Eskom	Technical and Generic Report	Matimba Power Station

Title:	**Matimba Power Station July 2023 emissions report Rev 2**	Document Identifier:	**RP/247/037**
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		Area of Applicability:	**Matimba Power Station**
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Compiled by	**Functional Responsibility**	**Authorized by**
KH Ramahlare	**MC Mamabolo**	**Obakeng Mabotja**
Senior Advisor Environment	**Environmental Manager**	**General Manager**
Date:2024-04-18	Date:18/04/2024	Date: 2024-04-19

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1. Report Summary

Matimba Power Station was issued with an Atmospheric Emission License (H16/1/13-WDM05) in September 2022. The License requires the license holder to submit monthly reports to the Department. This report is the revision 2 of the initial report submitted to the licensing authority in July 2023. The revision of the report was necessitated by changes applied to the Matimba Emission Reporting tool (ERT V12.2021 to ERT V02.2024VF), which included the implementation of the spot test correlations and parallel tests (QAL 2) tests performed in July-August 2023 and the usage of surrogate particulate emissions values when monitors exceed their range due to high actual emissions using the Deutsch calculation.

During the period under review, Matimba experienced ninety (90) exceedances of the daily particulate matter emission limit (50mg/Nm^3), fifty-seven (57) of these exceedances occurred outside of the forty-eight hours grace period and were recorded on the Eskom incident management process as non-compliance to the Atmospheric Emissions Licence.

No exceedances of the monthly SOx limit (3500mg/Nm3) or the daily NOx emission limit (750mg/Nm3) occurred.

The flue gas conditioning plant (SO3 Plant) for all the units did not achieve the required 100% availability due to the defects and breakdown experienced on the plants throughout the month. On 21 July 2023 at 21:30 the units SO3 plants went on hold and stop mode due low sulphur flow that were caused by a defective supply pump, the repairs of the pump were instituted, and the plant returned to normal operations on the 24 July 2023 at 21:30.

More information regarding above mentioned issues is provided in the relevant sections within the report.

2. Emission information

2.1 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	1 042 250
	Fuel Oil	Tons/month	1 200	553,961
Production Rates	**Product/ By-Product Name**	**Unit**	**Maximum Production Capacity Permitted (Quantity)**	**Production Rate**
	Energy	MW	4000	2620,171

The consumption rates for the month of July 2023 were within the permitted maximum limits.

2.2 Abatement technology

Table 2: Abatement Equipment Control Technology Utilised

Associated Unit	Technology Type	Minimum utilisation (%)	Efficiency (%)
Unit 1	Electrostatic Precipitator	100%	99,810%
Unit 2	Electrostatic Precipitator	100%	99,840%
Unit 3	Electrostatic Precipitator	100%	99,845%
Unit 4	Electrostatic Precipitator	100%	99,693%
Unit 5	Electrostatic Precipitator	100%	99,808%
Unit 6	Electrostatic Precipitator	100%	99,899%
Associated Unit	**Technology Type**	**Minimum utilisation (%)**	**Actual Utilisation (%)**
Unit 1	SO_3 Plant	100%	83,45%
Unit 2	SO_3 Plant	100%	94,09%
Unit 3	SO_3 Plant	100%	92,88%
Unit 4	SO_3 Plant	100%	91,80%
Unit 5	SO_3 Plant	100%	88,58%
Unit 6	SO_3 Plant	100%	93,99%

Flue gas conditioning plant availability was below the required 100% for all six (06) units due to maintenance activities and unplanned breakdowns. Defects were addressed and plants returned. On 21 July 2023 at 21:30 the units Sulphur plant were reported to start tripping due to low sulphur flow that was caused by the defective supply pump. Repairs on the offloading pump were started and completed on 24 July 2023 at 21:30 and the sulphur tanked was then topped up and the sulphur plant returned to operation.

2.3 Energy source characteristics

Table 3: Energy Source Material Characteristics.

	Characteristic	Stipulated Range (Unit)	Monthly Average Content
Coal burned	**Sulphur Content**	1.6%	1,21 %
	Ash Content	40%	34,79 %

Energy source characteristics remained within the ranges stipulated in the license.

2.4 Emissions reporting

2.4.1 Particulate Matter Emissions

The emission monitors Correlation spot test were performed in July/August 2023 and the results were applied and used for gaseous emissions calculation for October 2023.The spot test results for PM emissions for Unit 4 and 6 have failed the minimum requirements outlined in the Eskom emission calculation Methodology and were not applied.

Unit 1 Particulate Emissions

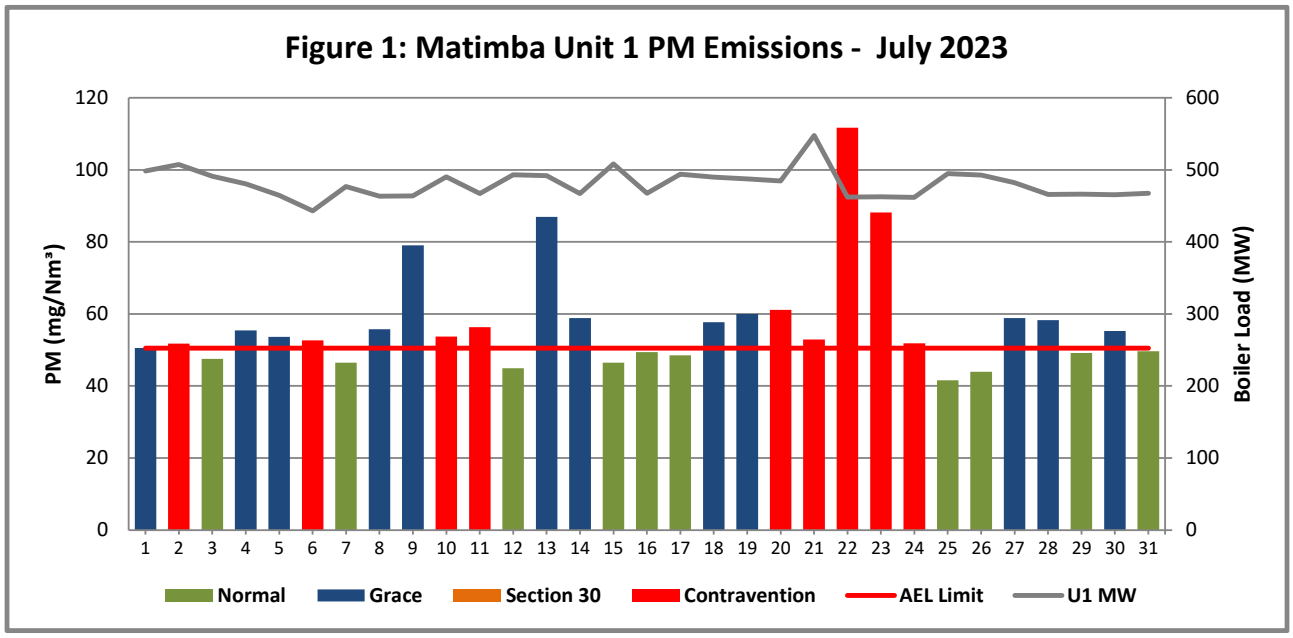

Figure 1: Particulate matter daily average emissions against emission limit for unit 1 for the month of July 2023

Interpretation:

Unit 1 exceeded the daily particulate emission limit of 50mg/Nm3 on 1,2,4,5,6, 8 to 11,13,14,18 to 24, 27, 28 and 30 July 2023. The exceedances on 2,6,10,11,20 to 24 July 2023 occurred outside of the 48-hour grace period and were recorded on the Eskom incident management process as non-compliance to the Atmospheric Emissions Licence. The exceedances were due to accumulation of ash at the dust handling plant leading to high hopper levels within the flue gas cleaning system which resulted in reducing the efficiency of the abatement technology (electrostatic precipitator fields) and the unavailability of the SO_3 plant. The investigation into the causes of the exceedances were done and corrective measure put in place to correct the root causes.

Unit 2 Particulate Emissions

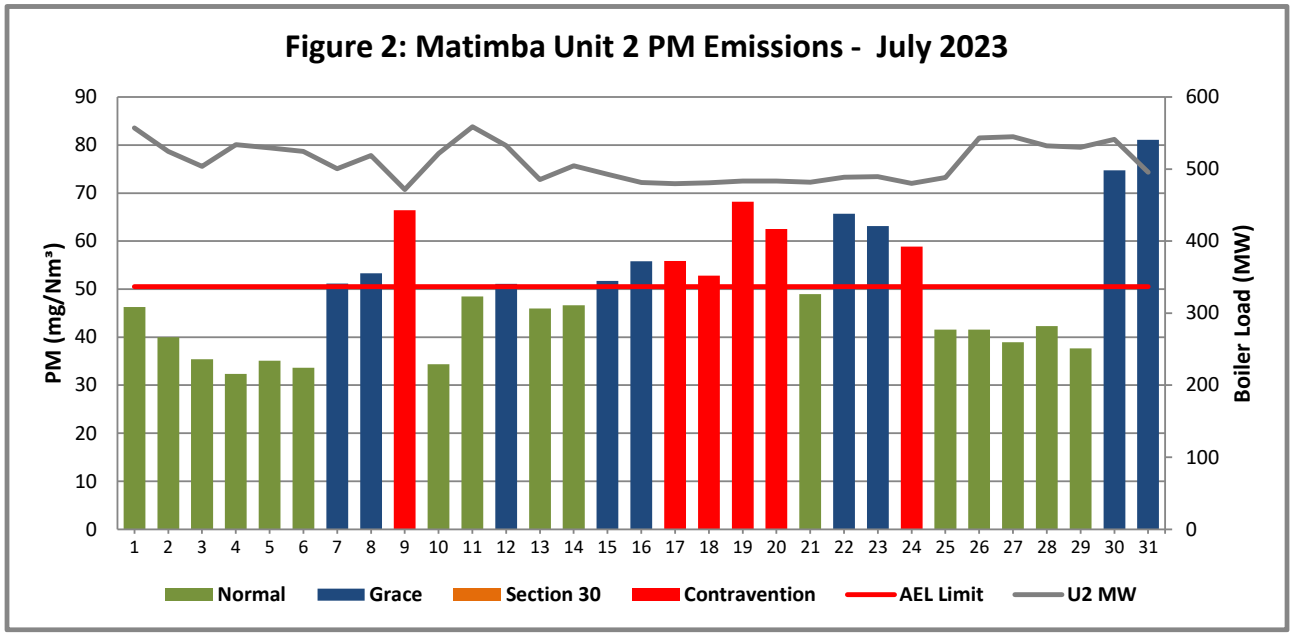

Figure 2: Particulate matter daily average emissions against emission limit for unit 2 for the month of July 2023

Interpretation:

Unit 2 exceeded the daily particulate emission limit of 50mg/Nm3 on 7,8,9,15 to 17 to 20,22,23 to 24, 30 and 31 July 2023. The exceedances from on 9,17,18,19,20, and 24 July 2023 occurred outside of the 48-hour grace period and were recorded on the Eskom incident management process as non-compliance to the Atmospheric Emissions Licence. The exceedances were due to accumulation of ash at the dust handling plant leading to high hopper levels within the flue gas cleaning system which resulted in reducing the efficiency of the abatement technology (electrostatic precipitator fields) and the unavailability of the SO3 plant. The investigation into the causes of the exceedances were done and corrective measure put in place to correct the root causes.

Unit 3 Particulate Emissions

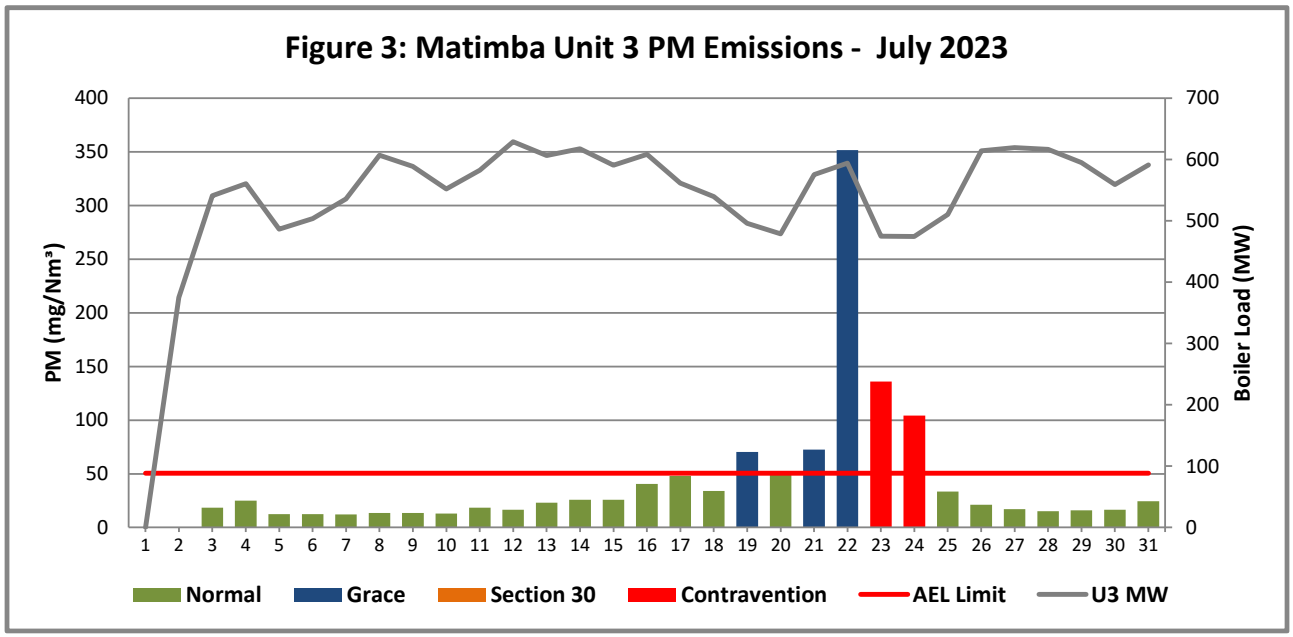

Figure 3: Particulate matter daily average emissions against emission limit for unit 3 for the month of July 2023

Interpretation:

Unit 3 Particulate matter exceeded the daily limit of 50 mg/Nm3 on 19,21,22,23, and 24 July 2023. The exceedances from on 23 and 24 July 2023 occurred outside of the 48-hour grace period and were recorded on the Eskom incident management process as non-compliance to the Atmospheric Emissions Licence. The exceedances were due to accumulation of ash at the dust handling plant leading to high hopper levels within the flue gas cleaning system which resulted in reducing the efficiency of the abatement technology (electrostatic precipitator fields) and the unavailability of the SO3 plant.

Unit 4 Particulate Emissions

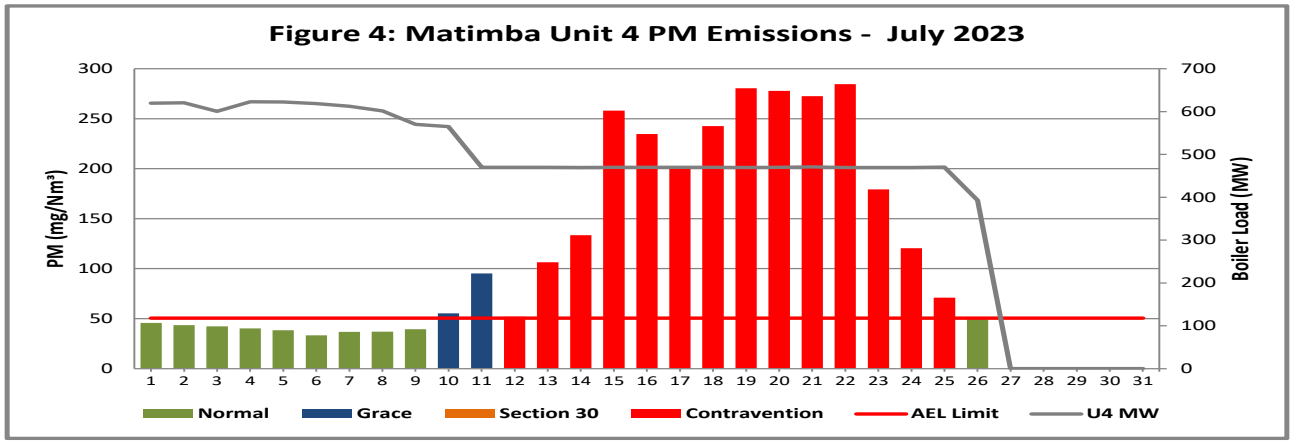

Figure 4: Particulate matter daily average emissions against emission limit for unit 4 for the month of July 2023

Interpretation:

Unit 4 Particulate matter exceeded the daily limit of 50 mg/Nm^3 on 10 to 26 July 2023. Exceedance from 12 to 26 July 2023 occurred outside of the 48-hour grace period and were recorded on the Eskom incident management process as non-compliance to the Atmospheric Emissions Licence. The exceedances were due to accumulation of ash at the dust handling plant leading to high hopper levels within the flue gas cleaning system which resulted in reducing the efficiency of the abatement technology (electrostatic precipitator fields) and the unavailability of the SO3 plant. The investigation into the causes of the exceedances were done and corrective measure put in place to correct the root causes.

Unit 5 Particulate Emissions

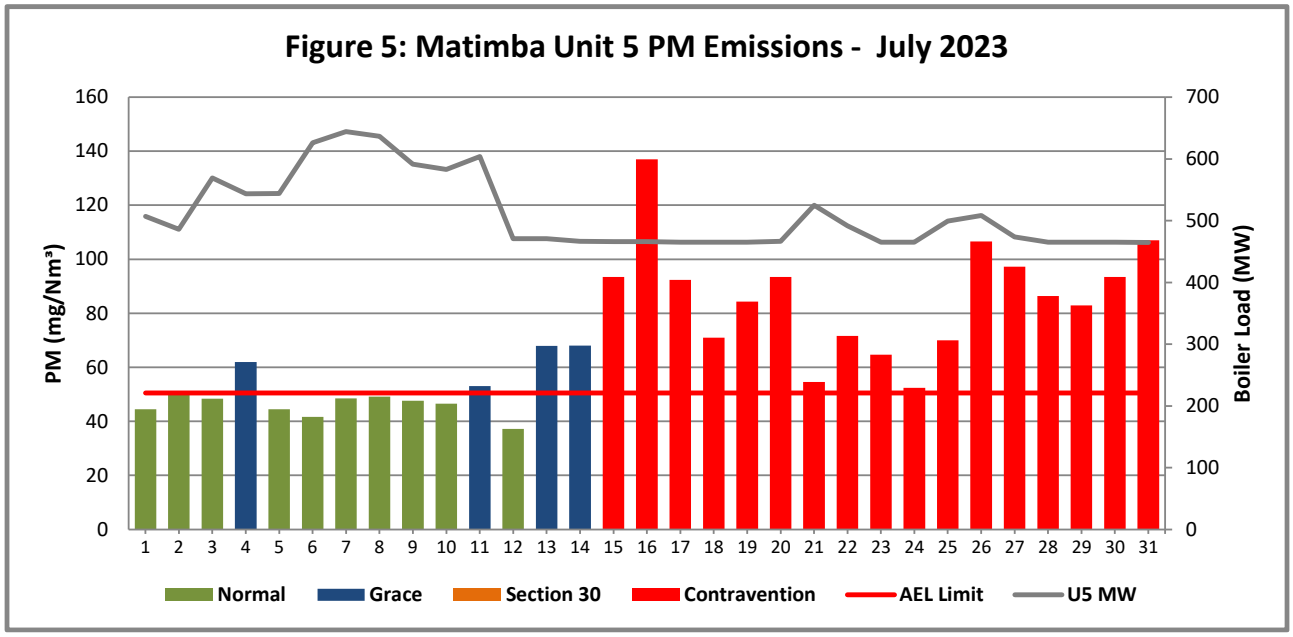

Figure 5: Particulate matter daily average emissions against emission limit for unit 5 for the month of July 2023

Interpretation:

Unit 5 Particulate matter exceeded the daily limit of 50 mg/Nm^3 on 4,11,13 to 24,26 to 31 July 2023. Exceedance from 15 to 24 to 31 July 2023 occurred outside of the 48-hour grace period and were recorded on the Eskom incident management process as non-compliance to the Atmospheric Emissions Licence. The exceedances were due to accumulation of ash at the dust handling plant leading to high hopper levels within the flue gas cleaning system which resulted in reducing the efficiency of the abatement technology (electrostatic precipitator fields) and the unavailability of the SO3 plant. The investigation into the causes of the exceedances were done and corrective measure put in place to correct the root causes.

Unit 6 Particulate Emissions

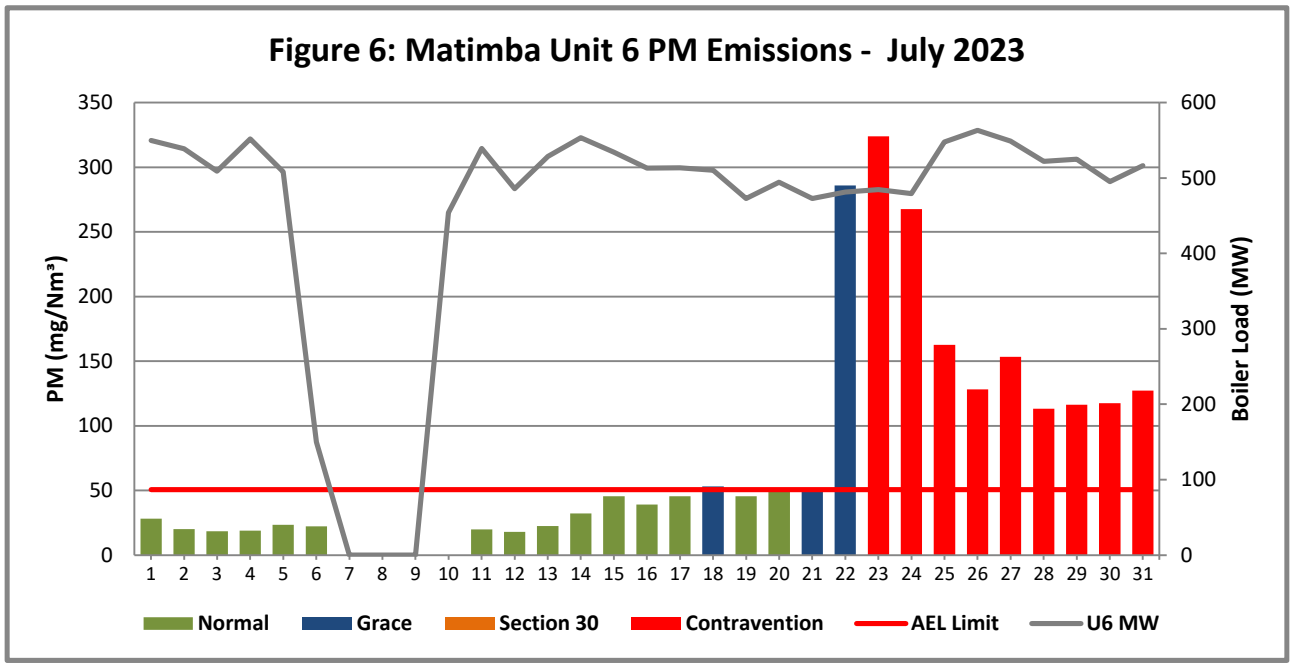

Figure 6: Particulate matter daily average emissions against emission limit for unit 6 for the month of July 2023

Interpretation:

Unit 6 Particulate matter exceeded the daily limit of 50 mg/Nm3 on 18,21 to 31 July 2023. The exceedances from 23 to 31 July 2023 occurred outside of the 48-hour grace period and were recorded on the Eskom incident management process as non-compliance to the Atmospheric Emissions Licence. The exceedances were due to unavailability of the SO3 plant.

2.4.2 Gaseous Emissions

Gaseous emissions analyzers calibration for all 6 units were performed in June 2023.
The quality assurance spot tests were performed on the monitors in July 2023.

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Unit 1 SO_2 Emissions

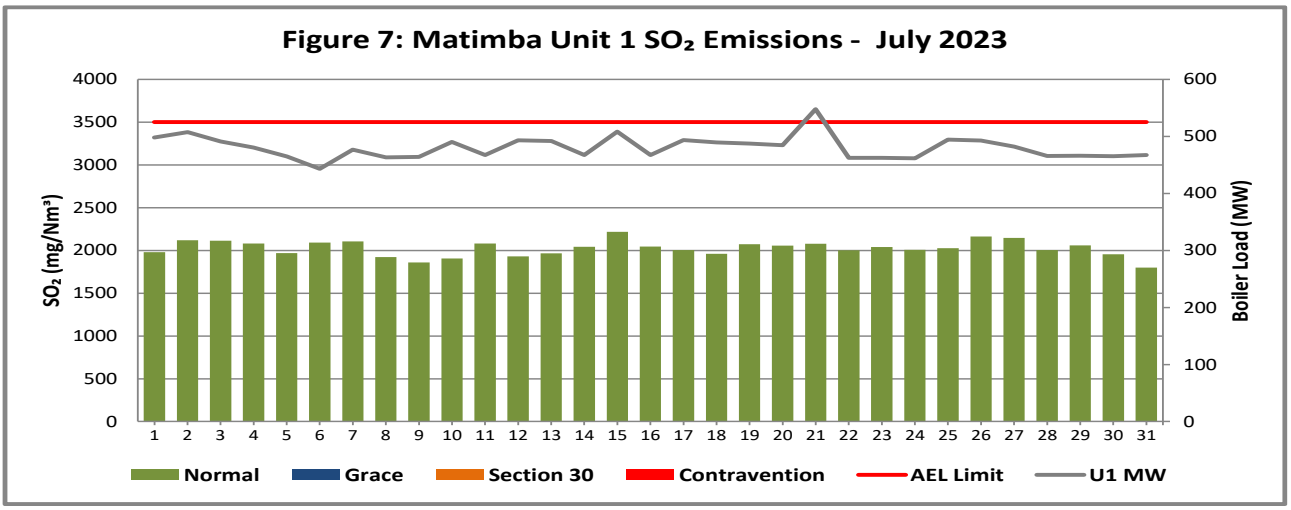

Figure 7: SO2 daily average emissions against emission limit for unit 1 for the month of July 2023

Interpretation:

All daily averages below SO_2 emission monthly limit of 3500 mg/Nm^3.

Unit 2 SO_2 Emissions

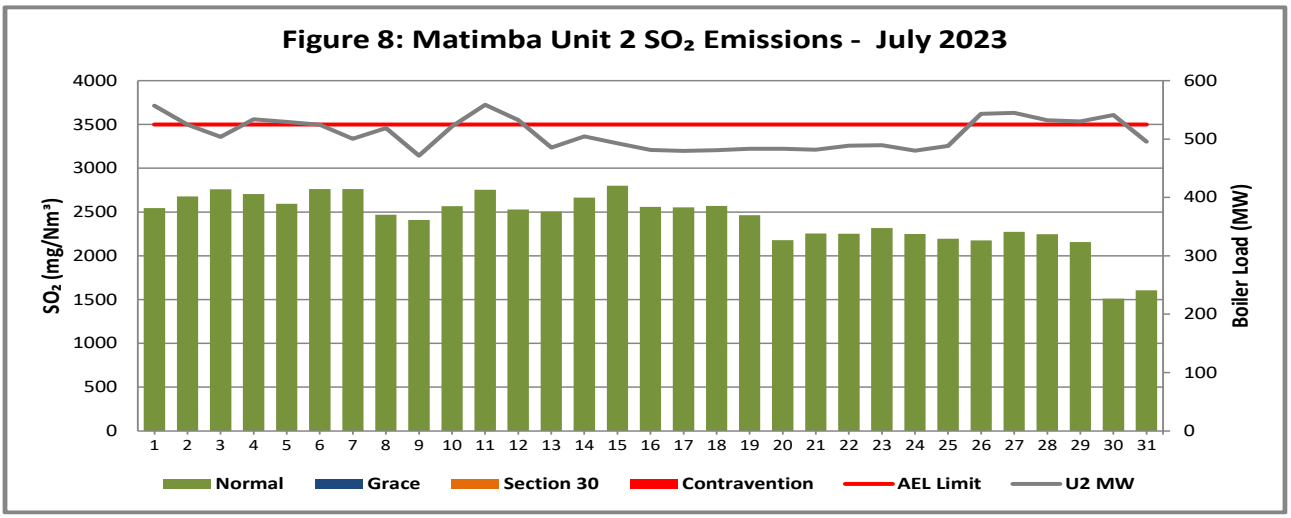

Figure 8: SO2 daily average emissions against emission limit for unit 2 for the month of July 2023

Interpretation:

All daily averages below SO_2 emission monthly limit of 3500 mg/Nm^3

Unit 3 SO_2 Emissions

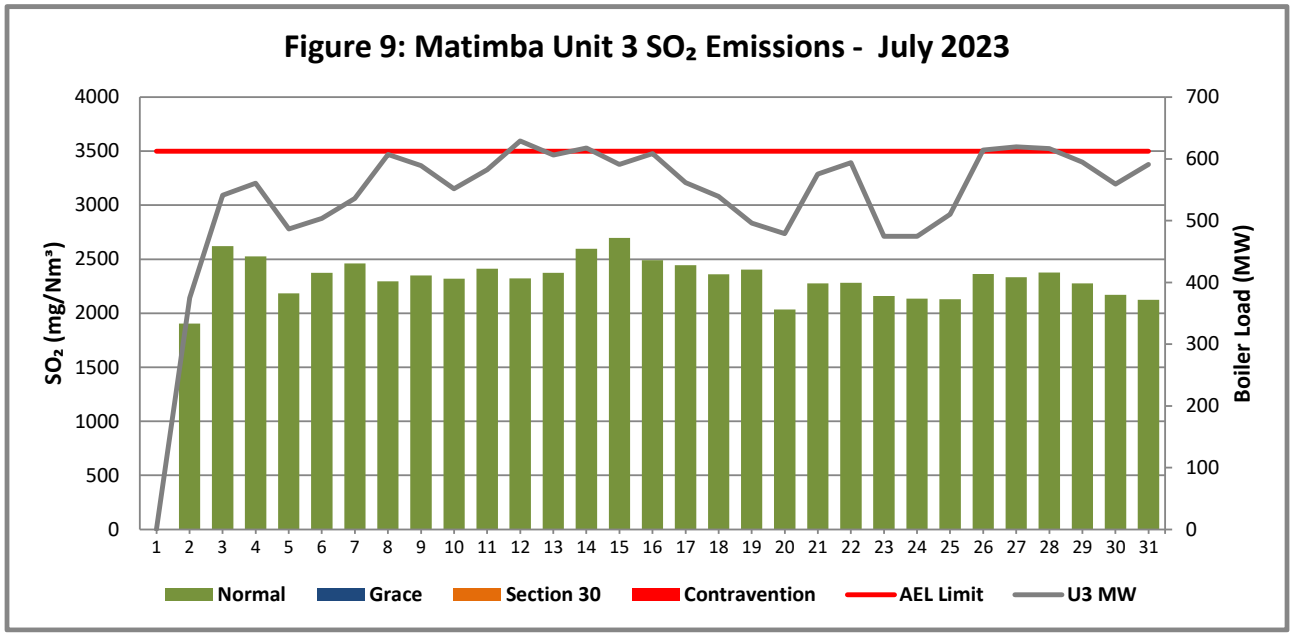

Figure 9: SO2 daily average emissions against emission limit for unit 3 for the month of July 2023

Interpretation:

All daily averages below SO_2 emission monthly limit of 3500 mg/Nm^3.

Unit 4 SO_2 Emissions

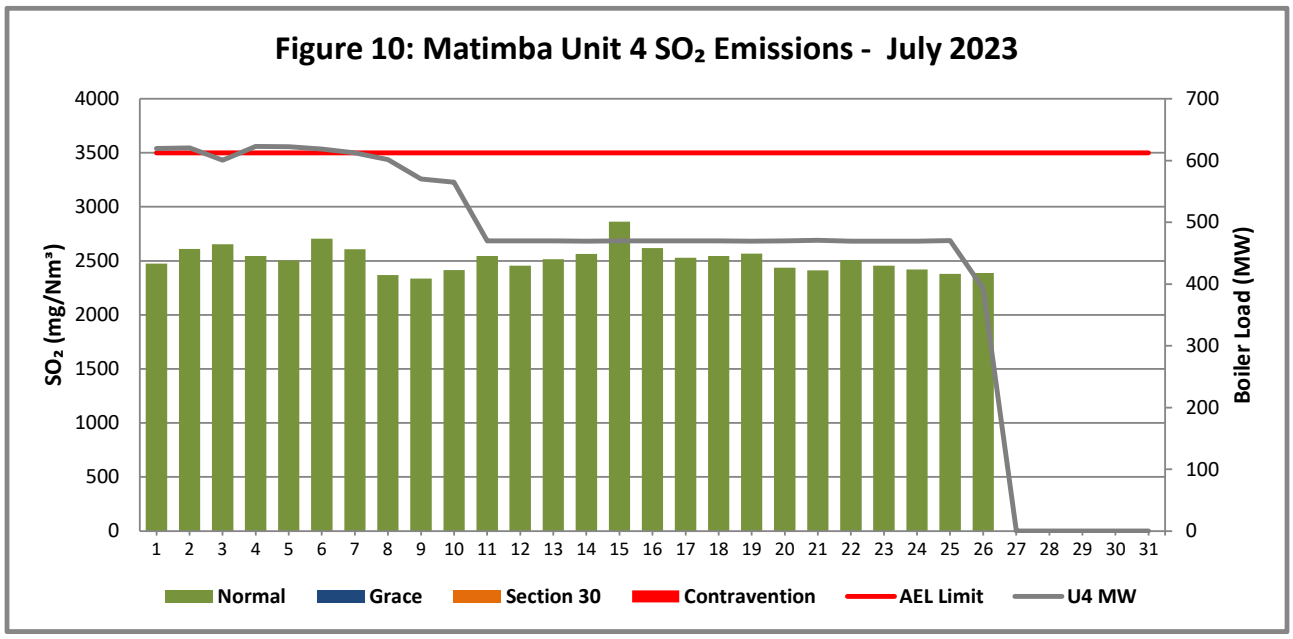

Figure 10: SO2 daily average emissions against emission limit for unit 4 for the month of July 2023

Interpretation:

All daily averages below SO_2 emission monthly limit of 3500 mg/Nm^3.

Unit 5 SO_2 Emissions

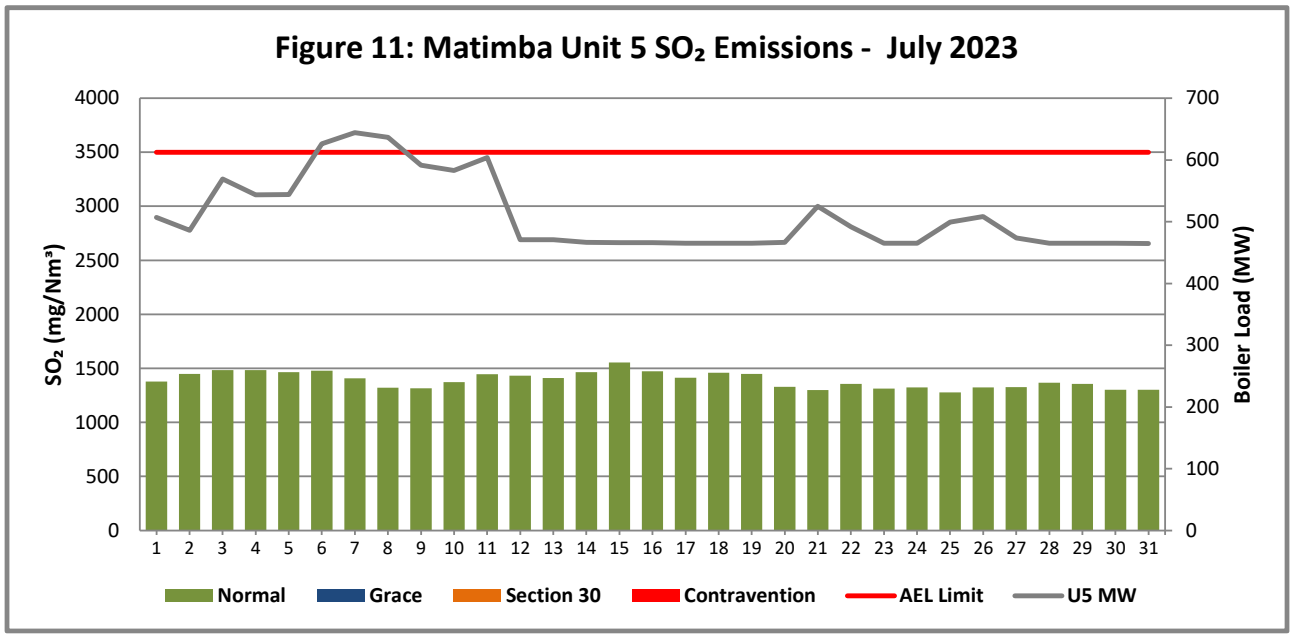

Figure 11: SO2 daily average emissions against emission limit for unit 5 for the month of July 2023

Interpretation:

All daily averages below SO_2 emission monthly limit of 3500 mg/Nm^3.

Unit 6 SO_2 Emissions

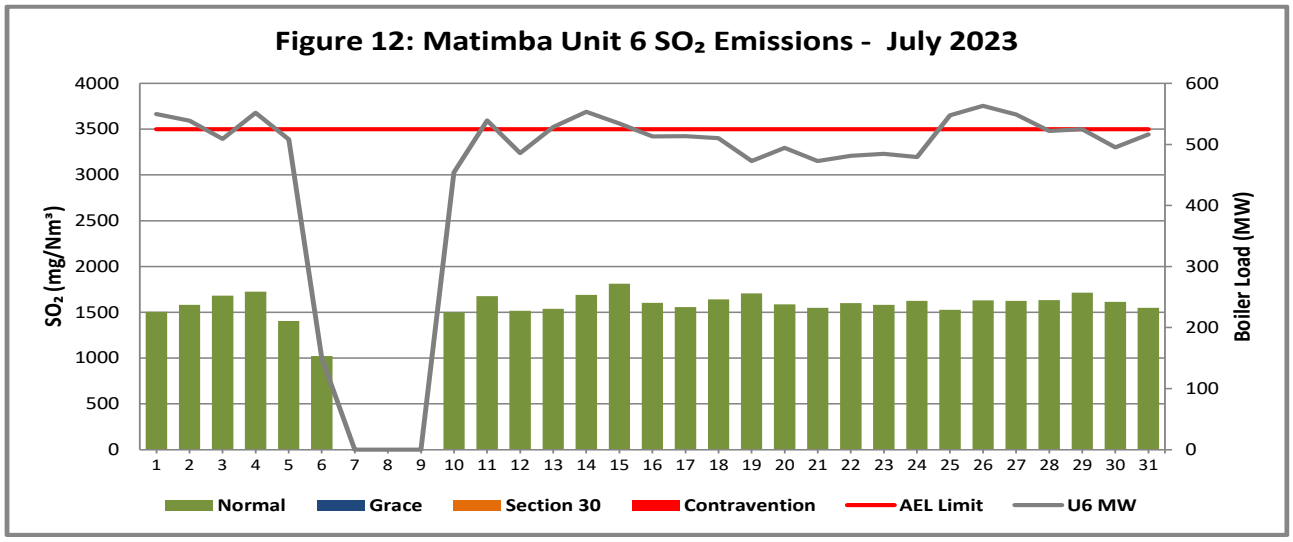

Figure 12: SO2 daily average emissions against emission limit for unit 6 for the month of July 2023

Interpretation:

All daily averages remained below SO_2 emission monthly limit of 3500 mg/Nm^3.

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Unit 1 NO_x Emissions

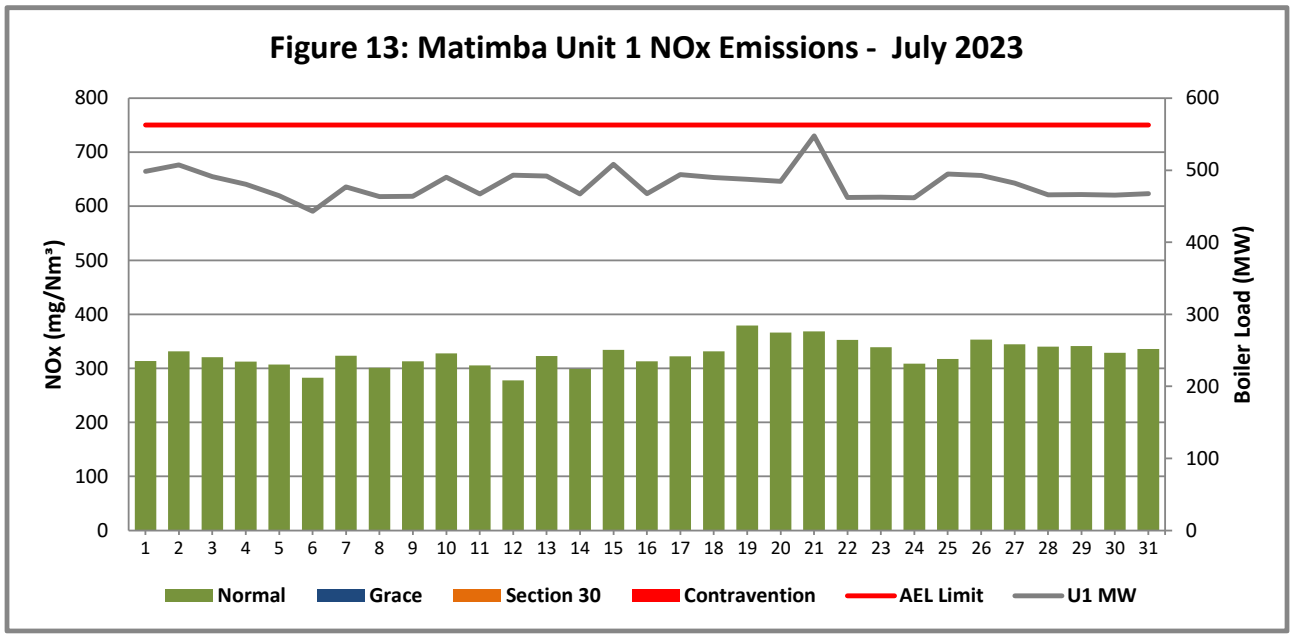

Figure 13: NOx daily average emissions against emission limit for unit 1 for the month of July 2023

Interpretation:

All daily averages below NOx emission limit of 750 mg/Nm^3.

Unit 2 NO_x Emissions

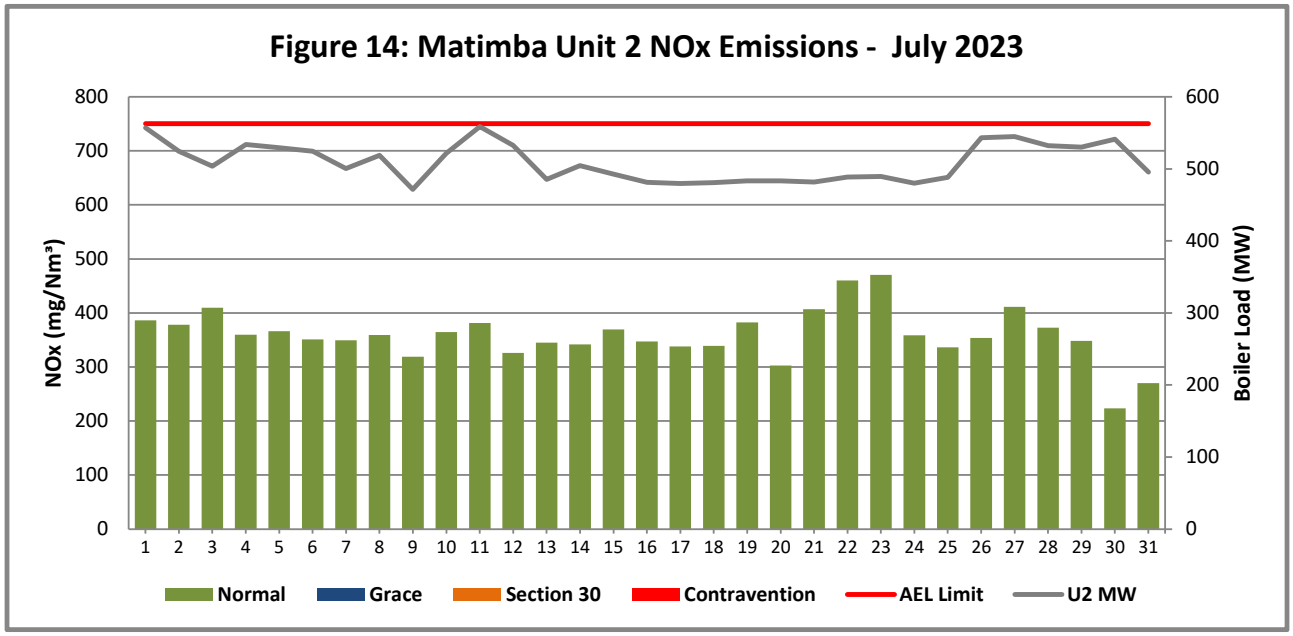

Figure 14: NOx daily average emissions against emission limit for unit 2 for the month of July 2023

Interpretation:

All daily averages below NOx emission limit of 750 mg/Nm^3.

Unit 3 NO_x Emissions

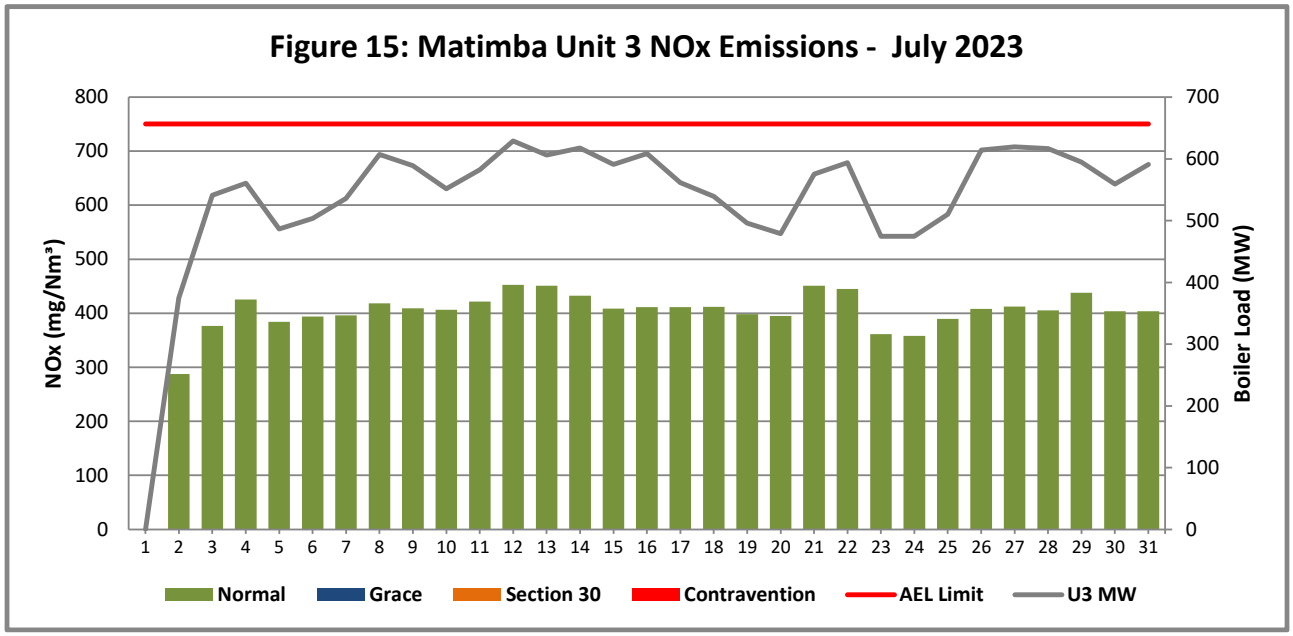

Figure 15: NOx daily average emissions against emission limit for unit 3 for the month of July 2023

Interpretation:

All daily averages below NOx emission limit of 750 mg/Nm^3.

Unit 4 NO_x Emissions

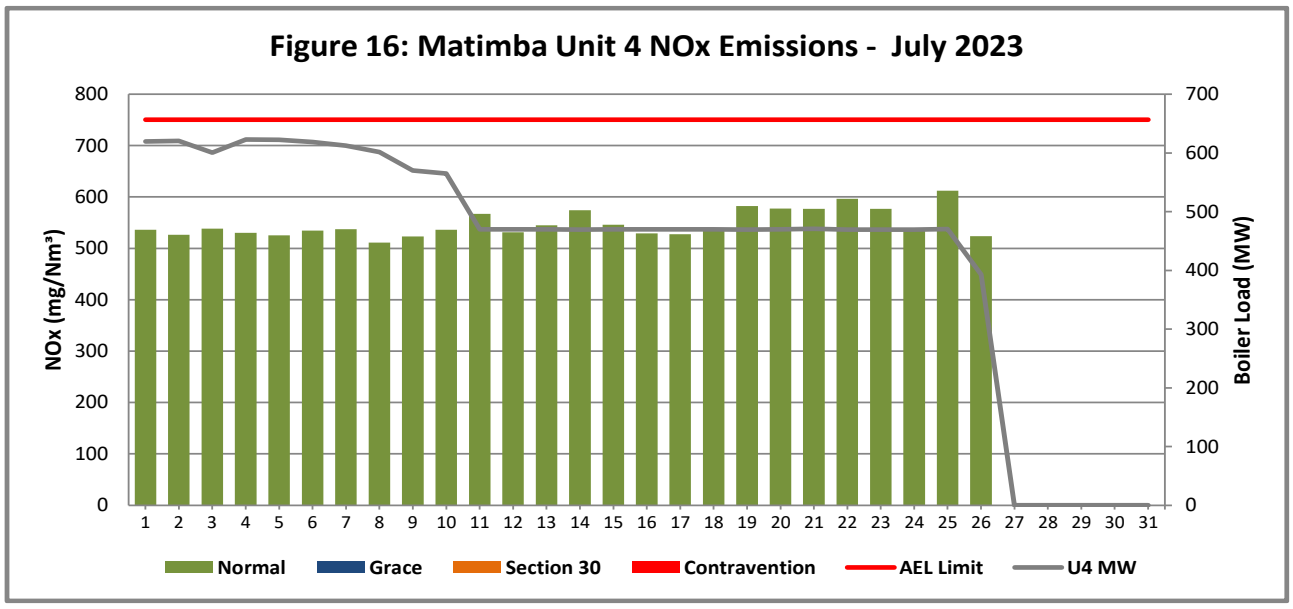

Figure 16: NOx daily average emissions against emission limit for unit 4 for the month of July 2023

Interpretation:

All daily averages below NOx emission limit of 750 mg/Nm^3.

Unit 5 NO_x Emissions

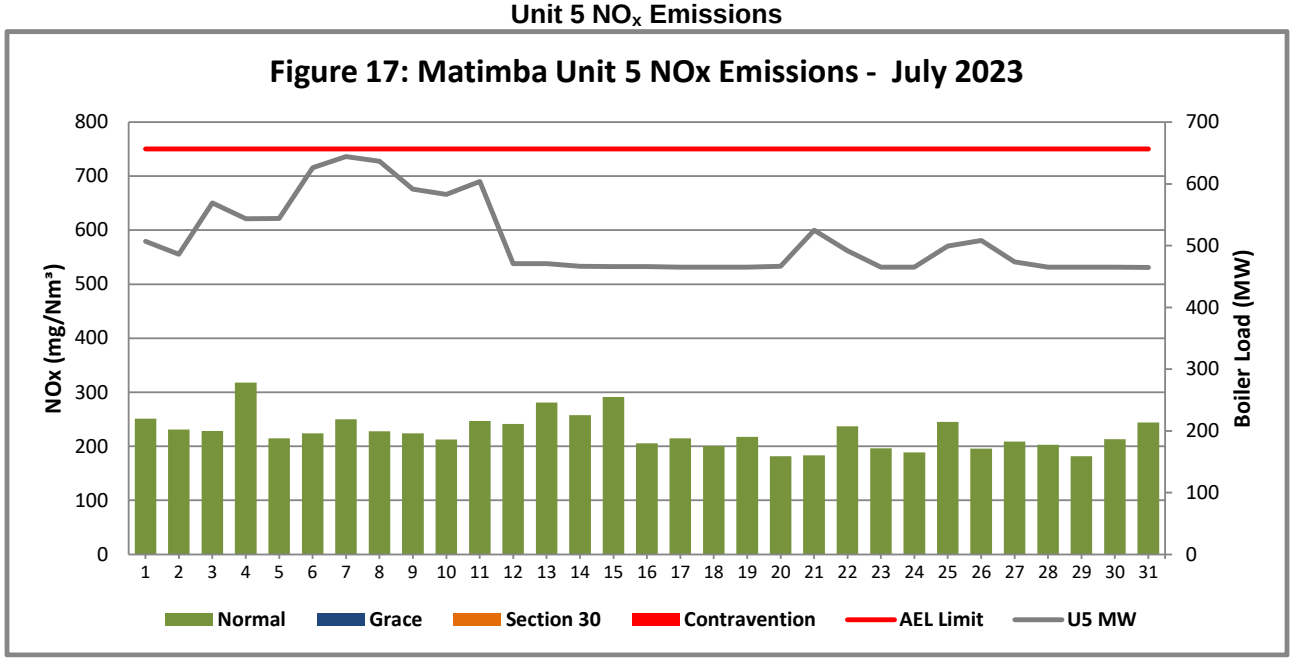

Figure 17: NOx daily average emissions against emission limit for unit 5 for the month of July 2023

Interpretation:

All daily averages below NOx emission limit of 750 mg/Nm^3.

Unit 6 NO_x Emissions

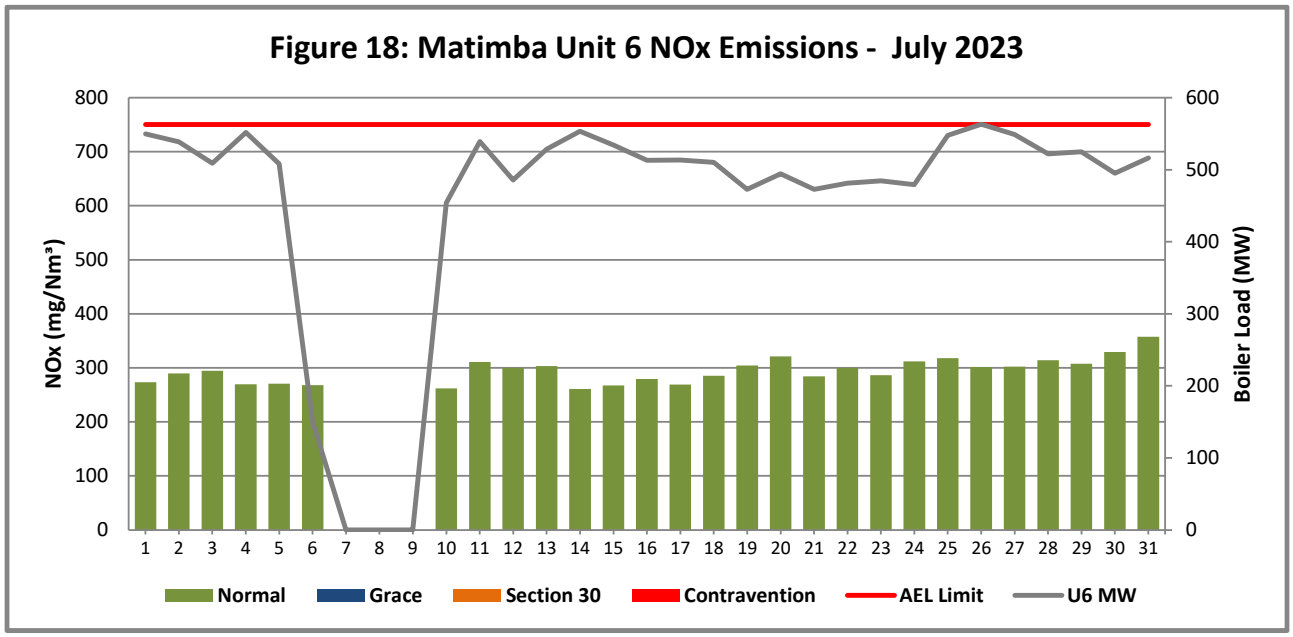

Figure 18 NOx daily average emissions against emission limit for unit 6 for the month of July 2023

Interpretation:

All daily averages below NOx emission limit of 750 mg/Nm^3.

2.4.3 Total Volatile Organic Compounds

Table 4: Total volatile compound estimates

Eskom

CALCULATION OF EMISSIONS OF TOTAL VOLATILE COMPOUNDS FROM FUEL OIL STORAGE TANKS*

Date:	Thursday, 17 August 2023
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:	**August**	
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:	***553,961***	
Molecular weight of the fuel oil:	166,00	Lb/lb-mole
METEROLOGICAL DATA FOR THE MONTH	**Data**	**Unit**
Daily average ambient temperature	20,46	°C
Daily maximum ambient temperature	28,86	°C
Daily minimum ambient temperature	12,76	°C
Daily ambient temperature range	16,09	°C
Daily total insolation factor	4,23	kWh/m²/day
Tank paint colour	***Grey/medium***	NA
Tank paint solar absorbtance	0,68	NA
FINAL OUTPUT:	**Result**	**Unit**
Breathing losses:	0,56	kg/month
Working losses:	0,02	kg/month
TOTAL LOSSES (Total TVOC Emissions for the month):	**0,58**	**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.

2.4.4 Greenhouse gas (CO_2) emissions

CO_2 emissions are reported in terms of the Greenhouse gas reporting regulations (GN 43712, GNR. 994/2020) and are not included in the monthly AEL compliance report.

2.5 Daily power generated.

Table 5: Daily power generated per unit in MWh for the month of July 2023

Date	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
2023/07/01	10910.9	11892.7	0	13465.6	10946.6	11886.8
2023/07/02	11120	11173	2518.42	13466	10506.2	11646
2023/07/03	10749.5	10704.1	11722.8	13030.9	12302.7	10998.8
2023/07/04	10512.6	11368.9	12250.1	13503.2	11824	11904.8
2023/07/05	10136.3	11263.4	10565	13484.1	11746.9	10999.4
2023/07/06	9739.93	11181.1	11000.7	13412.8	13583.7	0
2023/07/07	10414.3	10696.7	11664.5	13309	14031.1	0
2023/07/08	10130.4	11042.1	13331.5	13054.7	13858.1	0
2023/07/09	10127.1	10024.7	12896.1	12347.1	12820.6	0
2023/07/10	10732.4	11087.3	12125.8	12282.3	12695.3	8025.34
2023/07/11	10241.5	11958.6	12720.9	10224.2	13180.6	11686.2
2023/07/12	10802.7	11372	13779.2	10213.1	10191.9	10500
2023/07/13	10776	10318.3	13302.4	10226.1	10252.5	11413
2023/07/14	10220.4	10738.5	13542.9	10237	10190.2	11992.4
2023/07/15	11132.9	10473.7	12968.2	10231.8	10192.8	11560.3
2023/07/16	10214.7	10211.1	13344.2	10200.4	10138.1	11088.7
2023/07/17	10804.7	10185.6	12297.1	10194.2	10114.7	11088.3
2023/07/18	10699.5	10202.1	11754.6	10190	10107.5	11040.3
2023/07/19	10638.9	10263.7	10825.7	10188.2	10049.3	10183.6
2023/07/20	10600.2	10268.2	10411	10220.6	10100.6	10666.4
2023/07/21	12029.3	10244.3	12622.8	10236.8	11411.7	10186.5
2023/07/22	10128.3	10439.5	13051.2	10238	10718.8	10379.6
2023/07/23	10115.7	10449.2	10361.5	10208	10080.8	10448.7
2023/07/24	10056.4	10185	10323.3	10179.7	10044.2	10324.9
2023/07/25	10789.4	10359	11149.5	10189.2	10812.6	11836.4
2023/07/26	10778.9	11542.9	13425.1	259.277	11061.1	12209.5
2023/07/27	10580.7	11586.7	13576.5	0	10255.2	11900.7
2023/07/28	10176.8	11315.9	13495	0	10054.6	11283.7
2023/07/29	10178.2	11288	13056.9	0	10045.6	11369.9
2023/07/30	10160.7	11543	12218.2	0	10064.6	10642.1
2023/07/31	10225.2	10514.6	12909.5	0	10085.2	11135.1

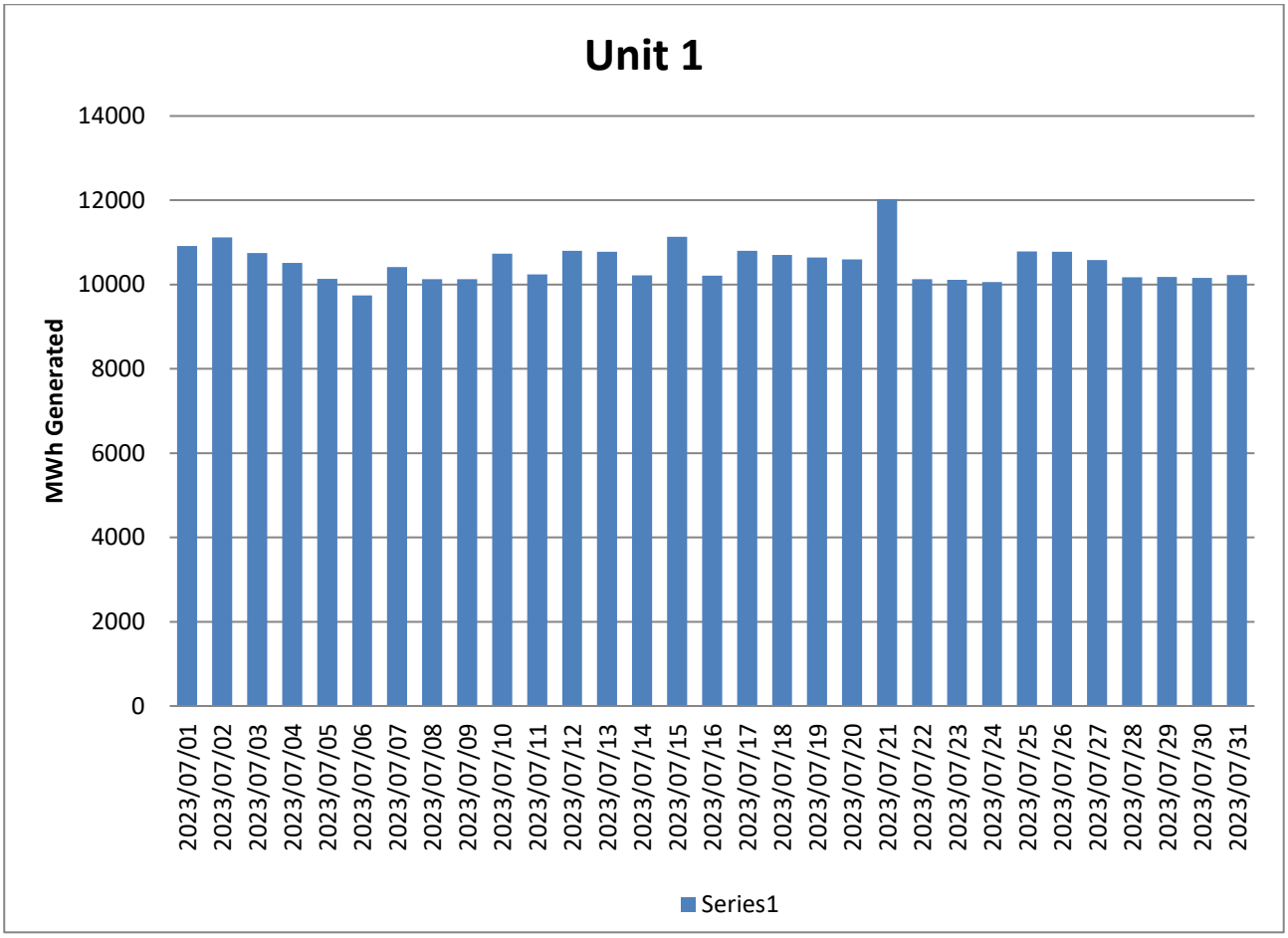

Figure 19: Unit 1 daily generated power in MWh for the month of July 2023.

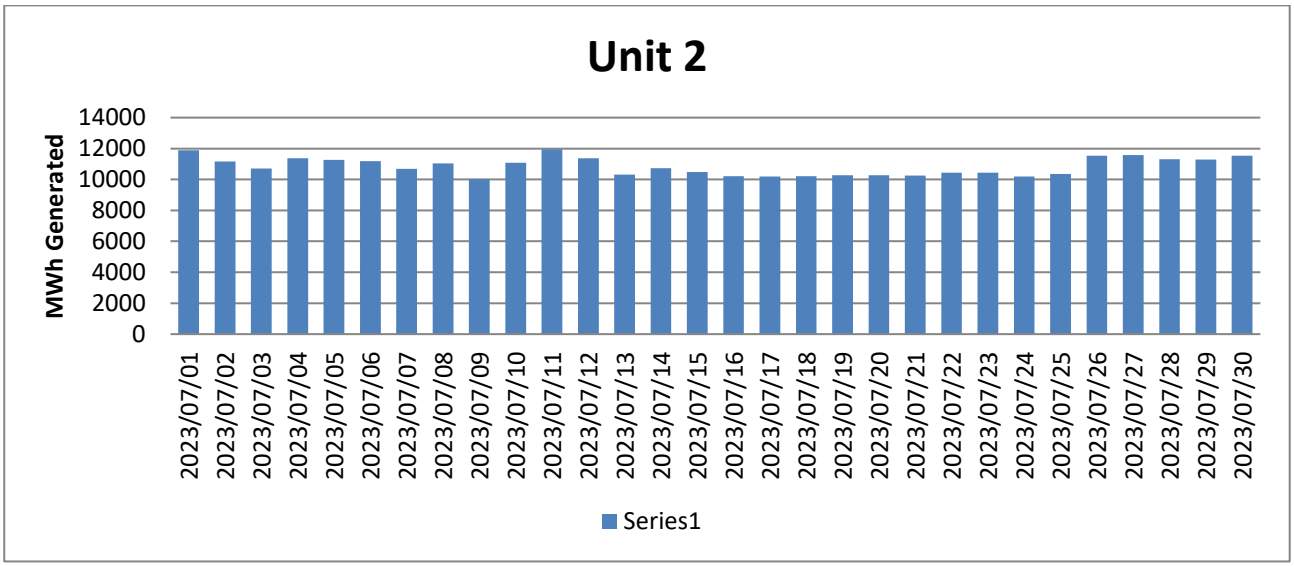

Figure 20: Unit 2 daily generated power in MWh for the month of July 2023

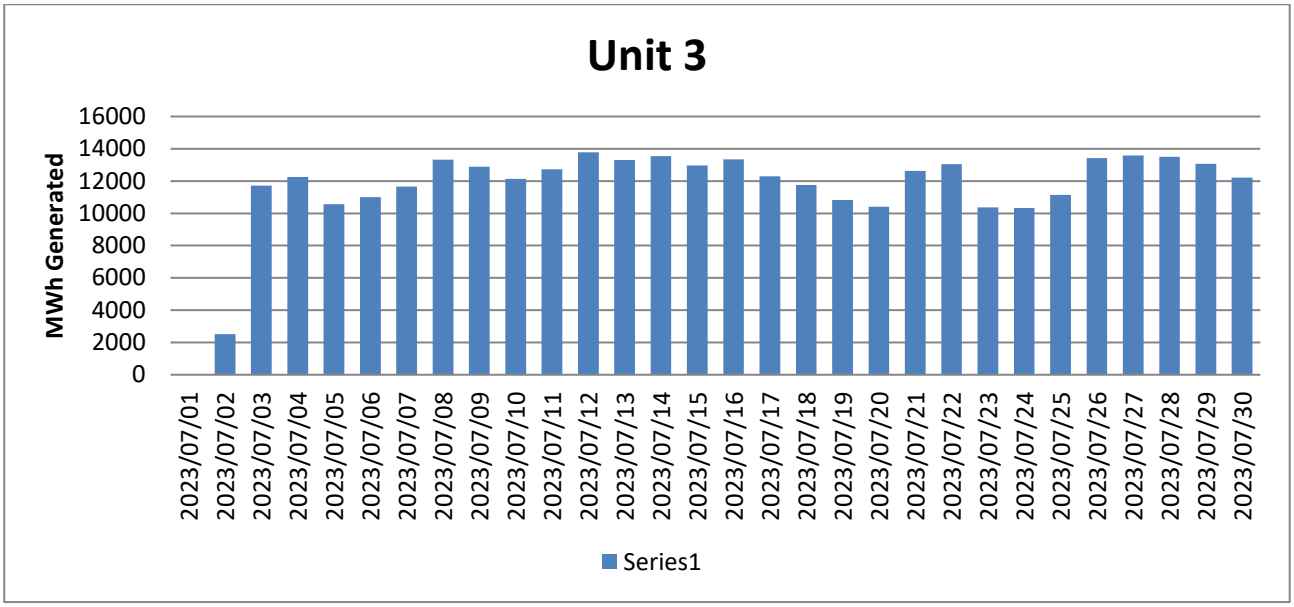

Figure 21: Unit 3 daily generated power in MWh for the month of July 2023

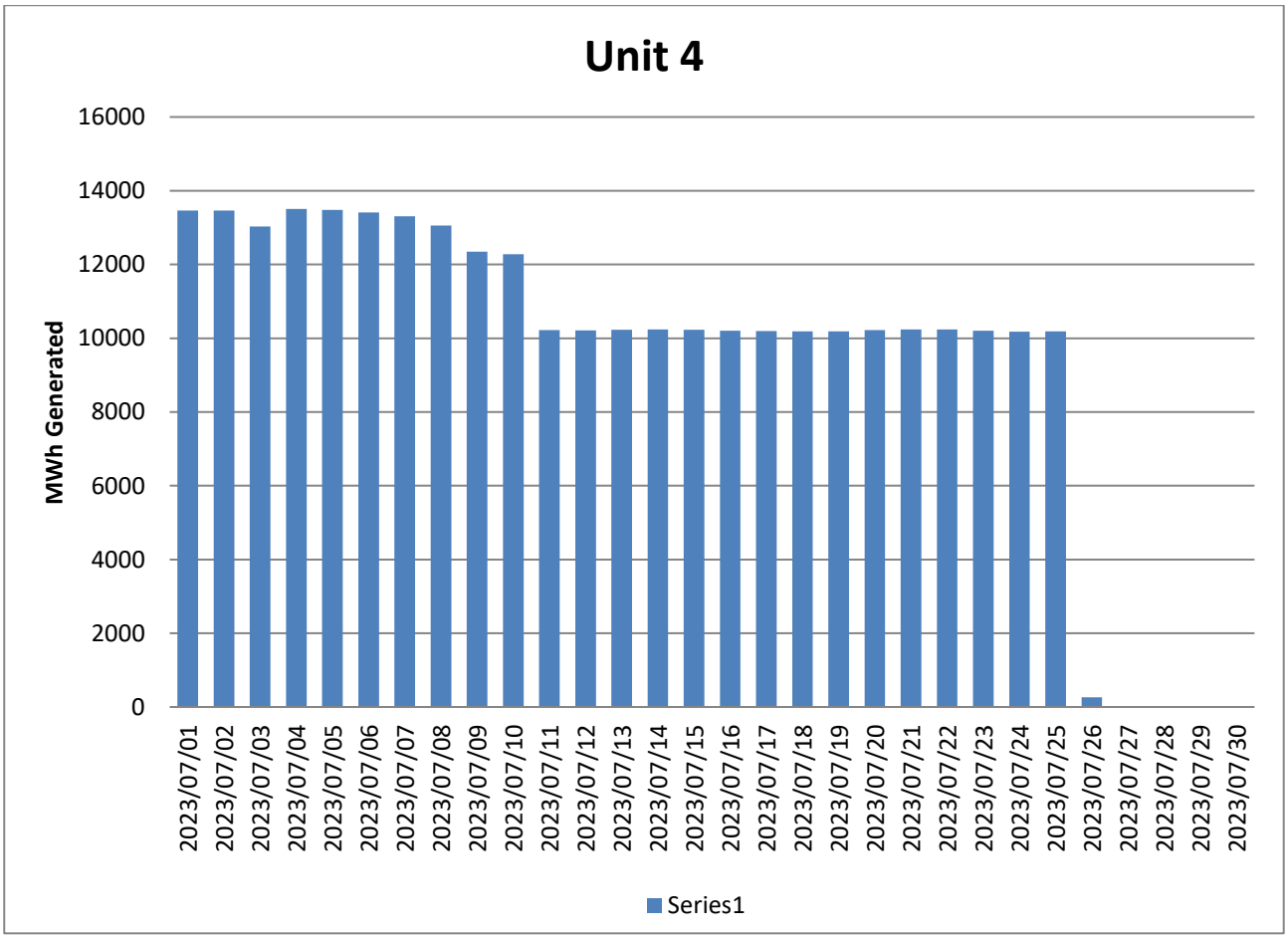

Figure 22: Unit 4 daily generated power in MWh for the month of July 2023

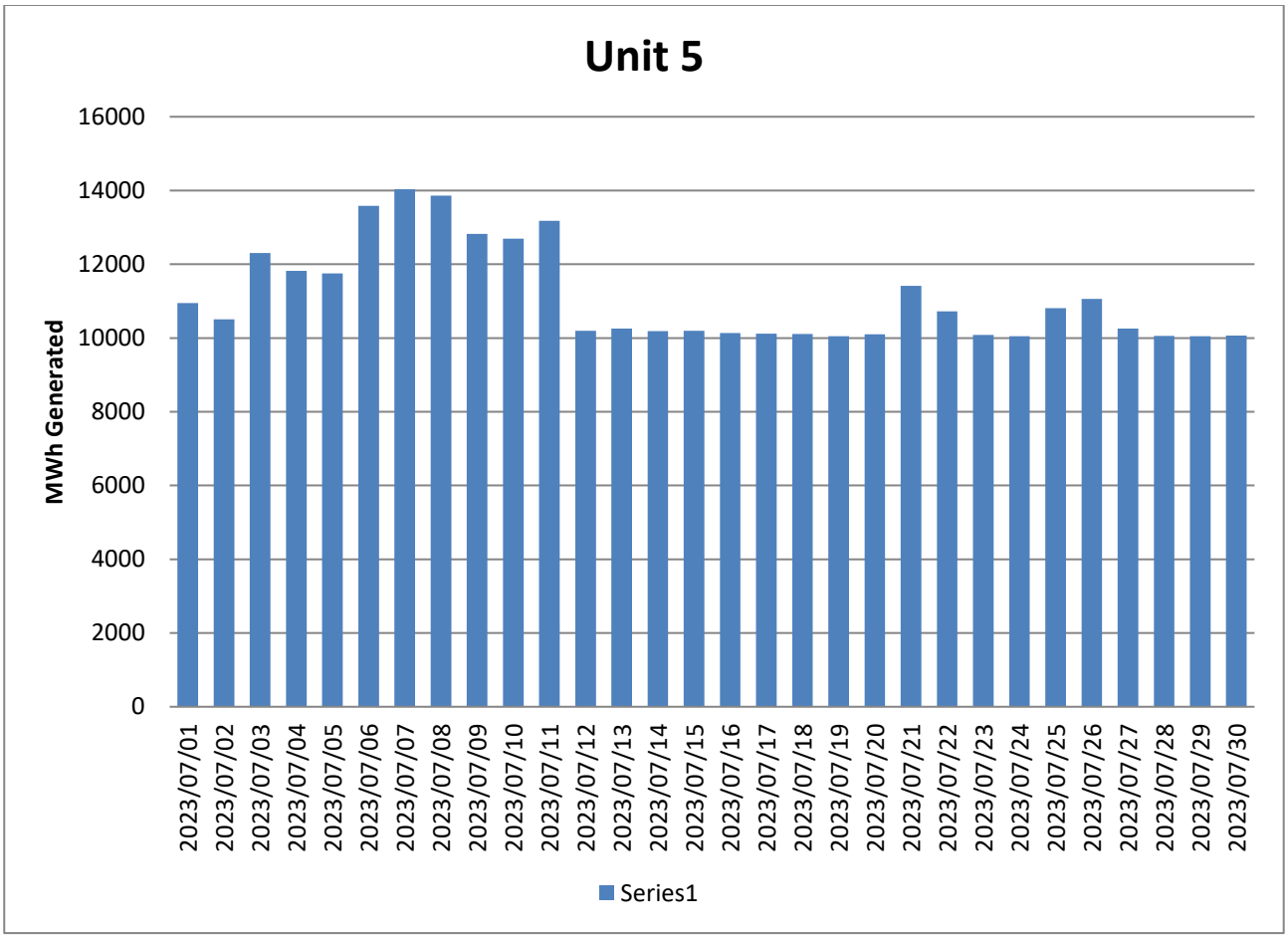

Figure 23: Unit 5 daily generated power in MWh for the month of July 2023

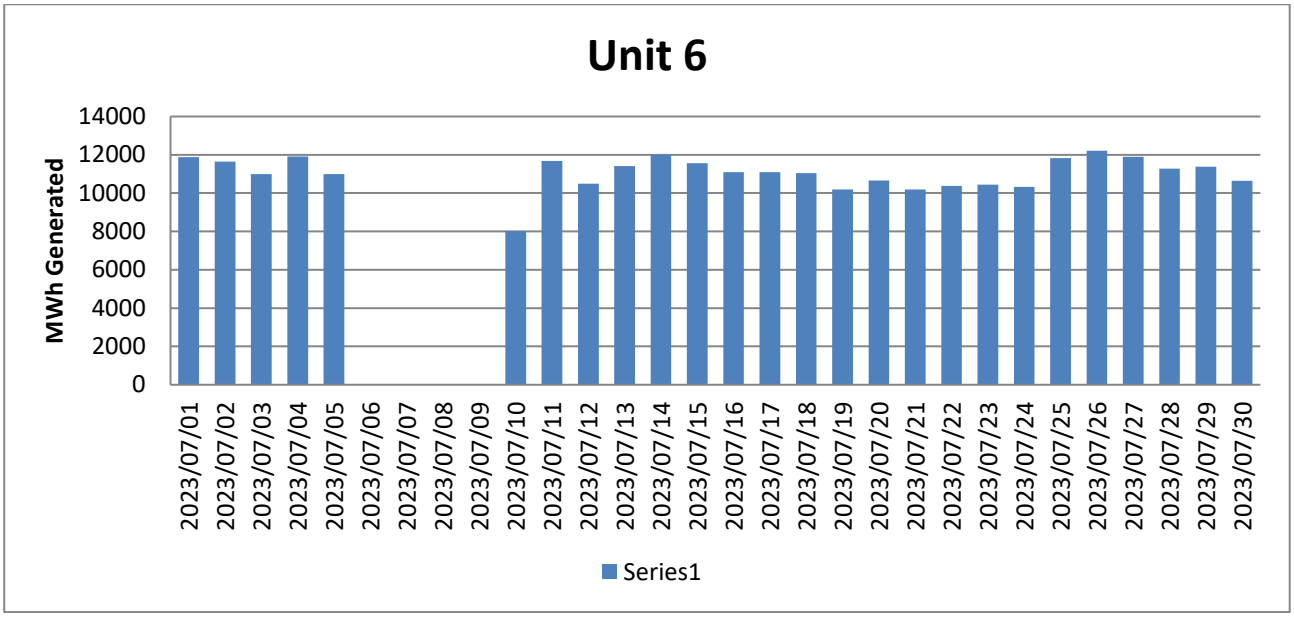

Figure 24: Unit 6 daily generated power in MWh for the month of July 2023.

2.6 Pollutant Tonnages

The emitted pollutant tonnages for July 2023 are provided in table 6.

Table 6: Pollutant tonnages for the month of July 2023

Associated Unit/Stack	PM (tons)	SO2 (tons)	NOx (tons)
Unit 1	111.9	3 967.6	636.6
Unit 2	129.2	6 270.3	925.6
Unit 3	106.3	5 744.9	1 005.1
Unit 4	194.0	4 087.9	886.0
Unit 5	139.4	2 817.9	459.2
Unit 6	88.4	3 357.9	617.2
SUM	769.3	26 246.7	4 529.7

2.7 Operating days in compliance to PM AEL Limit

Table 7: Operating days in compliance with PM AEL limit of July 2023

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm³)
Unit 1	10	12	0	9	21	57.4
Unit 2	16	9	0	6	15	50.4
Unit 3	24	3	0	2	5	44.8
Unit 4	10	2	0	14	16	125.8
Unit 5	10	4	0	17	21	70.0
Unit 6	15	3	0	9	12	90.8
SUM	**85**	**33**	**0**	**57**	**90**	

2.8 Operating days in compliance to SOx AEL Limit

Table 8: Operating days in compliance with SOx AEL limit of July 2023

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO_2 (mg/Nm³)
Unit 1	31	0	0	0	0	2 026.3
Unit 2	31	0	0	0	0	2 421.4
Unit 3	30	0	0	0	0	2 326.9
Unit 4	26	0	0	0	0	2 516.2
Unit 5	31	0	0	0	0	1 391.2
Unit 6	28	0	0	0	0	1 585.5
SUM	**177**	**0**	**0**	**0**	**0**	

2.9 Operating days in compliance to NOx AEL Limit

Table 9: Operating days in compliance with NOx AEL limit of July 2023

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm³)
Unit 1	31	0	0	0	0	326.2
Unit 2	31	0	0	0	0	359.0
Unit 3	30	0	0	0	0	405.6
Unit 4	26	0	0	0	0	547.7
Unit 5	31	0	0	0	0	226.3
Unit 6	28	0	0	0	0	294.4
SUM	**177**	**0**	**0**	**0**	**0**	

2.10 Reference values

Table 10: Reference values for data provided, July 2023

Compound / Parameter	Units of Measure	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Oxygen	%	5.87	8.75	5.08	8.07	6.12	6.27
Moisture	%	4.44	3.20	5.40	3.03	4.40	1.96
Velocity	m/s	21.2	32.9	26.8	25.0	21.5	28.1
Temperature	ºC	140.9	124.3	129.1	133.6	124.4	161.7
Pressure	mBar	929.1	936.0	920.5	923.8	943.6	920.5

2.11 Continuous Emission Monitors

2.11.1 Reliability

Continuous emission monitors were available for more than 80% of the reporting period. The emitted pollutant tonnages for July 2023 are provided in table 6.

Table 11: Average percentage (%) availability of monitors for the month of July 2023.

Associated Unit/Stack	PM	SO_2	NO
Unit 1	*100,0*	*100,0*	*100,0*
Unit 2	*100,0*	*100,0*	*98,7*
Unit 3	*99,6*	*100,0*	*100,0*
Unit 4	*82,5*	*100,0*	*99,8*
Unit 5	*99,9*	*99,7*	*96,6*
Unit 6	*94,6*	*96,4*	*96,4*

2.11.2 Changes, downtime, and repairs

Unit 1

- No adjustments done on the CEMs. Calibration of gaseous analysers is not done from April 2023 due to unavailability of the calibration gas.
- No downtime or repairs done on the particulate monitors.

Unit 2

- No adjustments done on the CEMs. Calibration of gaseous analysers is not done from April 2023 due to unavailability of the calibration gas.
- No downtime or repairs done on the particulate monitors.

Unit 3

- No adjustments done on the CEMs. Calibration of gaseous analysers is not done from April 2023 due to unavailability of the calibration gas.
- No downtime or repairs done on the particulate monitors.

Unit 4

- No adjustments done on the CEMs. Calibration of gaseous analysers is not done from April 2023 due to unavailability of the calibration gas.
- No downtime or repairs done on the particulate monitors.

Unit 5

- No adjustments done on the CEMs.
- Calibration of gaseous analysers is not done from April 2023 due to unavailability of the calibration gas.

  No downtime or repairs done on the particulate monitors.

Unit 6

- No adjustments done on the CEMs. Calibration of gaseous analysers is not done from April 2023 due to unavailability of the calibration gas.
- No downtime or repairs done on the particulate monitors.

2.11.3 Sampling dates and times

Table 12: Dates of last full conducted CEMS verification tests for PM for unit 4 and 6 only

Name of service provider:		Stacklabs Environmental Services CC		
Address of service provider:		10 Chisel Street Boltonia Krugersdorp 1739		
Stack/ Unit	**PM**	**SO_2**	**NOx**	**CO_2**
1	New sampling tests in table 13	New sampling tests in table 13	New sampling tests in table 13	New sampling tests in table 13
2	New sampling tests in table 13	New sampling tests in table 13	New sampling tests in table 13	New sampling tests in table 13
3	New sampling tests in table 13	New sampling tests in table 13	New sampling tests in table 13	New sampling tests in table 13
4	2021/07/13 14h31	New sampling tests in table 13	New sampling tests in table 13	New sampling tests in table 13
5	New sampling tests in table 13	New sampling tests in table 13	New sampling tests in table 13	New sampling tests in table 13
6	2020/09/09 06h41	New sampling tests in table 13	New sampling tests in table 13	New sampling tests in table 13

Note: The CEMS verification tests for PM, SO_2 and NOx were performed in October 2022 and failed. The spot tests were done in August 2023.

Table 13: Dates of last conducted CEMS Spot verification tests for PM, SO_2 and NOx (without unit 4 and 6 PMs)

Name of service provider:		Levego Environmental services		
Address of service provider:		Building R6 Pineland site Ardeer Road Modderfontein 1645		
Stack/ Unit	**PM**	**SO_2**	**NOx**	**CO_2**
1	2023/08/01 19h33	2023/08/01 19:33	2023/08/01 19:33	2023/08/01 19:33
2	2023/07/29 21:17	2023/07/29 21:17	2023/07/29 21:17	2023/07/29 21:17
3	2023/08/06 03:00	2023/08/06 03:00	2023/08/06 03:00	2023/08/06 03:00
4	Dates in table 12 above	2023/08/04 19:39	2023/08/04 19:39	2023/08/04 19:39
5	2023/08/05 07:30	2023/08/05 07:30	2023/08/05 07:30	2023/08/05 07:30
6	Dates in table 12 above	2023/08/05 15:52	2023/08/05 15:52	2023/08/05 15:52

Note: The CEMS Spot verification tests for PM, SO_2 and NOx were performed in August 2023. PM spot verification test results for units 4 and 6 failed and old curves are still in use.

2.12 Units Start-up information

Table 14: Start-up information

Unit	3	
Fires in	2023/07/02	09h33
Synchronization with Grid	2023/07/02	15h43
Emissions below limit	2023/07/02	22h01
Fires in, to synchronization	6,10	HOURS
Synchronization to < Emission limit	6,18	HOURS

Unit	6	
Fires in	2023/07/09	22h42
Synchronization with Grid	2023/07/10	03h52

Emissions below limit	2023/07/10	19h01
Fires in, to synchronization	5,10	HOURS
Synchronization to < Emission limit	15,8	HOURS

2.13 Emergency generation

Table 15: Emergency generation

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Emergency Generation hours declared by national Control	744	744	744	744	744	744
Emergency Hours declared including hours after stand down						
Days over the Limit during Emergency Generation	22	13	5	17	20	5

During the period under review all Units were on emergency generation in force from 01 July 2023 until 31 July 2023.

2.14 Complaints register.

Table 16: Complaints

Source Code/ Name	Root Cause Analysis	Calculation of Impacts/ emissions associated with the incident	Dispersion modelling of pollutants where applicable	Measures implemented to prevent reoccurrence	Date by which measure will be implemented
Manketti Lodge	Investigation underway.				

2.15 Air quality improvements and social responsibility conducted.

2.15.1 Air quality improvements

None

2.15.2 Social responsibility conducted.

None

2.16 Ambient air quality monitoring

Ambient air quality monitoring report was not available at the time of publishing this report.

2.17 Electrostatic precipitator and Sulphur plant status

Unit 1

- 8 fields out of service, will be inspected next opportunity.
- No abnormalities on the SO3 plant. Preventative maintenance done during the month.

Unit 2

- 11fields out of service, will be inspected next opportunity.
- No abnormalities on the SO3 plant. Preventative maintenance done during the month.

Unit 3

- 2 fields out of service, will be inspected next opportunity. No abnormalities on the SO3 plant. Preventative maintenance done during the month.

Unit 4

- 9 field out of service, will be inspected next opportunity.
- No abnormalities on the SO3 plant. Preventative maintenance done during the month.

Unit 5

- 7 fields out of service, will be inspected next opportunity.
- Hole in burner casing and sulphur leak causing low availability. Preventative maintenance done during the month.

Unit 6

- 13 fields out of service, will be inspected next opportunity.
- Hole in burner casing and sulphur leak causing low availability. Preventative maintenance done during the month.

SO3 common plant

- No abnormalities on the sulphur storage plant.

2.18 General

Name and reference number of the monitoring methods 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. S23º 40' 2.8" E027º 36' 34.8" 175m from ground level and 75m from the top.
    b. Gas:
        i. S23º 40' 2.8" E027º 36' 34.8" 100m from ground level and 150m from the top.
    c. Stack height
        i. 250 meters consist of 3 flues.
2. Stack two
    a. Particulates:
        i. S23º 40' 14.8" E027º 36' 47.5" 175m from ground level and 75m from the top.
    b. Gas:
        i. S23º 40' 14.8" E027º 36' 47.5" 100m from ground level and 150m from the top.
    c. Stack height
        i. 250 meters consist of 3 flues`

3. Attachments

None

4. Report Conclusion

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

Wikus van Rensburg

GENERAL MANAGER: MATIMBA POWER STATION