, Regional Directorate, CPCB, Bhopal.
4. Chief Environmental Engineer, RSPCB, Jaipur.
5. Chief Scientific Office, RSPCB, Jaipur.
6. Grour In-charge, MUID, RSPCB, Jaipur.
7. Regional Officer, Regional Office, RSPCB, Chittorgarh.
8. Regional Officer, Regional Office, RSPCB, Pali.
9. Regional Officer, Regional Office, RSPCB,Jodhpur.
10. Regional Officer, Regional Office, RSPCB, Sikar.
11. Lab In-charge, Regional Laboratory, RSPCB, Bikaner.
12. Regional Officer, Regional Office, RSPCB, Hanumangarh.
13. Lab In-charge, Regional Laboratory, RSPCB, Chittorgarh.
14. Lab In-charge, Regional Laboratory, RSPCB, Pali.
15. Lab In-charge, Regional Laboratory, RSPCB, Jodhpur.
16. Lab In-charge, Regional Laboratory, RSPCB, Sikar.
17. Lab In-charge, Regional Laboratory, RSPCB, Bikaner.
18. Sh. Giriraj Kumar Songara, SSO, Regional Office, RSPCB, Chittorgarh.
19. Sh. Yashpal Meena, SO, Regional Office, RSPCB, Pali.
20. Sh. Devendra Singh Bikundia, SO, Regional Office, RSPCB, Jodhpur.
21. Sh. Daya Ram, SO, Regional Office, RSPCB, Sikar.
22. Sh. Dara Singh, SO, Regional Office, RSPCB, Sikar.

Member Secretary

R12

Rajasthan State Pollution Control Board

Continuous Ambient Air Quality Monitoring Report

Yearly Average: Jan. 2022 to Dec. 2022

Station Name	NO_2	NH_3	SO_2	CO	O_3	PM_{10}	$PM_{2.5}$	AQI
	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	
Police Comm. Jpr	60.55	64.98	14.68	1.47	31.52	142.74	70.27	151
Psy. Center Jpr	40.87	37.40	12.02	0.84	44.29	107.45	52.28	111
Sci. Park Jpr	47.04	45.96	15.66	0.87	48.97	131.69	55.96	123
Alwar	21.81	23.23	13.30	0.74	20.26	92.19	41.54	92
Bhiwadi	64.40	81.62	19.80	1.02	20.28	203.75	94.74	216
Ajmer	25.96	61.65	17.73	0.74	29.18	116.43	56.58	111
Udaipur	32.99	29.26	8.47	0.68	34.40	119.09	54.65	115
Kota	22.38	19.68	10.22	0.73	33.59	115.26	57.98	123
Pali	20.78	16.14	9.25	0.75	34.52	104.91	58.11	105
Jodhpur	37.68	27.20	8.76	0.79	31.67	155.48	71.56	153
Standards	40.00	100.00	50.00	2 (8Hrs)	100 (8Hrs)	60.00	40.00	

AQI Colour Codes	Related Heath Concerns
Good (0-50)	Minimal Impact
Satisfactory (51-100)	Minor breathing discomfort to sensitive people
Moderate (101-200)	Breathing discomfort to the people with lung, heart disease, children and older adults
Poor (201-300)	Breathing discomfort to people on prolonged exposure
Very Poor (301-400)	Respiratory illness to the people on prolonged exposure
Severe (>400)	Respiratory effects even on healthy people

Rajasthan State Pollution Control Board
Continuous Ambient Air Quality Monitoring Report

Monitoring Location : **CAAQMS AJMER, RAJASTHAN**

Monthly Average

Month/ Parameters	NO_2	NH_3	SO_2	CO	O_3	PM_{10}	$PM_{2.5}$	AQI
	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	mg/m^3	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	
Jan-22	21.96	102.46	11.42	0.91	32.14	102.71	56.92	**102**
Feb-22	22.72	134.18	13.64	0.72	28.00	109.03	58.80	**106**
Mar-22	25.66	96.52	15.32	0.77	31.77	114.59	54.61	**110**
Apr-22	29.34	39.97	19.56	0.83	35.40	194.30	75.88	**124**
May-22	18.94	26.91	16.46	0.63	40.07	155.97	77.33	**160**
Jun-22	20.58	29.28	22.24	0.66	37.52	111.48	63.90	**121**
Jul-22	31.74	51.90	28.63	0.70	26.40	89.27	39.52	**87**
Aug-22	34.06	46.66	15.65	0.71	20.64	93.69	40.08	**94**
Sep-22	15.95	20.16	24.09	0.67	29.88	80.65	40.80	**83**
Oct-22	25.21	36.26	14.07	0.68	26.07	109.81	51.19	**110**
Nov-22	33.62	60.78	12.74	0.82	23.38	115.44	57.89	**117**
Dec-22	31.77	94.67	18.88	0.84	18.90	120.24	62.07	**113**
Standards	**40.00**	**100.00**	**50.00**	**2 (8Hrs)**	**100 (8Hrs)**	**60.00**	**40.00**	

Rajasthan State Pollution Control Board
Continuous Ambient Air Quality Monitoring Report

Monitoring Location : **CAAQMS ALWAR, RAJASTHAN**

Monthly Average

Month/ Parameters	NO_2	NH_3	SO_2	CO	O_3	PM_{10}	$PM_{2.5}$	AQI
	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	mg/m^3	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	
Jan-22	29.19	34.86	12.63	0.91	13.55	92.85	48.18	93
Feb-22	31.31	37.54	13.32	0.79	17.72	89.48	38.22	89
Mar-22	36.51	34.30	11.94	0.73	19.06	98.58	37.90	99
Apr-22	29.18	32.02	15.06	0.67	22.74	106.13	38.55	103
May-22	18.91	21.26	13.50	0.62	25.99	121.38	52.04	115
Jun-22	14.78	15.27	15.16	0.65	24.50	98.23	41.54	95
Jul-22	7.96	11.20	14.03	0.66	14.50	63.97	30.07	64
Aug-22	4.84	7.61	14.46	0.51	17.66	62.29	29.20	63
Sep-22	6.40	11.80	11.47	0.63	19.97	81.67	31.23	81
Oct-22	14.32	16.88	13.31	0.81	22.17	83.56	38.22	87
Nov-22	31.31	27.05	11.38	0.89	24.49	107.13	56.16	116
Dec-22	37.02	29.03	13.32	1.01	20.78	101.04	57.19	101
Standards	40.00	100.00	50.00	2 (8Hrs)	100 (8Hrs)	60.00	40.00	

Rajasthan State Pollution Control Board
Continuous Ambient Air Quality Monitoring Report

Monitoring Location : **CAAQMS BHIWADI, RAJASTHAN**

Monthly Average

Month/ Parameters	NO_2	NH_3	SO_2	CO	O_3	PM_{10}	$PM_{2.5}$	AQI
	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	mg/m^3	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	
Jan-22	54.69	82.02	18.99	1.01	9.44	205.29	112.13	274
Feb-22	54.38	84.21	24.43	0.87	18.31	198.73	103.91	246
Mar-22	55.00	90.68	34.48	0.96	23.19	251.74	119.01	297
Apr-22	81.10	128.25	45.21	0.87	29.98	294.38	154.16	323
May-22	58.06	63.40	23.49	0.87	30.28	250.20	124.12	274
Jun-22	63.72	73.34	19.26	0.81	27.36	205.47	101.50	218
Jul-22	25.52	19.53	10.62	0.83	15.70	85.95	41.95	84
Aug-22	43.97	42.39	13.64	0.79	14.88	86.99	36.97	85
Sep-22	123.61	88.51	10.43	1.08	15.36	130.24	60.66	131
Oct-22	87.84	107.86	11.19	1.48	19.33	192.89	83.14	191
Nov-22	54.47	90.21	12.14	1.38	23.50	290.89	111.81	261
Dec-22	70.47	109.08	13.71	1.24	16.03	252.19	87.55	202
Standards	**40.00**	**100.00**	**50.00**	**2 (8Hrs)**	**100 (8Hrs)**	**60.00**	**40.00**	

Rajasthan State Pollution Control Board
Continuous Ambient Air Quality Monitoring Report

Monitoring Location : **Police Commissionerate Offce, JAIPUR, RAJASTHAN**

Monthly Average

Month/ Parameters	NO_2	NH_3	SO_2	CO	O_3	PM_{10}	$PM_{2.5}$	AQI
	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	mg/m^3	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	
Jan-22	62.60	54.42	17.46	1.52	29.94	166.81	87.70	192
Feb-22	62.23	59.47	12.17	1.65	33.44	152.89	68.76	135
Mar-22	73.23	65.73	17.64	1.52	38.63	155.95	73.76	146
Apr-22	84.82	68.15	16.35	1.95	33.15	192.96	100.23	225
May-22	55.47	72.58	11.43	1.32	42.26	192.22	94.11	209
Jun-22	50.05	82.35	14.32	1.02	29.77	134.94	70.01	149
Jul-22	33.78	94.99	13.80	1.02	28.08	58.04	25.36	58
Aug-22	33.40	56.12	12.96	0.86	18.90	82.06	37.12	80
Sep-22	35.00	48.79	13.21	2.33	22.55	94.75	45.47	91
Oct-22	85.29	50.99	15.30	1.17	31.65	153.79	71.28	147
Nov-22	78.30	84.77	12.48	1.74	34.87	174.02	81.22	187
Dec-22	72.39	41.44	19.06	1.50	35.02	154.40	88.19	194
Standards	**40.00**	**100.00**	**50.00**	**2 (8Hrs)**	**100 (8Hrs)**	**60.00**	**40.00**	

Rajasthan State Pollution Control Board
Continuous Ambient Air Quality Monitoring Report

Monitoring Location : **Science Park, JAIPUR, RAJASTHAN**

Monthly Average

Month/ Parameters	NO_2	NH_3	SO_2	CO	O_3	PM_{10}	$PM_{2.5}$	AQI
	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	mg/m^3	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	
Jan-22	24.83	32.67	15.81	1.00	42.72	166.96	67.74	145
Feb-22	31.44	43.46	15.62	0.84	54.71	155.84	63.14	137
Mar-22	52.73	68.19	17.01	0.87	53.77	138.91	62.87	126
Apr-22	90.69	96.40	16.88	0.92	56.70	165.30	71.12	151
May-22	69.95	97.24	14.41	0.64	59.60	225.13	85.98	205
Jun-22	61.49	15.60	15.01	0.82	57.87	155.38	55.99	138
Jul-22	35.25	27.81	15.65	0.82	37.97	57.77	29.85	64
Aug-22	24.02	23.69	15.33	0.75	38.70	67.28	32.93	62
Sep-22	27.21	26.46	14.89	0.76	45.58	60.67	34.52	67
Oct-22	35.65	28.74	15.08	0.95	57.22	68.54	46.83	89
Nov-22	61.82	53.04	17.56	1.15	52.98	167.41	66.05	159
Dec-22	49.36	38.22	14.67	0.96	29.81	151.05	54.54	134
Standards	40.00	100.00	50.00	2 (8Hrs)	100 (8Hrs)	60.00	40.00	

Rajasthan State Pollution Control Board
Continuous Ambient Air Quality Monitoring Report

Monitoring Location : **Psychiatric Centre, JAIPUR, RAJASTHAN**

Monthly Average

Month/ Parameters	NO_2	NH_3	SO_2	CO	O_3	PM_{10}	$PM_{2.5}$	AQI
	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	mg/m^3	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	
Jan-22	41.27	38.44	11.46	0.95	40.25	105.94	64.24	114
Feb-22	36.75	39.08	11.70	0.67	47.99	112.98	50.97	109
Mar-22	43.55	37.82	13.15	0.85	51.45	126.73	61.25	118
Apr-22	49.65	42.10	14.14	0.94	41.07	148.38	62.85	138
May-22	32.66	26.93	11.09	0.74	52.66	179.27	83.20	199
Jun-22	25.48	19.09	11.25	0.77	54.82	122.19	47.08	113
Jul-22	26.26	31.80	9.67	0.74	38.34	39.90	19.72	52
Aug-22	24.41	29.20	8.90	0.66	31.50	51.99	22.29	59
Sep-22	32.43	32.68	12.64	0.79	36.92	68.04	34.46	71
Oct-22	48.09	40.53	14.64	0.88	50.71	103.51	57.13	118
Nov-22	67.22	59.72	10.55	1.14	45.15	115.86	67.23	131
Dec-22	62.67	51.39	15.04	0.97	40.59	114.63	56.96	110
Standards	40.00	100.00	50.00	2 (8Hrs)	100 (8Hrs)	60.00	40.00	

Rajasthan State Pollution Control Board
Continuous Ambient Air Quality Monitoring Report

Monitoring Location : **CAAQMS JODHPUR, RAJASTHAN**

Monthly Average

Month/ Parameters	NO_2	NH_3	SO_2	CO	O_3	PM_{10}	$PM_{2.5}$	AQI
	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	mg/m^3	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	
Jan-22	45.86	34.69	9.80	0.99	30.73	172.86	80.52	168
Feb-22	42.32	25.85	9.43	0.91	31.90	175.78	85.22	184
Mar-22	32.05	19.39	9.40	0.88	33.96	172.90	83.90	180
Apr-22	31.77	18.97	8.00	0.78	33.49	191.68	86.92	189
May-22	34.35	24.19	7.58	0.83	34.51	226.46	102.60	239
Jun-22	34.32	23.26	7.09	0.84	37.00	168.44	74.13	161
Jul-22	29.28	20.29	7.12	0.68	22.93	71.11	33.78	71
Aug-22	26.51	21.53	7.21	0.49	22.22	94.57	38.74	91
Sep-22	30.98	21.96	8.07	0.54	24.43	95.50	44.29	91
Oct-22	41.09	30.78	9.79	0.81	32.53	159.01	75.83	146
Nov-22	55.00	46.55	13.22	0.99	38.96	182.03	80.12	172
Dec-22	48.65	38.93	8.41	0.77	37.37	155.44	72.62	142
Standards	40.00	100.00	50.00	2 (8Hrs)	100 (8Hrs)	60.00	40.00	

Rajasthan State Pollution Control Board
Continuous Ambient Air Quality Monitoring Report

Monitoring Location : **CAAQMS KOTA, RAJASTHAN**

Monthly Average

Month/ Parameters	NO_2	NH_3	SO_2	CO	O_3	PM_{10}	$PM_{2.5}$	AQI
	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	mg/m^3	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	
Jan-22	26.86	32.54	9.74	0.74	32.28	113.26	79.41	165
Feb-22	38.32	23.00	10.06	0.65	46.56	137.86	69.34	131
Mar-22	36.03	24.50	10.88	0.63	44.06	133.74	65.88	122
Apr-22	17.69	12.93	7.78	0.13	18.03	71.17	37.58	135
May-22	22.45	25.82	9.66	0.50	50.71	189.06	84.37	186
Jun-22	21.97	20.25	10.18	0.67	44.61	105.69	53.91	106
Jul-22	14.45	17.30	9.57	0.66	23.05	55.93	28.87	57
Aug-22	19.41	22.23	9.72	0.69	19.10	59.26	30.79	60
Sep-22	12.93	9.39	11.30	0.75	17.28	69.61	35.43	70
Oct-22	18.14	18.75	11.46	0.93	31.13	118.97	57.99	115
Nov-22	16.42	13.82	11.85	1.21	37.45	162.69	81.38	189
Dec-22	23.88	15.61	10.43	1.19	38.82	165.93	70.80	144
Standards	40.00	100.00	50.00	2 (8Hrs)	100 (8Hrs)	60.00	40.00	

Rajasthan State Pollution Control Board
Continuous Ambient Air Quality Monitoring Report

Monitoring Location : **CAAQMS PALI, RAJASTHAN**
Monitoring Conducted By: **ENVIRONNEMENT S.A INDIA PVT. LTD.**

Monthly Average

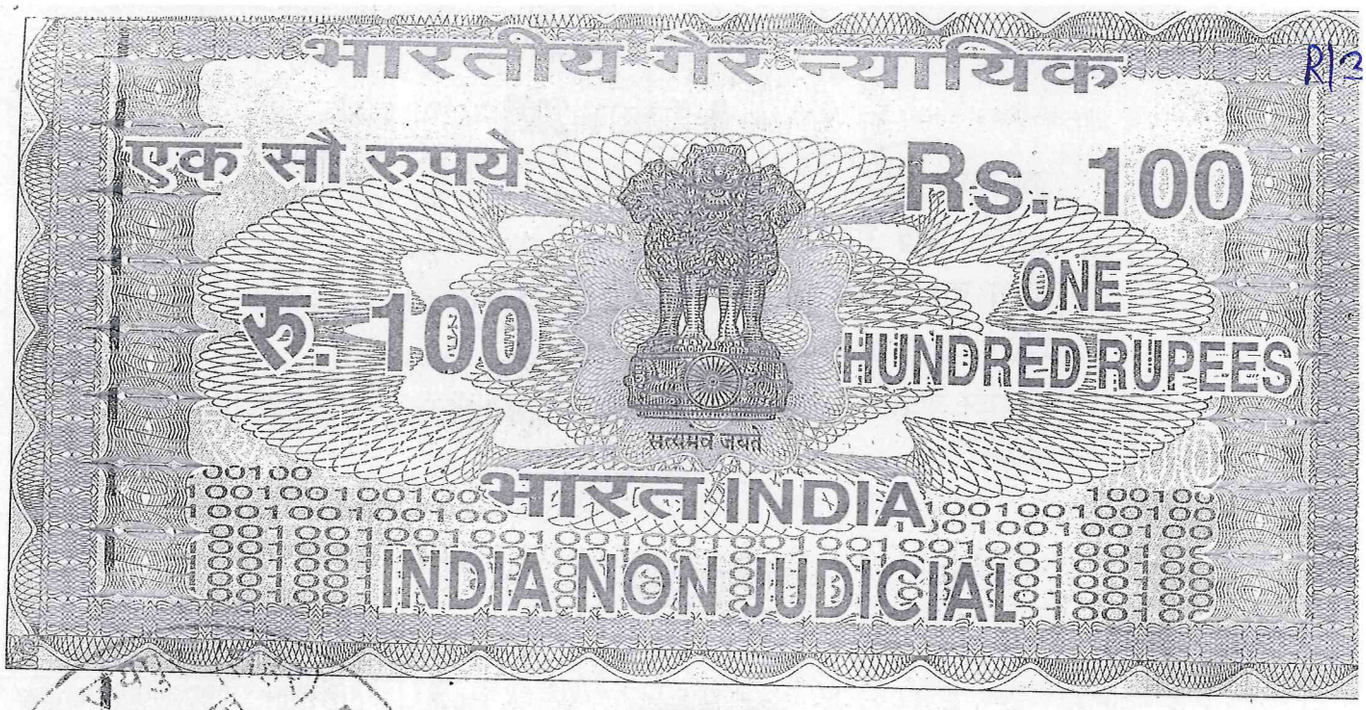
Month/ Parameters	NO_2	NH_3	SO_2	CO	O_3	PM_{10}	$PM_{2.5}$	AQI
	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	mg/m^3	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	
Jan-22	33.62	26.33	9.50	0.75	27.17	104.49	59.48	103
Feb-22	25.97	21.97	13.34	0.65	33.81	113.88	62.05	109
Mar-22	15.01	16.45	10.64	0.68	30.92	118.36	64.32	114
Apr-22	17.60	15.41	13.91	1.11	47.75	133.61	69.80	136
May-22	18.46	20.22	13.49	0.79	41.33	169.53	76.22	164
Jun-22	18.50	18.40	6.35	0.56	34.63	116.47	66.43	129
Jul-22	17.89	20.32	6.65	0.50	16.11	58.68	33.84	57
Aug-22	18.32	12.69	6.07	0.57	22.68	67.14	39.46	67
Sep-22	18.49	11.45	5.68	0.54	21.35	78.95	*	78
Oct-22	20.62	11.03	6.79	0.71	38.66	85.21	45.56	89
Nov-22	22.41	8.50	8.93	1.04	48.72	107.25	62.26	115
Dec-22	22.47	10.97	9.60	1.05	51.16	105.35	59.73	104
Standards	**40.00**	**100.00**	**50.00**	**2 (8Hrs)**	**100 (8Hrs)**	**60.00**	**40.00**	

Rajasthan State Pollution Control Board
Continuous Ambient Air Quality Monitoring Report

Monitoring Location : **CAAQMS UDAIPUR, RAJASTHAN**

Monthly Average

Month/ Parameters	NO_2	NH_3	SO_2	CO	O_3	PM_{10}	$PM_{2.5}$	AQI
	mg/m^3	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	
Jan-22	23.12	30.54	10.48	0.97	36.11	149.86	74.66	149
Feb-22	35.50	36.35	10.45	0.86	42.92	140.54	58.09	127
Mar-22	42.85	35.87	11.26	0.86	47.44	137.64	63.70	125
Apr-22	51.22	28.27	8.05	0.77	54.75	139.00	59.44	126
May-22	43.38	32.32	6.03	0.62	46.94	164.97	67.33	148
Jun-22	28.25	46.60	6.53	0.57	37.85	85.00	40.52	81
Jul-22	16.55	27.03	8.96	0.41	16.29	51.06	23.53	51
Aug-22	14.42	27.40	5.86	0.36	14.43	65.98	29.68	64
Sep-22	25.52	30.90	7.46	0.43	18.81	76.26	35.14	76
Oct-22	39.03	25.25	7.18	0.80	24.51	111.10	48.27	105
Nov-22	38.21	9.14	9.03	0.74	32.54	145.75	73.07	150
Dec-22	37.78	21.49	10.30	0.77	40.21	161.91	82.41	175
Standards	40.00	100.00	50.00	2 (8Hrs)	100 (8Hrs)	60.00	40.00	



राजस्थान RAJASTHAN

AV 071326

07 SEP 2021

MEMORANDUM OF UNDERSTANDING

Between

Rajasthan State Pollution Control Board, Jaipur

And

Malviya National Institute Of Technology Jaipur

For

"Estimating Carrying Capacity of Ambient Air in Alwar and Bharatpur Districts of Rajasthan"

This Memorandum of Understanding (MoU) is made on this 3rd November 2021 between Malviya National Institute of Technology Jaipur (MNIT, Jaipur) and Rajasthan State Pollution Control Board, Jaipur.

of many people

03 NOV 2021

क्रमांक 3717 दिनांक .....

मुद्रांक क्रय मूल्य ....100x2=200/-....

केता का नाम ....RSPCB & MNIT....

पिता का नाम. .....—.....

निवास स्थान –....MNIT Campus, Jaipur....

वास्ते – ....MOU....

मुद्रांक विक्रेता

Suman

सुमन अग्रवाल
दुकान नं.45, अग्रवाल एन्टरप्राईजेज
ला.नं. 35/96, स्टाम्प विक्रेता,
मालवीय नगर, जयपुर–17

राजस्थान स्टाम्प अधिनियम 1998 के अन्तर्गत स्टाम्प राशि पर प्रभारित अधिभार	
1.आधारभूत विकास हेतु अधिभार" "0030–02–800–(02)–00– 10% रूपये –	10 रू
2.गो–संवर्धन/ संरक्षण हेतु अधिभार" '0030–02–800–(03)–00– 10% रूपये –	10 रू
3. प्राकृतिक एवं मानव निर्मित आपदाओं से राहत '0030–02–800–(04)–00– 10% रूपये –	10
कुल योग –	30 रू

Sham
हस्ताक्षर स्टाम्प/वे

Dilip

हस्ताक्षर
केता का नाम Dilip Singh Bhad
पहचान संख्या DN-9158-0937-

PREAMBLE

The Rajasthan State Pollution Control Board, Jaipur intends to estimate Carrying Capacity of Ambient Air in Alwar and Bharatpur Districts of Rajasthan." (Hereinafter referred to as CC study) The proposal of MNIT, Jaipur was recommended for award at cost of Rs. 9.0 Lacs + 18% taxes.

Sh. Sumit Khandelwal, Associate Professor, Department of Civil Engineering, MNIT Jaipur will execute this work. Chairperson/Member Secretary, Rajasthan State Pollution Control Board, Jaipur will co-ordinate the work activities from Rajasthan State Pollution Control Board, Jaipur.

Now THEREFORE, IT IS HEREBY AGREED TO BY AND BETWEEN MNIT JAIPUR AND RAJASTHAN STATE POLLUTION CONTROL BOARD, JAIPUR as follows:

1. Introduction:-

Brick Kiln manufacturing is a small-scale and unorganized sector in India. The emissions produced from the Brick Kiln are primarily Particulate Matter (PM_{10}), Carbon Monoxide (CO) and Sulphur Dioxide (SO_2) during brick firing operation. CO is mainly emitted due to incomplete combustion of fuel whereas the SO_2 emissions are dependent on the amount of sulphur present in the fuel. All these three pollutants are criteria pollutants included in the National Ambient Air Quality Standards (NAAQS) and pose significant harm to human health and the environment.

The Hon'ble NGT has recently issued a blanket order to shut down all the brick kilns within the administrative limits of Alwar and Bharatpur districts of Rajasthan to control/avoid the pollution load emitted by the brick kilns after accounting for the Assimilative supporting capacity of the area to comply with the NAAQS based on PM_{10} parameter.

The report submitted by CPCB in compliance to directions of NGT has calculated pollution load, assimilative capacity and environment supportive capacity based on PM_{10} parameter. Subsequently, it was concluded that there is not enough carrying capacity in the air environment of Bharatpur & Alwar district to operate any brick kiln.

2. Need of Study:-

The blanket ban on operation of brick kiln industries has affected livelihood of many people in the two districts. It is also adversely affecting the

construction activities in the region due to shortage of quality bricks and rise in the prices of bricks. A need is there to revisit the district wise carrying capacity, as calculated by the CPCB, on following accounts:-

- The arid conditions of Rajasthan are responsible for high background PM_{10} concentrations in the region due to re-suspension of natural dust. A large proportion of the PM_{10} concentration in the air may be of crustal origin. Evaluating the carrying capacity of the environment based solely on PM_{10} concentration may lead to erroneous conclusions.

- Absolutely same monthly average values of PM_{10} have been used for calculating the carrying capacity of ambient air of Alwar and Bharatpur districts of Rajasthan.

- The carrying capacity of Alwar and Bharatpur districts was assessed by CPCB considering satellite based data in the absence of ground based monitoring stations.

- If multiple point observations are available, then pollution contour may be developed and weighted area between two contours may be used to get a better indication of carrying capacity.

Hence, it is recommended that the pollutions from the brick kiln needs to be reexamined. This may be carried out by using both $PM_{2.5}$ as well as PM_{10} as parameters and their compliance with NAAQS. Using $PM_{2.5}$ in addition to PM_{10} will indicate that the pollution load considered is only from anthropogenic activities and not natural.

3. Project Objective:-

The proposed key objective for the study is to examine the additional load (based on PM_{10}/ $PM_{2.5}$ parameter) on the ambient air environment from the brick kilns in and around Alwar and Bharatpur cities through atmospheric dispersion modeling.

4. Applicable Standards:-

The Environmental Protection Rules, 1986 and its amendments specify the limits on air emissions from brick kiln stack. Apart from this, the brick kiln emission shall be such that the average pollution load is within the limits prescribed under the NAAQS.

5. Methodology:-

1. An emissions inventory of the existing brick kilns will be populated (the data shall be provided by the Rajasthan State Pollution Control Board, RSPCB). Any data available with Central Pollution Control Board

(CPCB) may also be used. The inventory will comprise stack geo-location, diameter, height, exit temperature, flue gas exit velocity, flue gas composition, and type and amount of fuel consumption. In the absence of emission inventory, USEPA AP42 emission factors and/or emission factors generated by Grreentech in their report "A Roadmap for cleaner Brick Production in India, 2012" shall be used.

2. The 5-year surface and upper air meteorological data will be obtained from the nearby Airports/CAAQMS stations/IMD/any other reliable source. The mixing height is a critical parameter in the dispersion of pollutants, which is normally accessed from "Atlas of hourly mixing height and associative capacity of atmosphere in India" published in 2008 by India Meteorological Department, New Delhi. If point meteorological data is not available then the corresponding gridded data (accessible online) shall be used.
3. AERMOD, an USEPA regulatory model will be used to study the cumulative dispersion of pollutants (PM_{10}/ $PM_{2.5}$) from the brick kilns in and around both Alwar and Bharatpur cities.
4. The atmospheric dispersion modeling will provide additional load on the ambient air environment from the cumulative operation of the brick kilns. Pollution maps (isopleths) will be generated for PM_{10}/ $PM_{2.5}$ parameters individually for Alwar and Bharatpur cities.
5. Based on isopleths the pollution hotspots in each study area will be identified where the ground level concentration (GLC) is exceeding (more than the background levels) by fixed percentage/concentration. The contribution from clusters of brick kilns will be simulated at each hotspot for various meteorological conditions. Subsequently, iterations will be performed to geographically reposition or complete shutdown of these clusters to maintain regional air quality in compliance with NAAQS.

6. Further Scope :-

Emission factors from brick kilns, operated in Indian conditions, using mixed type of fuel are not available. It is possible to conduct a separate study to determine emission factors suitable to Indian brick kiln industry. A study, for such a purpose, may be conducted on a zig-zag/FCBTK type of brick kiln at Jaipur.

This will comprise of development of activity-based emission factors comprising few or all parameters such as $PM_{2.5}$, PM_{10}, NO_2, SO_2 and CO. Post development of localized emission factors the net pollution load

from brick kilns for $PM_{2.5}$ and the number of brick kilns allowed to be operated can be re-calculated in compliance with NAAQS to provide valuable information to RSPCB for devising effective control and mitigating air pollution from Brick Kilns.

7. Timeline:-

The entire project will have to be completed within 03 months after signing of the MoU and transfer of first installment.

8. ROLE AND RESPONSIBILITIES OF MNIT, JAIPUR AND RAJASTHAN STATE POLLUTION CONTROL BOARD, JAIPUR.

8.1 RESPONSIBILITIES OF MNIT, JAIPUR.

MNIT, Jaipur will provide following services to the RSPSB-

1. The data available with the State Board (as brick production capacity, type of fuel, Quantity of fuel used, Stack height, Stack inside diameter at the top & geo-location) will be shared after MoU. Meteorological data will not be provided at the level of State Board. MNIT, Jaipur has to co-ordinate with the IMD, Pune and obtain the same. Further, other data related to stack gas velocity etc. will be shared if available with the State Board.
2. Carrying out study of cumulative dispersion of pollutants (PM_{10}/$PM_{2.5}$) and additional load on ambient air from cumulative operation of all brick kilns in Alwar & Bharatpur districts.
3. Submission of final report along with capacity building of RSPCB officials in undertaking air quality assessment, trend analysis and carrying capacity study.

8.2 RESPONSIBILITIES OF RAJASTHAN STATE POLLUTION CONTROL BOARD, JAIPUR

The State Board shall monitor the progress of the said Project and examine the final reports and outcomes of the study from time to time so that study may be carried within the stipulated time period and as per scope of work.

9. FINANCIAL TERMS AND MODE OF PAYMENT

To estimate Carrying Capacity of Ambient Air in Alwar and Bharatpur Districts of Rajasthan, the total cost of project is as follows:

9.1. Total cost of Project is Rs. 4,50,000/- (Rs. four lacs Fifty thousand only)

plus GST as applicable (current rate is 18%) for each city. The total cost includes expenditure required for procuring various data for modeling (in addition to the data that will be provided by the RSPCB), manpower expenses for handing data, Technical advice fee and Institute overheads.

9.2. The above payments can be made either through Demand Draft or online payment method in following account:-

Bank Account Name - Registrar MNIT (Industrial Consultancy Cell)
Bank Name & Branch - ICICI Bank, Jaipur MREC Branch
Account No. – 676801081625
IFSC Code - ICIC0006768

9.3. It is noted here that no tax is to be deducted at source and MNIT Jaipur, being a university and not for the purpose of profit, has been exempted from TDS deductions.

9.4. The payment terms given below:-

9.4.1 The grant will be released in two installments.

9.4.2 First installment of 50% of the total cost will be released as an advance on signing of the MoU.

9.4.3 Release of the final installment shall be considered on proper submission of utilization certificate/statement of expenditure of first grant.

10. OTHER TERMS AND CONDITIONS

10.1 Activities assigned to MNIT, Jaipur will be closely monitored by the officers of Rajasthan State Pollution Control Board, Jaipur and it is, therefore, necessary to inform the Rajasthan State Pollution Control Board well in advance about the details of the activities/program to be conducted.

10.2 The Rajasthan State Pollution Control Board, Jaipur may request MNIT, Jaipur anytime with notice of 15 days in advance for giving a presentation of progress of the project. Interim reports of the project must be submitted as and when asked for.

10.3 It is to submit the utilization certificate in the format which can be downloaded from our website at http://dst.rajasthan.gov.in/ from download section after utilization of installment of the grant. Release of the final installment shall be considered on proper submission of utilization certificate/statement of expenditure of first grant.

10.4 In all the program/publicity materials/ publications/ patents/ technology of this project, the name of Rajasthan State Pollution Control Board, Jaipur should be clearly mentioned. Any such activity/ publication/ participation in conferences w.r.t. presenting this study or a portion thereof will be done

by MNIT, Jaipur with due permission of the Rajasthan State Pollution Control Board, Jaipur.

10.5 Five colored copies of final report along with soft copy in CD are to be submitted.

10.6 All payments are to be made in favor of Registrar MNIT (Industrial Consultancy Cell).

10.7 The authority to resolve any disputes in the matter shall be done at the level of Chairperson, Rajasthan State Pollution Control Board, Jaipur and Registrar, MNIT, Jaipur. Their decision shall be final and binding on all involved.

11. Force Majeure:

The parties shall not be responsible for any failure to perform due to unforeseen circumstances or to causes beyond their reasonable control, including but not limited to acts of God, War, riot, embargoes, and acts of civil or military authorities, fire, floods, accidents, terrorist activity, strikes or shortages/failure / breakdown of transportation, facilities, fuel, energy, labor or materials. In the event of any such aspect being beyond the control of participating agencies, appropriate strategies would be worked out to compensate the project activities/schedules accordingly.

12. MOU AND ITS AMENDMENTS

This MoU shall be sole repository or the terms and conditions agreed to between the parties and no amendments thereof shall take effect or be binding on MNIT, Jaipur and Rajasthan State Pollution Control Board, Jaipur, unless such amendment is mutually agreed among the parties and is recorded in writing and signed by the representatives of MNIT, Jaipur and Rajasthan State Pollution Control Board, Jaipur.

13. ARBITRATION

Any dispute or differences arising out of interpretation of any of the clauses listed above or otherwise shall be resolved by mutual consultation and if arbitration is needed, the matter shall be referred to the Registrar, MNIT, Jaipur and Chairperson, Rajasthan State Pollution Control Board, who shall mutually appoint a sole arbitrator to decide the dispute. If they fail to reach an agreement regarding who shall act as the arbitrator, the appointment of sole arbitrator shall be as per the provisions of Arbitration & Conciliation Act, 1996. The venue of arbitration shall be Jaipur and language shall be English.

IN WITNESS WHEREOF the parties hereto have executed this MoU through their authorized representatives.

FOR AND ON BEHALF OF
MNIT, Jaipur

Signature:
Name : Dr. Sumit Khandelwal
Designation: Associate Professor
Place: Jaipur
Date: 03/11/2021
Witnesses:
1. Dr. ANEESH PRABHAKAR.
2. Dr PREETI BHATT.

FOR AND ON BEHALF OF
Rajasthan State Pollution Control Board, Jaipur

Signature:
Name : ANAND MOHAN.
Designation: Member Secretary.
Place: Jaipur
Date: 03rd November 2021
Witnesses:
1. (Dr. Vijai Singhal)
2. 3/11/2021 (V. S. Parihar)

आनन्द मोहन
सदस्य सचिव

Dr. Vijai Singhal
Chief Env. Engineer

वी.एस.परिहार
मुख्य वैज्ञानिक अधिकारी