Eskom

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08 October 2020

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Ref: (12/4/12L-W4/A3)

Dear Mrs Thivhafuni

MATIMBA POWER STATION'S MONTHLY EMISSIONS REPORT FOR THE MONTH OF JULY 2020

This serves as the monthly report required in terms of Section 7.7.1 in Matimba Power Station's Atmospheric Emission License 12/4/12L-W4/A4.

Matimba Power Station
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Eskom Holdings SOC Ltd Reg No 2002/015527/30

Raw Materials and Products

Table 1: Quantity of Raw Materials and Products used/produced for the month.

Raw Materials and Products used	Raw Material Type	Unit	Maximum Permitted Consumption Rate (Quantity)	Consumption Rate
	Coal	Tons/month	1 500 000	1194429
	Fuel Oil	Tons/month	1 200	272.778
Production Rates	**Product/ By-Product Name**	**Unit**	**Maximum Production Capacity Permitted (Quantity)**	**Production Rate**
	Energy	GWh	4 212.6	2 479.235

Abatement Technology

Table 2: Abatement Equipment Control Technology utilise.

Associated Unit	Technology Type	Actual Utilisation (%)
Unit 1	Electrostatic Precipitator	99,964%
Unit 2	Electrostatic Precipitator	99,918%
Unit 3	Electrostatic Precipitator	99,942%
Unit 4	Electrostatic Precipitator	99,944%
Unit 5	Electrostatic Precipitator	99,981%
Unit 6	Electrostatic Precipitator	99,919%

Associated Unit	Technology Type	Actual Utilisation (%)
Unit 1	SO_3 Plant	96.8
Unit 2	SO_3 Plant	83.9
Unit 3	SO_3 Plant	90.3
Unit 4	SO_3 Plant	96.8
Unit 5	SO_3 Plant	96.8
Unit 6	SO_3 Plant	96.8

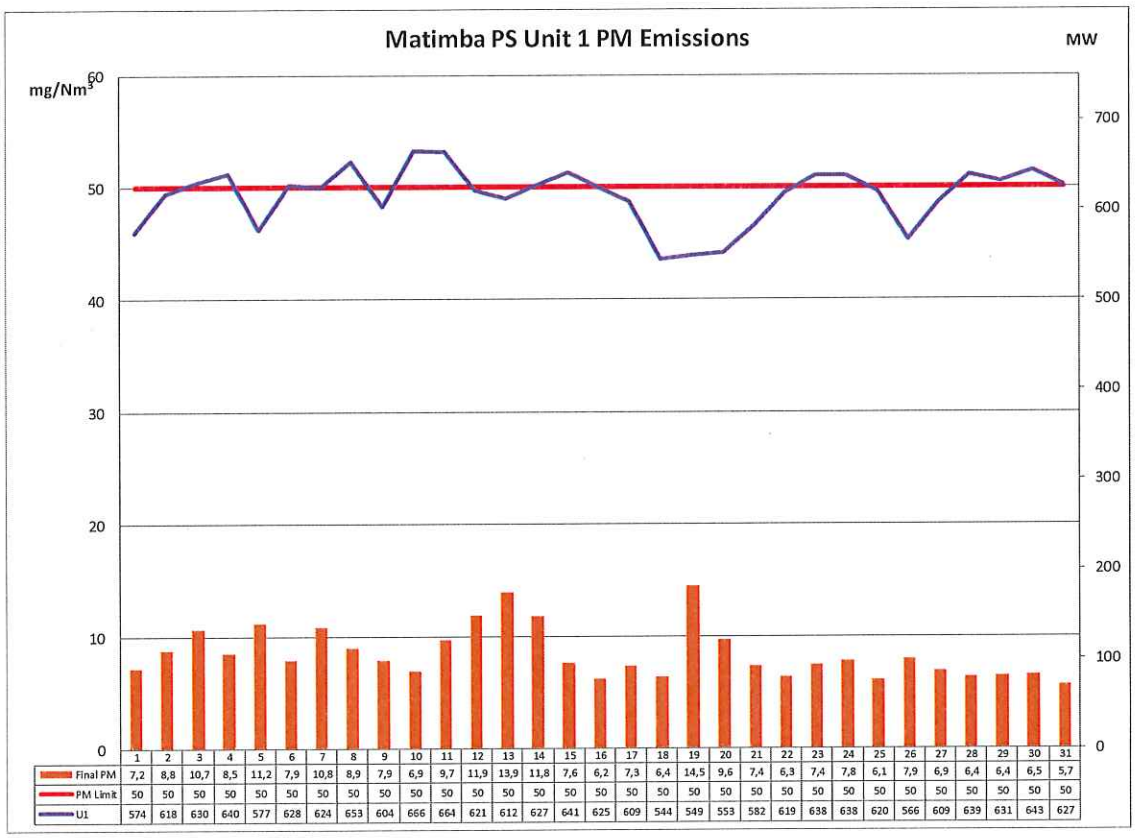
Energy Source Characteristics

Table 3: Energy Source Material Characteristics.

	Characteristic	Stipulated Range (Unit)	Monthly Average Content
Coal burned	**Sulphur Content**	0.8-1.6%	1.356
	Ash Content	30-40%	30.952

Emissions Reporting

Unit 1 particulate emissions

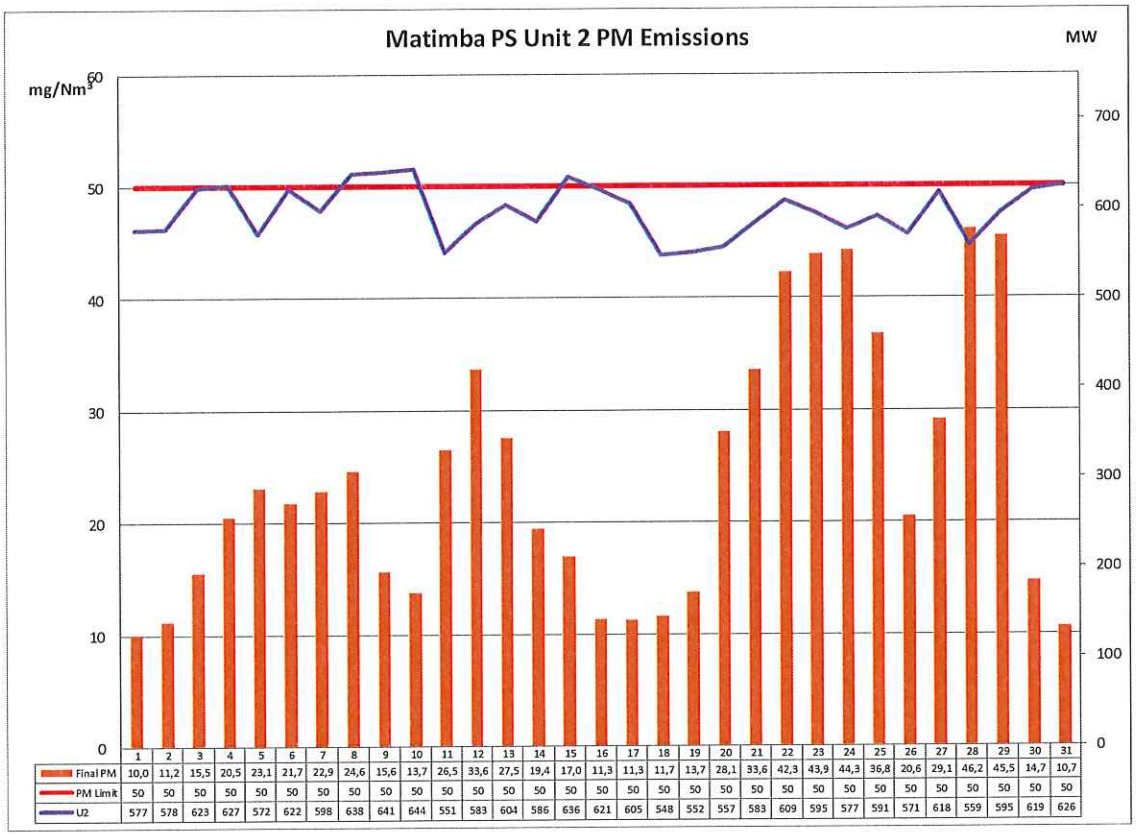


	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Final PM	7,2	8,8	10,7	8,5	11,2	7,9	10,8	8,9	7,9	6,9	9,7	11,9	13,9	11,8	7,6	6,2	7,3	6,4	14,5	9,6	7,4	6,3	7,4	7,8	6,1	7,9	6,9	6,4	6,4	6,5	5,7
PM Limit	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
U1	574	618	630	640	577	628	624	653	604	666	664	621	612	627	641	625	609	544	549	553	582	619	638	638	620	566	609	639	631	643	627

Graph 1: Particulate matter daily average emissions against emission limit for unit 1 for the month of July 2020

Interpretation:
All daily averages below particulate emission limit of 50 mg/Nm^3.

Unit 2 particulate emissions

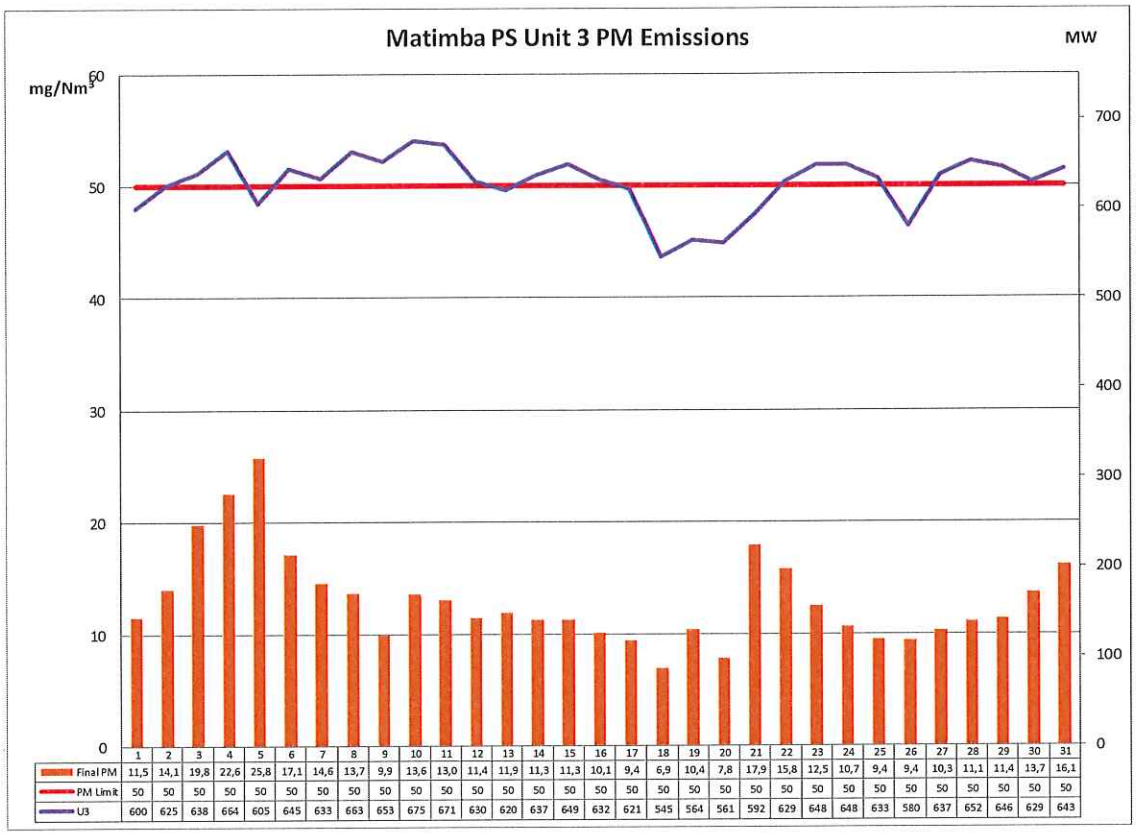


	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Final PM	10,0	11,2	15,5	20,5	23,1	21,7	22,9	24,6	15,6	13,7	26,5	33,6	27,5	19,4	17,0	11,3	11,3	11,7	13,7	28,1	33,6	42,3	43,9	44,3	36,8	20,6	29,1	46,2	45,5	14,7	10,7
PM Limit	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
U2	577	578	623	627	572	622	598	638	641	644	551	583	604	586	636	621	605	548	552	557	583	609	595	577	591	571	618	559	595	619	626

Graph 2: Particulate matter daily average emissions against emission limit for unit 2 for the month of July 2020

Interpretation:
All daily averages below particulate emission limit of 50 mg/Nm^3.

Unit 3 particulate emissions

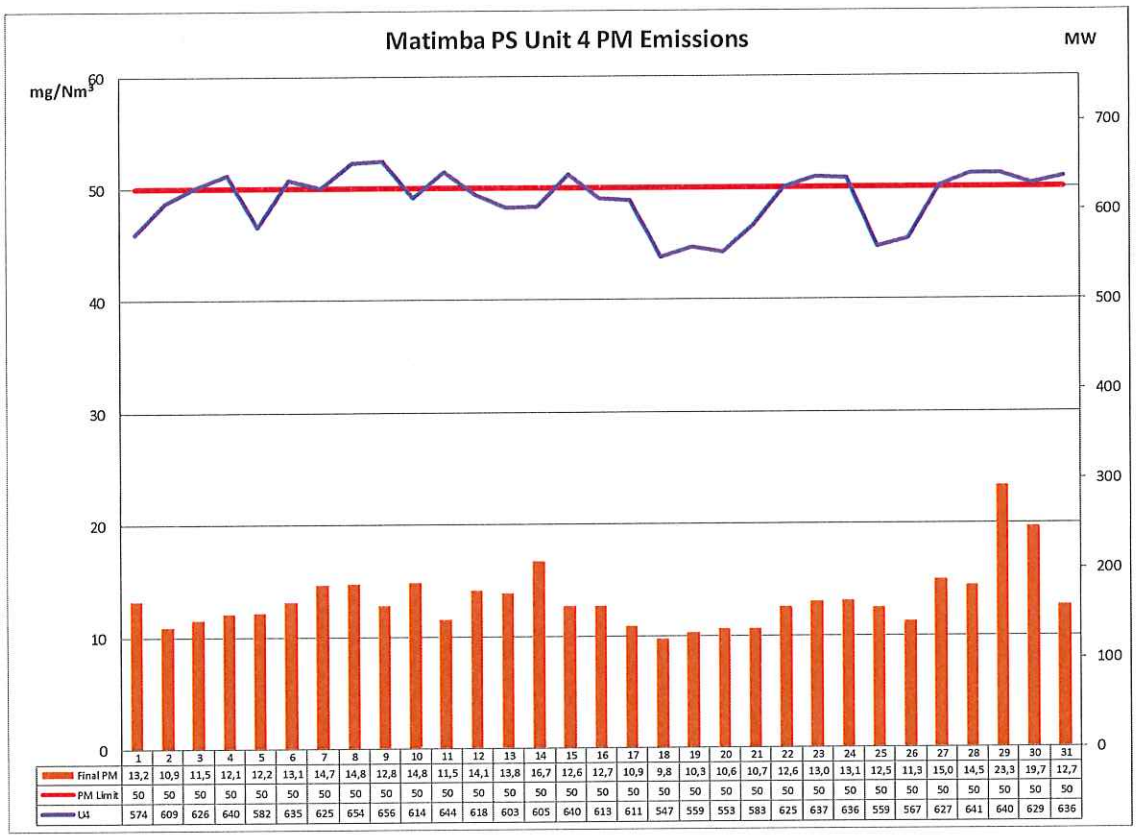


	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Final PM	11,5	14,1	19,8	22,6	25,8	17,1	14,6	13,7	9,9	13,6	13,0	11,4	11,9	11,3	11,3	10,1	9,4	6,9	10,4	7,8	17,9	15,8	12,5	10,7	9,4	9,4	10,3	11,1	11,4	13,7	16,1
PM Limit	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
U3	600	625	638	664	605	645	633	663	653	675	671	630	620	637	649	632	621	545	564	561	592	629	648	648	633	580	637	652	646	629	643

Graph 3: Particulate matter daily average emissions against emission limit for unit 3 for the month of July 2020

Interpretation:
All daily averages below particulate emission limit of 50 mg/Nm^3.

Unit 4 particulate emissions

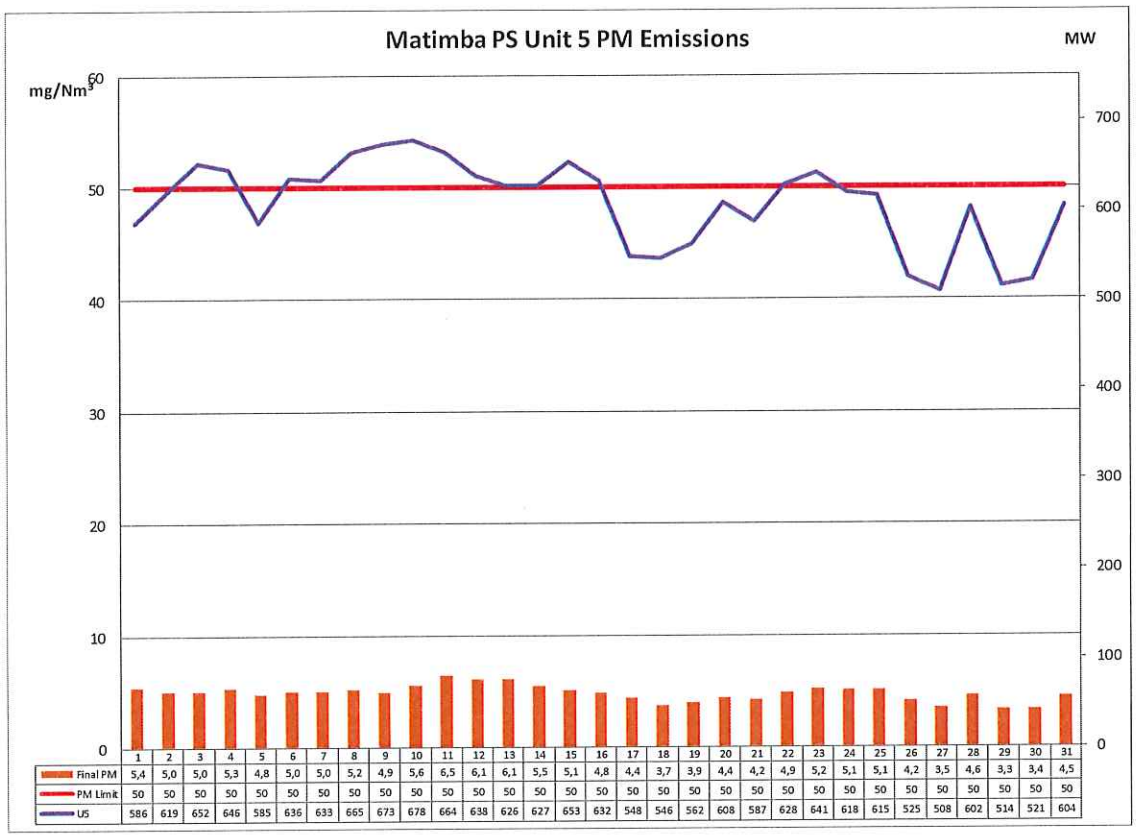


	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Final PM	13,2	10,9	11,5	12,1	12,2	13,1	14,7	14,8	12,8	14,8	11,5	14,1	13,8	16,7	12,6	12,7	10,9	9,8	10,3	10,6	10,7	12,6	13,0	13,1	12,5	11,3	15,0	14,5	23,3	19,7	12,7
PM Limit	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
U4	574	609	626	640	582	635	625	654	656	614	644	618	603	605	640	613	611	547	559	553	583	625	637	636	559	567	627	641	640	629	636

Graph 4: Particulate matter daily average emissions against emission limit for unit 4 for the month of July 2020

Interpretation:
All daily averages below particulate emission limit of 50 mg/Nm^3.

Unit 5 particulate emissions

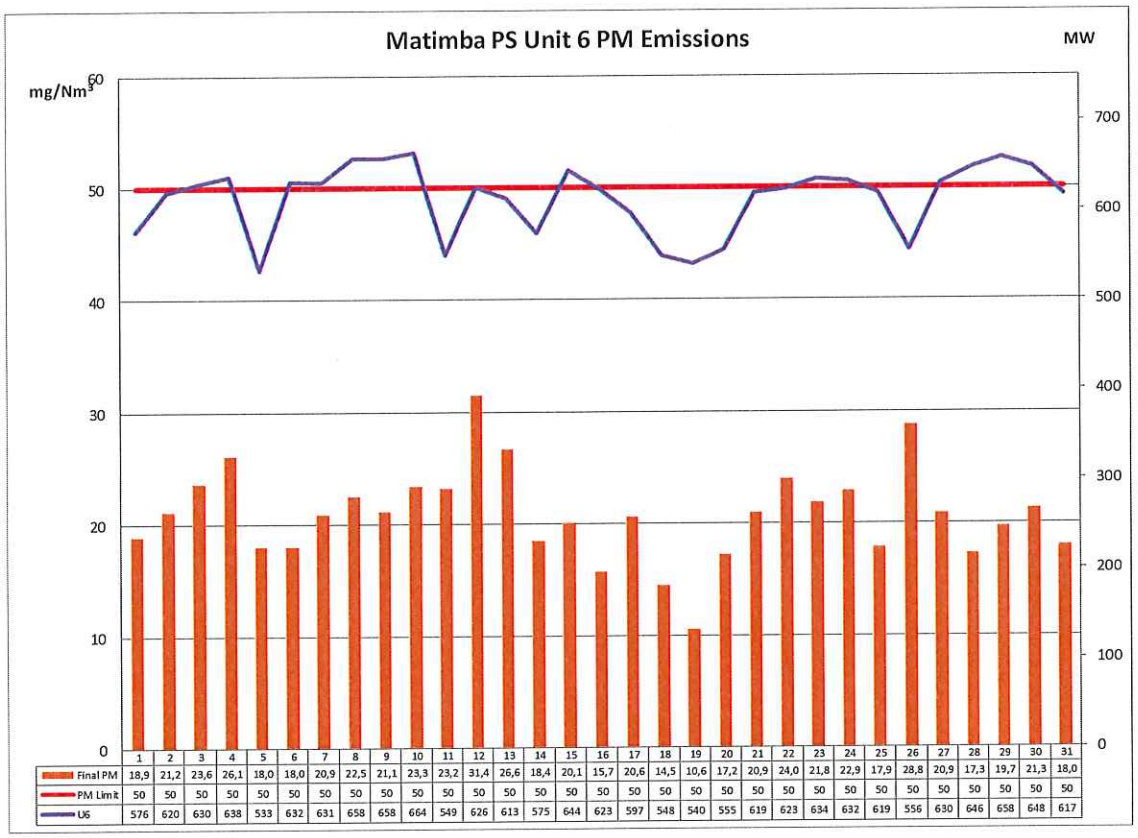


	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Final PM	5,4	5,0	5,0	5,3	4,8	5,0	5,0	5,2	4,9	5,6	6,5	6,1	6,1	5,5	5,1	4,8	4,4	3,7	3,9	4,4	4,2	4,9	5,2	5,1	5,1	4,2	3,5	4,6	3,3	3,4	4,5
PM Limit	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
US	586	619	652	646	585	636	633	665	673	678	664	638	626	627	653	632	548	546	562	608	587	628	641	618	615	525	508	602	514	521	604

Graph 5: Particulate matter daily average emissions against emission limit for unit 5 for the month of July 2020

Interpretation:
All daily averages below particulate emission limit of 50 mg/Nm^3.

Unit 6 particulate emissions

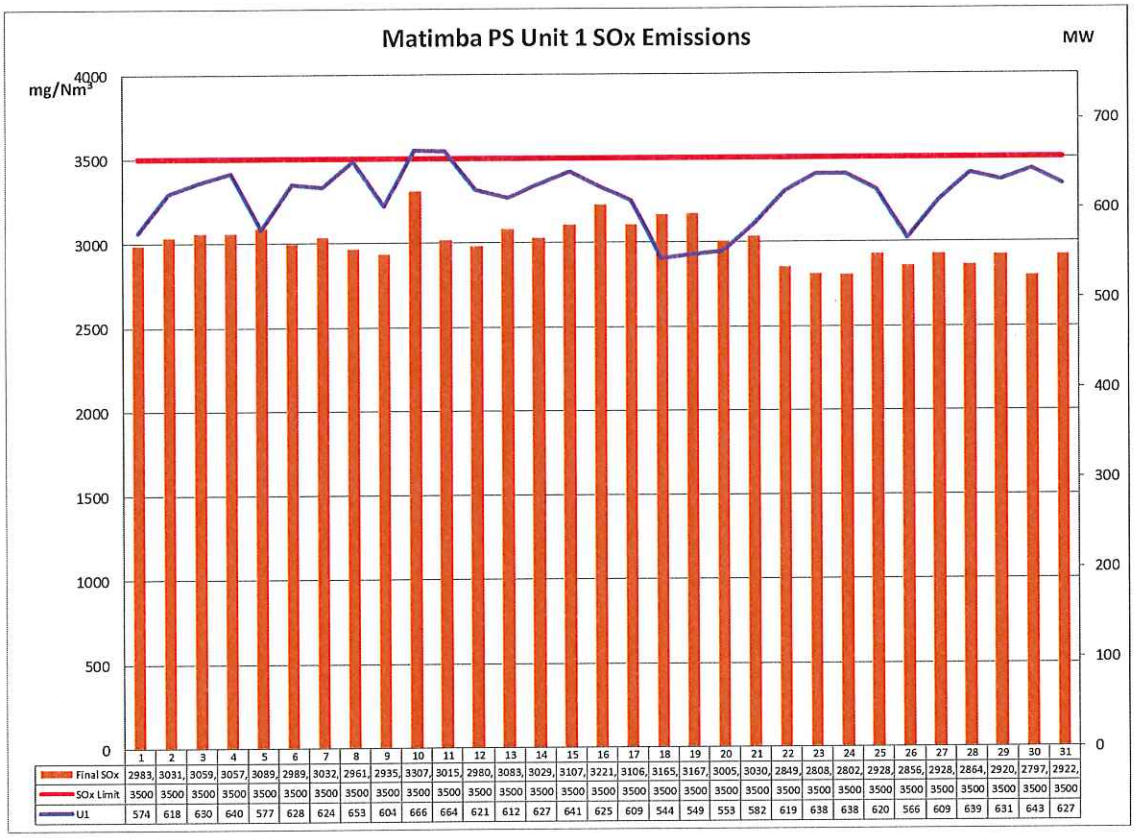


	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Final PM	18,9	21,2	23,6	26,1	18,0	18,0	20,9	22,5	21,1	23,3	23,2	31,4	26,6	18,4	20,1	15,7	20,6	14,5	10,6	17,2	20,9	24,0	21,8	22,9	17,9	28,8	20,9	17,3	19,7	21,3	18,0
PM Limit	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
U6	576	620	630	638	533	632	631	658	658	664	549	626	613	575	644	623	597	548	540	555	619	623	634	632	619	556	630	646	658	648	617

Graph 6: Particulate matter daily average emissions against emission limit for unit 6 for the month of July 2020

Interpretation:
All daily averages below particulate emission limit of 50 mg/Nm^3.

Unit 1 SO_2 emissions

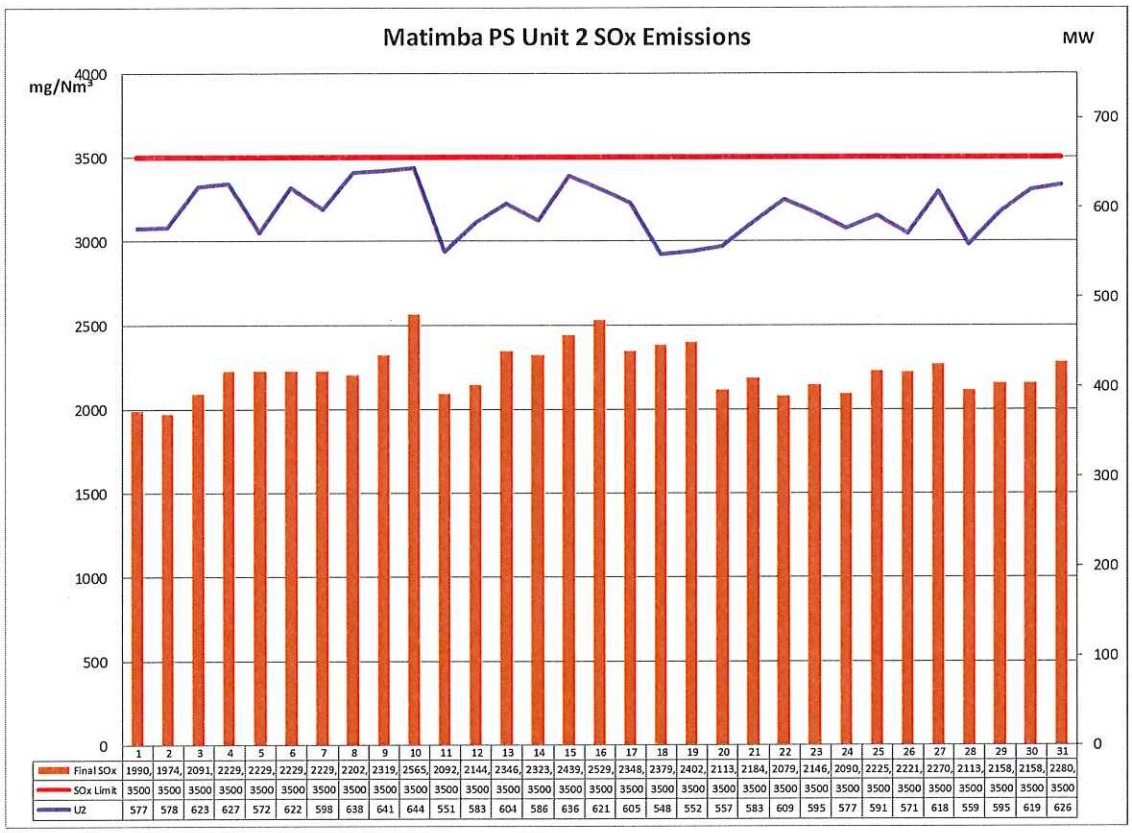


	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Final SOx	2983,	3031,	3059,	3057,	3089,	2989,	3032,	2961,	2935,	3307,	3015,	2980,	3083,	3029,	3107,	3221,	3106,	3165,	3167,	3005,	3030,	2849,	2808,	2802,	2928,	2856,	2928,	2864,	2920,	2797,	2922,
SOx Limit	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500
U1	574	618	630	640	577	628	624	653	604	666	664	621	612	627	641	625	609	544	549	553	582	619	638	638	620	566	609	639	631	643	627

Graph 7: SO_2 daily average emissions against emission limit for unit 1 for the month of July 2020

Interpretation:
All daily averages below SO2 emission limit of 3500 mg/Nm3.

Unit 2 SO_2 emissions

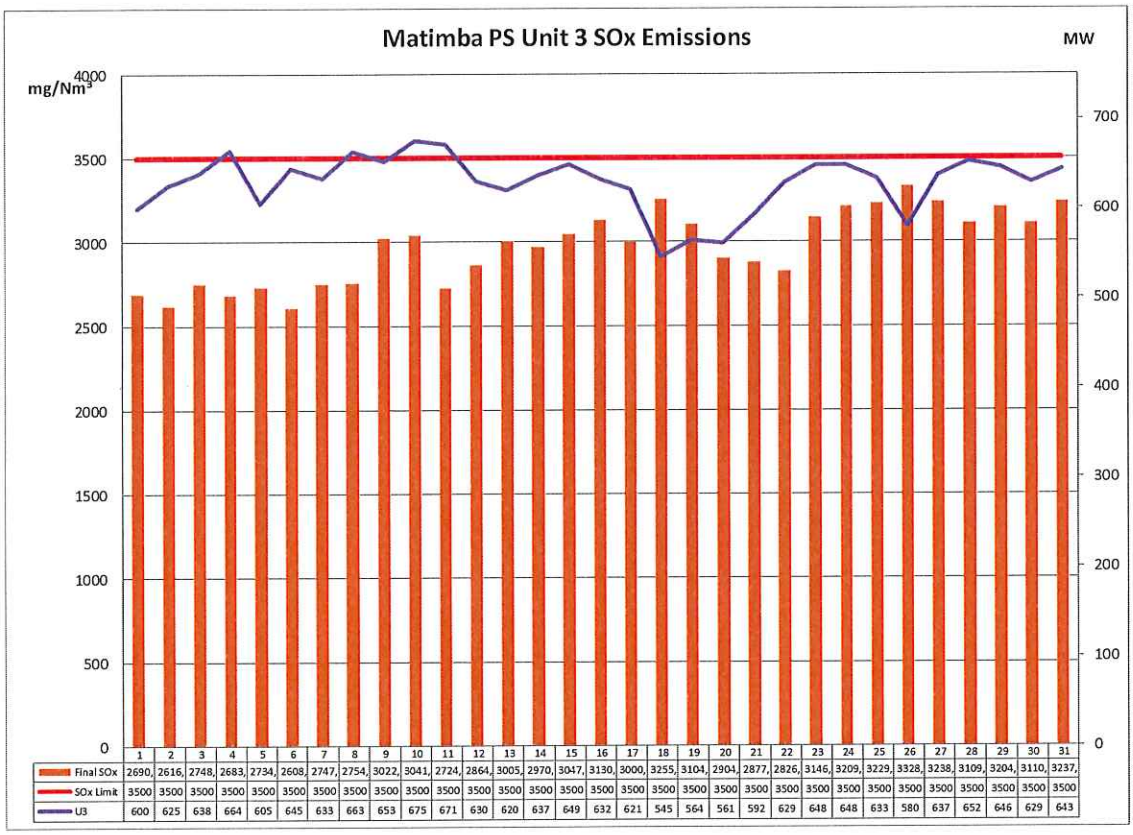


	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Final SOx	1990,	1974,	2091,	2229,	2229,	2229,	2229,	2202,	2319,	2565,	2092,	2144,	2346,	2323,	2439,	2529,	2348,	2379,	2402,	2113,	2184,	2079,	2146,	2090,	2225,	2221,	2270,	2113,	2158,	2158,	2280,
SOx Limit	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500
U2	577	578	623	627	572	622	598	638	641	644	551	583	604	586	636	621	605	548	552	557	583	609	595	577	591	571	618	559	595	619	626

Graph 8: SO_2 daily average emissions against emission limit for unit 2 for the month of July 2020

Interpretation:
All daily averages below SO2 emission limit of 3500 mg/Nm3.

Unit 3 SO_2 emissions

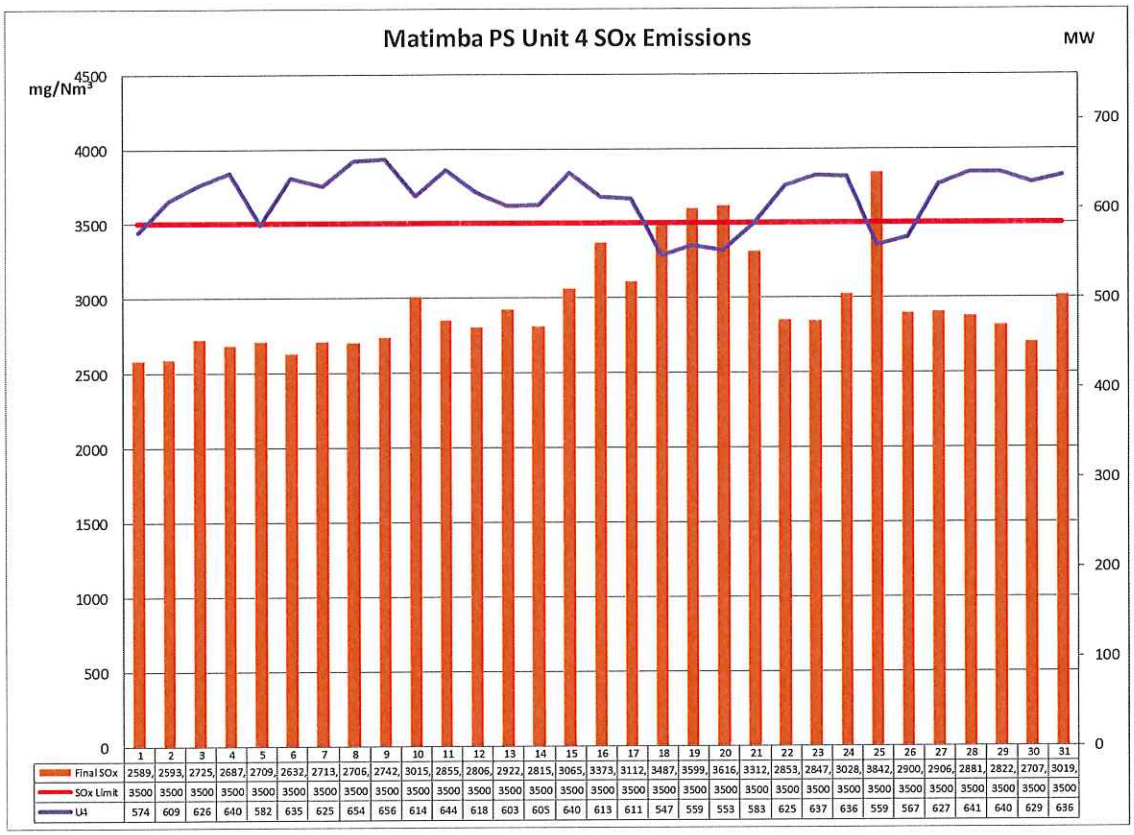


	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Final SOx	2690,	2616,	2748,	2683,	2734,	2608,	2747,	2754,	3022,	3041,	2724,	2864,	3005,	2970,	3047,	3130,	3000,	3255,	3104,	2904,	2877,	2826,	3146,	3209,	3229,	3328,	3238,	3109,	3204,	3110,	3237,
SOx Limit	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500
U3	600	625	638	664	605	645	633	663	653	675	671	630	620	637	649	632	621	545	564	561	592	629	648	648	633	580	637	652	646	629	643

Graph 9: SO_2 daily average emissions against emission limit for unit 3 for the month of July 2020

Interpretation:
All daily averages below SO2 emission limit of 3500 mg/Nm3.

Unit 4 SO_2 emissions

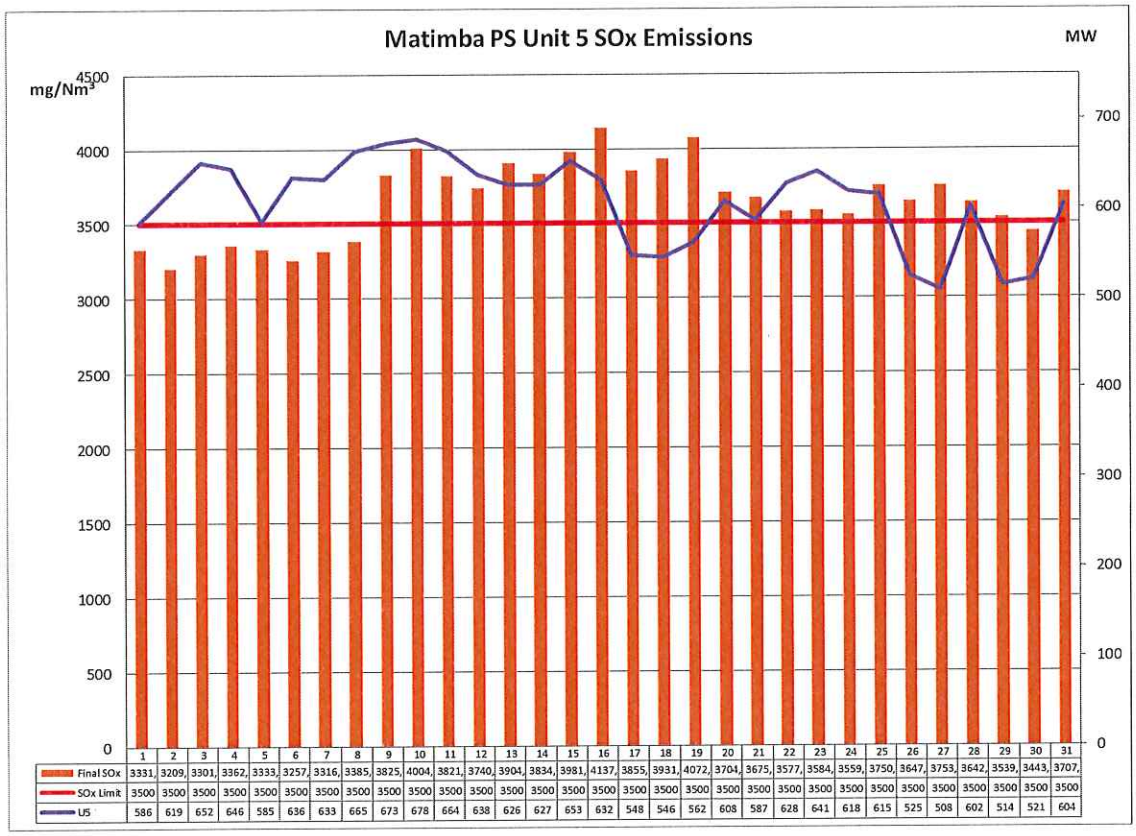


Graph 10: SO_2 daily average emissions against emission limit for unit 4 for the month of July 2020

Interpretation:

Increased SO_x emissions were observed on the 19th, 20th, and the 25th of July 2020. The increase in emissions are suspected to be due to an increase in sulphur content of the coal burnt. The monthly average SO_x emissions were 2964 mg/Nm³ which is still within the monthly average limit of 3500mg/Nm³ as per license requirement.

Unit 5 SO_2 emissions



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Final SOx	3331,	3209,	3301,	3362,	3333,	3257,	3316,	3385,	3825,	4004,	3821,	3740,	3904,	3834,	3981,	4137,
SOx Limit	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500
U5	586	619	652	646	585	636	633	665	673	678	664	638	626	627	653	632

	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Final SOx	3855,	3931,	4072,	3704,	3675,	3577,	3584,	3559,	3750,	3647,	3753,	3642,	3539,	3443,	3707,
SOx Limit	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500
U5	548	546	562	608	587	628	641	618	615	525	508	602	514	521	604

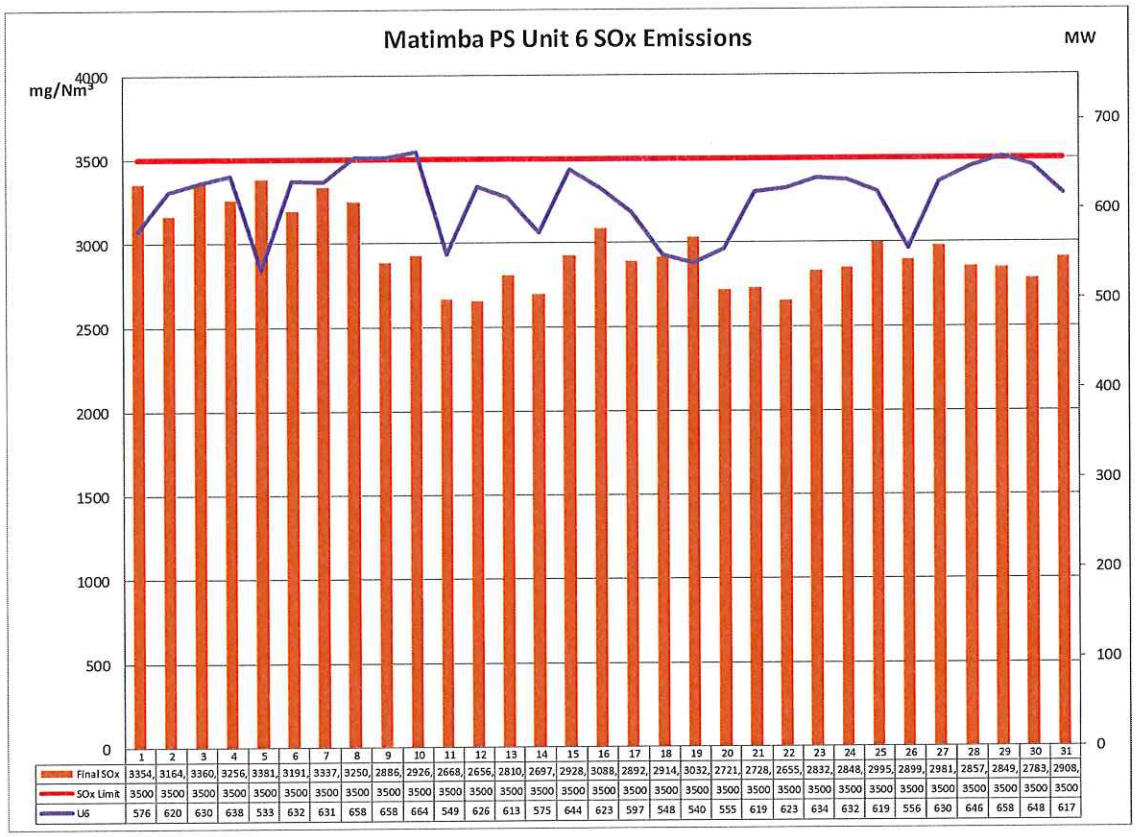
Graph 11: SO_2 daily average emissions against emission limit for unit 5 for the month of July 2020

Interpretation:

Increased SO_x emissions increased from the 9th of July 2020 until the 29th of July 2020. This lead to a monthly average of 3651 mg/Nm³ which exceeds the monthly average limit of 3500mg/Nm³.

It is suspected that the exceedances are due to an increase in the sulphur content of the coal used in the combustion process. The exceedances will be thoroughly investigated to determine the root cause.

Unit 6 SO_2 emissions

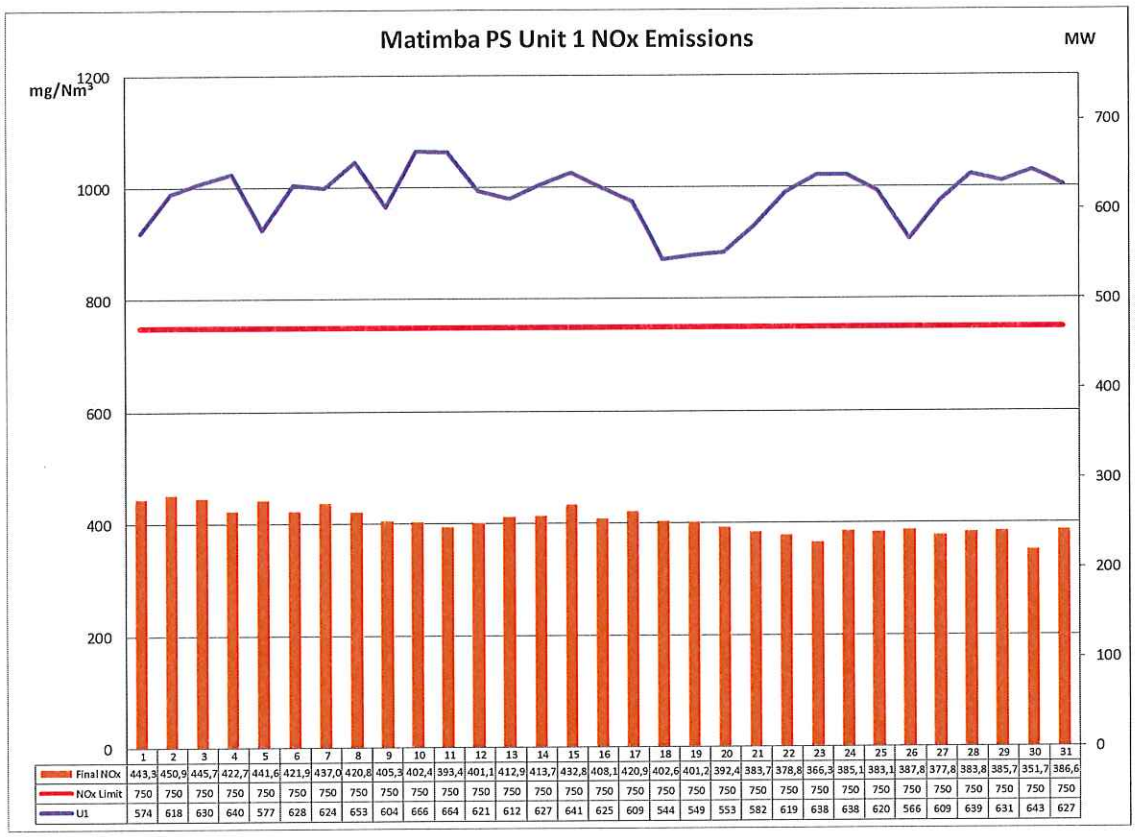


	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Final SOx	3354,	3164,	3360,	3256,	3381,	3191,	3337,	3250,	2886,	2926,	2668,	2656,	2810,	2697,	2928,	3088,	2892,	2914,	3032,	2721,	2728,	2655,	2832,	2848,	2995,	2899,	2981,	2857,	2849,	2783,	2908,
SOx Limit	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500
U6	576	620	630	638	533	632	631	658	658	664	549	626	613	575	644	623	597	548	540	555	619	623	634	632	619	556	630	646	658	648	617

Graph 12: SO_2 daily average emissions against emission limit for unit 6 for the month of July 2020

Interpretation:
All daily averages below SO2 emission limit of 3500 mg/Nm3.

Unit 1 NO_x emissions

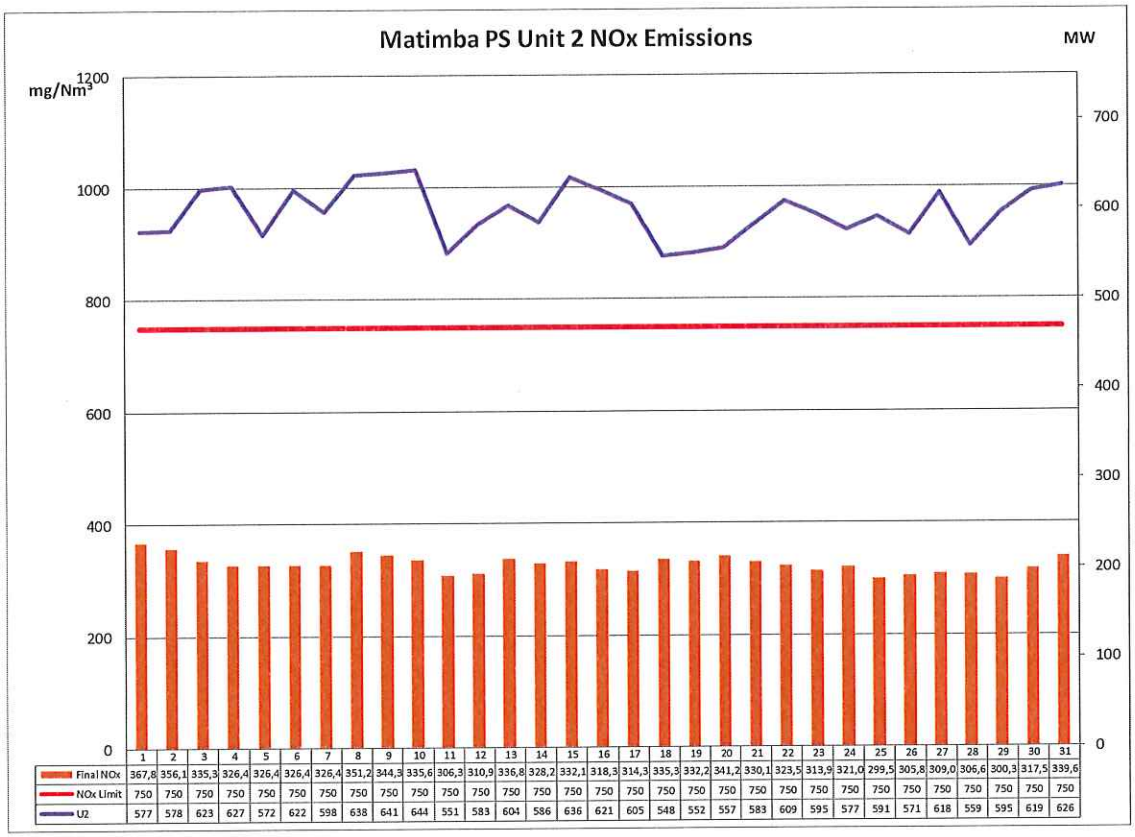


	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Final NOx	443,3	450,9	445,7	422,7	441,6	421,9	437,0	420,8	405,3	402,4	393,4	401,1	412,9	413,7	432,8	408,1	420,9	402,6	401,2	392,4	383,7	378,8	366,3	385,1	383,1	387,8	377,8	383,8	385,7	351,7	386,6
NOx Limit	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750
U1	574	618	630	640	577	628	624	653	604	666	664	621	612	627	641	625	609	544	549	553	582	619	638	638	620	566	609	639	631	643	627

Graph 13: NO_x daily average emissions against emission limit for unit 1 for the month of July 2020

Interpretation:
All daily averages below NO_x emission limit of 750 mg/Nm³.

Unit 2 NO_x emissions

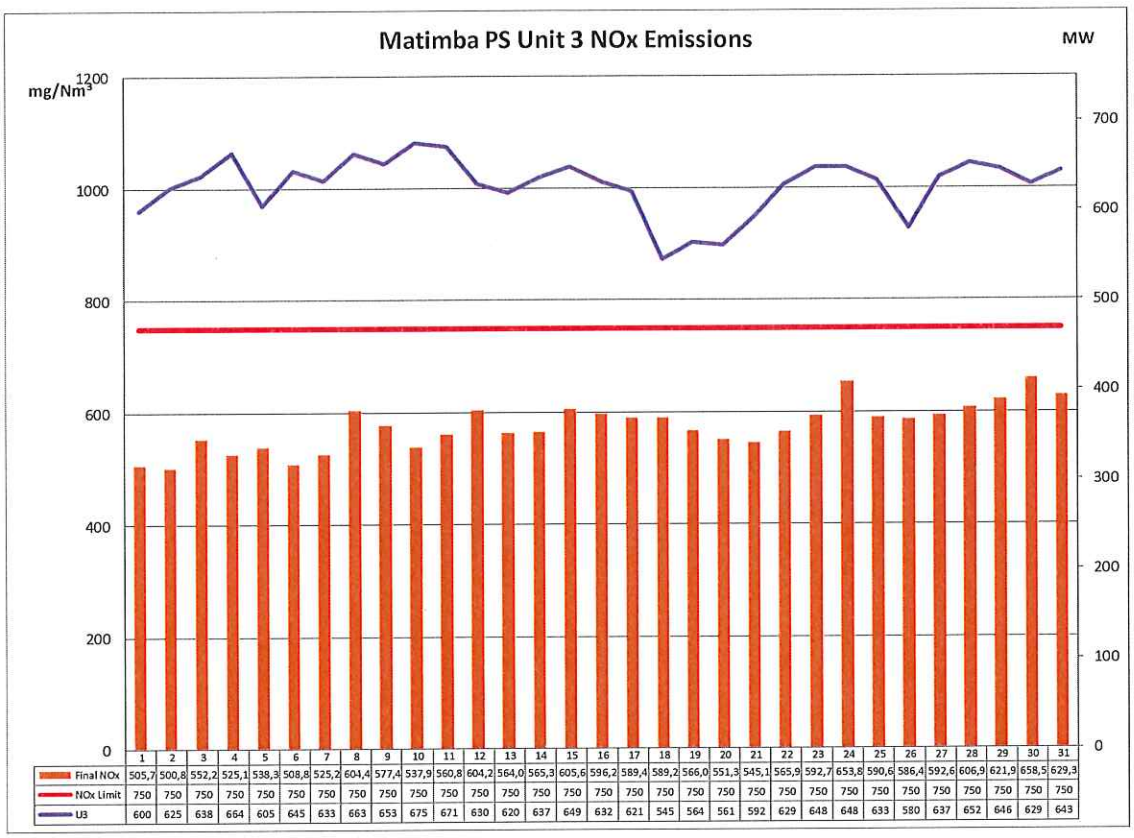


	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Final NOx	367,8	356,1	335,3	326,4	326,4	326,4	326,4	351,2	344,3	335,6	306,3	310,9	336,8	328,2	332,1	318,3	314,3	335,3	332,2	341,2	330,1	323,5	313,9	321,0	299,5	305,8	309,0	306,6	300,3	317,5	339,6
NOx Limit	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750
U2	577	578	623	627	572	622	598	638	641	644	551	583	604	586	636	621	605	548	552	557	583	609	595	577	591	571	618	559	595	619	626

Graph 14: NO_x daily average emissions against emission limit for unit 2 for the month of July 2020

Interpretation:
All daily averages below NO_x emission limit of 750 mg/Nm^3.

Unit 3 NO_x emissions

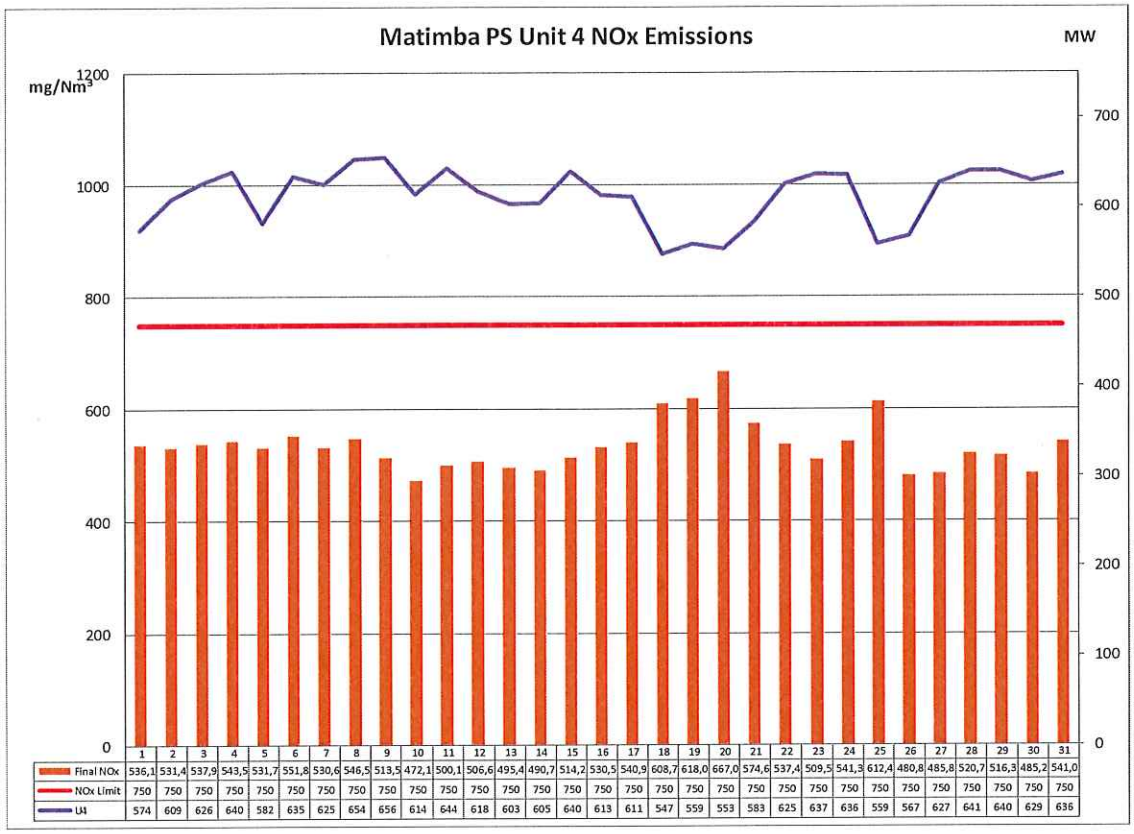


	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Final NOx	505,7	500,8	552,2	525,1	538,3	508,8	525,2	604,4	577,4	537,9	560,8	604,2	564,0	565,3	605,6	596,2	589,4	589,2	566,0	551,3	545,1	565,9	592,7	653,8	590,6	586,4	592,6	606,9	621,9	658,5	629,3
NOx Limit	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750
U3	600	625	638	664	605	645	633	663	653	675	671	630	620	637	649	632	621	545	564	561	592	629	648	648	633	580	637	652	646	629	643

Graph 15: NO_x daily average emissions against emission limit for unit 3 for the month of July 2020

Interpretation:
All daily averages below NO_x emission limit of 750 mg/Nm^3.

Unit 4 NO_x emissions

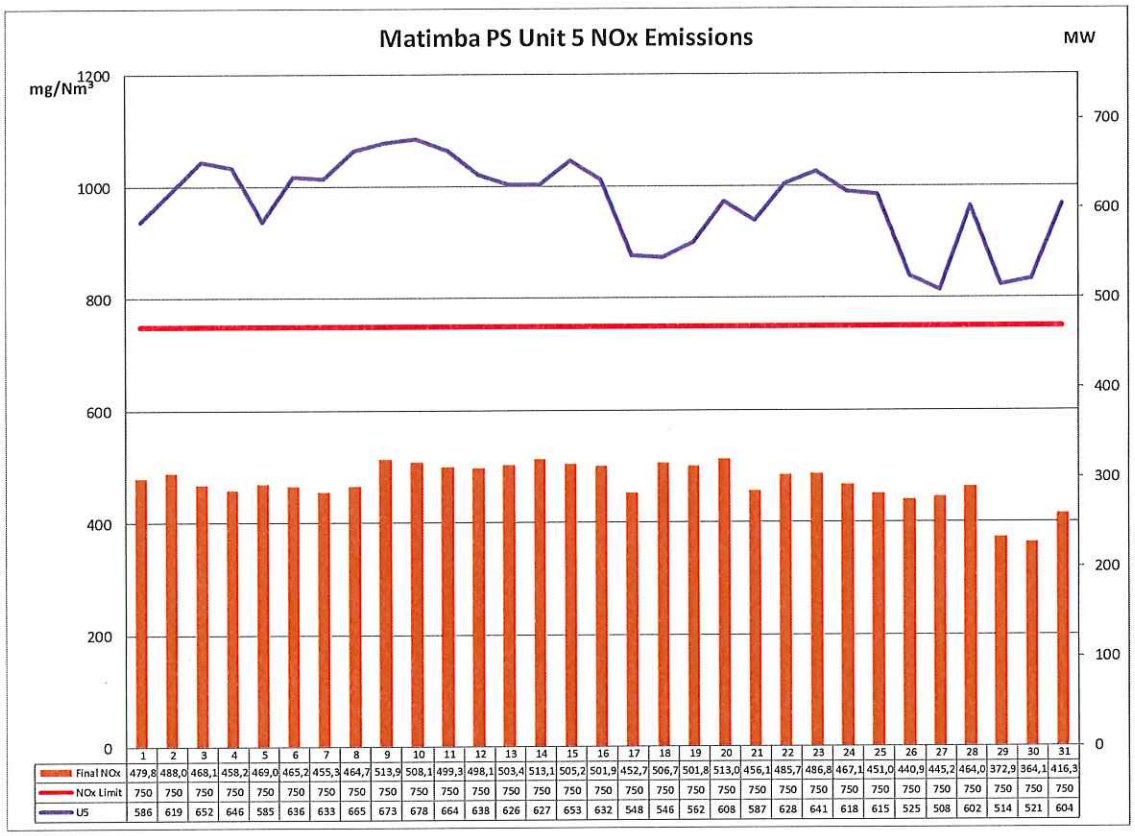


	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Final NOx	536,1	531,4	537,9	543,5	531,7	551,8	530,6	546,5	513,5	472,1	500,1	506,6	495,4	490,7	514,2	530,5	540,9	608,7	618,0	667,0	574,6	537,4	509,5	541,3	612,4	480,8	485,8	520,7	516,3	485,2	541,0
NOx Limit	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750
U4	574	609	626	640	582	635	625	654	656	614	644	618	603	605	640	613	611	547	559	553	583	625	637	636	559	567	627	641	640	629	636

Graph 16: NO_x daily average emissions against emission limit for unit 4 for the month of July 2020

Interpretation:
All daily averages below NO_x emission limit of 750 mg/Nm^3.

Unit 5 NO_x emissions



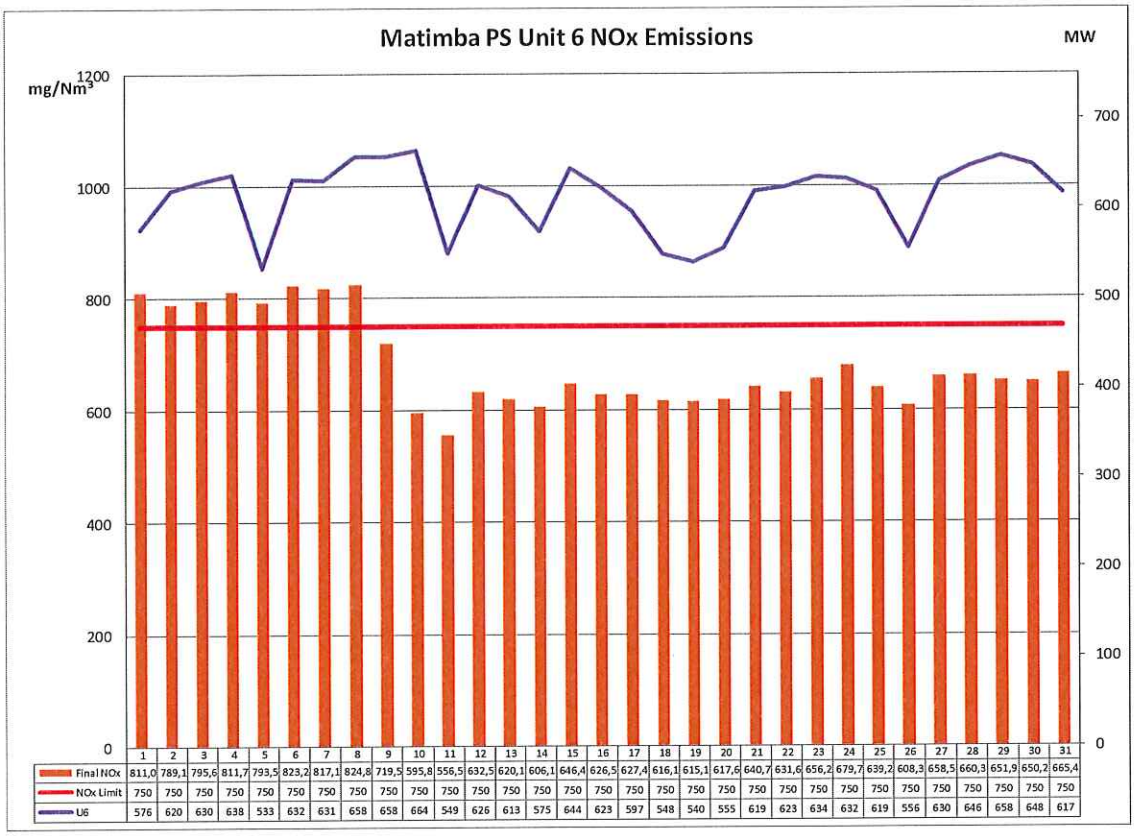
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Final NOx	479,8	488,0	468,1	458,2	469,0	465,2	455,3	464,7	513,9	508,1	499,3	498,1	503,4	513,1	505,2	501,9
NOx Limit	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750
U5	586	619	652	646	585	636	633	665	673	678	664	638	626	627	653	632

	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Final NOx	452,7	506,7	501,8	513,0	456,1	485,7	486,8	467,1	451,0	440,9	445,2	464,0	372,9	364,1	416,3
NOx Limit	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750
U5	548	546	562	608	587	628	641	618	615	525	508	602	514	521	604

Graph 17: NO_x daily average emissions against emission limit for unit 5 for the month of July 2020

Interpretation:
All daily averages below NO_x emission limit of 750 mg/Nm^3.

Unit 6 NO_x emissions



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Final NOx	811,0	789,1	795,6	811,7	793,5	823,2	817,1	824,8	719,5	595,8	556,5	632,5	620,1	606,1	646,4	626,5	627,4	616,1	615,1	617,6	640,7	631,6	656,2	679,7	639,2	608,3	658,5	660,3	651,9	650,2	665,4
NOx Limit	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750
U6	576	620	630	638	533	632	631	658	658	664	549	626	613	575	644	623	597	548	540	555	619	623	634	632	619	556	630	646	658	648	617

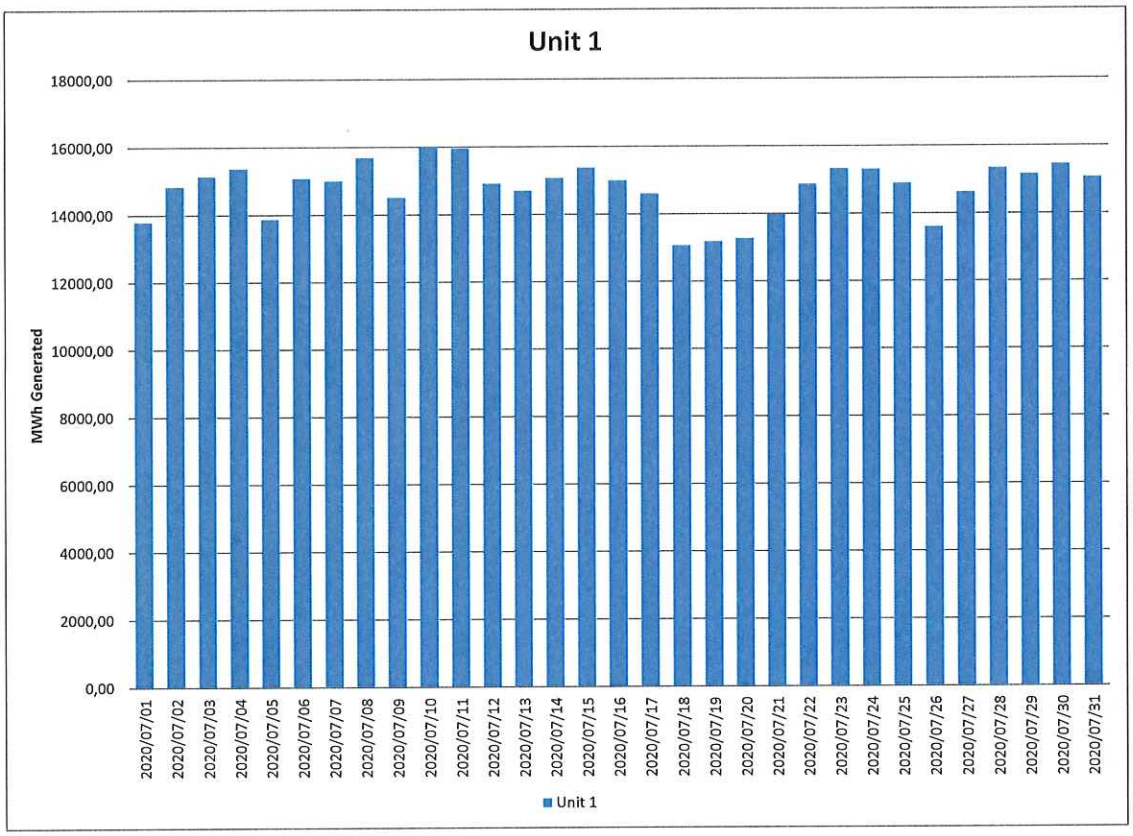
Graph 18: NO_x daily average emissions against emission limit for unit 6 for the month of July 2020

Interpretation:
Unit 6 exceeded the daily average NO_x limit from the 1st to the 8th of July 2020. The exceedances was due to a defective monitor. The monitor was repaired on the 8th of July 2020 and emission readings normalised.

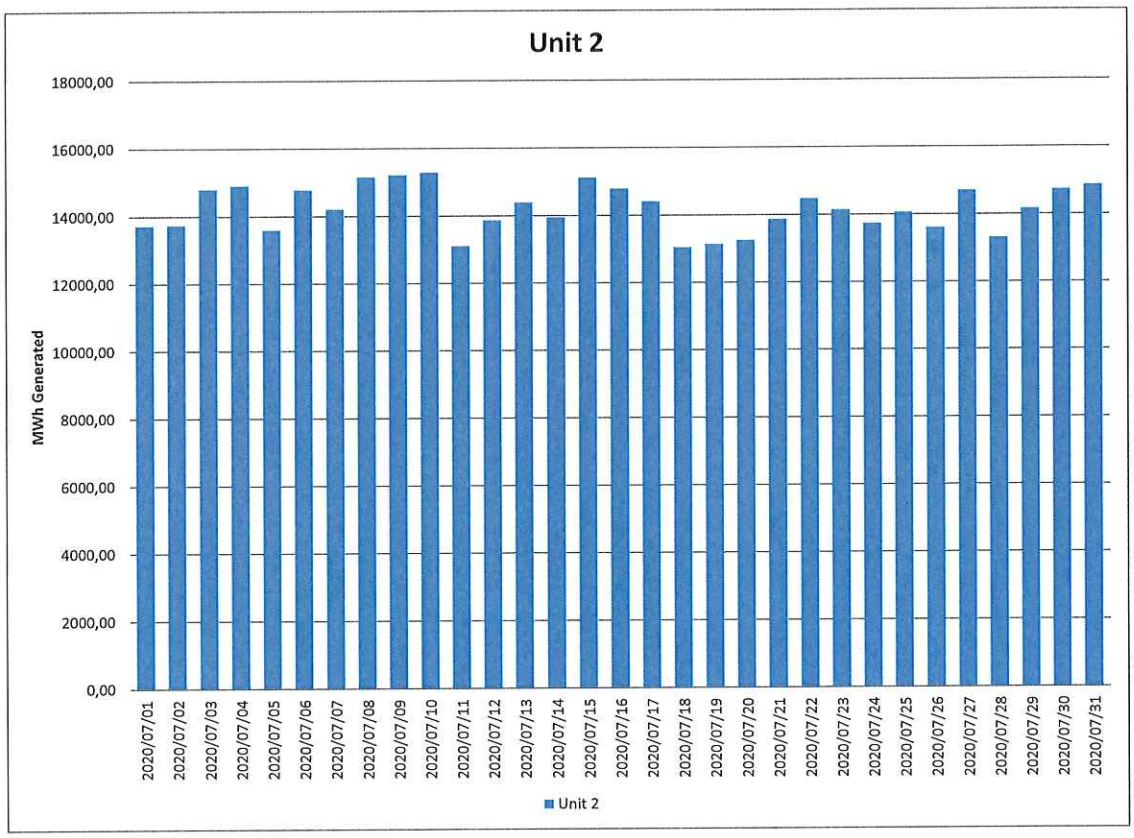
Table 4: Daily power generated per unit in MWh for the month of July 2020

Date	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
2020/07/01	13797,47	13719,47	13988,80	13725,53	13947,80	13701,73
2020/07/02	14840,27	13739,07	14588,73	14536,80	14720,50	14745,93
2020/07/03	15142,40	14800,67	14898,80	14960,00	15522,90	14990,20
2020/07/04	15371,07	14903,67	15514,07	15295,33	15375,40	15185,07
2020/07/05	13873,67	13595,40	14121,00	13902,00	13928,90	12667,60
2020/07/06	15082,40	14780,80	15109,60	15163,47	15124,30	15054,47
2020/07/07	15001,07	14210,27	14949,13	14944,33	15063,00	15001,60
2020/07/08	15684,67	15162,00	15843,93	15617,60	15821,80	15656,67
2020/07/09	14504,67	15223,87	15591,07	15671,54	16022,60	15653,27
2020/07/10	15998,40	15300,33	16131,73	12890,60	16140,80	15809,67
2020/07/11	15962,07	13106,33	16028,33	15377,33	15804,30	13088,33
2020/07/12	14908,73	13875,00	15045,33	14767,20	15189,80	14911,87
2020/07/13	14705,33	14391,80	14806,07	14418,40	14909,30	14594,80
2020/07/14	15074,00	13943,73	15214,87	14457,80	14912,20	13671,53
2020/07/15	15382,93	15125,80	15512,47	15298,00	15551,50	15330,73
2020/07/16	15003,40	14793,80	15104,40	14651,07	15048,60	14817,40
2020/07/17	14613,13	14412,27	14831,73	14599,87	13038,70	14216,80
2020/07/18	13075,20	13051,00	13021,53	13083,80	12990,30	13036,33
2020/07/19	13185,40	13139,27	13474,33	13354,07	13374,20	12844,07
2020/07/20	13274,20	13253,60	13385,80	13222,27	14469,90	13204,40
2020/07/21	13973,20	13870,67	14134,20	13932,67	13969,90	14730,87
2020/07/22	14874,47	14479,80	15013,73	14934,80	14951,40	14823,87
2020/07/23	15328,53	14150,27	15459,80	15220,20	15247,30	15098,07
2020/07/24	15319,13	13738,80	15456,80	15187,60	14718,50	15052,13
2020/07/25	14894,73	14059,87	15104,87	13355,93	14639,10	14728,00
2020/07/26	13604,93	13604,80	13833,40	13558,53	12493,30	13219,87
2020/07/27	14625,40	14709,33	15198,33	14972,27	12107,00	14981,00
2020/07/28	15342,20	13308,60	15555,80	15307,13	14327,50	15371,13
2020/07/29	15156,07	14165,80	15407,13	15283,40	12238,20	15646,00
2020/07/30	15450,33	14731,93	15000,13	15022,67	12415,20	15400,53
2020/07/31	15066,53	14869,47	15343,13	15205,87	14387,60	14670,60

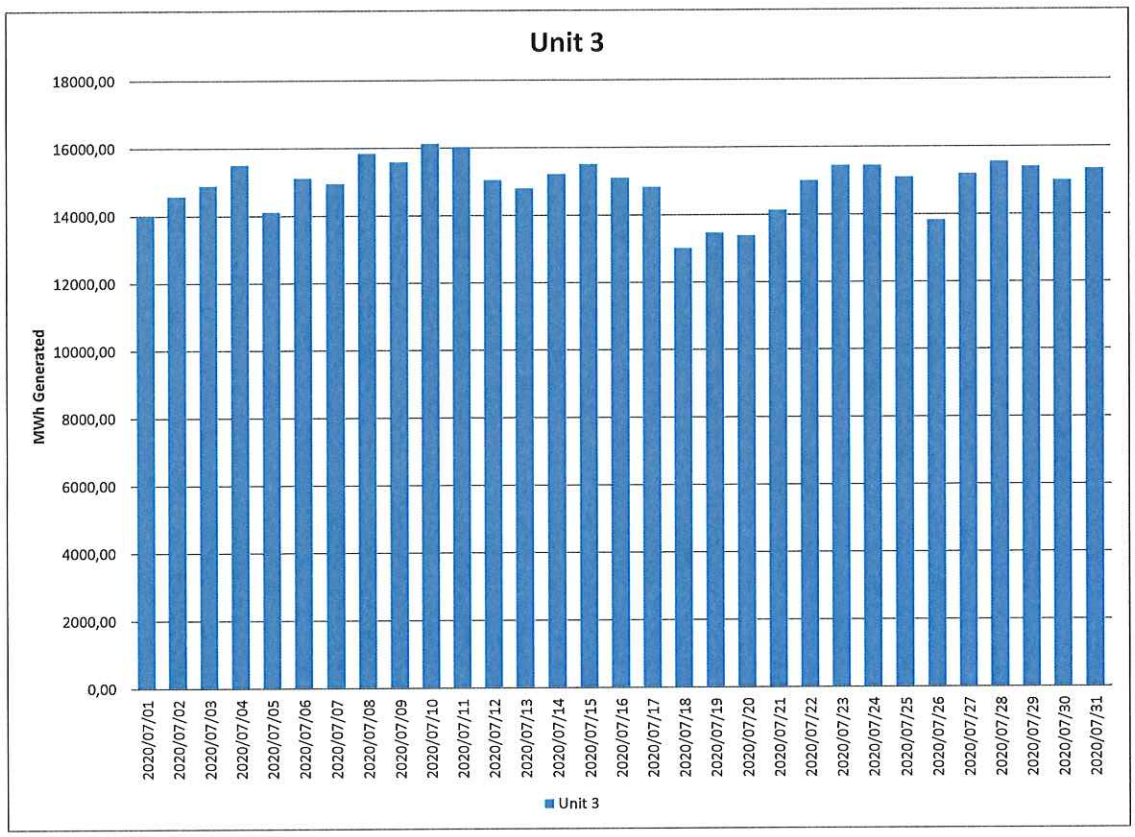
Graph 19: Unit 1 daily generated power in MWh for the month of July 2020



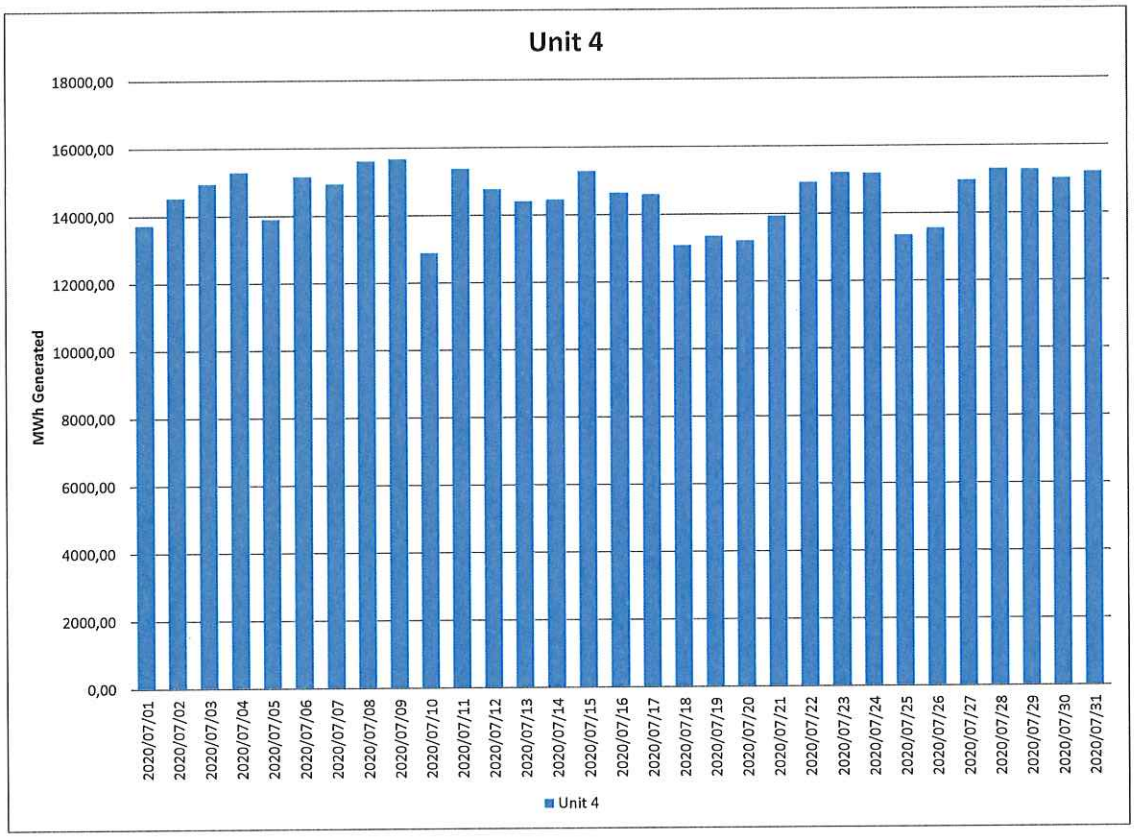
Graph 20: Unit 2 daily generated power in MWh for the month of July 2020



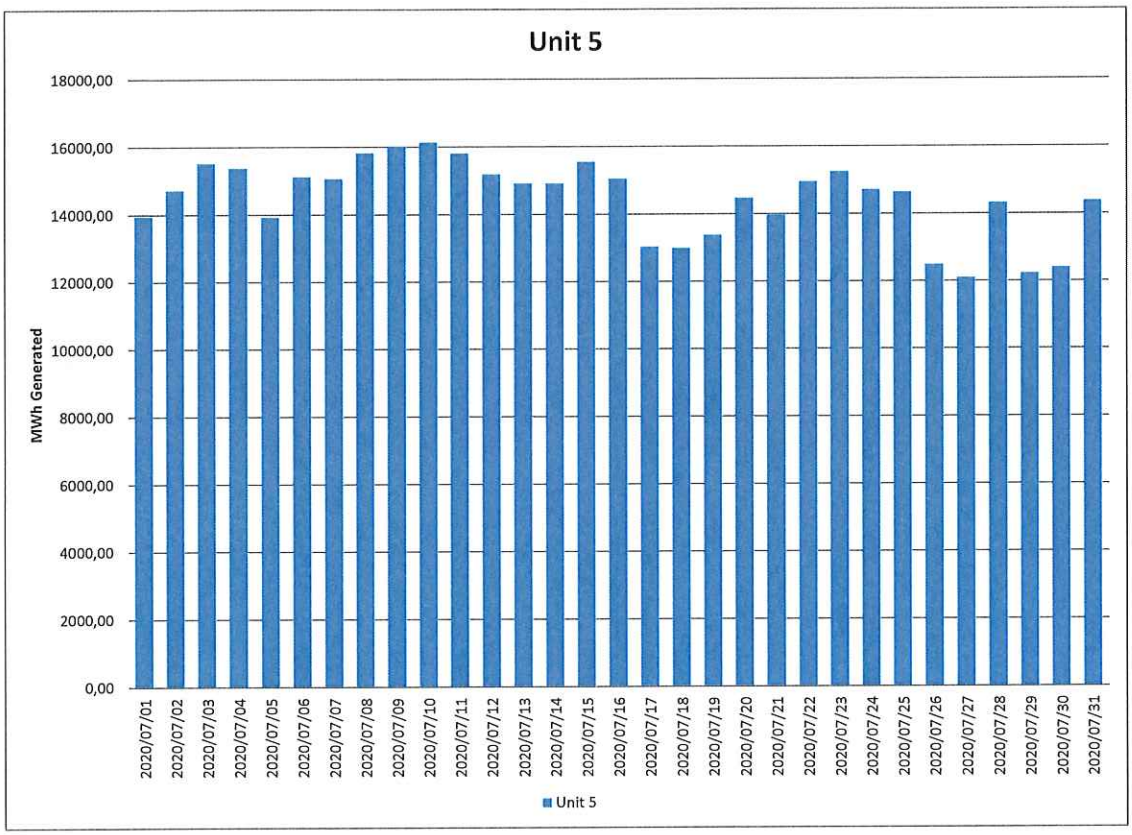
Graph 21: Unit 3 daily generated power in MWh for the month of July 2020



Graph 22: Unit 4 daily generated power in MWh for the month of July 2020



Graph 23: Unit 5 daily generated power in MWh for the month of July 2020



Graph 24: Unit 6 daily generated power in MWh for the month of July 2020

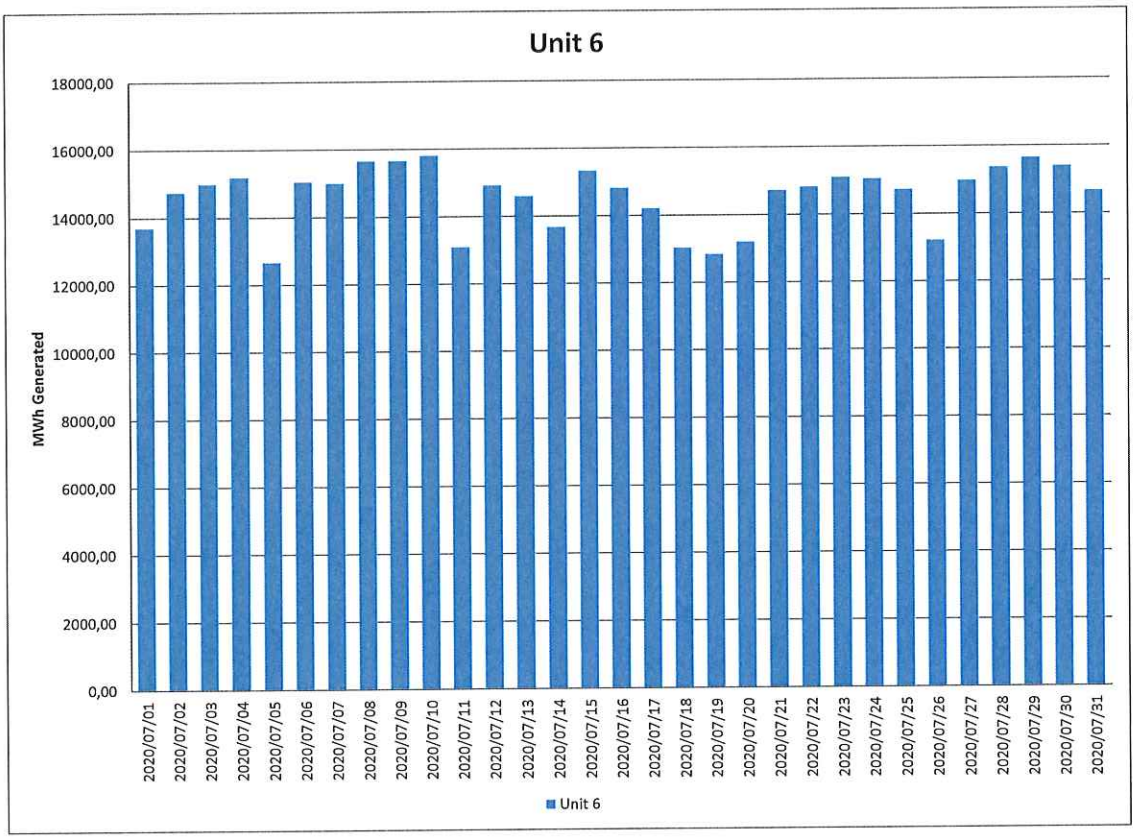


Table 5: Pollutant tonnages for the month of July 2020

Associated Unit/Stack	PM (tons)	SO_2 (tons)	NO_x (tons)	CO_2 (tons)
Unit 1	19,9	6 830,0	920,2	356 199
Unit 2	45,2	5 980,7	874,5	403 901
Unit 3	34,5	5 450,0	1 054,6	370 943
Unit 4	29,6	6 970,1	1 264,3	416 628
Unit 5	10,5	7 732,8	1 001,8	423 804
Unit 6	44,9	6 188,1	1 421,8	433 453
SUM	184,6	39 151,9	6 537,1	2 404 929

Table 6: Reference values for data provided.

Compound / Parameter	Units of Measure	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Oxygen	%	6,92	5,88	8,78	6,95	8,12	9,03
Moisture	%	4,68	3,55	3,66	5,22	4,00	4,13
Velocity	m/s	26,1	30,3	24,3	27,5	26,4	28,8
Temperature	°C	136,5	166,0	135,6	125,8	127,8	121,9
Pressure	mBar	938,6	943,2	934,6	929,1	933,8	896,9

Start-up information.

Table 7: Start-up information

Unit	4	
Fires in	10h43	2020-07-10
Synchronization with Grid	12h25	2020-07-10
Emissions below limit	13h00	2020-07-10
Fires in to synchronization	1.7	Hours
Synchronization to < Emission limit	0.583	Hours

Emergency Generation

Table 8: Emergency Generation.

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Emergency Generation hours declared by national Control	311	311	311	292	311	311
Emergency Hours declared including hours after stand down	348	348	348	328	348	348
Days over the Limit during Emergency Generation	0	0	0	0	0	0

Complaints Register

Table 9: Complaints.

Source Code/ Name	Root Cause Analysis	Calculation of Impacts/ emissions associated with the incident	Dispersion modeling of pollutants where applicable	Measures implemented to prevent reoccurrence	Date by which measure will be implemented
None					

Table 10: Total volatile compound estimates.

Eskom

ALCULATION OF EMISSIONS OF TOTAL VOLATILE COMPOUNDS FROM FUEL OIL STORAGE TANK

Date:	Thursday, 08 October 2020
Station:	Matimba Power Station
Province:	Limpopo Province
Tank no.	1-4
Description:	Outdoor fuel oil storage tank
Tank Type:	Vertical fixed roof (vented to atmosphere)
Material stored:	Fuel Oil 150

MONTHLY INPUT DATA FOR THE STATION

Please only insert relevant monthly data inputs into the *blue cells* below

Choose from a dropdown menu in the *green cells*

The total VOC emissions for the month are in the *red cells*

IMPORTANT: Do not change ***any*** other cells without consulting the AQ CoE

MONTH:	**July**	
GENERAL INFORMATION:	**Data**	**Unit**
Total number of fuel oil tanks:	4	NA
Height of tank:	13,34	m
Diameter of tank:	9,53	m
Net fuel oil throughput for the month:	272,778	tons/month
Molecular weight of the fuel oil:	166,00	Lb/lb-mole
METEROLOGICAL DATA FOR THE MONTH	**Data**	**Unit**
Daily average ambient temperature	17,66	°C
Daily maximum ambient temperature	25,87	°C
Daily minimum ambient temperature	10,47	°C
Daily ambient temperature range	15,40	°C
Daily total insolation factor	3,47	kWh/m²/day
Tank paint colour	*Grey/medium*	NA
Tank paint solar absorbtance	0,68	NA
FINAL OUTPUT:	**Result**	**Unit**
Breathing losses:	0,53 kg/month	
Working losses:	0,01 kg/month	
TOTAL LOSSES (Total TVOC Emissions for the month):	0,54 kg/month	

*Calculations performed on this spreadsheet are taken from the USEPA AP-42- Section 7.1 Organic Liquid Storage Tanks - January 1996. This spreadsheet is derived from materials provided by Jimmy Peress, PE, Tritech Consulting Engineers, 85-93 Chevy Chase Street, Jamaica, NY 11432 USA, Tel - 718-454-3920, Fax - 718-454-6330, e-mail - PeressJ@nyc.rr.com.

Table 11: Average % availability of monitors for the month of July 2020.

Associated Unit/Stack	PM	SO_2	NO	CO_2
Unit 1	*100,0*	*99,9*	*99,7*	*99,9*
Unit 2	*100,0*	*84,0*	*83,7*	*83,9*
Unit 3	*100,0*	*99,7*	*99,7*	*99,6*
Unit 4	*100,0*	*100,0*	*100,0*	*100,0*
Unit 5	*100,0*	*100,0*	*99,9*	*99,7*
Unit 6	*100,0*	*99,9*	*99,9*	*99,7*

Ambient Air quality Monitoring

Eight (8) exceedances of the $PM_{2.5}$ national daily limit and eleven (11) exceedance of the PM_{10} national daily limit were recorded in July 2020. The SO_2 national hourly limit was exceeded three (3) times and the SO_2 national 10-minute limit was exceeded twice. No other parameters exceeded the set limits during the monitoring period.

Ambient $PM_{2.5}$, PM_{10} and NO_2 concentrations at Marapong monitoring site show influence of emissions from low level sources in the area while SO_2 concentrations show influence of emissions from both tall stack emitters and low level sources.

The average data recovery for the period was 82.1% and the station availability was 98.3%.

Detailed results can be found in Attachment 1, "Marapong air quality monthly report for July 2020".

General

Name and reference number of the monitoring method used:

1. Particulate and gas monitoring according to standards
    a. BS EN 14181:2004 - Quality Assurance of Automated Measuring Systems
    b. ESKOM internal standard 240-56242363 Emissions Monitoring and Reporting Standard

Sampling locations:

1. Stack one
    a. Particulates:
        i. S23^0 40' 2.8" E027^0 36' 34.8" 175m from ground level and 75m from the top.
    b. Gas:
        i. S23^0 40' 2.8" E027^0 36' 34.8" 100m from ground level and 150m from the top.
    c. Stack height
        i. 250 meter consist of 3 flues
2. Stack two
    a. Particulates:
        i. S23^0 40' 14.8" E027^0 36' 47.5" 175m from ground level and 75m from the top.
    b. Gas:
        i. S23^0 40' 14.8" E027^0 36' 47.5" 100m from ground level and 150m from the top.
    c. Stack height
        i. 250 meter consist of 3 flues

Unit 1

1. 0 out of 32 precipitator fields is out of service.
2. No abnormalities on the SO_3 plant. Preventative maintenance done during the month.

Unit 2

1. 4 out of 32 precipitator fields is out of service. Repairs will be done during the next opportunity outage.
2. No abnormalities on the SO_3 plant. Preventative maintenance done during the month.

Unit 3

1. 2 out of 32 precipitator fields is out of service. Repairs will be done during the next opportunity outage.
2. No abnormalities on the SO3 plant. Preventative maintenance done during the month.

Unit 4

1. All precipitator fields in service.
2. No abnormalities on the SO3 plant. Preventative maintenance done during the month.

Unit 5

1. All precipitator fields in service.
2. No abnormalities on the SO_3 plant. Preventative maintenance done during the month.

Unit 6

1. 3 out of 32 precipitator fields is out of service. Repairs will be done during the next opportunity outage.
2. No abnormalities on the SO_3 plant. Preventative maintenance done during the month.

SO3 common plant

1. No abnormalities on the sulphur storage plant.

CEMs

1. No adjustments done on the CEMs. Calibration is done every second week.

Particulate monitors

2. No downtime or repairs done on the particulate monitors.

Air quality improvements

1. None

Social responsibility conducted

No campaigns conducted in July 2020

Sampling dates and times

1. Continuous

Attachments

Monthly ambient air quality report

The rest of the information demonstrating compliance with the emission license conditions is supplied in the annual emission report sent to your office.

Hoping the above will meet your satisfaction.

I hereby declare that the information in this report is correct.

Yours sincerely

GENERAL MANAGER: MATIMBA POWER STATION