

LIST OF ANNEXURE									
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2		5 to 7					EC Compliance status Unit 2&3		
3		8 to 11					EC Compliance status Unit 4		
4		12 to 17					EC Compliance status Unit 5		
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10	III	41	EC Point (ii)	Road map compliance fly ash utilisation FY20-21		
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Stack Emission Report Unit # 1																				
S No	Parameter	Units	Oct-20			Nov-20			Dec-20			Jan-21			Feb-21			Mar-21		
			Pass A	Pass B	Avg	Pass A	Pass B	Avg	Pass A	Pass B	Avg	Pass A	Pass B	Avg	Pass A	Pass B	Avg	Pass A	Pass B	Avg
1	Barometric Pressure	mmHg	748	748	748	748	748	748	748	748	748	748	748	748	748	748	748	748	748	748
2	Stack Temperature	(°C)	131	131	130	130	133	133	133	133	133	135	135	138	138	138	137	137	137	137
3	Exit Velocity of Flue Emission	(m/sec)	25.95	25.92	25.94	25.98	25.95	25.97	25.92	25.92	25.92	25.97	25.91	25.91	25.99	25.96	25.98	25.95	25.98	25.97
4	Particulate Matter (PM)	mg/Nm ³	67.73	66.41	67.07	66.57	67.86	67.22	67.42	67.97	67.42	67.97	67.7	66.89	66.62	67.45	67.04	66.98	67.23	67.11
5	PM Corrected to 6% O ₂	mg/Nm ³	74.16	73.79	73.98	73.97	75.96	74.97	73.82	74.97	73.82	74.97	74.4	73.78	74.57	74.39	74.48	73.88	74.7	74.29
6	Sulphur Dioxide (as SO ₂)	mg/Nm ³	766.6	779.1	772.8	773.6	769.8	771.7	782.3	772.2	772.2	777.2	777.2	782.5	776.6	788.6	782.6	782.3	785.3	783.8
7	SO ₂ Corrected to 6% O ₂	mg/Nm ³	839.3	865.7	852.5	859.5	861.7	860.6	856.6	851.6	854.1	854.1	854.1	863	869.3	869.7	869.5	862.9	872.6	867.7
8	Oxides of Nitrogen (as NO ₂)	mg/Nm ³	532.2	510.7	521.4	540.7	530.8	535.7	550.3	534.2	542.2	542.2	542.2	547.7	538.7	532.5	535.6	530.3	528.3	529.3
9	NO ₂ Corrected to 6% O ₂	mg/Nm ³	582.7	567.4	575	600.7	594.2	597.4	602.5	589.2	595.9	595.9	595.9	604	603	587.3	595.1	584.9	587	585.9
10	Carbon monoxide (as CO)	(% v/v)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
11	Oxygen	(% v/v)	7.3	7.5	7.4	7.5	7.6	7.55	7.3	7.4	7.3	7.4	7.35	7.4	7.6	7.4	7.5	7.4	7.5	7.45
12	Carbon dioxide	(% v/v)	11.3	11.5	11.4	11.4	11.7	11.55	11.1	11.3	11.1	11.2	11.2	11.3	11.6	11.9	11.75	11.3	11.7	11.5

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S/D - Shut Down

Stack Emission Report Unit # 2

S No	Parameter	Units	Oct-20			Nov-20			Dec-20			Jan-21			Feb-21			Mar-21		
			Pass A	Pass B	Avg	Pass A	Pass B	Avg	Pass A	Pass B	Avg	Pass A	Pass B	Avg	Pass A	Pass B	Avg	Pass A	Pass B	Avg
1	Barometric Pressure	mmHg	748	748	748	748	748	748	748	748	748	748	748	748	748	748	748	748	748	748
2	Stack Temperature	(°C)	138	138	138	135	135	135	137	137	137	140	140	140	142	142	140	141	141	141
3	Exit Velocity of Flue Emission	(m/sec)	26.96	26.94	26.95	26.91	26.97	26.94	26.96	26.93	26.95	26.9	26.97	26.97	26.91	26.93	26.935	26.97	26.96	26.97
4	Particulate Matter (PM)	mg/Nm ³	67.78	66.67	67.23	65.67	66.6	66.14	66.42	67.21	66.82	67.46	67.23	67.54	67.26	67.345	66.97	66.87	65.98	66.43
5	PM Corrected to 6% O ₂	mg/Nm ³	74.76	74.63	74.7	74.06	75.68	74.87	74.35	74.68	74.52	73.86	74.7	74.49	74.45	74.28	74.41	74.85	74.41	74.63
6	Sulphur Dioxide (as SO ₂)	mg/Nm ³	839.5	829.6	834.5	840.3	833.1	836.7	835.3	850.6	842.9	810.6	835.3	822.95	810.6	822.95	802.5	887.9	885.5	886.7
7	SO ₂ Corrected to 6% O ₂	mg/Nm ³	925.9	928.6	927.2	947.8	946.7	947.2	935	945.1	940.1	887.5	928.2	907.81	891.6	901.6	896.6	887.9	885.5	886.7
8	Oxides of Nitrogen (as NO ₂)	mg/Nm ³	535.5	523.7	529.6	508.5	513.5	511	511.5	521.7	516.6	526.6	538.6	532.6	521.3	526.5	531.7	509.3	514.6	511.9
9	NO ₂ Corrected to 6% O ₂	mg/Nm ³	590.6	586.2	588.4	573.4	583.5	578.5	572.5	579.7	576.1	576.5	598.5	587.51	579.3	582.8	586.4	570.2	580.3	575.2
10	Carbon monoxide (as CO)	(% v/v)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
11	Oxygen	(% v/v)	7.4	7.6	7.5	7.7	7.8	7.75	7.6	7.5	7.55	7.3	7.5	7.4	7.5	7.4	7.5	7.6	7.7	7.65
12	Carbon dioxide	(% v/v)	11.3	11.5	11.4	11.6	11.3	11.45	11.3	11.5	11.4	11.5	11.6	11.55	11.1	11.2	11.55	11.5	11.7	11.6

S/D - Shut Down

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Stack Emission Report Unit # 3

S No	Parameter	Units	Oct-20			Nov-20			Dec-20			Jan-21			Feb-21			Mar-21		
			Pass A	Pass B	Avg	Pass A	Pass B	Avg	Pass A	Pass B	Avg	Pass A	Pass B	Avg	Pass A	Pass B	Avg	Pass A	Pass B	Avg
1	Barometric Pressure	mmHg	748	748	748	748	748	748	748	748	748	S/D	S/D	748	748	748	748	748	748	748
2	Stack Temperature	(°C)	140	140	140	139	139	139	136	136	136	S/D	S/D	144	144	144	146	146	146	146
3	Exit Velocity of Flue Emission	(m/se)	26.89	26.92	26.91	26.85	26.9	26.88	26.91	26.98	26.95	S/D	S/D	26.82	26.88	26.85	26.88	26.86	26.87	26.87
4	Particulate Matter (PM)	mg/Nm3	66.88	66.54	66.71	67.34	68.67	68.01	66.74	67.93	67.34	S/D	S/D	68.32	67.73	68.03	69.11	68.76	68.94	68.94
5	PM Corrected to 6% O ₂	mg/Nm3	74.87	73.93	74.4	73.73	75.74	74.74	74.16	74.38	74.27	S/D	S/D	74.26	74.16	74.21	74.58	74.74	74.66	74.66
6	Sulphur Dioxide (as SO ₂)	mg/Nm3	865.5	869.3	867.4	890.3	885.7	888	887.4	874.7	881	S/D	S/D	775.5	789.7	782.6	783.6	783.2	783.4	783.4
7	SO ₂ Corrected to 6% O ₂	mg/Nm3	968.8	965.9	967.4	974.8	976.8	975.8	985.9	957.7	971.8	S/D	S/D	842.9	864.6	853.7	845.6	851.3	848.5	848.5
8	Oxides of Nitrogen (as NO ₂)	mg/Nm3	515.3	523.4	519.4	535.5	541.2	538.3	542.6	537.6	540.1	S/D	S/D	526.6	521.7	524.1	542.3	532.7	537.5	537.5
9	NO ₂ Corrected to 6% O ₂	mg/Nm3	576.9	581.6	579.2	586.3	596.9	591.6	602.8	588.6	595.7	S/D	S/D	572.4	571.2	571.8	585.3	579	582.1	582.1
10	Carbon monoxide (as CO)	(% v/v)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	S/D	S/D	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
11	Oxygen	(% v/v)	7.6	7.5	7.55	7.3	7.4	7.35	7.5	7.3	7.4	S/D	S/D	7.2	7.3	7.25	7.1	7.2	7.15	7.15
12	Carbon dioxide	(% v/v)	11.4	11.6	11.5	11.3	11.2	11.25	11.5	11.7	11.6	S/D	S/D	11.7	11.4	11.55	11.4	11.7	11.55	11.55

S/D - Shut Down

Stack Emission Report Unit # 4

S No	Parameter	Units	Oct-20			Nov-20			Dec-20			Jan-21			Feb-21			Mar-21				
			Pass A	Pass B	AVG	Pass A	Pass B	AVG	Pass A	Pass B	AVG	Pass A	Pass B	AVG	Pass A	Pass B	AVG	Pass A	Pass B	AVG		
1	Barometric Pressure	mmHg	748	748	748	748	748	748	748	748	748	748	748	748	748	748	748	748	748	S/D	S/D	S/D
2	Stack Temperature	(°C)	143	143	141	141	141	141	143	143	143	143	145	147	147	147	147	147	147	S/D	S/D	S/D
3	Exit Velocity of Flue Emission	(m/sec)	26.84	26.86	26.85	26.89	26.87	26.88	26.84	26.82	26.83	26.83	26.89	26.87	26.86	26.82	26.84	26.84	26.84	S/D	S/D	S/D
4	Particulate Matter (PM)	mg/Nm3	44.45	43.67	44.06	44.24	43.89	44.07	44.52	43.78	44.15	43.78	43.78	44.6	44.53	44.76	44.65	44.65	44.65	S/D	S/D	S/D
5	PM Corrected to 6% O ₂	mg/Nm3	49.76	49.63	49.7	49.16	49.13	49.15	49.84	49.38	49.61	48.64	49.93	49.11	49.73	49.42	49.42	49.42	49.42	S/D	S/D	S/D
6	Sulphur Dioxide (as SO ₂)	mg/Nm3	889.1	892.5	890.8	892.3	893	892.7	887.8	879.8	883.8	867.6	870.4	870.8	864.7	867.7	867.7	867.7	867.7	S/D	S/D	S/D
7	SO ₂ Corrected to 6% O ₂	mg/Nm3	995.3	1014	1005	991.5	999.7	995.6	993.8	992.2	993	964	974.4	960.4	960.7	960.6	960.6	960.6	960.6	S/D	S/D	S/D
8	Oxides of Nitrogen (as NO ₂)	mg/Nm3	488.7	467.9	478.3	487.5	472.3	479.9	445.3	465.8	455.6	451.5	460.3	447.7	461.4	454.6	454.6	454.6	454.6	S/D	S/D	S/D
9	NO ₂ Corrected to 6% O ₂	mg/Nm3	547	531.7	539.3	541.7	528.7	535.2	498.5	525.3	511.9	501.7	515.3	493.7	512.7	503.2	503.2	503.2	503.2	S/D	S/D	S/D
10	Carbon monoxide (as CO)	(% v/v)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	S/D	S/D	S/D
11	Oxygen	(% v/v)	7.6	7.8	7.7	7.5	7.6	7.55	7.6	7.7	7.65	7.5	7.6	7.4	7.5	7.45	7.45	7.45	7.45	S/D	S/D	S/D
12	Carbon dioxide	(% v/v)	11.2	11.4	11.3	11.3	11.5	11.4	11.6	11.4	11.5	11.8	11.5	11.3	11.7	11.5	11.5	11.5	11.5	S/D	S/D	S/D

S/D - Shut Down

Stack Emission Report Unit # 5

S No	Parameter	Units	Oct-20			Nov-20			Dec-20			Jan-21			Feb-21			Mar-21		
			Pass A	Pass B	Avg	Pass A	Pass B	Avg	Pass A	Pass B	Avg	Pass A	Pass B	Avg	Pass A	Pass B	Avg	Pass A	Pass B	Avg
1	Barometric Pressure	mmHg	748	748	748	748	748	748	S/D	S/D	S/D	748	748	748	748	748	748	748	748	748
2	Stack Temperature	(°C)	140	140	140	138	138	138	S/D	S/D	S/D	139	139	136	136	138	138	138	138	138
3	Exit Velocity of Flue Emission	(m/se)	29.85	29.86	29.86	29.82	29.84	29.83	S/D	S/D	S/D	29.8	29.87	29.85	29.82	29.84	29.89	29.86	29.88	29.88
4	Particulate Matter (PM)	mg/Nm ³	43.22	42.99	43.11	44.78	43.89	44.34	S/D	S/D	S/D	45.24	44.11	44.89	43.98	44.44	45.23	44.98	45.11	45.11
5	PM Corrected to 6% O ₂	mg/Nm ³	48.02	48.85	48.44	49.03	48.77	48.9	S/D	S/D	S/D	49.9	47.95	49.15	48.87	49.01	49.16	49.25	49.21	49.21
7	Sulphur Dioxide (as SO ₂)	mg/Nm ³	839.6	842.6	841.1	843.2	850.7	847	S/D	S/D	S/D	852.4	847.6	842.4	850.2	846.3	849.8	843.5	846.6	846.6
8	SO ₂ Corrected to 6% O ₂	mg/Nm ³	932.8	957.5	945.1	923.2	945.2	934.2	S/D	S/D	S/D	940.2	921.3	922.4	944.7	933.5	923.7	923.5	923.6	923.6
9	Oxides of Nitrogen (as NO ₂)	mg/Nm ³	475.4	480.8	478.1	495.3	498.6	497	S/D	S/D	S/D	491.3	493.6	495.7	487.6	491.6	489.8	490.6	490.2	490.2
10	NO ₂ Corrected to 6% O ₂	mg/Nm ³	528.2	546.3	537.3	542.3	554	548.2	S/D	S/D	S/D	541.9	536.5	542.7	541.7	542.2	532.4	537.1	534.7	534.7
11	Carbon monoxide (as CO)	(% v/v)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	S/D	S/D	S/D	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
12	Oxygen	(% v/v)	7.5	7.8	7.65	7.3	7.5	7.4	S/D	S/D	S/D	7.4	7.2	7.3	7.5	7.4	7.2	7.3	7.25	7.25
13	Carbon dioxide	(% v/v)	11.5	11.6	11.55	11.3	11.4	11.35	S/D	S/D	S/D	11.5	11.7	11.8	11.3	11.55	11.4	11.6	11.5	11.5

S/D - Shut Down



NOIDA TESTING LABORATORIES

(A Government Approved Testing Laboratory)

(An ISO 9001 : 2015, 14001 : 2015 & ISO 45001 : 2018 & NABL Accredited Laboratory)

MoEF & CC (Ministry of Environment, Forest & Climate Change), UPPCB & HSPCB Recognized Laboratory

+91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Annex - II

Test Report of	Report No.	Date of Issue
Waste Water	WW-130321-17	30/03/2021

ISSUED TO: TATA POWERCOMPANY LIMITED
Jojobera Power Plant, Jamshedpur

SAMPLING & ANALYSIS DATA

Date of Sampling : 13.03.2021
 Sample No. : TP/2021/MAR/17
 Sample Description : ETP Inlet
 Sample Quantity/Packing detail : 2 lt/Plastic Cane

Sl No	Parameter	Test Method	Result
1	Colour	APHA 23 rd Edtn-2017, 2120B	Blackish
2	pH value at 25 ^o C	APHA 23 rd Edtn-2017,4500-H+B	6.81
3	Total Dissolved Solids (as TDS) mg/l	APHA 23 rd Edtn-2017, 2540C	927.00
4	Total Suspended Solid (as TSS) mg/l	APHA 23 rd Edtn-2017,2540D	152.00
5	Temperature Deg C	IS 3025 (Part 9)-1984; Rffm:2006	25
6	Dissolved Oxygen mg/l	APHA 23 rd Edtn-2017, 4500-O-C	7.69
7	Biochemical Oxygen Demand (as BOD) mg/l	APHA 23 rd Edtn-2017, 5210B	387.68
8	Chemical Oxygen Demand (COD) mg/l	APHA 23 rd Edtn-2017, 5220B	983.34
9	Oil and Grease mg/l	APHA 23 rd Edtn-2017, 5520B.	23.75
11	Fixed Suspended solids mg/l	APHA 23 rd Edtn-2017, 2540E	68.78
12	Volatile Suspended Solids mg/l	APHA 23 rd Edtn-2017, 2540E	74.00
13	Fixed Dissolved Solids mg/l	APHA 23 rd Edtn-2017, 2540E	493.34
14	Volatile Dissolved Solids mg/l	APHA 23 rd Edtn-2017, 2540E	343.00
15	Total Volatile Solids mg/l	APHA 23 rd Edtn-2017, 2540E	393.00

Checked By



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Laboratory : GT-20, Sector-117, Noida, Gautam Budh Nagar - 201301

Branch Office : B-2, Handwan, Ultrakhnad

Branch Office : Gayatri Nagar, Katgodan, Haldwani, Ultrakhnad

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Analyzing for an Assured Future

NOIDA TESTING LABORATORIES

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(An ISO : 9001 : 2015, 14001 : 2015 & ISO 45001 : 2018 & NABL Accredited Laboratory)

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TEST CERTIFICATE

Test Report of Waste Water	Report No. WW-130321-18	Date of Issue 30/03/2021
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ISSUED TO: TATA POWERCOMPANY LIMITED
Jojobera Power Plant, Jamshedpur

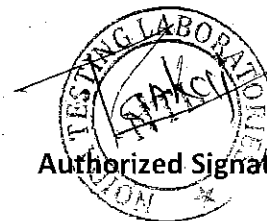
SAMPLING & ANALYSIS DATA

Date of Sampling : 13.03.2021
Sample No. : TP/2021/MAR/18
Sample Description : ETP Outlet
Sample Quantity/Packing detail : 2 lt/Plastic Cane

Sl No.	Parameter	Test Method	Result	Limit Inland Surface water
1	Colour	APHA 23 rd Edtn-2017, 2120B	Colourless	--
2	pH value at 25 ^o C	APHA 23 rd Edtn-2017,4500-H+B	7.47	6.5 -8.5
3	Total Dissolved Solids (as TDS) mg/l	APHA 23 rd Edtn-2017, 2540C	723.00	---
4	Total Suspended Solid (as TSS) mg/l	APHA 23 rd Edtn-2017,2540D	24.00	100
5	Temperature Deg C	IS 3025 (Part 9)-1984; Rffm:2006	25	---
6	Dissolved Oxygen mg/l	APHA 23 rd Edtn-2017, 4500-O-C	7.87	---
7	Biochemical Oxygen Demand (as BOD) mg/l	APHA 23 rd Edtn-2017, 5210B	16.42	30
8	Chemical Oxygen Demand (COD) mg/l	APHA 23 rd Edtn-2017, 5220B	88.71	250
9	Oil and Grease mg/l	APHA 23 rd Edtn-2017, 5520B.	4.23	10
10	Fixed Suspended solids mg/l	APHA 23 rd Edtn-2017, 2540E	24.00	---
11	Volatile Suspended Solids mg/l	APHA 23 rd Edtn-2017, 2540E	32.44	---
12	Fixed Dissolved Solids mg/l	APHA 23 rd Edtn-2017, 2540E	343.00	---
13	Volatile Dissolved Solids mg/l	APHA 23 rd Edtn-2017, 2540E	232.00	---
14	Total Volatile Solids mg/l	APHA 23 rd Edtn-2017, 2540E	273.00	---

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Laboratory : GT-20, Sector-117, Noida, Gautam Budh Nagar, -201301

Branch Office : IP-2, Haridwar, Uttarakhand

Branch Office : Gayatri Nagar, Katgodam, Haldwani, Uttarakhand

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TEST CERTIFICATE

Test Report of Waste Water	Report No. WW-130221-17	Date of Issue 28/02/2021
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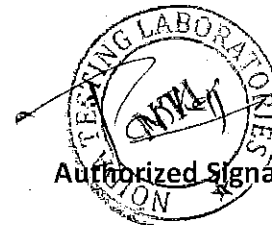
ISSUED TO: **TATA POWERCOMPANY LIMITED**
Jojobera Power Plant, Jamshedpur

SAMPLING & ANALYSIS DATA

Date of Sampling : 13.02.2021
Sample No. : TP/2021/FEB/17
Sample Description : ETP Inlet
Sample Quantity/Packing detail : 2 lt/Plastic Cane

Sl No	Parameter	Test Method	Result
1	Colour	APHA 23 rd Edtn-2017, 2120B	Blackish
2	pH value at 25 ^o C	APHA 23 rd Edtn-2017,4500-H+B	6.89
3	Total Dissolved Solids (as TDS) mg/l	APHA 23 rd Edtn-2017, 2540C	933.00
4	Total Suspended Solid (as TSS) mg/l	APHA 23 rd Edtn-2017,2540D	145.00
5	Temperature Deg C	IS 3025 (Part 9)-1984; Rffm:2006	25
6	Dissolved Oxygen mg/l	APHA 23 rd Edtn-2017, 4500-O-C	7.65
7	Biochemical Oxygen Demand (as BOD) mg/l	APHA 23 rd Edtn-2017, 5210B	398.34
8	Chemical Oxygen Demand (COD) mg/l	APHA 23 rd Edtn-2017, 5220B	989.45
9	Oil and Grease mg/l	APHA 23 rd Edtn-2017, 5520B.	24.93
11	Fixed Suspended solids mg/l	APHA 23 rd Edtn-2017, 2540E	62.34
12	Volatile Suspended Solids mg/l	APHA 23 rd Edtn-2017, 2540E	71.00
13	Fixed Dissolved Solids mg/l	APHA 23 rd Edtn-2017, 2540E	494.00
14	Volatile Dissolved Solids mg/l	APHA 23 rd Edtn-2017, 2540E	366.00
15	Total Volatile Solids mg/l	APHA 23 rd Edtn-2017, 2540E	387.00

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Laboratory : GT-20, Sector-117, Noida Gautam Budh Nagar, 201301

Branch Office : IP-2, Hardwar, Uttarakhand

Branch Office : Gayatri Nagar, Katgodam, Haridwar, Uttarakhand

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TEST CERTIFICATE

Test Report of Waste Water	Report No. WW-130221-18	Date of Issue 28/02/2021
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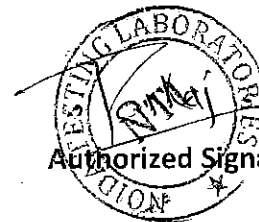
ISSUED TO: **TATA POWERCOMPANY LIMITED**
Jojobera Power Plant, Jamshedpur

SAMPLING & ANALYSIS DATA

Date of Sampling : 13.02.2021
Sample No. : TP/2021/FEB/18
Sample Description : ETP Outlet
Sample Quantity/Packing detail : 2 lt/Plastic Cane

Sl No	Parameter	Test Method	Result	Limit Inland Surface water
1	Colour	APHA 23 rd Edtn-2017, 2120B	Colourless	--
2	pH value at 25 ^o C	APHA 23 rd Edtn-2017,4500-H+B	7.42	6.5 -8.5
3	Total Dissolved Solids (as TDS) mg/l	APHA 23 rd Edtn-2017, 2540C	734.00	---
4	Total Suspended Solid (as TSS) mg/l	APHA 23 rd Edtn-2017,2540D	25.00	100
5	Temperature Deg C	IS 3025 (Part 9)-1984; Rffm:2006	25	---
6	Dissolved Oxygen mg/l	APHA 23 rd Edtn-2017, 4500-O-C	7.93	---
7	Biochemical Oxygen Demand (as BOD) mg/l	APHA 23 rd Edtn-2017, 5210B	15.42	30
8	Chemical Oxygen Demand (COD) mg/l	APHA 23 rd Edtn-2017, 5220B	83.31	250
9	Oil and Grease mg/l	APHA 23 rd Edtn-2017, 5520B.	4.53	10
10	Fixed Suspended solids mg/l	APHA 23 rd Edtn-2017, 2540E	26.00	---
11	Volatile Suspended Solids mg/l	APHA 23 rd Edtn-2017, 2540E	30.64	---
12	Fixed Dissolved Solids mg/l	APHA 23 rd Edtn-2017, 2540E	361.00	---
13	Volatile Dissolved Solids mg/l	APHA 23 rd Edtn-2017, 2540E	235.00	---
14	Total Volatile Solids mg/l	APHA 23 rd Edtn-2017, 2540E	302.00	---

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TEST CERTIFICATE

Test Report of	Report No.	Date of Issue
Waste Water	WW-090121-17	24/01/2021

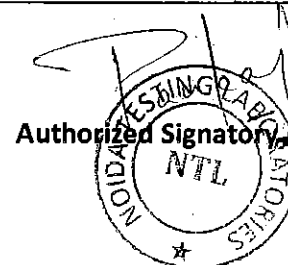
ISSUED TO: **TATA POWERCOMPANY LIMITED**
Jojobera Power Plant, Jamshedpur

SAMPLING & ANALYSIS DATA

Date of Sampling : 09.01.2021
Sample No. : TP/2020/JAN/17
Sample Description : ETP Inlet
Sample Quantity/Packing detail : 2 lt/Plastic Cane

Sl No	Parameter	Test Method	Result
1	Colour	APHA 23 rd Edtn-2017, 2120B	Blackish
2	pH value at 25 ^o C	APHA 23 rd Edtn-2017,4500-H+B	6.75
3	Total Dissolved Solids (as TDS) mg/l	APHA 23 rd Edtn-2017, 2540C	824.00
4	Total Suspended Solid (as TSS) mg/l	APHA 23 rd Edtn-2017,2540D	121.00
5	Temperature Deg C	IS 3025 (Part 9)-1984; Rffm:2006	21.00
6	Dissolved Oxygen mg/l	APHA 23 rd Edtn-2017, 4500-O-C	5.56
7	Biochemical Oxygen Demand (as BOD) mg/l	APHA 23 rd Edtn-2017, 5210B	353.70
8	Chemical Oxygen Demand (COD) mg/l	APHA 23 rd Edtn-2017, 5220B	942.32
9	Oil and Grease mg/l	APHA 23 rd Edtn-2017, 5520B.	22.40
11	Fixed Suspended solids mg/l	APHA 23 rd Edtn-2017, 2540E	56.00
12	Volatile Suspended Solids mg/l	APHA 23 rd Edtn-2017, 2540E	67.00
13	Fixed Dissolved Solids mg/l	APHA 23 rd Edtn-2017, 2540E	434.00
14	Volatile Dissolved Solids mg/l	APHA 23 rd Edtn-2017, 2540E	342.00
15	Total Volatile Solids mg/l	APHA 23 rd Edtn-2017, 2540E	354.00

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TEST CERTIFICATE

Test Report of	Report No.	Date of Issue
Waste Water	WW-090121-18	24/01/2021

ISSUED TO: TATA POWERCOMPANY LIMITED
Jojobera Power Plant, Jamshedpur

SAMPLING & ANALYSIS DATA

Date of Sampling : 09.01.2021
Sample No. : TP/2020/JAN/18
Sample Description : ETP Outlet
Sample Quantity/Packing detail : 2 lt/Plastic Cane

Sl No	Parameter	Test Method	Result	Limit Inland Surface water
1	Colour	APHA 23 rd Edtn-2017, 2120B	Colourless	--
2	pH value at 25 ^o C	APHA 23 rd Edtn-2017,4500-H+B	7.34	6.5 -8.5
3	Total Dissolved Solids (as TDS) mg/l	APHA 23 rd Edtn-2017, 2540C	782.00	---
4	Total Suspended Solid (as TSS) mg/l	APHA 23 rd Edtn-2017,2540D	27.00	100
5	Temperature Deg C	IS 3025 (Part 9)-1984; Rffm:2006	17.00	---
6	Dissolved Oxygen mg/l	APHA 23 rd Edtn-2017, 4500-O-C	7.31	---
7	Biochemical Oxygen Demand (as BOD) mg/l	APHA 23 rd Edtn-2017, 5210B	14.20	30
8	Chemical Oxygen Demand (COD) mg/l	APHA 23 rd Edtn-2017, 5220B	80.30	250
9	Oil and Grease mg/l	APHA 23 rd Edtn-2017, 5520B.	4.10	10
10	Fixed Suspended solids mg/l	APHA 23 rd Edtn-2017, 2540E	23.00	---
11	Volatile Suspended Solids mg/l	APHA 23 rd Edtn-2017, 2540E	33.30	---
12	Fixed Dissolved Solids mg/l	APHA 23 rd Edtn-2017, 2540E	352.00	---
13	Volatile Dissolved Solids mg/l	APHA 23 rd Edtn-2017, 2540E	260.00	---
14	Total Volatile Solids mg/l	APHA 23 rd Edtn-2017, 2540E	323.00	---

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TEST CERTIFICATE

Test Report of	Report No.	Date of Issue
Waste Water	WW-121220-17	22/12/2020

ISSUED TO: **TATA POWERCOMPANY LIMITED**
Jojobera Power Plant, Jamshedpur

SAMPLING & ANALYSIS DATA

Date of Sampling : 12.12.2020
 Sample No. : TP/2020/DEC/17
 Sample Description : ETP Inlet
 Sample Quantity/Packing detail : 2 lt/Plastic Cane

Sl No	Parameter	Test Method	Result
1	Colour	APHA 23 rd Edtn-2017, 2120B	Blackish
2	pH value at 25 ^o C	APHA 23 rd Edtn-2017,4500-H+B	6.86
3	Total Dissolved Solids (as TDS) mg/l	APHA 23 rd Edtn-2017, 2540C	812.00
4	Total Suspended Solid (as TSS) mg/l	APHA 23 rd Edtn-2017,2540D	118.00
5	Temperature Deg C	IS 3025 (Part 9)-1984; Rffm:2006	19.00
6	Dissolved Oxygen mg/l	APHA 23 rd Edtn-2017, 4500-O-C	5.30
7	Biochemical Oxygen Demand (as BOD) mg/l	APHA 23 rd Edtn-2017, 5210B	362.30
8	Chemical Oxygen Demand (COD) mg/l	APHA 23 rd Edtn-2017, 5220B	932.22
9	Oil and Grease mg/l	APHA 23 rd Edtn-2017, 5520B.	21.30
11	Fixed Suspended solids mg/l	APHA 23 rd Edtn-2017, 2540E	53.00
12	Volatile Suspended Solids mg/l	APHA 23 rd Edtn-2017, 2540E	65.00
13	Fixed Dissolved Solids mg/l	APHA 23 rd Edtn-2017, 2540E	430.00
14	Volatile Dissolved Solids mg/l	APHA 23 rd Edtn-2017, 2540E	327.00
15	Total Volatile Solids mg/l	APHA 23 rd Edtn-2017, 2540E	343.00

Note: 1. The result listed refer only to the tested samples and applicable parameters.
 2. Sample will be destroyed one month from the date of issue of test certificate.
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TEST CERTIFICATE

Test Report of	Report No.	Date of Issue
Waste Water	WW-121220-18	22/12/2020

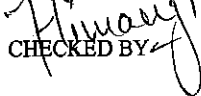
ISSUED TO: TATA POWERCOMPANY LIMITED
Jojobera Power Plant, Jamshedpur

SAMPLING & ANALYSIS DATA

Date of Sampling : 12.12.2020
Sample No. : TP/2020/DEC/18
Sample Description : **ETP Outlet**
Sample Quantity/Packing detail : 2 lt/Plastic Cane

Sl No	Parameter	Test Method	Result	Limit Inland Surface water
1	Colour	APHA 23 rd Edtn-2017, 2120B	Colourless	---
2	pH value at 25 ^o C	APHA 23 rd Edtn-2017,4500-H+B	7.27	6.5 -8.5
3	Total Dissolved Solids (as TDS) mg/l	APHA 23 rd Edtn-2017, 2540C	772.00	---
4	Total Suspended Solid (as TSS) mg/l	APHA 23 rd Edtn-2017,2540D	24.00	100
5	Temperature Deg C	IS 3025 (Part 9)-1984; Rffm:2006	19.00	---
6	Dissolved Oxygen mg/l	APHA 23 rd Edtn-2017, 4500-O-C	7.70	---
7	Biochemical Oxygen Demand (as BOD) mg/l	APHA 23 rd Edtn-2017, 5210B	15.30	30
8	Chemical Oxygen Demand (COD) mg/l	APHA 23 rd Edtn-2017, 5220B	82.40	250
9	Oil and Grease mg/l	APHA 23 rd Edtn-2017, 5520B.	4.30	10
10	Fixed Suspended solids mg/l	APHA 23 rd Edtn-2017, 2540E	24.00	---
11	Volatile Suspended Solids mg/l	APHA 23 rd Edtn-2017, 2540E	30.00	---
12	Fixed Dissolved Solids mg/l	APHA 23 rd Edtn-2017, 2540E	364.00	---
13	Volatile Dissolved Solids mg/l	APHA 23 rd Edtn-2017, 2540E	263.00	---
14	Total Volatile Solids mg/l	APHA 23 rd Edtn-2017, 2540E	320.00	---

- Note: 1. The result listed refer only to the tested samples and applicable parameters.
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TEST CERTIFICATE

Test Report of	Report No.	Date of Issue
Waste Water	WW-131120-17	22/11/2020

ISSUED TO: TATA POWERCOMPANY LIMITED
Jojobera Power Plant, Jamshedpur

SAMPLING & ANALYSIS DATA

Date of Sampling : 13.11.2020
Sample No. : TP/2020/NOV/17
Sample Description : ETP Inlet
Sample Quantity/Packing detail : 2 lt/Plastic Cane

Sl No	Parameter	Test Method	Result
1	Colour	APHA 23 rd Edtn-2017, 2120B	Blackish
2	pH value at 25 ^o C	APHA 23 rd Edtn-2017,4500-H+B	6.94
3	Total Dissolved Solids (as TDS) mg/l	APHA 23 rd Edtn-2017, 2540C	796
4	Total Suspended Solid (as TSS) mg/l	APHA 23 rd Edtn-2017,2540D	110
5	Temperature Deg C	IS 3025 (Part 9)-1984; Rffm:2006	21
6	Dissolved Oxygen mg/l	APHA 23 rd Edtn-2017, 4500-O-C	5.4
7	Biochemical Oxygen Demand (as BOD) mg/l	APHA 23 rd Edtn-2017, 5210B	310.2
8	Chemical Oxygen Demand (COD) mg/l	APHA 23 rd Edtn-2017, 5220B	869.7
9	Oil and Grease mg/l	APHA 23 rd Edtn-2017, 5520B.	22.4
11	Fixed Suspended solids mg/l	APHA 23 rd Edtn-2017, 2540E	50
12	Volatile Suspended Solids mg/l	APHA 23 rd Edtn-2017, 2540E	62
13	Fixed Dissolved Solids mg/l	APHA 23 rd Edtn-2017, 2540E	412
14	Volatile Dissolved Solids mg/l	APHA 23 rd Edtn-2017, 2540E	314
15	Total Volatile Solids mg/l	APHA 23 rd Edtn-2017, 2540E	344

Notes:

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3. This test report will not be used for any publicity/legal purpose.
4. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer.

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TEST CERTIFICATE

Test Report of	Report No.	Date of Issue
Waste Water	WW-131120-18	22/11/2020

ISSUED TO: **TATA POWERCOMPANY LIMITED**
Jojobera Power Plant, Jamshedpur

SAMPLING & ANALYSIS DATA

Date of Sampling : 13.11.2020
Sample No. : TP/2020/NOV/18
Sample Description : ETP Outlet
Sample Quantity/Packing detail : 2 lt/Plastic Cane

Sl No	Parameter	Test Method	Result	Limit Inland Surface water
1	Colour	APHA 23 rd Edtn-2017, 2120B	Colourless	--
2	pH value at 25 ^o C	APHA 23 rd Edtn-2017,4500-H+B	7.41	6.5 -8.5
3	Total Dissolved Solids (as TDS) mg/l	APHA 23 rd Edtn-2017, 2540C	784	---
4	Total Suspended Solid (as TSS) mg/l	APHA 23 rd Edtn-2017,2540D	25	100
5	Temperature Deg. C	IS 3025 (Part 9)-1984; Rffm:2006	21	---
6	Dissolved Oxygen mg/l	APHA 23 rd Edtn-2017, 4500-O-C	7.9	---
7	Biochemical Oxygen Demand (as BOD) mg/l	APHA 23 rd Edtn-2017, 5210B	12.8	30
8	Chemical Oxygen Demand (COD) mg/l	APHA 23 rd Edtn-2017, 5220B	75.9	250
9	Oil and Grease mg/l	APHA 23 rd Edtn-2017, 5520B.	4.2	10
10	Fixed Suspended solids mg/l	APHA 23 rd Edtn-2017, 2540E	21	---
11	Volatile Suspended Solids mg/l	APHA 23 rd Edtn-2017, 2540E	32	---
12	Fixed Dissolved Solids mg/l	APHA 23 rd Edtn-2017, 2540E	351	---
13	Volatile Dissolved Solids mg/l	APHA 23 rd Edtn-2017, 2540E	274	---
14	Total Volatile Solids mg/l	APHA 23 rd Edtn-2017, 2540E	337	---

Notes:

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Asia Enviro Lab

(An ISO 9001:2015, 14001:2015, 45001:2018, NABL & MOEF Approved Lab.)

Job Description : Environmental Testing, ETP/STP Manufacturing, ETP/STP Plant Operation Pollution NOC etc.

Lab - H1-837, Near Pollution Control Board, RIICO Indl. Area, Bhiwadi, Distt. Alwar (Rajasthan) - 301019

Ph. No. : 09694666022, 9466619911, 7737696987, Email : asiaenvirolab@gmail.com , Website : www.asiaenvirolab.com

Test Report

Report No.: AEL/2020/TP/3010/04	Reporting Date: 30/10/2020
Issued to: M/S TATA POWER COMPANY Jojobera Power Plant, Jojobera Jamshedpur	Sample I'd : AEL/20/TP/3010/04 Date : 16.10.2020 Period of testing : 16.10.2020 - 21.10.2020

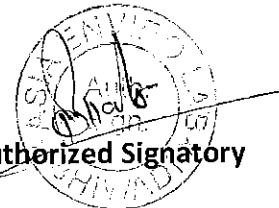
SAMPLE PARTICULARS:

Type of Report	Waste Water
Type of the Sample	ETP Inlet
Date of Sampling	10.10.2020

Sl No	Parameter	Test Method	Result
1	Colour	APHA 23 rd Edtn-2017, 2120B	Blackish
2	pH value at 25 ^o C	APHA 23 rd Edtn-2017, 4500-H+B	7.36
3	Total Dissolved Solids (as TDS) mg/l	APHA 23 rd Edtn-2017, 2540C	824
4	Total Suspended Solid (as TSS) mg/l	APHA 23 rd Edtn-2017, 2540D	125
5	Temperature Deg C	IS.3025 (Part 9)-1984, Rffm:2006	23
6	Dissolved Oxygen mg/l	APHA 23 rd Edtn-2017, 4500-O-C	5.9
7	Biochemical Oxygen Demand (as BOD) mg/l	APHA 23 rd Edtn-2017, 5210B	402.6
8	Chemical Oxygen Demand (COD) mg/l	APHA 23 rd Edtn-2017, 5220B	957.6
9	Oil and Grease mg/l	APHA 23 rd Edtn-2017, 5520B.	20.7
11	Fixed Suspended solids mg/l	APHA 23 rd Edtn-2017, 2540E	59
12	Volatile Suspended Solids mg/l	APHA 23 rd Edtn-2017, 2540E	68
13	Fixed Dissolved Solids mg/l	APHA 23 rd Edtn-2017, 2540E	471
14	Volatile Dissolved Solids mg/l	APHA 23 rd Edtn-2017, 2540E	369
15	Total Volatile Solids mg/l	APHA 23 rd Edtn-2017, 2540E	387

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Note: 1. The result listed refer only to the tested samples and applicable parameters.
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Job Description : Environmental Testing, ETP/STP Manufacturing, ETP/STP Plant Operation Pollution NOC etc.

Lab - H1-837, Near Pollution Control Board, RIICO Indl. Area, Bhiwadi, Distt. Alwar (Rajasthan) - 301019

Ph. No. : 09694666022, 9466619911, 7737696987, Email : asiaenvirolab@gmail.com , Website : www.asiaenvirolab.com

Test Report

Report No.: AEL/2020/TP/3010/05	Reporting Date: 30/10/2020
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Issued to: M/S TATA POWER COMPANY Jojobera Power Plant, Jojobera Jamshedpur	Sample I'd : AEL/20/TP/3010/05 Date : 16.10.2020 Period of testing : 16.10.2020 - 21.10.2020
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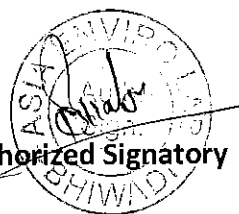
SAMPLE PARTICULARS:

Type of Report	Waste Water
Type of the Sample	ETP Outlet
Date of Sampling	10.10.2020

Sl No	Parameter	Test Method	Result	Limit Inland Surface water
1	Colour	APHA 23 rd Edtn-2017, 2120B	Colourless	--
2	pH value at 25 ^o C	APHA 23 rd Edtn-2017, 4500-H+B	7.21	6.5 -8.5
3	Total Dissolved Solids (as TDS) mg/l	APHA 23 rd Edtn-2017, 2540C	786	---
4	Total Suspended Solid (as TSS) mg/l	APHA 23 rd Edtn-2017, 2540D	22.0	100
5	Temperature Deg C	IS 3025 (Part 9)-1984; Rffm:2006	24.0	---
6	Dissolved Oxygen mg/l	APHA 23 rd Edtn-2017, 4500-O-C	7.6	---
7	Biochemical Oxygen Demand (as BOD) mg/l	APHA 23 rd Edtn-2017, 5210B	17.9	30
8	Chemical Oxygen Demand (COD) mg/l	APHA 23 rd Edtn-2017, 5220B	92.4	250
9	Oil and Grease mg/l	APHA 23 rd Edtn-2017, 5520B.	4.6	10
10	Fixed Suspended solids mg/l	APHA 23 rd Edtn-2017, 2540E	30	---
11	Volatile Suspended Solids mg/l	APHA 23 rd Edtn-2017, 2540E	39	---
12	Fixed Dissolved Solids mg/l	APHA 23 rd Edtn-2017, 2540E	396	---
13	Volatile Dissolved Solids mg/l	APHA 23 rd Edtn-2017, 2540E	262	---
14	Total Volatile Solids mg/l	APHA 23 rd Edtn-2017, 2540E	348	---

Checked By

Authorized Signatory



- Note: 1. The result listed refer only to the tested samples and applicable parameters. 40
2. Sample will be destroyed one month from the date of issue of test certificate.
3. Any complaints about this report should be communicated within 7 days of issue of this report
4. The report is Not to be reproduced-wholly or in part and can Not be used as an evidence in the Court of law and should Not be used in any advertising Media without our special permission in writing.

Compliance of Ash Utilization of FY21

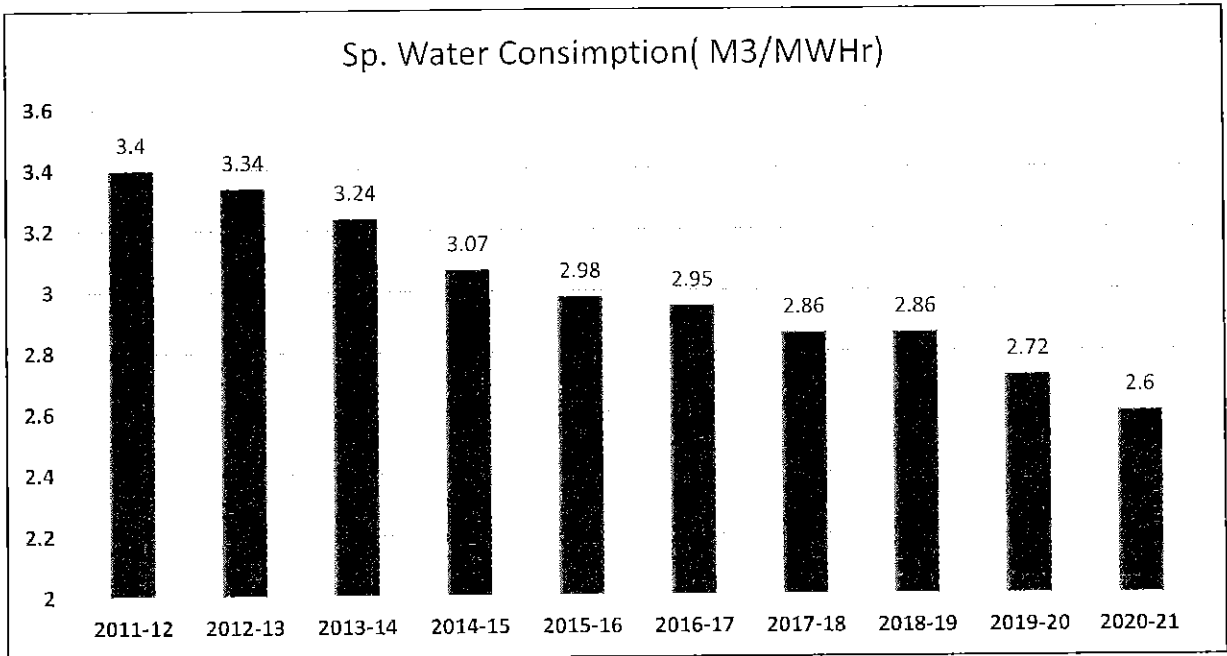
S.N.	Description	Unit	Q1	Q2	Q3	Q4	Total Fly Ash Utilisation in FY 2020-21
A	Ash Generation	MT	166415	221619	226584	226227	840845
	(Fly Ash + Bed Ash)						
B	Ash Utilisation	MT	78443	154624	180216	179699	592982
i)	Brick Manufacturing	MT	1597	3635	6551	8504	20287
ii)	Ready Mix Concrete	MT	3412	8125	10396	7995	29928
iii)	(Cement Industry)	MT	73434	142864	163269	163200	542767
	Utilization % of Cement/Bricks/RMC		47%	70%	80%	79%	71%
iii)	Low Lying area filling/ Area Development	MT	79259	75708	46368	46528	247863
viii)	Utilization % of Low lying		48%	34%	20%	21%	
	Total Ash Utilisation	MT	157702	230332	226584	226227	840845
C	Total Ash Utilisation percentage	%	95%	104%	100%	100%	100.00%

Fly Ash Generation and Utilisation Plan for FY 22

Month	ABP Coal Consumption	Generation Qty (MT)			Dry Low Lying Area	Cement Plant	Other Bricks, R MC	Total Ash Evacuation	Dry Fly Ash Utilization %	Ash Sent to Pond (Dry) MT	Total Ash Utilization %
		Total	Fly Ash	Bottom Ash							
April-21	2,32,895	86,614	69,291	17,323	7,200	44,000	6,000	57,200	72%	36614	66%
May-21	2,32,895	86,614	69,291	17,323	3,600	50,000	10,000	63,600	87%	26614	73%
June-21	2,32,895	86,614	69,291	17,323	10,800	50,000	13,000	73,800	91%	23614	85%
July-21	2,32,895	86,614	69,291	17,323	21,600	40,000	13,000	74,600	76%	33614	86%
August-21	2,32,895	86,614	69,291	17,323	21,600	40,000	13,000	74,600	76%	33614	86%
September-21	2,32,895	86,614	69,291	17,323	21,600	40,000	13,000	74,600	76%	33614	86%
October-21	2,32,895	86,614	69,291	17,323	36,000	58,000	11,000	1,05,000	100%	17614	121%
November-21	2,32,895	86,614	69,291	17,323	36,000	58,000	11,000	1,05,000	100%	17614	121%
December-21	2,32,895	86,614	69,291	17,323	36,000	58,000	11,000	1,05,000	100%	17614	121%
January-22	2,32,895	86,614	69,291	17,323	36,000	58,000	11,000	1,05,000	100%	17614	121%
February-22	2,32,895	86,614	69,291	17,323	34,200	58,000	11,000	1,03,200	100%	17614	119%
March-22	2,32,895	86,614	69,291	17,323	28,800	58,000	11,000	97,800	100%	17614	113%
Total	27,94,740	10,39,364	8,31,491	2,07,873	2,93,400	6,12,000	1,34,000	10,39,400	90%	293364	100%

Proactive action for Environmental Improvement

- 100 % Fly ash utilization as per Govt. approved guidelines.
- Continuous operation of effluent treatment plant for recycling of waste water is in place. The treated water being used as make up water to minimize the intake of raw water.
- 550 no of new saplings planted from the local species in plant area.
- LOI and Work Order placed for installation of FGD (Flue Gas Desulphurization) and work has started.
- Sp. raw water consumption recorded 2.60 M3/ MWH in FY 2020-21 against statutory limit 3.5 M3/ MWH. The year wise improvement is graphically represented below.



Noise Monitoring Report

Sl. No.	Month	Location	Oct-20			Nov-20			Dec-20			Jan-21			Feb-21			Mar-21		
			Monitoring Date	Leq dB(A) Day	Leq dB(A) Night	Monitoring Date	Leq dB(A) Day	Leq dB(A) Night	Monitoring Date	Leq dB(A) Day	Leq dB(A) Night	Monitoring Date	Leq dB(A) Day	Leq dB(A) Night	Monitoring Date	Leq dB(A) Day	Leq dB(A) Night	Monitoring Date	Leq dB(A) Day	Leq dB(A) Night
1		Boiler Area	09.10.20	74.9	69.4	10.11.20	74.4	69.3	14.12.20	74.8	69.8	08.01.21	74.7	69.4	03.02.21	74.9	69.2	04.03.21	74.6	69.7
2		Turbine Floor	09.10.20	74.2	69.3	10.11.20	74.9	69.8	14.12.20	74.3	68.4	08.01.21	74.8	69.7	03.02.21	74.7	68.3	04.03.21	74.8	68.9
3		CHP Area	09.10.20	73.1	68.4	10.11.20	73.8	68.5	14.12.20	73.8	69.2	08.01.21	73.4	68.4	03.02.21	72.2	67.6	04.03.21	72.7	67.2
4		Ash Plant Area	09.10.20	73.2	67.5	10.11.20	74.2	67.3	14.12.20	74.6	68.7	08.01.21	74.7	68.8	03.02.21	72.4	66.6	05.03.21	73.5	67.2
5		Office Building	10.10.20	72.5	64.3	11.11.20	71.7	63.2	15.12.20	72.4	61.6	09.01.21	73.4	63.6	04.02.21	70.2	61.4	05.03.21	71.1	60.3
6		Canteen Premises	10.10.20	70.4	63.8	11.11.20	70.5	62.5	15.12.20	71.2	62.6	09.01.21	72.6	63.8	04.02.21	73.1	62.4	05.03.21	73.6	61.8
7		Security Gate	10.10.20	74.4	64.7	11.11.20	73.7	63.4	15.12.20	74.2	61.1	09.01.21	74.3	62.7	04.02.21	74.8	67.2	06.03.21	74.7	68.4
8		Kali Mandir Gobindpur	10.10.20	72.4	64.8	11.11.20	71.8	62.8	15.12.20	73.4	64.2	09.01.21	73.8	65.3	04.02.21	74.3	66.8	06.03.21	74.8	65.3
9		Gadra Collage	11.10.20	63.7	58.2	12.11.20	64.8	57.7	16.12.20	68.8	58.3	10.01.21	61.7	60.8	05.02.21	70.7	60.4	06.03.21	72.1	61.7
10		AVN School	11.10.20	61.4	59.4	12.11.20	63.7	58.3	16.12.20	66.1	60.8	10.01.21	69.5	62.5	05.02.21	71.3	61.7	07.03.21	74.2	62.5
11		Sharma School	11.10.20	63.6	58.3	12.11.20	62.5	56.8	16.12.20	69.6	59.4	10.01.21	71.4	60.5	05.02.21	72.4	60.9	07.03.21	73.8	61.5
12		Panchayat Bhavan	11.10.20	53.5	52.7	12.11.20	57.8	54.6	16.12.20	59.5	56.3	10.01.21	61.4	59.4	05.02.21	66.3	60.7	07.03.21	69.3	61.3
13		Gobindpur Market	12.10.20	74.3	68.4	13.11.20	74.8	69.5	17.12.20	74.9	69.6	11.01.21	74.3	67.4	06.02.21	74.8	66.9	08.03.21	74.9	65.3
14		Basic School	12.10.20	63.2	59.2	13.11.20	61.6	57.4	17.12.20	63.8	58.8	11.01.21	65.3	59.6	06.02.21	69.8	61.4	08.03.21	72.1	60.3
15		Subhash Nagar	12.10.20	73.5	68.8	13.11.20	74.6	69.3	17.12.20	74.3	69.5	11.01.21	74.2	68.8	06.02.21	74.7	69.3	08.03.21	74.9	69.5
16		Post Office Gadra	12.10.20	72.8	69.1	13.11.20	73.6	62.4	17.12.20	74.1	65.8	11.01.21	74.4	64.5	06.02.21	73.4	66.8	09.03.21	74.2	63.1

Ambient Air Quality report (Oct 20 to March 21)

Location 1 Clarified water Tank Pump House

Parameter	Sox	Nox	PM10	PM2.5	O3	Pd	CO	NH3	C6H6	BAP	As	Ni
Unit	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³	µg/m ³	µg/m ³	ng/m ³	ng/m ³	ng/m ³
Yearly limit	50	40	60	40	100	0.5	2	100	5	1	6	20
Daily limit	80	80	100	60	180	1	4	400				
Date of monitoring												
26.09.20 to 27.09.20	28.67	44.34	50	27	13.45	0.02	0.59	16.45	2.23	0.45	1.55	4.35
28.09.20 to 29.09.20	32.45	37.67	65	47	13.56	0.04	0.33	17.56	2.05	0.54	1.57	4.23
30.09.20 to 01.10.20	41.22	40.75	52	42	17.556	0.02	0.34	13.56	1.78	0.47	1.43	4.62
02.10.20 to 03.10.20	44.34	48.86	85	56	19.67	0.02	0.45	17.45	1.97	0.63	1.85	4.26
04.10.20 to 05.10.20	39.67	39.7	31	24	14.6	0.03	0.34	17.56	1.98	0.85	1.4	4.55
06.10.20 to 07.10.20	23.67	41.33	52	21	13.88	0.04	0.689	14.69	1.778	0.7	1.33	4.42
08.10.20 to 09.10.20	30.65	42.88	44	29	18.57	0.02	0.46	16.4	1.99	0.69	1.78	4.64
10.10.20 to 11.10.20	24.26	39.77	43	23	16.47	0.06	0.62	15.26	2.05	0.46	1.278	4.72
12.10.20 to 13.10.20	20.45	32.45	40	19	17.5	0.07	0.45	11.37	2.04	0.57	1.46	4.27
14.10.20 to 15.10.20	21.45	27.55	56	20	13.35	0.04	0.24	14.22	2.06	0.53	1.65	4.48
16.10.20 to 17.10.20	32.77	49.66	55	34	16.45	0.07	0.48	15.36	2.08	0.53	1.76	4.36
18.10.20 to 19.10.20	26.45	42.56	65	41	13.56	0.02	0.55	21.56	2.05	0.66	1.55	4.36
20.10.20 to 21.10.20	29.78	44.98	57	35	18.57	0.02	0.73	24.3	2.07	0.45	1.24	4.65
22.10.20 to 23.10.20	32.45	37.45	54	33	15.36	0.02	0.54	22.87	2.02	0.67	1.54	4.46
24.10.20 to 25.10.20	30.22	41.23	38	17	13.7	0.07	0.5	16.34	2.02	0.76	1.38	4.22
26.10.20 to 27.10.20	21.46	42.21	68	35	17.5	0.02	0.54	14.3	2.21	0.44	1.4	4.4
28.10.20 to 29.10.20	32.87	43.87	53	30	15.34	0.03	0.74	22.36	2.02	0.65	1.75	5.873
30.10.20 to 31.10.20	25.87	32.87	54	27	16.45	0.02	0.56	14.34	2.03	0.65	1.45	4.44
01.11.20 to 02.11.20	21.87	33.98	59	31	13.35	0.02	0.35	16.45	2.14	0.52	1.75	4.25
03.11.20 to 04.11.20	22.56	38.67	68	40	15.34	0.04	0.39	18.56	1.57	0.34	1.57	4.22
05.11.20 to 06.11.20	18.23	30.23	61	36	15.66	0.05	0.43	18.89	1.98	0.56	1.45	4.88
07.11.20 to 08.11.20	19.22	32.11	60	31	16.4	0.02	0.34	16.45	2.02	0.645	1.6	4.1
09.11.20 to 10.11.20	27.56	31.22	51	23	12.6	0.02	0.36	14.6	2.13	0.64	1.4	4.2
11.11.20 to 12.11.20	23.34	36.78	70	43	19.5	0.02	0.74	14.45	2.02	0.42	1.2	4.2
13.11.20 to 14.11.20	21.15	29.67	41	23	14.7	0.02	0.73	14.6	2.05	0.32	1.2	4.2
15.11.20 to 16.11.20	35.77	47.63	56	30	29.78	0.02	0.57	12.66	2.16	0.7	1.45	4.55
17.11.20 to 18.11.20	34.12	41.98	44	23	21.45	0.02	0.32	17.89	2.18	0.56	1.86	5.13
19.11.20 to 20.11.20	26.67	34.24	44	22	16.45	0.03	0.24	14.45	2.11	0.55	1.2	4.3
21.11.20 to 22.11.20	36.987	41.34	52	35	22.86	0.04	0.765	16.38	2.13	0.54	1.75	4.86
23.11.20 to 24.11.20	35.55	36.45	42	23	16.45	0.03	0.66	22.22	2.17	0.66	1.28	4.41
25.11.20 to 26.11.20	26.66	34.16	60	30	16.32	0.05	0.63	18.66	2.16	0.7	1.45	4.62
27.11.20 to 28.11.20	22.15	34.54	39	19	14.34	0.02	0.42	16.3	2.02	0.64	1.1	4.2
29.11.20 to 30.11.20	31.45	34.35	28	17	14.78	0.04	0.31	12.56	1.78	0.45	1.54	4.77
01.12.20 to 02.12.20	27.54	29.234	31	28	27.56	0.03	0.43	13.37	2.25	0.67	1.66	4.36
03.12.20 to 04.12.20	41.87	59.87	83	34	15.32	0.02	0.62	18.65	2.15	0.45	1.34	5.76
05.12.20 to 06.12.20	23.87	30.76	39	23	14.23	0.04	0.43	21.33	2.13	0.54	1.54	4.55
07.12.20 to 08.12.20	21.76	32.76	83	38	15.98	0.03	0.43	17.44	2.05	0.64	1.32	4.46
09.12.20 to 10.12.20	27.55	36.45	48	33	25.45	0.05	0.56	13.35	2.21	0.66	1.76	5.31
11.12.20 to 12.12.20	30.78	39.67	63	42	18.45	0.02	0.54	17.35	1.99	0.6	1.39	4.58
13.12.20 to 14.12.20	30.57	45.28	65	24	14.84	0.02	0.69	19.55	2.02	0.54	1.48	4.65
15.12.20 to 16.12.20	27.51	31.67	34	21	16.3	0.03	0.42	17.45	2.15	0.55	1.42	4.28
17.12.20 to 18.12.20	23.45	30.23	30	19	17.56	0.07	0.27	14.35	2.01	0.76	1.67	4.67
18.12.20 to 19.12.20	48.67	49.67	59	34	14.47	0.02	0.68	16.46	2.13	0.54	1.65	4.52
20.12.20 to 21.12.20	26.35	30.78	33	17	12.11	0.06	0.44	17.67	2.06	0.23	1.56	4.55
22.12.20 to 23.12.20	32.76	56.778	34	24	13.58	0.04	0.34	15.56	2.07	0.44	1.7	4.68
24.12.20 to 25.12.20	40.33	37.66	51	30	14.46	0.02	0.46	17.56	2.03	0.26	1.67	4.2
26.12.20 to 27.12.20	34.22	45.34	44	26	12.6	0.02	0.52	21.65	2.02	0.56	1.35	4.52

28.12.20 to 29.12.20	48.54	49.77	57	43	16.42	0.04	0.34	13.88	1.74	0.47	1.68	4.48
30.12.20 to 31.12.20	34.76	41.24	65	32	26.56	0.02	0.37	14.56	2.09	0.86	1.457	4.51
01.01.21 to 02.01.21	32.55	39.77	54	26	12.46	0.04	0.53	22.6	1.94	0.35	1.37	4.66
03.01.21 to 04.01.21	27.66	34.22	62	31	13.66	0.02	0.55	15.46	2.05	0.65	1.49	4.57
05.01.21 to 06.01.21	22.44	36.45	65	38	12.3	0.02	0.35	14.6	2.14	0.45	1.3	4.4
07.01.21 to 08.01.21	23.14	30.87	55	24	14.45	0.05	0.54	13.4	1.78	0.71	1.789	4.51
09.01.21 to 10.01.21	42.56	52.45	59	28	15.34	0.04	0.39	18.56	1.57	0.34	1.57	4.22
11.01.21 to 12.01.21	20.23	32.16	68	35	24.32	0.03	0.67	12.38	2.26	0.86	1.7	4.778
13.01.21 to 14.01.21	35.33	45.25	44	20	14.7	0.02	0.4	15.3	2.02	0.44	1.6	4.3
15.01.21 to 16.01.21	29.55	40.36	55	30	17.55	0.02	0.36	17.56	1.89	0.68	1.68	4.66
17.01.21 to 18.01.21	42.53	54.22	67	36	22.75	0.02	0.48	17.37	2.21	0.52	1.76	4.98
19.01.21 to 20.01.21	26.54	32.63	41	22	21.36	0.03	0.38	15.61	2.24	0.71	1.65	5.32
21.01.21 to 22.01.21	30.56	43.16	62	35	26.61	0.02	0.58	16.43	2.05	0.33	1.78	4.37
23.01.21 to 24.01.21	28.66	42.48	45	27	21.64	0.07	0.56	14.66	2.26	0.54	1.55	5.21
25.01.21 to 26.01.21	22.56	38.67	52	35	15.34	0.04	0.39	18.56	1.57	0.34	1.57	4.22
27.01.21 to 28.01.21	31.45	42.56	53	25	14.34	0.02	0.34	21.23	2.01	0.45	1.34	4.66
29.01.21 to 30.01.21	40.21	47.35	76	56	21.45	0.02	0.67	17.56	2.11	0.62	1.785	4.75
31.01.21 to 01.02.21	23.23	38.53	64	38	12.46	0.04	0.53	22.6	1.94	0.35	1.37	4.66
02.02.21 to 03.02.21	31.31	45.37	88	38	13.66	0.02	0.55	15.46	2.05	0.65	1.49	4.57
04.02.21 to 05.02.21	32.33	47.66	59	30	11.6	0.02	0.45	14.5	2.12	0.56	1.1	4.2
06.02.21 to 07.02.21	23.14	30.87	62	33	14.45	0.05	0.65	14.35	1.78	0.71	1.789	4.51
08.02.21 to 09.02.21	29.55	34.55	90	44	17.55	0.02	0.36	17.56	1.89	0.68	1.68	4.66
10.02.21 to 11.02.21	41.11	46.46	57	31	14.7	0.02	0.73	14.6	2.05	0.32	1.2	4.2
12.02.21 to 13.02.21	20.23	32.16	63	42	24.32	0.03	0.67	12.38	2.26	0.86	1.7	4.778
14.02.21 to 15.02.21	29.55	37.55	55	30	17.55	0.02	0.36	17.56	1.89	0.68	1.68	4.66
16.02.21 to 17.02.21	32.4	41.24	54	32	17.2	0.02	0.74	13.6	2.11	0.47	1.4	5.2
18.02.21 to 19.02.21	45.22	54.35	72	55	21.07	0.02	0.65	14.98	2.37	0.64	1.44	5.34
20.02.21 to 21.02.21	36.87	48.66	61	34	23.56	0.04	0.54	13.45	2.11	0.68	1.24	5.27
22.02.21 to 23.02.21	35.42	44.24	94	43	16.45	0.02	0.56	14.34	2.03	0.65	1.45	4.44
24.02.21 to 25.02.21	35.77	47.63	76	37	29.78	0.02	0.57	13.67	2.06	0.58	1.38	4.245
26.02.21 to 27.02.21	28.45	30.23	69	31	15.66	0.05	0.43	18.89	1.98	0.56	1.45	4.88
28.02.21 to 01.03.21	33.24	40.23	96	54	13.47	0.02	0.67	15.77	2.14	0.66	1.54	4.55
02.03.21 to 03.03.21	19.97	28.9	77	30	14.56	0.02	0.51	19.63	1.86	0.46	1.45	5.42
04.03.21 to 05.03.21	20.6	29.77	58	25	16.451	0.02	0.26	14.1	2.02	0.54	1.3	4.1
06.03.21 to 07.03.21	34.44	32.11	69	23	16.4	0.02	0.34	16.45	2.02	0.645	1.6	4.1
08.03.21 to 09.03.21	30.78	45.24	72	37	17.52	0.02	0.34	17.56	1.73	0.45	1.55	4.52
10.03.21 to 11.03.21	31.34	35.11	55	32	15.79	0.02	0.42	14.55	2.12	0.52	1.43	4.76
12.03.21 to 13.03.21	21.33	32.111	32	14	13.66	0.02	0.77	14.5	2.05	0.65	1.49	4.57
14.03.21 to 15.03.21	15.66	28.67	31	16	19.67	0.05	0.445	14.34	2.05	0.57	1.55	4.23
16.03.21 to 17.03.21	17.55	31.33	35	18	13.33	0.02	0.54	15.56	2.03	0.46	1.1	4.1
18.03.21 to 19.03.21	32.45	37.67	65	31	13.56	0.04	0.33	17.56	2.05	0.54	1.57	4.23
20.03.21 to 21.03.21	28.45	42.42	83	41	14.4	0.02	0.57	15.5	2.04	0.35	1.2	4.3
22.03.21 to 23.03.21	22.47	36.14	75	36	16.4	0.02	0.65	17.5	2.04	0.51	1.6	4.5
24.03.21 to 25.03.21	20.78	28.56	86	42	15.6	0.02	0.85	17.67	2.05	0.45	1.3	4.4
MIN	15.66	27.55	28	14	11.6	0.02	0.24	11.37	1.57	0.23	1.1	4.1
MAX	48.67	59.87	96	56	29.78	0.07	0.85	24.3	2.37	0.86	1.86	5.873
AVG	29.5839	39.066	57.275	31.198	16.929	0.03	0.5013	16.5	2.034	0.559	1.503	4.5635

Ambient Air Quality report (Oct 20 to March 21)

Location 2 Behind Middling coal Shed												
Parameter	Sox	Nox	PM10	PM2.5	O3	Pd	CO	NH3	C6H6	BAP	As	Ni
Unit	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	mg/m3	µg/m3	µg/m3	ng/m3	ng/m3	ng/m3
Yearly limit	50	40	60	40	100	0.5	2	100	5	1	6	20
Daily limit	80	80	100	60	180	1	4	400				
Date of Monitoring												
26.09.20 to 27.09.20	26.35	30.78	33	17	12.11	0.06	0.44	17.67	2.06	0.23	1.56	4.55
28.09.20 to 29.09.20	21.17	31.22	47	26	11.77	0.03	0.2	21.456	2.02	0.56	1.22	4.37
30.09.20 to 01.10.20	20.76	24.56	45	23	15.52	0.04	0.44	18.78	2.06	0.52	1.33	4.43
02.10.20 to 03.10.20	24.67	36.7	38	19	11.78	0.03	0.22	17.68	2.06	0.678	1.77	4.52
04.10.20 to 05.10.20	23.14	31.33	35	17	12.74	0.05	0.35	19.78	2.02	0.27	1.4	4.38
06.10.20 to 07.10.20	15.83	32.11	48	22	12.46	0.04	0.53	22.6	1.94	0.35	1.37	4.66
08.10.20 to 09.10.20	21.45	25.67	27	13	13.22	0.06	0.13	21.51	2.06	0.67	1.57	4.43
10.10.20 to 11.10.20	17.56	27.85	25	20	15.7	0.02	0.35	15.4	2.06	0.45	1.4	4.2
12.10.20 to 13.10.20	18.87	26.53	30	18	13.86	0.02	0.45	13.86	2.03	0.51	1.1	4.3
14.10.20 to 15.10.20	28.56	41.34	64	32	14.34	0.02	0.34	21.23	2.01	0.45	1.34	4.66
16.10.20 to 17.10.20	31.57	46.44	42	32	14.57	0.02	0.25	22.11	2.07	0.46	1.65	4.23
18.10.20 to 19.10.20	26.47	35.34	59	26	16.78	0.02	0.55	19.78	2.04	0.65	1.68	4.47
20.10.20 to 21.10.20	29.76	41.33	64	34	15.52	0.02	0.36	21.34	2.04	0.37	1.36	4.22
22.10.20 to 23.10.20	42.87	53.44	61	47	17.46	0.02	0.49	24.11	2.02	0.556	1.54	4.2
24.10.20 to 25.10.20	34.25	44.34	85	50	17.56	0.02	0.41	19.66	1.87	0.46	1.25	4.34
26.10.20 to 27.10.20	32.4	41.24	54	24	21.33	0.02	0.25	16.45	2.17	0.46	1.37	5.55
28.10.20 to 29.10.20	26.35	34.21	40	19	23.87	0.02	0.55	18.66	2.26	0.65	1.34	4.26
30.10.20 to 31.10.20	32.44	42.16	51	23	21.07	0.02	0.65	14.98	2.37	0.64	1.44	5.34
01.11.20 to 02.11.20	21.23	32.45	37	18	22.75	0.02	0.48	17.37	2.21	0.52	1.76	4.98
03.11.20 to 04.11.20	30.88	40.26	56	30	18.47	0.02	0.64	26.4	2.05	0.58	1.65	5.38
05.11.20 to 06.11.20	34.56	46.56	62	32	14.34	0.02	0.65	18.66	2.06	0.45	1.44	5.33
07.11.20 to 08.11.20	24.11	32.67	52	24	15.87	0.05	0.55	19.86	2.11	0.68	1.43	5.83
09.11.20 to 10.11.20	33.76	44.65	59	30	13.67	0.04	0.47	21.87	2.22	0.87	1.75	5.65
11.11.20 to 12.11.20	35.12	44.78	32	18	17.76	0.05	0.41	15.11	1.45	0.32	1.73	4.44
13.11.20 to 14.11.20	34.56	48.78	63	45	13.34	0.05	0.55	13.45	1.98	0.55	1.46	4.68
15.11.20 to 16.11.20	22.67	34.16	43	20	13.86	0.02	0.45	13.86	2.03	0.51	1.1	4.3
17.11.20 to 18.11.20	21.45	25.67	51	22	14.34	0.02	0.34	21.23	2.01	0.45	1.34	4.66
19.11.20 to 20.11.20	18.67	30.98	56	32	16.42	0.02	0.51	18.57	2.16	0.47	1.67	4.52
21.11.20 to 22.11.20	17.56	27.85	67	27	16.48	0.02	0.51	16.45	2.167	0.75	1.37	4.83
23.11.20 to 24.11.20	25.67	35.24	41	22	17.46	0.02	0.38	21.47	2.04	0.446	1.36	4.25
25.11.20 to 26.11.20	29.79	32.86	47	28	14.47	0.02	0.64	23.88	2.04	0.674	1.64	4.63
27.11.20 to 28.11.20	23.21	43.4	35	27	13.58	0.03	0.56	14.45	2.02	0.37	1.33	4.36
29.11.20 to 30.11.20	21.87	35.23	55	21	16.42	0.04	0.34	13.88	1.74	0.47	1.68	4.48
01.12.20 to 02.12.20	17.23	30.23	22	12	16.41	0.03	0.54	12.36	2.16	0.54	1.36	4.32
03.12.20 to 04.12.20	27.44	30.56	58	25	13.57	0.02	0.45	24.23	2.14	0.53	1.38	5.41
05.12.20 to 06.12.20	16.43	24.9	32	14	13.22	0.05	0.45	12.31	2.09	0.46	1.23	4.47
07.12.20 to 08.12.20	20.1	33.9	32	14	13.21	0.02	0.69	14.21	2.02	0.43	1.63	4.28
09.12.20 to 10.12.20	25.35	38.57	47	23	13.45	0.02	0.86	18.78	2.06	0.64	1.36	4.35
11.12.20 to 12.12.20	21.45	27.55	56	20	13.35	0.04	0.24	14.22	2.06	0.53	1.65	4.48
13.12.20 to 14.12.20	32.4	41.24	51	30	21.33	0.02	0.25	16.45	2.17	0.46	1.37	5.55
15.12.20 to 16.12.20	37.56	38.46	68	33	17.45	0.02	0.63	15.55	2.02	0.83	1.58	4.27
17.12.20 to 18.12.20	29.77	34.24	66	27	18.67	0.02	0.55	22.11	2.26	0.55	1.35	4.78
18.12.20 to 19.12.20	29.78	44.98	57	35	18.57	0.02	0.73	24.3	2.07	0.45	1.24	4.65
20.12.20 to 21.12.20	26.44	33.55	31	20	16.42	0.02	0.45	18.57	2.11	0.54	1.32	4.22
22.12.20 to 23.12.20	27.56	31.22	51	23	12.6	0.02	0.36	14.6	2.13	0.64	1.4	4.2
24.12.20 to 25.12.20	20.78	28.56	28	13	13.36	0.06	0.44	17.45	2.02	0.56	1.46	4.32
26.12.20 to 27.12.20	26.6	34.24	65	43	22.4	0.06	0.35	17.461	2.13	0.81	1.47	5.33

28.12.20 to 29.12.20	26.22	38.55	45	22	13.22	0.06	0.13	21.51	2.06	0.67	1.57	4.43
30.12.20 to 31.12.20	25.34	42.44	67	40	17.44	0.03	0.48	14.25	1.75	0.69	1.57	4.32
01.01.21 to 02.01.21	31.57	46.44	42	32	14.57	0.02	0.25	22.11	2.07	0.46	1.65	4.23
03.01.21 to 04.01.21	26.45	42.56	64	39	19.66	0.02	0.55	21.56	2.05	0.66	1.55	4.36
05.01.21 to 06.01.21	21.45	46.45	51	25	14.34	0.02	0.34	21.23	2.01	0.45	1.34	4.66
07.01.21 to 08.01.21	24.45	33.66	42	24	15.4	0.02	0.44	18.23	2.14	0.45	1.51	4.43
09.01.21 to 10.01.21	27.51	36.24	61	27	16.3	0.02	0.56	16.4	2.07	0.566	1.6	4.22
11.01.21 to 12.01.21	31.33	48.67	73	42	12.6	0.02	0.52	21.65	2.02	0.56	1.35	4.25
13.01.21 to 14.01.21	29.76	41.33	65	40	15.52	0.02	0.36	21.34	2.04	0.37	1.45	4.67
15.01.21 to 16.01.21	32.4	46.41	44	23	13.66	0.02	0.77	14.5	2.05	0.65	1.49	4.57
17.01.21 to 18.01.21	26.35	30.78	68	37	16.44	0.06	0.44	17.67	2.06	0.23	1.56	4.55
19.01.21 to 20.01.21	18.87	26.53	54	35	20.32	0.02	0.45	13.86	2.03	0.51	1.1	4.3
21.01.21 to 22.01.21	34.25	44.34	67	45	18.67	0.02	0.41	19.66	1.87	0.46	1.25	4.34
23.01.21 to 24.01.21	35.12	44.78	77	46	17.76	0.05	0.41	15.11	1.45	0.32	1.73	4.44
25.01.21 to 26.01.21	28.56	39.67	40	24	13.36	0.06	0.44	17.45	2.02	0.56	1.46	4.32
27.01.21 to 28.01.21	35.45	46.45	52	32	15.34	0.04	0.39	18.56	1.57	0.34	1.57	4.22
29.01.21 to 30.01.21	25.45	35.66	63	40	21.33	0.03	0.33	18.33	2.02	0.44	1.67	4.22
31.01.21 to 01.02.21	33.55	43.45	95	45	16.4	0.03	0.53	15.1	2.03	0.53	1.5	4.6
02.02.21 to 03.02.21	34.56	41.34	63	45	13.34	0.05	0.55	13.45	1.98	0.55	1.46	4.68
04.02.21 to 05.02.21	27.56	38.66	55	31	21.34	0.02	0.36	14.6	2.13	0.64	1.4	4.2
06.02.21 to 07.02.21	36.43	49.66	64	37	24.45	0.02	0.54	15.56	2.03	0.46	1.1	4.1
08.02.21 to 09.02.21	25.45	37.55	67	41	22.75	0.02	0.48	17.37	2.21	0.52	1.76	4.98
10.02.21 to 11.02.21	22.15	35.22	78	61	14.6	0.02	0.76	18.5	2.03	0.54	1.3	4.2
12.02.21 to 13.02.21	31.45	44.34	74	58	25.33	0.02	0.53	18.56	2.02	0.86	1.67	4.39
14.02.21 to 15.02.21	28.78	37.56	57	29	19.33	0.02	0.35	11.12	2.03	0.45	1.32	4.24
16.02.21 to 17.02.21	33.62	42.44	50	23	15.46	0.02	0.56	16.56	2.03	0.36	1.1	4.3
18.02.21 to 19.02.21	25.35	38.57	93	49	14.33	0.02	0.86	18.78	2.06	0.64	1.36	4.35
20.02.21 to 21.02.21	32.45	44.26	65	37	17.66	0.04	0.33	17.56	2.05	0.54	1.57	4.23
22.02.21 to 23.02.21	39.55	49.77	52	27	23.11	0.04	0.689	14.69	1.778	0.7	1.33	4.42
24.02.21 to 25.02.21	22.56	38.67	67	38	15.34	0.04	0.39	18.56	1.57	0.34	1.57	4.22
26.02.21 to 27.02.21	21.56	29.77	86	47	12.5	0.03	0.33	18.33	2.02	0.44	1.67	4.22
28.02.21 to 01.03.21	20.45	32.45	98	57	19.5	0.02	0.35	16.4	2.04	0.34	1.2	4.3
02.03.21 to 03.03.21	21.33	31.33	76	43	13.33	0.02	0.54	15.56	2.03	0.46	1.1	4.1
04.03.21 to 05.03.21	21.33	30.45	69	36	22.75	0.02	0.48	17.37	2.21	0.52	1.76	4.98
06.03.21 to 07.03.21	21.44	37.66	83	50	14.46	0.02	0.46	17.56	2.03	0.26	1.67	4.2
08.03.21 to 09.03.21	18.67	26.13	74	31	13.56	0.02	0.53	18.56	2.02	0.86	1.67	4.39
10.03.21 to 11.03.21	19.66	26.45	58	25	13.57	0.02	0.45	24.23	2.14	0.53	1.38	5.41
12.03.21 to 13.03.21	16.9	25.6	34	15	12.12	0.02	0.35	11.12	2.03	0.45	1.32	4.24
14.03.21 to 15.03.21	21.54	32.53	35	17	16.26	0.02	0.53	16.56	1.86	0.45	1.689	4.67
16.03.21 to 17.03.21	32.45	44.34	33	14	13.56	0.04	0.33	17.56	2.05	0.54	1.57	4.23
18.03.21 to 19.03.21	44.34	48.86	85	56	19.67	0.02	0.45	17.45	1.97	0.63	1.85	4.26
20.03.21 to 21.03.21	26.45	42.56	65	41	13.56	0.02	0.55	21.56	2.05	0.66	1.55	4.36
22.03.21 to 23.03.21	21.46	42.21	96	52	17.5	0.02	0.54	14.3	2.21	0.44	1.4	4.4
24.03.21 to 25.03.21	23.34	36.78	70	43	19.5	0.02	0.74	14.45	2.02	0.42	1.2	4.2
MIN	15.83	24.56	22	12	11.77	0.02	0.13	11.12	1.45	0.23	1.1	4.1
MAX	44.34	53.44	98	61	25.33	0.06	0.86	26.4	2.37	0.87	1.85	5.83
AVG	26.74	37.3	55.88	30.89	16.33	0.028	0.4644	17.9232	2.03071	0.522	1.4625	4.5215

Ambient Air Quality report (Oct 20 to March 21)

Location 3 Near Unit 5 Cooling Tower

Parameter	Sox	Nox	PM10	PM2.5	O3	Pd	CO	NH3	C6H6	BAP	As	Ni
Unit	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³	µg/m ³	µg/m ³	ng/m ³	ng/m ³	ng/m ³
Yearly limit	50	40	60	40	100	0.5	2	100	5	1	6	20
Daily limit	80	80	100	60	180	1	4	400				
Date of Monitoring												
26.09.20 to 27.09.20	25.35	38.57	47	28	13.45	0.02	0.86	18.78	2.06	0.64	1.36	4.35
28.09.20 to 29.09.20	31.34	35.11	58	32	15.79	0.02	0.42	14.547	2.12	0.52	1.43	4.76
30.09.20 to 01.10.20	36.55	48.78	39	26	19.56	0.04	0.56	17.7	2.17	0.68	1.9	4.22
02.10.20 to 03.10.20	38.57	40.76	44	24	15.45	0.06	0.41	17.34	2.17	0.49	1.78	4.62
04.10.20 to 05.10.20	28.57	38.56	54	25	14.78	0.02	0.62	16.46	2.05	0.56	1.75	4.53
06.10.20 to 07.10.20	31.34	38.83	46	26	16.45	0.02	0.55	15.46	2.05	0.64	1.65	4.66
08.10.20 to 09.10.20	31.33	42.34	70	58	14.34	0.02	0.65	15.46	2.04	0.55	1.55	4.75
10.10.20 to 11.10.20	32.4	39.78	85	65	13.66	0.02	0.77	14.5	2.05	0.65	1.49	4.57
12.10.20 to 13.10.20	41.34	41.87	86	55	13.9	0.06	0.49	16.98	1.94	0.65	1.48	4.43
14.10.20 to 15.10.20	30.22	41.39	55	27	18.34	0.05	0.45	17.56	2.03	0.67	1.56	4.87
16.10.20 to 17.10.20	41.29	35.33	51	31	14.46	0.03	0.67	15.77	1.77	0.78	1.68	4.3
18.10.20 to 19.10.20	27.45	39.87	52	33	15.7	0.02	0.35	15.4	2.06	0.45	1.4	4.2
20.10.20 to 21.10.20	18.67	30.98	56	33	16.42	0.02	0.51	18.57	2.16	0.47	1.67	4.52
22.10.20 to 23.10.20	17.56	27.85	54	27	16.48	0.02	0.51	16.45	2.167	0.75	1.37	4.83
24.10.20 to 25.10.20	41.34	41.87	59	28	19.67	0.05	0.445	14.34	2.05	0.57	1.55	4.23
26.10.20 to 27.10.20	18.87	26.53	58	31	13.86	0.02	0.45	13.86	2.03	0.51	1.1	4.3
28.10.20 to 29.10.20	30.22	41.23	46	25	13.7	0.07	0.5	16.34	2.02	0.76	1.38	4.22
30.10.20 to 31.10.20	20.23	32.16	71	42	24.32	0.03	0.67	12.38	2.26	0.86	1.7	4.778
01.11.20 to 02.11.20	23.8	35.12	60	31	13.34	0.04	0.37	13.45	2.17	0.44	1.27	4.11
03.11.20 to 04.11.20	21.33	31.33	67	23	13.33	0.02	0.54	15.56	2.03	0.46	1.1	4.1
05.11.20 to 06.11.20	24.45	33.55	36	25	13.4	0.02	0.46	14.5	2.03	0.45	1.2	4.2
07.11.20 to 08.11.20	40.33	37.66	51	30	14.46	0.02	0.46	17.56	2.03	0.26	1.67	4.2
09.11.20 to 10.11.20	36.45	47.55	49	33	16.23	0.02	0.52	14.45	2.02	0.88	1.77	4.57
11.11.20 to 12.11.20	21.66	29.66	44	18	18.5	0.02	0.55	17.5	2.04	0.24	1.3	4.2
13.11.20 to 14.11.20	27.44	30.56	58	25	13.57	0.02	0.45	24.23	2.14	0.53	1.38	5.41
15.11.20 to 16.11.20	28.67	44.34	50	27	13.45	0.02	0.59	16.45	2.23	0.45	1.55	4.35
17.11.20 to 18.11.20	32.45	37.67	65	47	13.56	0.04	0.33	17.56	2.05	0.54	1.57	4.23
19.11.20 to 20.11.20	36.99	41.34	52	35	22.86	0.04	0.765	16.38	2.13	0.54	1.75	4.86
21.11.20 to 22.11.20	35.77	47.63	56	30	29.78	0.02	0.57	13.667	2.06	0.58	1.38	4.245
23.11.20 to 24.11.20	28.45	30.23	42	22	15.66	0.05	0.43	18.89	1.98	0.56	1.45	4.88
25.11.20 to 26.11.20	34.11	42.34	52	33	17.56	0.02	0.41	19.66	1.87	0.46	1.25	4.34
27.11.20 to 28.11.20	44.24	38.67	49	32	19.78	0.02	0.44	14.67	1.87	0.65	1.25	4.51
29.11.20 to 30.11.20	41.34	47.57	48	34	19.765	0.02	0.34	18.46	1.83	0.34	1.38	4.87
01.12.20 to 02.12.20	23.34	36.78	68	44	14.57	0.02	0.56	15.95	2.17	0.54	1.57	4.76
03.12.20 to 04.12.20	17.46	25.25	83	41	14.4	0.02	0.57	15.5	2.04	0.35	1.2	4.3
05.12.20 to 06.12.20	24.21	32.11	35	18	12.14	0.03	0.36	23.88	2.04	0.674	1.64	4.63
07.12.20 to 08.12.20	29.55	31.98	45	22	17.55	0.02	0.36	17.56	1.89	0.68	1.68	4.66
09.12.20 to 10.12.20	17.46	25.25	43	26	16.4	0.02	0.65	17.5	2.04	0.51	1.6	4.5
11.12.20 to 12.12.20	21.15	30.78	35	17	15.2	0.02	0.6	15.1	2.07	0.45	1.4	4.2
13.12.20 to 14.12.20	42.53	39.987	67	36	22.75	0.02	0.48	17.37	2.21	0.52	1.76	4.98
15.12.20 to 16.12.20	28.55	46.55	57	31	21.07	0.03	0.34	18.6	2.27	0.65	1.67	5.33
17.12.20 to 18.12.20	29.55	40.36	55	53	17.55	0.02	0.36	17.56	1.89	0.68	1.68	4.66
18.12.20 to 19.12.20	19.78	31.27	45	25	14.5	0.02	0.54	18.3	2.12	0.65	1.6	4.2
20.12.20 to 21.12.20	18.66	42.35	23	10	14.98	0.07	0.41	14.33	1.89	0.75	1.34	4.86
22.12.20 to 23.12.20	22.11	30.89	25	13	15.7	0.02	0.45	16.4	2.02	0.54	1.2	4.2
24.12.20 to 25.12.20	30.22	41.39	55	27	18.34	0.05	0.45	17.56	2.03	0.67	1.56	4.87
26.12.20 to 27.12.20	27	42.34	45	26	14.34	0.05	0.23	16.456	1.94	0.46	1.69	4.27

28.12.20 to 29.12.20	22.47	36.14	65	41	16.4	0.02	0.65	17.5	2.04	0.51	1.6	4.5
30.12.20 to 31.12.20	23.45	31.34	42	23	17.5	0.02	0.46	17.5	2.13	0.53	1.3	4.3
01.01.21 to 02.01.21	22.23	42.45	51	31	21.07	0.02	0.65	14.98	2.37	0.64	1.44	5.34
03.01.21 to 04.01.21	34.11	39.78	56	26	14.8	0.02	0.47	15.67	2.06	0.64	1.44	4.75
05.01.21 to 06.01.21	23.11	31.34	67	35	16.45	0.04	0.68	14.24	2.06	0.55	1.56	4.29
07.01.21 to 08.01.21	32.45	48.66	53	28	16.34	0.04	0.31	12.22	2.02	0.66	1.66	4.36
09.01.21 to 10.01.21	23.5	30.1	63	32	14.32	0.02	0.42	23.22	2.05	0.82	1.32	5.31
11.01.21 to 12.01.21	20.78	28.56	73	42	15.6	0.02	0.85	17.67	2.05	0.45	1.3	4.4
13.01.21 to 14.01.21	24.67	47.14	66	38	13.74	0.02	0.64	15.47	2.056	0.58	1.74	4.25
15.01.21 to 16.01.21	23.67	41.33	52	21	17.45	0.04	0.689	14.69	1.778	0.7	1.33	4.42
17.01.21 to 18.01.21	26.45	42.56	65	41	13.56	0.02	0.55	21.56	2.05	0.66	1.55	4.36
19.01.21 to 20.01.21	25.87	32.87	54	27	16.45	0.02	0.56	14.34	2.03	0.65	1.45	4.44
21.01.21 to 22.01.21	34.12	41.98	66	32	21.45	0.02	0.32	17.89	2.18	0.56	1.86	5.13
23.01.21 to 24.01.21	41.87	59.87	83	34	15.32	0.02	0.62	18.65	2.15	0.45	1.34	5.76
25.01.21 to 26.01.21	22.56	38.67	52	32	15.34	0.04	0.39	18.56	1.57	0.34	1.57	4.22
27.01.21 to 28.01.21	29.34	38.34	90	40	14.45	0.03	0.34	21.34	2.14	0.75	1.66	4.68
29.01.21 to 30.01.21	27.44	36.23	57	38	13.57	0.02	0.45	24.23	2.14	0.53	1.38	5.41
31.01.21 to 01.02.21	31.5	37.46	84	53	16.48	0.02	0.51	16.45	2.167	0.76	1.55	4.51
02.02.21 to 03.02.21	24.22	35.3	67	27	16.48	0.02	0.51	16.45	2.167	0.75	1.37	4.83
04.02.21 to 05.02.21	33.24	41.44	72	52	13.47	0.02	0.67	15.77	2.14	0.66	1.54	4.55
06.02.21 to 07.02.21	24.67	47.14	84	43	13.74	0.02	0.64	15.47	2.056	0.58	1.74	4.25
08.02.21 to 09.02.21	29.44	34.66	49	17	13.5	0.02	0.72	13.8	2.12	0.54	1.3	4.2
10.02.21 to 11.02.21	21.44	35.23	70	35	16.4	0.02	0.34	16.45	2.02	0.645	1.6	4.1
12.02.21 to 13.02.21	34.22	48.66	62	41	17.66	0.04	0.51	15.33	1.87	0.66	1.67	4.64
14.02.21 to 15.02.21	24.11	33.45	65	34	15.3	0.02	0.46	14.3	2.02	0.63	1.4	4.2
16.02.21 to 17.02.21	29.44	35.11	58	32	15.79	0.02	0.42	14.547	2.12	0.52	1.43	4.76
18.02.21 to 19.02.21	32.13	42.34	70	58	14.34	0.02	0.65	15.46	2.04	0.55	1.55	4.75
20.02.21 to 21.02.21	28.45	44.34	86	55	13.9	0.06	0.49	16.98	1.94	0.65	1.48	4.43
22.02.21 to 23.02.21	34.22	42.56	59	28	19.67	0.05	0.445	14.34	2.05	0.57	1.55	4.23
24.02.21 to 25.02.21	21.77	37.56	71	39	17.45	0.02	0.53	16.45	2.06	0.34	1.64	4.78
26.02.21 to 27.02.21	32.4	41.24	84	46	21.33	0.02	0.25	16.45	2.17	0.46	1.37	5.55
28.02.21 to 01.03.21	25.34	34.22	95	54	24.34	0.06	0.36	17.46	2.12	0.67	1.56	5.63
02.03.21 to 03.03.21	31.23	43.34	68	33	17.45	0.02	0.63	15.55	2.02	0.83	1.58	4.27
04.03.21 to 05.03.21	32.38	40.78	81	67	15.38	0.02	0.52	18.461	2.06	0.63	1.75	4.51
06.03.21 to 07.03.21	29.77	34.24	87	52	18.67	0.02	0.55	22.11	2.26	0.55	1.35	4.78
08.03.21 to 09.03.21	30.57	45.28	73	48	14.84	0.02	0.69	19.55	2.02	0.54	1.48	4.65
10.03.21 to 11.03.21	29.78	44.98	69	35	18.57	0.02	0.73	24.3	2.07	0.45	1.24	4.65
12.03.21 to 13.03.21	21.2	30.56	37	19	13.67	0.02	0.43	16.4	2.02	0.44	1.2	4.2
14.03.21 to 15.03.21	22.33	32.41	38	20	14.47	0.02	0.68	16.46	2.13	0.54	1.65	4.52
16.03.21 to 17.03.21	15.83	32.11	35	17	12.46	0.04	0.53	22.6	1.94	0.35	1.37	4.66
18.03.21 to 19.03.21	34.25	44.34	85	50	17.56	0.02	0.41	19.66	1.87	0.46	1.25	4.34
20.03.21 to 21.03.21	34.56	48.78	75	45	13.344	0.05	0.55	13.45	1.98	0.55	1.46	4.68
22.03.21 to 23.03.21	37.56	38.46	68	33	17.45	0.02	0.63	15.55	2.02	0.83	1.58	4.27
24.03.21 to 25.03.21	25.34	42.44	94	53	17.44	0.03	0.48	14.25	1.75	0.69	1.57	4.32
MIN	15.83	25.25	23	10	12.14	0.02	0.23	12.22	1.57	0.24	1.1	4.1
MAX	44.24	59.87	95	67	29.78	0.07	0.86	24.3	2.37	0.88	1.9	5.76
AVG	28.58	38.353	59.69	34.033	16.374	0.028	0.515	16.887	2.048	0.5777	1.4988	4.5694

Ambient Air Quality report (Oct 20 to March 21)

Location 4 Near Wagon Tippler												
Parameter	Sox	Nox	PM10	PM2.5	O3	Pd	CO	NH3	C6H6	BAP	As	Ni
Unit	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	mg/m3	µg/m3	µg/m3	ng/m3	ng/m3	ng/m3
Yearly limit	50	40	60	40	100	0.5	2	100	5	1	6	20
Daily limit	80	80	100	60	180	1	4	400				
Date of Monitoring												
26.09.20 to 27.09.20	40.6	42.9	60.0	26.0	23.9	0.0	0.6	18.7	2.3	0.7	1.3	4.3
28.09.20 to 29.09.20	37.6	41.4	56.0	16.0	23.3	0.0	0.6	13.5	2.0	0.4	1.6	4.7
30.09.20 to 01.10.20	30.6	43.2	49.0	25.0	26.6	0.0	0.6	11.4	2.1	0.3	1.8	4.4
02.10.20 to 03.10.20	45.2	54.4	72.0	28.0	21.1	0.0	0.7	15.0	2.4	0.6	1.4	5.3
04.10.20 to 05.10.20	42.5	40.0	40.0	29.0	22.8	0.0	0.5	17.4	2.2	0.5	1.8	5.0
06.10.20 to 07.10.20	35.9	45.0	47.0	19.0	21.6	0.0	0.5	15.3	2.2	0.6	1.5	5.3
08.10.20 to 09.10.20	28.6	46.6	57.0	31.0	21.1	0.0	0.3	18.6	2.3	0.7	1.7	5.3
10.10.20 to 11.10.20	22.2	32.6	64.0	35.0	25.3	0.0	0.5	14.6	2.2	0.7	1.6	5.6
12.10.20 to 13.10.20	28.7	42.5	45.0	16.0	21.6	0.1	0.6	14.7	2.3	0.5	1.6	5.2
14.10.20 to 15.10.20	25.3	34.2	37.0	24.0	14.3	0.0	0.5	12.1	2.1	0.4	1.4	4.2
16.10.20 to 17.10.20	32.5	45.5	59.0	40.0	24.4	0.0	0.7	16.5	2.0	0.6	1.7	4.4
18.10.20 to 19.10.20	34.5	45.2	60.0	44.0	25.5	0.0	0.6	15.4	2.2	0.7	1.3	4.4
20.10.20 to 21.10.20	42.5	40.0	67.0	36.0	22.8	0.0	0.5	17.4	2.2	0.5	1.8	5.0
22.10.20 to 23.10.20	35.9	45.0	52.0	37.0	21.6	0.0	0.5	15.3	2.2	0.6	1.5	5.3
24.10.20 to 25.10.20	29.6	40.4	55.0	53.0	17.6	0.0	0.4	17.6	1.9	0.7	1.7	4.7
26.10.20 to 27.10.20	34.6	46.6	62.0	30.0	14.3	0.0	0.7	18.7	2.1	0.5	1.4	5.3
28.10.20 to 29.10.20	34.7	40.2	64.0	18.0	21.3	0.1	0.4	16.4	2.2	0.8	1.6	4.8
30.10.20 to 31.10.20	37.0	41.3	52.0	35.0	22.9	0.0	0.8	16.4	2.1	0.5	1.8	4.9
01.11.20 to 02.11.20	35.8	47.6	56.0	42.0	29.8	0.0	0.6	13.7	2.1	0.6	1.4	4.2
03.11.20 to 04.11.20	21.7	29.7	72.0	43.0	18.5	0.0	0.6	17.5	2.0	0.2	1.3	4.2
05.11.20 to 06.11.20	27.4	30.6	58.0	25.0	13.6	0.0	0.5	24.2	2.1	0.5	1.4	5.4
07.11.20 to 08.11.20	31.3	38.8	46.0	26.0	16.5	0.0	0.6	15.5	2.1	0.6	1.7	4.7
09.11.20 to 10.11.20	32.8	49.7	55.0	34.0	16.5	0.1	0.5	15.4	2.1	0.5	1.8	4.4
11.11.20 to 12.11.20	22.5	31.7	58.0	27.0	18.6	0.0	0.5	16.4	2.0	0.7	1.8	4.6
13.11.20 to 14.11.20	29.3	41.7	70.0	27.0	12.3	0.0	0.4	13.4	1.9	0.5	1.9	4.5
15.11.20 to 16.11.20	37.8	43.8	63.0	23.0	21.7	0.0	0.4	14.9	2.2	0.5	1.5	4.9
17.11.20 to 18.11.20	35.7	49.5	72.0	39.0	24.4	0.0	0.5	16.3	2.2	0.8	1.9	5.2
19.11.20 to 20.11.20	28.2	32.3	51.0	19.0	17.5	0.0	0.4	21.5	2.0	0.4	1.4	4.3
21.11.20 to 22.11.20	26.6	45.3	44.0	21.0	17.6	0.1	0.4	18.5	1.9	0.7	1.8	4.6
23.11.20 to 24.11.20	24.8	35.3	69.0	27.0	17.6	0.0	0.4	12.3	2.1	0.5	1.2	4.4
25.11.20 to 26.11.20	13.4	31.8	43.0	20.0	20.2	0.0	0.8	14.3	2.0	0.6	1.5	4.1
27.11.20 to 28.11.20	35.8	47.6	56.0	30.0	29.8	0.0	0.6	13.7	2.1	0.6	1.4	4.2
29.11.20 to 30.11.20	35.6	44.1	50.0	32.0	25.8	0.0	0.5	12.6	2.3	0.6	1.2	4.3
01.12.20 to 02.12.20	36.9	38.0	55.0	26.0	23.6	0.0	0.5	13.5	2.1	0.7	1.2	5.3
03.12.20 to 04.12.20	21.9	30.9	32.0	16.0	19.7	0.0	0.4	14.6	1.8	0.7	1.6	5.4
05.12.20 to 06.12.20	28.2	32.3	39.0	19.0	17.5	0.0	0.4	21.5	2.0	0.4	1.4	4.3
07.12.20 to 08.12.20	42.5	42.5	61.0	36.0	16.4	0.0	0.6	14.6	2.0	0.6	1.9	4.7
09.12.20 to 10.12.20	24.2	34.3	47.0	23.0	12.5	0.1	0.5	21.3	2.1	0.6	1.3	4.8
11.12.20 to 12.12.20	37.3	49.8	45.0	20.0	18.5	0.0	0.9	18.7	2.1	0.4	1.8	4.4
13.12.20 to 14.12.20	25.3	31.3	67.0	30.0	13.5	0.0	0.6	12.4	2.0	0.6	1.5	4.7
15.12.20 to 16.12.20	32.5	35.5	52.0	33.0	16.0	0.0	0.5	14.3	2.0	0.6	1.3	4.5
17.12.20 to 18.12.20	24.2	29.8	64.0	31.0	16.5	0.0	0.5	17.4	2.0	0.6	1.4	4.5
18.12.20 to 19.12.20	20.0	28.9	54.0	30.0	14.6	0.0	0.5	19.6	1.9	0.5	1.5	5.4
20.12.20 to 21.12.20	34.2	42.3	55.0	29.0	13.9	0.0	0.4	19.7	1.8	0.6	1.6	4.9
22.12.20 to 23.12.20	29.8	32.9	47.0	28.0	14.5	0.0	0.6	23.9	2.0	0.7	1.6	4.6
24.12.20 to 25.12.20	26.7	34.2	51.0	22.0	16.5	0.0	0.2	14.5	2.1	0.6	1.2	4.3
26.12.20 to 27.12.20	32.5	54.2	47.0	24.0	13.2	0.0	0.5	18.6	2.1	0.7	1.1	4.3

28.12.20 to 29.12.20	31.1	47.8	55.0	29.0	14.7	0.0	0.6	25.5	2.2	0.6	1.6	5.7
30.12.20 to 31.12.20	38.6	46.5	75.0	43.0	14.0	0.0	0.5	15.3	1.7	0.4	1.5	4.5
01.01.21 to 02.01.21	23.2	30.7	41.0	20.0	18.7	0.0	0.5	18.6	2.2	0.5	1.3	4.4
03.01.21 to 04.01.21	26.5	41.5	64.0	32.0	13.3	0.0	0.7	14.6	2.1	0.5	1.5	4.1
05.01.21 to 06.01.21	23.1	34.1	79.0	45.0	14.6	0.0	0.4	18.6	2.1	0.5	1.2	4.5
07.01.21 to 08.01.21	34.8	40.4	44.0	33.0	16.5	0.0	0.4	16.5	1.9	0.5	1.5	4.7
09.01.21 to 10.01.21	36.6	48.8	66.0	42.0	19.6	0.0	0.6	17.7	2.2	0.7	1.9	4.2
11.01.21 to 12.01.21	41.3	35.3	51.0	31.0	14.5	0.0	0.7	15.8	1.8	0.8	1.7	4.3
13.01.21 to 14.01.21	32.3	53.2	71.0	42.0	24.3	0.0	0.7	12.4	2.3	0.9	1.7	4.8
15.01.21 to 16.01.21	28.7	44.3	50.0	27.0	13.5	0.0	0.6	16.5	2.2	0.5	1.6	4.4
17.01.21 to 18.01.21	44.2	38.7	49.0	32.0	19.8	0.0	0.4	14.7	1.9	0.7	1.3	4.5
19.01.21 to 20.01.21	30.9	48.7	56.0	36.0	18.5	0.0	0.6	26.4	2.1	0.6	1.7	5.4
21.01.21 to 22.01.21	29.9	54.9	63.0	37.0	13.9	0.0	0.5	27.5	2.1	0.4	1.7	6.0
23.01.21 to 24.01.21	31.3	53.3	82.0	46.0	15.3	0.1	0.6	26.3	2.2	0.7	1.6	4.4
25.01.21 to 26.01.21	25.3	42.4	56.0	28.0	14.5	0.0	0.3	21.3	2.1	0.8	1.7	4.7
27.01.21 to 28.01.21	28.2	41.4	85.0	39.0	21.4	0.0	0.5	15.6	2.3	0.6	1.9	4.5
29.01.21 to 30.01.21	34.6	46.6	62.0	30.0	14.3	0.0	0.7	18.7	2.1	0.5	1.4	5.3
31.01.21 to 01.02.21	29.9	54.9	63.0	34.0	13.9	0.0	0.5	27.5	2.1	0.4	1.7	6.0
02.02.21 to 03.02.21	41.9	59.9	71.0	45.0	15.3	0.0	0.6	18.7	2.2	0.5	1.3	5.8
04.02.21 to 05.02.21	41.6	53.0	60.0	36.0	13.6	0.0	0.5	24.2	2.1	0.5	1.5	5.8
06.02.21 to 07.02.21	31.2	45.2	92.0	41.0	21.7	0.0	0.3	17.6	2.2	0.5	1.8	5.3
08.02.21 to 09.02.21	37.8	43.8	63.0	32.0	21.7	0.0	0.4	14.9	2.2	0.5	1.5	4.9
10.02.21 to 11.02.21	40.6	52.1	60.0	30.0	23.9	0.0	0.6	18.7	2.3	0.7	1.3	4.3
12.02.21 to 13.02.21	37.0	41.3	67.0	34.0	17.5	0.0	0.4	16.4	2.1	0.6	1.7	4.3
14.02.21 to 15.02.21	30.6	49.5	56.0	27.0	16.5	0.0	0.5	16.5	2.2	0.8	1.4	4.8
16.02.21 to 17.02.21	33.2	40.2	72.0	52.0	19.6	0.0	0.7	15.8	2.1	0.7	1.5	4.6
18.02.21 to 19.02.21	29.4	34.3	65.0	40.0	17.4	0.0	0.5	14.3	1.8	0.7	1.6	4.3
20.02.21 to 21.02.21	32.7	45.3	68.0	44.0	15.5	0.0	0.7	16.5	2.1	0.4	1.3	4.1
22.02.21 to 23.02.21	22.4	32.1	71.0	48.0	16.4	0.0	0.3	16.5	2.0	0.6	1.6	4.1
24.02.21 to 25.02.21	22.6	38.7	67.0	38.0	15.3	0.0	0.4	18.6	1.6	0.3	1.6	4.2
26.02.21 to 27.02.21	21.6	29.8	87.0	46.0	12.5	0.0	0.3	18.3	2.0	0.4	1.7	4.2
28.02.21 to 01.03.21	34.6	48.8	99.0	58.0	13.3	0.1	0.6	13.5	2.0	0.6	1.5	4.7
02.03.21 to 03.03.21	21.3	31.3	85.0	43.0	13.3	0.0	0.5	15.6	2.0	0.5	1.1	4.1
04.03.21 to 05.03.21	21.3	30.5	74.0	42.0	22.8	0.0	0.5	17.4	2.2	0.5	1.8	5.0
06.03.21 to 07.03.21	22.2	34.1	78.0	34.0	14.6	0.0	0.8	18.5	2.0	0.5	1.3	4.2
08.03.21 to 09.03.21	25.6	37.6	85.0	41.0	13.6	0.0	0.5	18.6	2.0	0.9	1.7	4.4
10.03.21 to 11.03.21	38.6	40.8	65.0	32.0	15.5	0.1	0.4	17.3	2.2	0.5	1.8	4.6
12.03.21 to 13.03.21	16.5	31.5	31.0	13.0	13.5	0.0	0.9	18.8	2.1	0.6	1.4	4.4
14.03.21 to 15.03.21	19.8	34.1	34.0	15.0	13.6	0.0	0.3	17.6	2.1	0.5	1.6	4.2
16.03.21 to 17.03.21	14.2	30.7	32.0	16.0	13.6	0.0	0.6	21.6	2.1	0.7	1.6	4.4
18.03.21 to 19.03.21	21.5	42.2	79.0	46.0	17.5	0.0	0.5	14.3	2.2	0.4	1.4	4.4
20.03.21 to 21.03.21	23.3	36.8	85.0	43.0	19.5	0.0	0.7	14.5	2.0	0.4	1.2	4.2
22.03.21 to 23.03.21	26.7	34.2	68.0	35.0	16.3	0.1	0.6	18.7	2.2	0.7	1.5	4.6
24.03.21 to 25.03.21	21.8	32.8	83.0	48.0	16.0	0.0	0.4	17.4	2.1	0.6	1.3	4.5
MIN	13.4	28.9	31.0	13.0	12.3	0.0	0.2	11.4	1.6	0.2	1.1	4.1
MAX	45.2	59.9	99.0	58.0	29.8	0.1	0.9	27.5	2.4	0.9	1.9	6.0
AVG	30.5	40.8	60.3	32.4	18.1	0.0	0.5	17.2	2.1	0.6	1.5	4.7



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Annex-VIII

NOIDA TESTING LABORATORIES

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TEST CERTIFICATE

Test Report of	Report No.	Date of Issue
Ground Water	WW-090121-17	24/01/2021

ISSUED TO: TATA POWERCOMPANY LIMITED
Jojobera Power Plant, Jamshedpur

SAMPLING & ANALYSIS DATA

Date of Sampling	:	09.01.2021
Sample No.	:	TP/2020/JAN/17
Sample Location	:	Jemco Ash Pond-2
Sample Quantity/Packing detail	:	2 lt/Plastic Cane

Chemical Analysis Result as per IS 10500 : 2012

Sl No	Parameter	Desir.Limit	Perms. Limit	Test Method	Result
1.	Color, Hazen	5	15	APHA (22 nd Edition)2012, 2120 B	<5
2.	Taste	Agreeable	Agreeable	IS 3025 (Part 5-1983 Rffm:2012	Agreeable
3.	Odour	Agreeable	Agreeable	IS 3025 (Part 5-1983 Rffm:2012	Agreeable
4.	pH analyzed at site	6.5-8.5	No Relaxation	IS 3025 (Part 11-1984 Rffm: 2012	7.42
5.	Anionic Detergents (as MBAS) in mg/l	0.2	1.0	IS 13428	<0.1
6.	Calcium as Ca in mg/l	75	200	IS 3025 (Part 40- 1991 Rffm: 2009	45.7
7.	Arsenic as As in mg/l	0.01	0.05	IS 3025 (Part 37-1988 Rffm: 2009	<0.005
8.	Lead as Pb in mg/l	0.01	No Relaxation	IS 3025 (Part 47-1994 Rffm: 2009	<0.005
9.	Mineral Oil	0.5	No Relaxation	IS 3025 (Part 39-1991 Rffm: 2009	<0.01
10.	Copper as Cu in mg/l	0.05	1.5	IS 3025 (Part 42 - 1992 Rffm:2009	<0.02
11.	Mercury as Hg in mg/l	0.001	No Relaxation	IS 3025 (Part 48-1994 Rffm: 2009	<0.002
12.	Cadmium as Cd in mg/l	0.003	No Relaxation	IS 3025 (Part 41-1992 Rffm: 2009	<0.001
13.	E. Coli MPN/100ml	Shall not be detectable in any 100ml sample		IS 1622:1981	Absent
14.	Fluoride as F in mg/l	1.0	1.5	IS 3025 (Part 60- 2008 Rffm: 2013	0.39
15.	Residual Free Chlorides In mg/l	0.2	1.0	IS 3025 (Part 26- 1986 Rffm:2009	<0.1
16.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53-1988 Rffm: 2009	0.15
17.	Chloride as Cl	250	1000	IS 3025 (Part 32-1988 Rffm: 2009	56.4
18.	Total Alkalinity as CaCO ₃ in mg/l	200	600	IS 3025 (Part 23- 1986 Rffm: 2009	165.5
19.	Aluminium as Al in mg/l	0.03	0.2	IS 3025 (Part 55- 2003	<0.01

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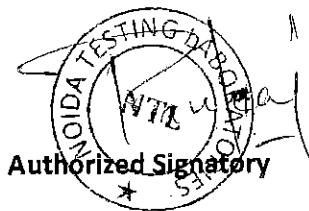
TEST CERTIFICATE

Chemical Analysis Result as per IS 10500 : 2012

Sl No	Parameter	Desir.Limit	Perms. Limit	Test Method	Result
1.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46-1994 Rffm: 2009	18.8
2.	Total Hardness as CaCO ₃ in mg/l	200	600	IS 3025 (Part 21-2013	158.4
3.	Boron as B in mg/l	0.5	1.0	IS 13428- 2005, Annex H	<0.5
4.	Manganese as Mn in mg/l	0.1	0.3	IS 3025 (Part 59 - 2006 Rffm:2012	<0.02
5.	Nitrate as NO ₃ in mg/l	45	No Relaxation	IS 3025 (Part 34-1988 Rffm: 2009	8.6
6.	Phenolic Compound as C ₆ H ₅ OH in mg/l	0.001	0.002	IS 3025 (Part 43- 1992; Rffm:2003	<0.001
7.	Selenium as Se in mg/l	0.01	No Relaxation	IS 15303 - 2003; Rffm 2013	<0.005
8.	Total Chromium as Cr in mg/l	0.05	No Relaxation	IS 3025 (Part 52 - 2003 Rffm:2009	<0.01
9.	Cyanide as CN in mg/l	0.05	No Relaxation	IS 3025 (Part 27- 1986 Rffm: 2009	<0.01
10.	Polynuclear Aromatic Hydrocarbons (as PAH in mg/l	0.0001	No Relaxation	US EPA 8270C	<0.0001
11.	Turbidity in N.T.U	1	5	IS 3025 (Part 10-1984 Rffm: 2012	<1.0
12.	Sulphide as H ₂ S in mg/l	0.05	No Relaxation	APHA 22nd Edtn 2012, 4500S2- D	<0.01
13.	Zinc in mg/l	0.2	No Relaxation	APHA 22nd Edtn, 2012, 6232 B	<0.14
14.	Nickel (as Ni in mg/l)	0.02	No Relaxation	IS 13428 (Annex L- 2005	<0.01
15.	Total Dissolved Solids in mg/l	500	2000	IS 3025(Part 16- 1984 Rffm: 2012	413
16.	Sulphate as SO ₄ in mg/l	0.05	No Relaxation	APHA 22nd Edtn 2012, 4500S2- D	<0.01
17.	Standard plate count MPN/100ml	--	--	IS 1622:1981	<5.0
18.	Sodium adsorption ratio	--	--	By Calculation	2.7
19.	Pesticides in ug/l	0.01	No Relaxation	US EPA	<0.01
20.	Radioactive materials Alpha emitters Bq/l	0.1	No Relaxation	IS 14194 (Part 2)	<0.1
21.	Radioactive materials Beta emitters Bq/l	1.0	No Relaxation	IS 14194 (Part 1)	<1.0

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Authorized Signatory



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TEST CERTIFICATE

Test Report of	Report No.	Date of Issue
Ground Water	WW-090121-17	24/01/2021

ISSUED TO: TATA POWERCOMPANY LIMITED
Jojobera Power Plant, Jamshedpur

SAMPLING & ANALYSIS DATA

Date of Sampling : 09.01.2021
Sample No. : TP/2020/JAN/17
Sample Location : Rampur Gitti Machine Area
Sample Quantity/Packing detail : 2 lt/Plastic Cane

Chemical Analysis Result as per IS 10500 : 2012

Sl No	Parameter	Desir.Limit	Perms. Limit	Test Method	Result
1.	Color, Hazen	5	15	APHA (22 nd Edition)2012, 2120 B	<5
2.	Taste	Agreeable	Agreeable	IS 3025 (Part 5-1983 Rffm:2012	Agreeable
3.	Odour	Agreeable	Agreeable	IS 3025 (Part 5-1983 Rffm:2012	Agreeable
4.	pH analyzed at site	6.5-8.5	No Relaxation	IS 3025 (Part 11-1984 Rffm: 2012	7.43
5.	Anionic Detergents (as MBAS) in mg/l	0.2	1.0	IS 13428	<0.1
6.	Calcium as Ca in mg/l	75	200	IS 3025 (Part 40- 1991 Rffm: 2009	42.7
7.	Arsenic as As in mg/l	0.01	0.05	IS 3025 (Part 37-1988 Rffm: 2009	<0.005
8.	Lead as Pb in mg/l	0.01	No Relaxation	IS 3025 (Part 47-1994 Rffm: 2009	<0.005
9.	Mineral Oil	0.5	No Relaxation	IS 3025 (Part 39-1991 Rffm: 2009	<0.01
10.	Copper as Cu in mg/l	0.05	1.5	IS 3025 (Part 42 - 1992 Rffm:2009	<0.01
11.	Mercury as Hg in mg/l	0.001	No Relaxation	IS 3025 (Part 48-1994 Rffm: 2009	<0.002
12.	Cadmium as Cd in mg/l	0.003	No Relaxation	IS 3025 (Part 41-1992 Rffm: 2009	<0.001
13.	E. Coli MPN/100ml	Shall not be detectable in any 100ml sample		IS 1622:1981	Absent
14.	Fluoride as F in mg/l	1.0	1.5	IS 3025 (Part 60- 2008 Rffm: 2013	0.48
15.	Residual Free Chlorides in mg/l	0.2	1.0	IS 3025 (Part 26- 1986 Rffm:2009	<0.1
16.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53-1988 Rffm: 2009	0.25
17.	Chloride as Cl	250	1000	IS 3025 (Part 32-1988 Rffm: 2009	72.7
18.	Total Alkalinity as CaCO ₃ in mg/l	200	600	IS 3025 (Part 23- 1986 Rffm: 2009	168.3
19.	Aluminium as Al in mg/l	0.03	0.2	IS 3025 (Part 55- 2003	<0.01

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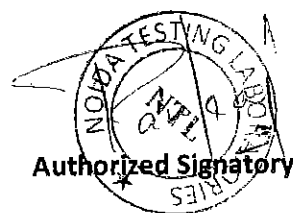
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Chemical Analysis Result as per IS 10500 : 2012

Sl No	Parameter	Desir.Limit	Perms. Limit	Test Method	Result
1.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46-1994 Rffm: 2009	18.7
2.	Total Hardness as CaCO ₃ in mg/l	200	600	IS 3025 (Part 21-2013	171.4
3.	Boron as B in mg/l	0.5	1.0	IS 13428- 2005, Annex H	<0.5
4.	Manganese as Mn in mg/l	0.1	0.3	IS 3025 (Part 59 - 2006 Rffm:2012	<0.02
5.	Nitrate as NO ₃ in mg/l	45	No Relaxation	IS 3025 (Part 34-1988 Rffm: 2009	9.6
6.	Phenolic Compound as C ₆ H ₅ OH in mg/l	0.001	0.002	IS 3025 (Part 43- 1992; Rffm:2003	<0.001
7.	Selenium as Se in mg/l	0.01	No Relaxation	IS 15303 - 2003; Rffm 2013	<0.005
8.	Total Chromium as Cr in mg/l	0.05	No Relaxation	IS 3025 (Part 52 - 2003 Rffm:2009	<0.01
9.	Cyanide as CN in mg/l	0.05	No Relaxation	IS 3025 (Part 27- 1986 Rffm: 2009	<0.01
10.	Polynuclear Aromatic Hydrocarbons (as PAH in mg/l)	0.0001	No Relaxation	US EPA 8270C	<0.0001
11.	Turbidity in N.T.U	1	5	IS 3025 (Part 10-1984 Rffm: 2012	<1.0
12.	Sulphide as H ₂ S in mg/l	0.05	No Relaxation	APHA 22nd Edtn 2012, 4500S2- D	<0.01
13.	Zinc in mg/l	0.2	No Relaxation	APHA 22nd Edtn, 2012, 6232 B	<0.13
14.	Nickel (as Ni in mg/l)	0.02	No Relaxation	IS 13428 (Annex L- 2005	<0.01
15.	Total Dissolved Solids in mg/l	500	2000	IS 3025(Part 16- 1984 Rffm: 2012	485
16.	Sulphate as SO ₄ in mg/l	0.05	No Relaxation	APHA 22nd Edtn 2012, 4500S2- D	<0.01
17.	Standard plate count MPN/100ml	--	--	IS 1622:1981	<5.1
18.	Sodium adsorption ratio	--	--	By Calculation	3.7
19.	Pesticides in ug/l	0.01	No Relaxation	US EPA	<0.01
20.	Radioactive materials Alpha emitters Bq/l	0.1	No Relaxation	IS 14194 (Part 2)	<0.1
21.	Radioactive materials Beta emitters Bq/l	1.0	No Relaxation	IS 14194 (Part 1)	<1.0

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TEST CERTIFICATE

Test Report of	Report No.	Date of Issue
Ground Water	WW-090121-17	24/01/2021

ISSUED TO: TATA POWERCOMPANY LIMITED
Jojobera Power Plant, Jamshedpur

SAMPLING & ANALYSIS DATA

Date of Sampling : 09.01.2021
Sample No. : TP/2020/JAN/17
Sample Location : Jemco Ash Pond-1
Sample Quantity/Packing detail : 2 lt/Plastic Cane

Chemical Analysis Result as per IS 10500 : 2012

Sl No	Parameter	Desir.Limit	Perms. Limit	Test Method	Result
1.	Color, Hazen	5	15	APHA (22 nd Edition)2012, 2120 B	<5
2.	Taste	Agreeable	Agreeable	IS 3025 (Part 5-1983 Rffm:2012)	Agreeable
3.	Odour	Agreeable	Agreeable	IS 3025 (Part 5-1983 Rffm:2012)	Agreeable
4.	pH analyzed at site	6.5-8.5	No Relaxation	IS 3025 (Part 11-1984 Rffm: 2012)	7.64
5.	Anionic Detergents (as MBAS) in mg/l	0.2	1.0	IS 13428	<0.1
6.	Calcium as Ca in mg/l	75	200	IS 3025 (Part 40- 1991 Rffm: 2009)	43.5
7.	Arsenic as As in mg/l	0.01	0.05	IS 3025 (Part 37-1988 Rffm: 2009)	<0.005
8.	Lead as Pb in mg/l	0.01	No Relaxation	IS 3025 (Part 47-1994 Rffm: 2009)	<0.005
9.	Mineral Oil	0.5	No Relaxation	IS 3025 (Part 39-1991 Rffm: 2009)	<0.01
10.	Copper as Cu in mg/l	0.05	1.5	IS 3025 (Part 42 - 1992 Rffm:2009)	<0.02
11.	Mercury as Hg in mg/l	0.001	No Relaxation	IS 3025 (Part 48-1994 Rffm: 2009)	<0.002
12.	Cadmium as Cd in mg/l	0.003	No Relaxation	IS 3025 (Part 41-1992 Rffm: 2009)	<0.001
13.	E. Coli MPN/100ml	Shall not be detectable in any 100ml sample		IS 1622:1981	Absent
14.	Fluoride as F in mg/l	1.0	1.5	IS 3025 (Part 60- 2008 Rffm: 2013)	0.39
15.	Residual Free Chlorides in mg/l	0.2	1.0	IS 3025 (Part 26- 1986 Rffm:2009)	<0.1
16.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53-1988 Rffm: 2009)	0.16
17.	Chloride as Cl	250	1000	IS 3025 (Part 32-1988 Rffm: 2009)	55.3
18.	Total Alkalinity as CaCO ₃ in mg/l	200	600	IS 3025 (Part 23- 1986 Rffm: 2009)	165.4
19.	Aluminium as Al in mg/l	0.03	0.2	IS 3025 (Part 55- 2003)	<0.01

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Chemical Analysis Result as per IS 10500 : 2012

Sl No	Parameter	Desir.Limit	Perms. Limit	Test Method	Result
1.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46-1994 Rffm: 2009	18.8
2.	Total Hardness as CaCO ₃ in mg/l	200	600	IS 3025 (Part 21-2013	162.6
3.	Boron as B in mg/l	0.5	1.0	IS 13428- 2005, Annex H	<0.5
4.	Manganese as Mn In mg/l	0.1	0.3	IS 3025 (Part 59 - 2006 Rffm:2012	<0.02
5.	Nitrate as NO ₃ in mg/l	45	No Relaxation	IS 3025 (Part 34-1988 Rffm: 2009	8.7
6.	Phenolic Compound as C ₆ H ₅ OH in mg/l	0.001	0.002	IS 3025 (Part 43- 1992; Rffm:2003	<0.001
7.	Selenium as Se in mg/l	0.01	No Relaxation	IS 15303 - 2003; Rffm 2013	<0.005
8.	Total Chromium as Cr in mg/l	0.05	No Relaxation	IS 3025 (Part 52 - 2003 Rffm:2009	<0.01
9.	Cyanide as CN in mg/l	0.05	No Relaxation	IS 3025 (Part 27- 1986 Rffm: 2009	<0.01
10.	Polynuclear Aromatic Hydrocarbons (as PAH in mg/l)	0.0001	No Relaxation	US EPA 8270C	<0.0001
11.	Turbidity in N.T.U	1	5	IS 3025 (Part 10-1984 Rffm: 2012	<1.0
12.	Sulphide as H ₂ S in mg/l	0.05	No Relaxation	APHA 22nd Edtn 2012, 4500S2- D	<0.01
13.	Zinc in mg/l	0.2	No Relaxation	APHA 22nd Edtn, 2012, 6232 B	<0.14
14.	Nickel (as Ni in mg/l)	0.02	No Relaxation	IS 13428 (Annex L- 2005	<0.01
15.	Total Dissolved Solids in mg/l	500	2000	IS 3025(Part 16- 1984 Rffm: 2012	434
16.	Sulphate as SO ₄ in mg/l	0.05	No Relaxation	APHA 22nd Edtn 2012, 4500S2- D	<0.01
17.	Standard plate count MPN/100ml	--	--	IS 1622:1981	<5.0
18.	Sodium adsorption ratio	--	--	By Calculation	2.7
19.	Pesticides in ug/l	0.01	No Relaxation	US EPA	<0.01
20.	Radioactive materials Alpha emitters Bq/l	0.1	No Relaxation	IS 14194 (Part 2)	<0.1
21.	Radioactive materials Beta emitters Bq/l	1.0	No Relaxation	IS 14194 (Part 1)	<1.0

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TEST CERTIFICATE

Test Report of	Report No.	Date of Issue
Ground Water	WW-090121-17	24/01/2021

ISSUED TO: **TATA POWERCOMPANY LIMITED**
Jojobera Power Plant, Jamshedpur

SAMPLING & ANALYSIS DATA

Date of Sampling : 09.01.2021
Sample No. : TP/2020/JAN/17
Sample Location : CHP
Sample Quantity/Packing detail : 2 lt/Plastic Cane

Chemical Analysis Result as per IS 10500 : 2012

Sl No	Parameter	Desir.Limit	Perms. Limit	Test Method	Result
1.	Color, Hazen	5	15	APHA (22 nd Edition)2012, 2120 B	<5
2.	Taste	Agreeable	Agreeable	IS 3025 (Part 5-1983 Rffm:2012	Agreeable
3.	Odour	Agreeable	Agreeable	IS 3025 (Part 5-1983 Rffm:2012	Agreeable
4.	pH analyzed at site	6.5-8.5	No Relaxation	IS 3025 (Part 11-1984 Rffm: 2012	7.31
5.	Anionic Detergents (as MBAS) in mg/l	0.2	1.0	IS 13428	<0.1
6.	Calcium as Ca in mg/l	75	200	IS 3025 (Part 40- 1991 Rffm: 2009	42.5
7.	Arsenic as As in mg/l	0.01	0.05	IS 3025 (Part 37-1988 Rffm: 2009	<0.005
8.	Lead as Pb in mg/l	0.01	No Relaxation	IS 3025 (Part 47-1994 Rffm: 2009	<0.005
9.	Mineral Oil	0.5	No Relaxation	IS 3025 (Part 39-1991 Rffm: 2009	<0.01
10.	Copper as Cu in mg/l	0.05	1.5	IS 3025 (Part 42 - 1992 Rffm:2009	<0.01
11.	Mercury as Hg in mg/l	0.001	No Relaxation	IS 3025 (Part 48-1994 Rffm: 2009	<0.002
12.	Cadmium as Cd in mg/l	0.003	No Relaxation	IS 3025 (Part 41-1992 Rffm: 2009	<0.001
13.	E. Coli MPN/100ml	Shall not be detectable in any 100ml sample		IS 1622:1981	Absent
14.	Fluoride as F in mg/l	1.0	1.5	IS 3025 (Part 60- 2008 Rffm: 2013	0.47
15.	Residual Free Chlorides in mg/l	0.2	1.0	IS 3025 (Part 26- 1986 Rffm:2009	<0.1
16.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53-1988 Rffm: 2009	0.13
17.	Chloride as Cl	250	1000	IS 3025 (Part 32-1988 Rffm: 2009	68.5
18.	Total Alkalinity as CaCO ₃ in mg/l	200	600	IS 3025 (Part 23- 1986 Rffm: 2009	174.7
19.	Aluminium as Al in mg/l	0.03	0.2	IS 3025 (Part 55- 2003	<0.01

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Chemical Analysis Result as per IS 10500 : 2012

Sl No	Parameter	Desir.Limit	Perms. Limit	Test Method	Result
20.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46-1994 Rffm: 2009	17.3
21.	Total Hardness as CaCO ₃ in mg/l	200	600	IS 3025 (Part 21-2013	178.4
22.	Boron as B in mg/l	0.5	1.0	IS 13428- 2005, Annex H	<0.5
23.	Manganese as Mn in mg/l	0.1	0.3	IS 3025 (Part 59 - 2006 Rffm:2012	<0.02
24.	Nitrate as NO ₃ in mg/l	45	No Relaxation	IS 3025 (Part 34-1988 Rffm: 2009	9.4
25.	Phenolic Compound as C ₆ H ₅ OH in mg/l	0.001	0.002	IS 3025 (Part 43- 1992; Rffm:2003	<0.001
26.	Selenium as Se in mg/l	0.01	No Relaxation	IS 15303 - 2003; Rffm 2013	<0.005
27.	Total Chromium as Cr in mg/l	0.05	No Relaxation	IS 3025 (Part 52 - 2003 Rffm:2009	<0.01
28.	Cyanide as CN in mg/l	0.05	No Relaxation	IS 3025 (Part 27- 1986 Rffm: 2009	<0.01
29.	Polynuclear Aromatic Hydrocarbons (as PAH in mg/l)	0.0001	No Relaxation	US EPA 8270C	<0.0001
30.	Turbidity in N.T.U	1	5	IS 3025 (Part 10-1984 Rffm: 2012	<1.0
31.	Sulphide as H ₂ S in mg/l	0.05	No Relaxation	APHA 22nd Edtn 2012, 4500S2- D	<0.01
32.	Zinc in mg/l	0.2	No Relaxation	APHA 22nd Edtn, 2012, 6232 B	<0.10
33.	Nickel (as Ni in mg/l)	0.02	No Relaxation	IS 13428 (Annex L- 2005	<0.01
34.	Total Dissolved Solids in mg/l	500	2000	IS 3025(Part 16- 1984 Rffm: 2012	434
35.	Sulphate as SO ₄ in mg/l	0.05	No Relaxation	APHA 22nd Edtn 2012, 4500S2- D	<0.01
36.	Standard plate count MPN/100ml	--	--	IS 1622:1981	<5.0
37.	Sodium adsorption ratio	--	--	By Calculation	3.8
38.	Pesticides in ug/l	0.01	No Relaxation	US EPA	<0.01
39.	Radioactive materials Alpha emitters Bq/l	0.1	No Relaxation	IS 14194 (Part 2)	<0.1
40.	Radioactive materials Beta emitters Bq/l	1.0	No Relaxation	IS 14194 (Part 1)	<1.0

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TEST CERTIFICATE

Test Report of Ground Water	Report No. WW-090121-17	Date of Issue 24/01/2021
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ISSUED TO: **TATA POWERCOMPANY LIMITED**
Jojobera Power Plant, Jamshedpur

SAMPLING & ANALYSIS DATA

Date of Sampling : 09.01.2021
Sample No. : TP/2020/JAN/17
Sample Location : Material Gate
Sample Quantity/Packing detail : 2 lt/Plastic Cane

Chemical Analysis Result as per IS 10500 : 2012

Sl No	Parameter	Desir. Limit	Perms. Limit	Test Method	Result
1.	Color, Hazen	5	15	APHA (22 nd Edition)2012, 2120 B	<5
2.	Taste	Agreeable	Agreeable	IS 3025 (Part 5-1983 Rffm:2012	Agreeable
3.	Odour	Agreeable	Agreeable	IS 3025 (Part 5-1983 Rffm:2012	Agreeable
4.	pH analyzed at site	6.5-8.5	No Relaxation	IS 3025 (Part 11-1984 Rffm: 2012	7.75
5.	Anionic Detergents (as MBAS) in mg/l	0.2	1.0	IS 13428	<0.1
6.	Calcium as Ca in mg/l	75	200	IS 3025 (Part 40- 1991 Rffm: 2009	44.9
7.	Arsenic as As in mg/l	0.01	0.05	IS 3025 (Part 37-1988 Rffm: 2009	<0.005
8.	Lead as Pb in mg/l	0.01	No Relaxation	IS 3025 (Part 47-1994 Rffm: 2009	<0.005
9.	Mineral Oil	0.5	No Relaxation	IS 3025 (Part 39-1991 Rffm: 2009	<0.01
10.	Copper as Cu in mg/l	0.05	1.5	IS 3025 (Part 42 - 1992 Rffm:2009	<0.01
11.	Mercury as Hg in mg/l	0.001	No Relaxation	IS 3025 (Part 48-1994 Rffm: 2009	<0.002
12.	Cadmium as Cd in mg/l	0.003	No Relaxation	IS 3025 (Part 41-1992 Rffm: 2009	<0.001
13.	E. Coli MPN/100ml	Shall not be detectable in any 100ml sample		IS 1622:1981	Absent
14.	Fluoride as F in mg/l	1.0	1.5	IS 3025 (Part 60- 2008 Rffm: 2013	0.44
15.	Residual Free Chlorides in mg/l	0.2	1.0	IS 3025 (Part 26- 1986 Rffm:2009	<0.1
16.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53-1988 Rffm: 2009	0.12
17.	Chloride as Cl	250	1000	IS 3025 (Part 32-1988 Rffm: 2009	62.7
18.	Total Alkalinity as CaCO ₃ in mg/l	200	600	IS 3025 (Part 23- 1986 Rffm: 2009	179.4
19.	Aluminium as Al in mg/l	0.03	0.2	IS 3025 (Part 55- 2003	<0.01

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TEST CERTIFICATE

Chemical Analysis Result as per IS 10500 : 2012

Sl No	Parameter	Desir.Limit	Perms. Limit	Test Method	Result
20.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46-1994 Rffm: 2009	15.8
21.	Total Hardness as CaCO ₃ in mg/l	200	600	IS 3025 (Part 21-2013	179.5
22.	Boron as B in mg/l	0.5	1.0	IS 13428- 2005, Annex H	<0.5
23.	Manganese as Mn in mg/l	0.1	0.3	IS 3025 (Part 59 - 2006 Rffm:2012	<0.02
24.	Nitrate as NO ₃ in mg/l	45	No Relaxation	IS 3025 (Part 34-1988 Rffm: 2009	9.2
25.	Phenolic Compound as C ₆ H ₅ OH in mg/l	0.001	0.002	IS 3025 (Part 43- 1992; Rffm:2003	<0.001
26.	Selenium as Se in mg/l	0.01	No Relaxation	IS 15303 - 2003; Rffm 2013	<0.005
27.	Total Chromium as Cr in mg/l	0.05	No Relaxation	IS 3025 (Part 52 - 2003 Rffm:2009	<0.01
28.	Cyanide as CN in mg/l	0.05	No Relaxation	IS 3025 (Part 27- 1986 Rffm: 2009	<0.01
29.	Polynuclear Aromatic Hydrocarbons (as PAH in mg/l)	0.0001	No Relaxation	US EPA 8270C	<0.0001
30.	Turbidity in N.T.U	1	5	IS 3025 (Part 10-1984 Rffm: 2012	<1.0
31.	Sulphide as H ₂ S in mg/l	0.05	No Relaxation	APHA 22nd Edtn 2012, 4500S2- D	<0.01
32.	Zinc in mg/l	0.2	No Relaxation	APHA 22nd Edtn, 2012, 6232 B	<0.10
33.	Nickel (as Ni in mg/l)	0.02	No Relaxation	IS 13428 (Annex L- 2005	<0.01
34.	Total Dissolved Solids in mg/l	500	2000	IS 3025(Part 16- 1984 Rffm: 2012	472
35.	Sulphate as SO ₄ in mg/l	0.05	No Relaxation	APHA 22nd Edtn 2012, 4500S2- D	<0.01
36.	Standard plate count MPN/100ml	--	--	IS 1622:1981	<5.0
37.	Sodium adsorption ratio	--	--	By Calculation	3.7
38.	Pesticides in ug/l	0.01	No Relaxation	US EPA	<0.01
39.	Radioactive materials Alpha emitters Bq/l	0.1	No Relaxation	IS 14194 (Part 2)	<0.1
40.	Radioactive materials Beta emitters Bq/l	1.0	No Relaxation	IS 14194 (Part 1)	<1.0

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TEST CERTIFICATE

Test Report of	Report No.	Date of Issue
Ground Water	WW-090121-17	24/01/2021

ISSUED TO: TATA POWERCOMPANY LIMITED
Jojobera Power Plant, Jamshedpur

SAMPLING & ANALYSIS DATA

Date of Sampling : 09.01.2021
Sample No. : TP/2020/JAN/17
Sample Location : Govindpur Village
Sample Quantity/Packing detail : 2 lt/Plastic Cane

Chemical Analysis Result as per IS 10500 : 2012

Sl No	Parameter	Desir.Limit	Perms. Limit	Test Method	Result
1.	Color, Hazen	5	15	APHA (22 nd Edition)2012, 2120 B	<5
2.	Taste	Agreeable	Agreeable	IS 3025 (Part 5-1983 Rffm:2012	Agreeable
3.	Odour	Agreeable	Agreeable	IS 3025 (Part 5-1983 Rffm:2012	Agreeable
4.	pH analyzed at site	6.5-8.5	No Relaxation	IS 3025 (Part 11-1984 Rffm: 2012	7.65
5.	Anionic Detergents (as MBAS) in mg/l	0.2	1.0	IS 13428	<0.1
6.	Calcium as Ca in mg/l	75	200	IS 3025 (Part 40- 1991 Rffm: 2009	47.3
7.	Arsenic as As in mg/l	0.01	0.05	IS 3025 (Part 37-1988 Rffm: 2009	<0.005
8.	Lead as Pb in mg/l	0.01	No Relaxation	IS 3025 (Part 47-1994 Rffm: 2009	<0.005
9.	Mineral Oil	0.5	No Relaxation	IS 3025 (Part 39-1991 Rffm: 2009	<0.01
10.	Copper as Cu in mg/l	0.05	1.5	IS 3025 (Part 42 - 1992 Rffm:2009	<0.01
11.	Mercury as Hg in mg/l	0.001	No Relaxation	IS 3025 (Part 48-1994 Rffm: 2009	<0.002
12.	Cadmium as Cd in mg/l	0.003	No Relaxation	IS 3025 (Part 41-1992 Rffm: 2009	<0.001
13.	E. Coli MPN/100ml	Shall not be detectable in any 100ml sample		IS 1622:1981	Absent
14.	Fluoride as F in mg/l	1.0	1.5	IS 3025 (Part 60- 2008 Rffm: 2013	0.46
15.	Residual Free Chlorides in mg/l	0.2	1.0	IS 3025 (Part 26- 1986 Rffm:2009	<0.1
16.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53-1988 Rffm: 2009	0.12
17.	Chloride as Cl	250	1000	IS 3025 (Part 32-1988 Rffm: 2009	67.4
18.	Total Alkalinity as CaCO ₃ in mg/l	200	600	IS 3025 (Part 23- 1986 Rffm: 2009	176.2
19.	Aluminium as Al in mg/l	0.03	0.2	IS 3025 (Part 55- 2003	<0.01

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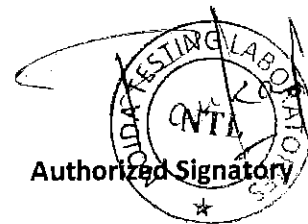
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Chemical Analysis Result as per IS 10500 : 2012

Sl No	Parameter	Deslr.Limit	Perms. Limit	Test Method	Result
20.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46-1994 Rffm: 2009	17.5
21.	Total Hardness as CaCO ₃ in mg/l	200	600	IS 3025 (Part 21-2013	189.6
22.	Boron as B in mg/l	0.5	1.0	IS 13428- 2005, Annex H	<0.5
23.	Manganese as Mn in mg/l	0.1	0.3	IS 3025 (Part 59 - 2006 Rffm:2012	<0.02
24.	Nitrate as NO ₃ in mg/l	45	No Relaxation	IS 3025 (Part 34-1988 Rffm: 2009	9.1
25.	Phenolic Compound as C ₆ H ₅ OH in mg/l	0.001	0.002	IS 3025 (Part 43- 1992; Rffm:2003	<0.001
26.	Selenium as Se in mg/l	0.01	No Relaxation	IS 15303 - 2003; Rffm 2013	<0.005
27.	Total Chromium as Cr in mg/l	0.05	No Relaxation	IS 3025 (Part 52 - 2003 Rffm:2009	<0.01
28.	Cyanide as CN in mg/l	0.05	No Relaxation	IS 3025 (Part 27- 1986 Rffm: 2009	<0.01
29.	Polynuclear Aromatic Hydrocarbons (as PAH in mg/l)	0.0001	No Relaxation	US EPA 8270C	<0.0001
30.	Turbidity in N.T.U	1	5	IS 3025 (Part 10-1984 Rffm: 2012	<1.0
31.	Sulphide as H ₂ S in mg/l	0.05	No Relaxation	APHA 22nd Edtn 2012, 4500S2- D	<0.01
32.	Zinc in mg/l	0.2	No Relaxation	APHA 22nd Edtn, 2012, 6232 B	<0.10
33.	Nickel (as Ni in mg/l)	0.02	No Relaxation	IS 13428 (Annex L- 2005	<0.01
34.	Total Dissolved Solids in mg/l	500	2000	IS 3025(Part 16- 1984 Rffm: 2012	446
35.	Sulphate as SO ₄ in mg/l	0.05	No Relaxation	APHA 22nd Edtn 2012, 4500S2- D	<0.01
36.	Standard plate count MPN/100ml	--	--	IS 1622:1981	<5.0
37.	Sodium adsorption ratio	--	--	By Calculation	3.7
38.	Pesticides in ug/l	0.01	No Relaxation	US EPA	<0.01
39.	Radioactive materials Alpha emitters Bq/l	0.1	No Relaxation	IS 14194 (Part 2)	<0.1
40.	Radioactive materials Beta emitters Bq/l	1.0	No Relaxation	IS 14194 (Part 1)	<1.0

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STATUS REPORT ON AFFORSTATION PLAN

1. Trees planted : 24000 between June'2001 to Oct'2001
Planted trees maintained up to March 2003
2. Planted 6521 trees between January 2003 to March 2003
3. Planted 1120 trees between April'2003 to September 2003
4. Planted 200 trees between April'2005 to September 2005
5. Planted 100 trees between October 2005 to March 2006 in phased manner
6. Planted 500 trees between April 2006 and September 2006.
7. Planted 500 trees between October 2006 to March 2007.
8. Planted 300 trees between April 2007 to September 2007
9. Planted 800 trees between October 2007 to March 2008
10. Planted 300 trees between April 2008 to September 2008
11. Planted 300 trees between Oct 2008 to March'2009
12. Planted 300 trees between April 2009 to Sept'2009
13. Planted 2000 trees between October 2009 to March 2010
14. Planted 3993 trees between April 2010 to September 2010
15. Planted 1007 trees between October 2010 to April 2011
16. Planted 400 trees between April 2011 to September 2011
17. Planted 400 trees between October 2011 to March 2012
18. Planted 400 trees between April 2012 to September 2012
19. Planted 50 trees between October 2012 to March 2013
20. Planted 250 trees between April 2013 to March 2014
21. Planted 350 trees between April 2014 to September 2014
22. Planted 300 trees between October 2014 to March 2015
23. Planted 1591 trees between April 2015 to March 2016
24. Planted 651 trees between April 2016 to September 2016
25. Planted 827 trees between October'2016 to March 2017
26. Planted 500 trees between April'17 to March'18.
27. Planted 560 trees between April'18 to March'19.
28. Planted 1150 trees between April'19 to March '20.
29. Planted 424 trees between April 20 to March 21

Total No. of sapling planted 49794 nos. till March 21.

Green Belt: 47.44 Acres

*Green coverage: 33.17 %

*TREE DENSITY = Approx. 1511 per Hectare

*Source: Third Party Tree Census of Jojobera Power Plant

Species of plants taken up for forestation- Refer next page.

S. No.	Scientific Name	Common Name
Shrubs		
1	<i>Lagascea mollis</i>	American soft head
2	<i>Cassia tora</i>	Pot cassia
3	<i>Hibiscus rosasinensis</i>	Shoe flower
4	<i>Lantana camera</i>	Lantana
Trees		
5	<i>Shorea robusta</i>	Sal
6	<i>Tectona grandis</i>	Teak
7	<i>Butea monosperma</i>	Flame of the forest
8	<i>Dendrocalamus strictus</i>	Bans
9	<i>Polyalthia longifolia</i>	Mast tree
10	<i>Acacia nilotica</i>	Babul
11	<i>Dalbergia sisoo</i>	Sisoo
12	<i>Terminalia cremulata</i>	Senha
13	<i>Lagerstroemia parviflora</i>	Lendya
14	<i>Bauhinia variegata</i>	Kachnar
15	<i>Ficus Bengalensis</i>	Vad
16	<i>Ficus religiosa</i>	Peepal
17	<i>Feucana leucocephala</i>	Subabul
18	<i>Terminalia catappa</i>	Jungli Badam
19	<i>Anogeissus latifolia</i>	Dhaura
20	<i>Maduca indica</i>	Mohwa
21	<i>Albizia lebbeck</i>	Black sirish
22	<i>Emblia officinalis</i>	Amla
23	<i>Terminalia arjuna</i>	Arjuna

Operational Expenditure for Environment during FY 2020-21 (Jojobera Station)			
Sl. No	Activity/Category	Condition reference	FY 2020-21 (In Rs.)
1	Environment Monitoring	EC unit 5 (iv)(v)(vii)(xvi)(xvii) ,CTO Unit 5 A (xi)	2936185
2	Green Belt Development	EC unit 5 (xviii),CTO Unit 5 A (ix)	101480
3	O & M of ETP & STP	EC unit 5 (IX &X),CTO Unit 5 A (x)	5154240
	ETP Water treatment chemical cost		899724
4	Trial for SOx reduction with chemical additives		1340480
5	O & M of CAAQMS	CTO unit 5 (i)	1488666
6	Operation and Maintainance of online monitoring system		1260000
8	Mobile water sprinkler	EC unit 5 (xvii),CTO Unit 5 B (viii)	1748524
9	Anhydrous Ammonia for ESP conditioning	EC unit 5 (v)	270683
10	Ground water level monitoring		83261
12	Misc. Environment Consultancy services		1613060
Total Expenditure			16896303

(An ISO 9001, 14001 & OSHAS 18001:2007, NABL Certified Lab)

Job Description : Environmental Testing, ETP/STP Manufacturing, ETP/STP Plant Operation Pollution NOC etc.

Lab - H1-837, Near Pollution Control Board, RIICO Indl. Area, Bhiwadi, Distt. Alwar (Rajasthan) - 301019

Ph. No. : 09694666022, 9466619911, 7737696987, Email : asiaenvirolab@gmail.com , Website : www.asiaenvirolab.com

Test Report

Report No.: AEL/2019/TP/2004/01	Reporting Date: 26/04/2019
Issued to: M/S TATA POWER COMPANY Jojobera Power Plant, Jojobera Jamshedpur	Sample I'd : AEL/19/TP/2004/01 Date : 22.04.19 Period of testing : 22.04.19 - 26.04.19

SAMPLE PARTICULARS:	
Test Report of	HEAVY METALS
Type of the Sample	Sample of (Bottom Ash) U #1
Date of Sampling	20.04.19

TEST RESULTS:				
S.N.	Parameter	Test Method	Results	Units
1.	Mercury (as Hg)	USEPA 3050B	0.84	mg/kg
2.	Cadmium (as Cd)	USEPA 3050B	<1.00	mg/kg
3.	Chromium (as Cr)	USEPA 3050B	1.65	mg/kg
4.	Lead (as Pb)	USEPA 3050B	1.73	mg/kg
5.	Arsenic (as As)	USEPA 3050B	1.31	mg/kg
6.	Zinc (as Zn)	USEPA 3050B	4.57	mg/kg
7.	Iron (as Fe)	AOAC 990.08:2005	21.56	mg/kg

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Note: 1. The result listed refer only to the tested samples and applicable parameters.
 2. Sample will be destroyed one month from the date of issue of test certificate.
 3. Any complaints about this report should be communicated within 7 days of issue of this report
 4. The report is Not to be reproduced-wholly or in part and can Not be used as an evidence in the Court of law and should Not be used in any advertising Media without our special permission in writing.



ASIA ENVIRO LAB

(An ISO 9001, 14001 & OSHAS 18001:2007, NABL Certified Lab)

Job Description : Environmental Testing, ETP/STP Manufacturing, ETP/STP Plant Operation Pollution NOC etc.

Lab - H1-837, Near Pollution Control Board, RIICO Indl. Area, Bhiwadi, Distt. Alwar (Rajasthan) - 301019

Ph. No. : 09694666022, 9466619911, 7737696987, Email : asiaenvirolab@gmail.com , Website : www.asiaenvirolab.com

Test Report

Report No.: AEL/2019/TP/2004/02	Reporting Date: 26/04/2019
Issued to: M/S TATA POWER COMPANY Jojobera Power Plant, Jojobera Jamshedpur	Sample I'd : AEL/19/TP/2004/02 Date : 22.04.19 Period of testing : 22.04.19 - 26.04.19

SAMPLE PARTICULARS:	
Test Report of	HEAVY METALS
Type of the Sample	Sample of (Bottom Ash) U #2
Date of Sampling	20.04.19

TEST RESULTS:				
S.N.	Parameter	Test Method	Results	Units
1.	Mercury (as Hg)	USEPA 3050B	0.93	mg/kg
2.	Cadmium (as Cd)	USEPA 3050B	<1.00	mg/kg
3.	Chromium (as Cr)	USEPA 3050B	1.56	mg/kg
4.	Lead (as Pb)	USEPA 3050B	1.72	mg/kg
5.	Arsenic (as As)	USEPA 3050B	1.28	mg/kg
6.	Zinc (as Zn)	USEPA 3050B	4.64	mg/kg
7.	Iron (as Fe)	AOAC 990.08:2005	22.56	mg/kg

Checked By

Authorized Signatory



- Note: 1. The result listed refer only to the tested samples and applicable parameters.
 2. Sample will be destroyed one month from the date of issue of test certificate.
 3. Any complaints about this report should be communicated within 7 days of issue of this report
 4. The report is Not to be reproduced-wholly or in part and can Not be used as an evidence in the Court of law and should Not be used in any advertising Media without our special permission in writing.



ASIA ENVIRO LAB

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Job Description : Environmental Testing, ETP/STP Manufacturing, ETP/STP Plant Operation Pollution NOC etc.

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Ph. No. : 09694666022, 9466619911, 7737696987, Email : asiaenvirolab@gmail.com , Website : www.asiaenvirolab.com

Test Report

Report No.: AEL/2019/TP/2004/03	Reporting Date: 26/04/2019
Issued to: M/S TATA POWER COMPANY Jojobera Power Plant, Jojobera Jamshedpur	Sample I'd : AEL/19/TP/2004/03 Date : 22.04.19 Period of testing : 22.04.19 - 26.04.19

SAMPLE PARTICULARS:	
Test Report of	HEAVY METALS
Type of the Sample	Sample of (Bottom Ash) U #3
Date of Sampling	20.04.19

TEST RESULTS:				
S.N.	Parameter	Test Method	Results	Units
1.	Mercury (as Hg)	USEPA 3050B	0.97	mg/kg
2.	Cadmium (as Cd)	USEPA 3050B	<1.00	mg/kg
3.	Chromium (as Cr)	USEPA 3050B	1.72	mg/kg
4.	Lead (as Pb)	USEPA 3050B	1.34	mg/kg
5.	Arsenic (as As)	USEPA 3050B	1.51	mg/kg
6.	Zinc (as Zn)	USEPA 3050B	4.42	mg/kg
7.	Iron (as Fe)	AOAC 990.08:2005	21.67	mg/kg

Checked By



Authorized Signatory

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Test Report

Report No.: AEL/2019/TP/2004/04	Reporting Date: 26/04/2019
Issued to: M/S TATA POWER COMPANY Jojobera Power Plant, Jojobera Jamshedpur	Sample I'd : AEL/19/TP/2004/04 Date : 22.04.19 Period of testing : 22.04.19 - 26.04.19

SAMPLE PARTICULARS:	
Test Report of	HEAVY METALS
Type of the Sample	Sample of (Bottom Ash) U #4
Date of Sampling	20.04.19

TEST RESULTS:				
S.N.	Parameter	Test Method	Results	Units
1.	Mercury (as Hg)	USEPA 3050B	0.89	mg/kg
2.	Cadmium (as Cd)	USEPA 3050B	<1.00	mg/kg
3.	Chromium (as Cr)	USEPA 3050B	1.42	mg/kg
4.	Lead (as Pb)	USEPA 3050B	1.32	mg/kg
5.	Arsenic (as As)	USEPA 3050B	1.54	mg/kg
6.	Zinc (as Zn)	USEPA 3050B	3.28	mg/kg
7.	Iron (as Fe)	AOAC 990.08:2005	21.34	mg/kg

Checked By


 Authorized Signatory

- Note: 1. The result listed refer only to the tested samples and applicable parameters.
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Ph. No. : 09694666022, 9466619911, 7737696987, Email : asiaenvirolab@gmail.com , Website : www.asiaenvirolab.com

Test Report

Report No.: AEL/2019/TP/2004/05	Reporting Date: 26/04/2019
Issued to: M/S TATA POWER COMPANY Jojobera Power Plant, Jojobera Jamshedpur	Sample I'd : AEL/19/TP/2004/05 Date : 22.04.19 Period of testing : 22.04.19 – 26.04.19

SAMPLE PARTICULARS:	
Test Report of	HEAVY METALS
Type of the Sample	Sample of (Bottom Ash) U #5
Date of Sampling	20.04.19

TEST RESULTS:				
S.N.	Parameter	Test Method	Results	Units
1.	Mercury (as Hg)	USEPA 3050B	0.82	mg/kg
2.	Cadmium (as Cd)	USEPA 3050B	<1.00	mg/kg
3.	Chromium (as Cr)	USEPA 3050B	1.35	mg/kg
4.	Lead (as Pb)	USEPA 3050B	1.53	mg/kg
5.	Arsenic (as As)	USEPA 3050B	1.67	mg/kg
6.	Zinc (as Zn)	USEPA 3050B	3.48	mg/kg
7.	Iron (as Fe)	AOAC 990.08:2005	19.57	mg/kg

Checked By

Authorized Signatory

Note: 1. The result listed refer only to the tested samples and applicable parameters.
 2. Sample will be destroyed one month from the date of issue of test certificate.
 3. Any complaints about this report should be communicated within 7 days of issue of this report
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CSR Highlights for FY 21 (Oct 20 to March 21)

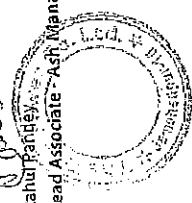
- Tata Power is mobilizing local women into **Self Help Groups**. **Total 182 SHG** comprising of around **2300 women** have been formed and bank linkages has been provided for all these groups. Training on income generation activities and supports have been given to around 600 SHG members. Many women have started their own enterprises. Around 200 women are involved in vermi and mushroom production. Total income earned is estimated to be around 47 lakhs.
- Ten SHGs and three farmers groups comprising of 32 members have been organized into Farmers groups and collective farming on a 20 acre of land is being done by consolidating small landholdings of different farmers.
- Financial Inclusion (Saving & thrift): Through regular saving & thrift deposit of around 74 lakhs has been mobilized and regular interloaning of 32 lakhs is being done. More than 400 families have been linked with different Govt. Schemes.
- **Behavior Change Communication - Health & Sanitation:** Using CLTS approach more than 1200 leach pit toilets have been constructed benefitting more than 600 people. Around 4585 people were sensitized by NGO on COVID-19. The community was targeted for the sanitization program on ill effects of Open defecations and more than 1200 families were motivated to build household toilets using their own resources.
- Approximately 1800 students of 6 government schools were given continuous coaching support on English language and their learning level saw an overall improvement of 18 %.
- On digital education front 650 school students were oriented on basics of computer. The methodology was tab based learning in groups.
- Every month health camps were conducted (6 camps since April) which provided benefit to 850 people in the form of treatment and free medicines.
- Income generation training was given to 1200 women on a number of skills – mushroom farming , vermi making , Poultry rearing , Backyard farming etc.
- Around 60 LED street lights have been distributed to different stakeholders for illumination benefitting around 5000 persons.
- **Mask making by SHGs and Distribution:** SHGs formed under DHAAGA initiatives stitched masks. SHG have supplied 10000 masks to and earned incomes. Tata Power distributed masks during this period to different groups. Around 5000 high value premium masks have been stitched by SHGs.

Wt 1 to 4

Jobbera Power Plant, Tata Power, Jamshedpur
Fly Ash Generation & Utilisation (Station)

Description	Reports Unit # 1 to 4												Station (Jan-21 to March-21)				TOTAL		
	Jan-21				Feb-21				Mar-21				Station (Jan-21 to March-21)						
	UNIT# 1	UNIT# 2	UNIT# 3	UNIT# 4	TOTAL	UNIT# 1	UNIT# 2	UNIT# 3	UNIT# 4	TOTAL	UNIT# 1	UNIT# 2	UNIT# 3	UNIT# 4	TOTAL	UNIT# 1		UNIT# 2	UNIT# 3
Middling (as fired) -MT	7303	7279	0	8657	23238.5	3053.5905	0	19798	22851.8	8663.3	0	0	1305.58	9972.89	19020	7279	0	29764	56063
lb Valley & others (as fired) -MT	21572	52023.9	5101	45360	124057	23742.409	36652	32029	117049	21857	58380	60113.5	3189.85	143560	57212	147056	89840	80580	384637
TOTAL COAL -MT	28875	59303	5101	54077	147286	26796	61827	139901	30580	58380	60113.5	4499	153653	59231	154335	69840	110344	110344	440750
TOTAL ASH GEN-MT	8762	29445	2077	19848	53833	8086	13550	19397	50625.9	3509	22674	23718	1708	57607.9	28356	59679	35378	40854	162087
Fly Ash Generated -MT	7009	18756	1682	15640	43066	6469	10848	7667	15517	40500.7	7607	18139	18974	1366	46086	21085	47743	28302	129653
Bottom Ash Generated -MT	1752	4689	415	3910	10767	1617	2712	1817	3879	10125.2	1902	4535	4744	342	11921.8	5271	11936	7076	32413
FLY ASH UTILISATION -MT	7009	18756	1682	15640	43066	6469	10848	7667	15517	40500.9	7453	17772	18690	1839	45153.6	20931	47376	27918	128721
% FLY ASH UTILISATION	100	100	100	100	100	100	100	100	98	98	98	98	98	98	98	99.27	99.23	98.64	99.28
TOTAL ASH UTILISATION	11127	29774	2638	24827	68367	8689	14572	10298	20843	54401	8675	20687	21639	1539	52559	28491	65033	34574	175327
% TOTAL ASH UTILISATION	127	127	127	127	127	107	107	107	107	107	91	91	91	91	108	109	98	116	108

Rahul Panigrahy
Lead Associate - Ash Management



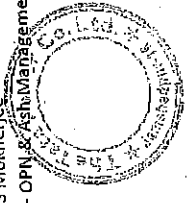
Vikrant Singh
Group Head - Planning



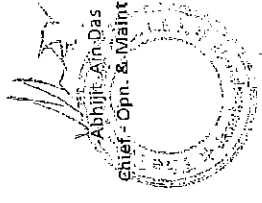
Mukul Singh
Head - Environment



S Mukherjee
Head - O.P.N. & Ash Management



Abhijit - An - Das
Chief - O.P.N. & Maint.



WHS

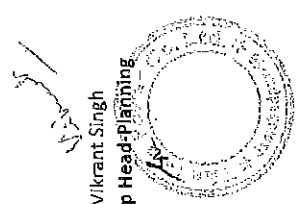
Jojobera Power Plant, Tata Power, Jamshedpur
Fly Ash Generation & Utilisation (Station)

UNIT# 5	Jan-21	Feb-21	Mar-21	Jan-21 to Mar-21
	UNIT# 5	UNIT# 5	UNIT# 5	TOTAL
Description				
Middling (as fired) -MT	54453	51321	55058	160832
1b Valley & others (as fired) -MT	0	0	0	0
TOTAL COAL -MT	54453	51321	55058	160832
TOTAL ASH GEN-MT	21700	20821	21840	64161
Fly Ash Generated -MT	17360	16657	17312	51329
Bottom Ash Generated -MT	4340	4164	4328	12832
FLY ASH UTILISATION -MT	17360	16657	16961	50978
% FLY ASH UTILISATION	100.00	100.00	97.98	99
TOTAL ASH UTILISATION -MT	27559	22374	19743	69676
% TOTAL ASH UTILISATION	127	107	91	109

Rahul Pandey
Lead Associate, Ash Management



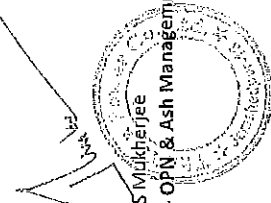
Vikrant Singh
Group Head-Planning



Mukul Singh
Head-Environment



S Mukherjee
Head - OPN & Ash Management



Abhijeet Das
Chief - OPN & Maint.



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Jobbera Power Plant, Taca Power, Jamshedpur
Fly Ash Generation & Utilisation (Station)

Description	Reports Unit # 1 to 4																			
	Oct-20				Nov-20				Dec-20				Station (Oct-20 to Dec-20)							
	UNIT# 1	UNIT# 2	UNIT# 3	UNIT# 4	TOTAL	UNIT# 1	UNIT# 2	UNIT# 3	UNIT# 4	TOTAL	UNIT# 1	UNIT# 2	UNIT# 3	UNIT# 4	TOTAL	UNIT# 1	UNIT# 2	UNIT# 3	UNIT# 4	TOTAL
Middling(as fired) -MT	6103	2592	2133.2	13002	23830.2	5801	19390	17505	21693	64529	10278	9481	10713.8	42011.1	72483.6	22182	31403	30352	76906	160843
lb Valley & others (as fired) -MT	19241	43036	44004	30089	136370	19765	28014	31945	23142	102566	20681	36095	41988	10365	109129	59687	107145	117937	63596	348365
TOTAL COAL -MT	26344	45628	46137	43091	160200	25566	47344	49450	45035	167395	30959	45576	52702	52378	181613	61869	138548	148289	140502	509208
TOTAL ASH GEN-MT	7391	16296	16779	14450	54916	7543	19356	20155	15922	52975.6	10722	17667	20756	20282	69428.5	25655	53318	57669	50855	187318
Fly Ash Generated -MT	5913	13036	13423	11560	43933	6034	15485	16124	12738	50360.5	8577	14134	16605	16226	55541	20524	42655	45152	40524	149854
Bottom Ash Generated -MT	1478	3259	3356	2890	10883	1509	3871	4031	3184	12595.1	2144	3533	4151	4056	13885.3	5131	10664	11536	10131	37464
FLY ASH UTILISATION -MT	5913	13036	13423	11560	43933	5932	15223	15851	12523	49529	8577	14134	16605	16226	55541.2	20422	42393	45879	40308	149003
% FLY ASH UTILISATION	100	100	100	100	100	98	98	98	98	98	100	100	100	100	100	99.50	99.39	99.41	99.47	99.43
TOTAL ASH UTILISATION-MT	7655	17319	17633	15358	58364	11105	28498	29674	23442	92719	14685	24198	28429	27780	95093.4	33545	70015	75936	66581	246177
% TOTAL ASH UTILISATION	106	106	106	106	106	147	147	147	147	147	137	137	137	137	137	131	131	132	131	131

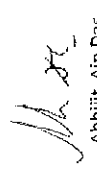
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Hari Pandey
Lead Associate - Ash Management


Vikrant Singh
Group Head-Planning


Mukul Singh
Head- Environment


S Mukherjee
Head - OPN & Ash Management


Abhijit AIN Das
Chief - Opn. & Maint.

Jobbera Power Plant, Tata Power, Jamshedpur
Fly Ash Generation & Utilisation (Station)

UNIT# 5	Oct-20	Nov-20	Dec-20	Oct-20 to Dec-20
Description	UNIT# 5	UNIT# 5	UNIT# 5	TOTAL
Middling(as fired) -MT	52526	36733	10391	99650
lb Valley & others (as fired) -MT	0	0	0	0
TOTAL COAL -MT	52526	36733	10391	99650
TOTAL ASH GEN-MT	20672	14512	4083	39266
Fly Ash Generated -MT	16537	11610	3266	31413
Bottom Ash Generated -MT	4134	2902	817	7853
FLY ASH UTILISATION -MT	16537	11413	3266	31217
% FLY ASH UTILISATION	100.00	98.31	100.00	99
TOTAL ASH UTILISATION -MT	21970	21366	5592	48928
% TOTAL ASH UTILISATION	106	147	137	125


Rakesh Pandey


Lead Associate- Ash Management


Vikrant Singh

Group Head-Planning


Mukul Singh

Head- Environment


S Mukherjee

Head - OPN & Ash Management


Abhijit Ain Das

Chief - Opn. & Maint.

Compliance status for Office Memorandum - Amendment in Environment Clearance for change in coal source by MOEF & CC dated 11.11.2020

S No	Conditions	Compliance Status
a	Details regarding change in source (location of the source, proposed quantity, distance from the power plant and mode of transportation), quality (Ash, Sulphur, Moisture content and Calorific value) shall be informed to the Ministry and its concerned Regional Office. The quantity of coal transported from each source along with the mode of transportation shall be submitted as part of EC Compliance Report	We have not changed the source of coal in Oct 2020 to March 2021.
b	The applicable flue gas emissions standards for Particulate Matter, Sulphur Dioxide, Oxides of Nitrogen and Mercury shall be complied inline with Ministry's Notification vide S.O. 3305(E) dated 7.12.2015 and subsequent . emissions. A progress of implementation and its compliance shall be submitted as part of Compliance Report	We have already placed the work order for installation of FGD (Flue gas desulfurization) system and work has started. The status of compliance for emission norms inline with Ministry's Notification vide S.O. 3305(E) dated 7.12.2015 and subsequent amendments is being attached as Annex XV.
c)	Ash content in the Coal and Coal transportation is governed by the Ministry's Notification vide S.O. 1561 (E) dated 21.5.2020. As far as possible, Coal transportation shall be done by rail/ conveyer or or other eco-friendly modes. However, road transportation is allowed with tarpaulin covered trucks till the railway/ conveyer belt infrastructure is made available. A progress (Physical and financial) of rail connectivity from nearest railway siding or conveyer connectivity to the power plant hall be submitted in the EC compliance report.	We are transporting the most of the coal by rail network and only a small quantity (2-3 %) is transported by tarpaulin covered trucks.
d)	Additional ash pond is not allowed due to increase m ash content in the raw coal as against the ash pond permitted in the Environmental Clearance. The 100% flyash utilisation is to be achieved within 4 years in line with Flyash Notifications dated 14.9.1999, 27.8.2003, 3.11.±009 & 25.1.2016 and amended time to time or extant regulations on Fly ash Utilisation.	The Fly ash utilization is 100 % for the year 2020-21.
e)	In case of exceptional circumstances, project proponents may approach the Ministry for seeking permission to use an emergency ash pond with cogent reasons, if any.	Not Applicable
f)	The details regarding monthly generation, utilisation and disposal of flyash (including bottom ash) shall be submitted to the Ministry and its Regional Office.	The details regarding monthly generation, utilisation and disposal of fly ash (including bottom ash) is attached as Annex XIII.

STATEMENT FOR COAL RECEIPT OF H2 FY 21 for Jojobeta Power Plant, Tata Power Co. Ltd.

Jamshedpur

Month	Mode of Transportation	Oct-20		Nov-20		Dec-20		Jan-21		Feb-21		Mar-21		Total Source Wise	
		By Rail Network		By Rail Network		By Rail Network		By Rail Network	By Road Network	By Rail Network	By Road Network	By Rail Network	By Road Network	Total Rail Network	Total Road Network
	CCL	51386	128170	70905	67177	0	61043	0	56708	0	435389	0	0	0	0
	MIDD	42542	46369	65965	42753	0	46661	0	38900	0	283189	0	0	0	0
	ECL	25549	11698	15234	7703	0	7583	0	33402	0	101169	0	0	0	0
	MCL	19207	8014	24111	27399	0	16755	0	11995	0	107481	0	0	0	0
	NCL	7915	0	7859	7963	0	0	0	3944	0	27682	0	0	0	0
	JDWS /2P	0	0	7494	0	0	0	0	0	0	7494	0	0	0	0
	WB REJECT	0	0	15083	0	0	0	0	0	0	15083	0	0	0	0
	TAILING	0	0	0	0	780	0	5033	0	9755	0	0	15568	0	0
	WB REJECT	0	0	0	0	1302	0	3023	0	4705	0	0	9029	0	0
	Total Qty.	146599	194251	206650	152996	2082	132041	8056	144949	14460	977486	24598	24598	24598	24598

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Emission Norms as per New Emission rules SO 3305 (E) dated 07.12.2015 and subsequent Amendments								
Sl No	Parameter	Unit	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	
1	PM	mg/NM3	100	100	100	50	50	
2	SOx	mg/NM3	600	600	600	600	600	
3	NOx	mg/NM3	600	600	600	450	450	
4	Hg	mg/NM3	Not Applicable	Not Applicable	Not Applicable	0.03	0.03	
5	Specific water consumption	M3/MWHR	3.5					

Compliance Status of New Emission rules SO 3305 (E) dated 07.12.2015 and subsequent Amendments								
Sl No	Parameter	Unit	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	
1	PM	mg/NM3	Complying	Complying	Complying	Complying	Complying	
2	SOx	mg/NM3	Not Complying	Not Complying	Not Complying	Not Complying	Not Complying	
3	NOx	mg/NM3	Complying	Complying	Complying	Complying	Complying	
4	Hg	mg/NM3	Not Applicable	Not Applicable	Not Applicable	Complying	Complying	
5	Specific water consumption	M3/MWHR	Complying					

- Note : 1. Work for FGD Installation under Progress
2. Work order for DeNOx installation Unit 4 & 5 placed