Eskom	Technical and Generic Report	Matimba Power Station

Title: **Matimba Power Station October 2023 emissions report**

Document Identifier:	**RP/247/040**
Plant Location:	**Emission management**
Area of Applicability:	**Matimba Power Station**
Functional Area Applicability:	**Environment**
Revision:	**1**
Total Pages:	**41**
Report Date:	**October 2023**
Disclosure Classification:	**Controlled**

Compiled by	Functional Responsibility	Authorized by
KH Ramahlare	**MC Mamabolo**	**Obakeng Mabotja**
Senior Advisor Environment	**Environmental Manager**	**General Manager**
Date: 2023-12-18	Date: 18/12/2023	Date: 2023/12/21

Content

Page

1. Report Summary 4
2. Emission information 5
   - 2.1 Raw materials and products 5
   - 2.2 Abatement technology 5
   - 2.3 Emissions reporting 6
     - 2.3.1 Particulate Matter Emissions 6
     - 2.3.2 Gaseous Emissions 12
     - 2.3.3 Total Volatile Organic Compounds 24
     - 2.3.4 Greenhouse gas (CO_2) emissions 25
   - 2.4 Daily power generated 25
   - 2.5 Pollutant Tonnages 32
   - 2.6 Operating days in compliance to PM AEL Limit 32
   - 2.7 Operating days in compliance to SOx AEL Limit 32
   - 2.8 Operating days in compliance to NOx AEL Limit 33
   - 2.9 Reference values 33
   - 2.10 Continuous Emission Monitors 33
     - 2.10.1 Reliability 33
     - 2.10.2 Changes, downtime, and repairs 34
     - 2.10.3 Sampling dates and times 35
   - 2.11 Units Start-up information 36
   - 2.12 Emergency generation 38
   - 2.13 Complaints register 39
   - 2.14 Air quality improvements and social responsibility conducted. 39
     - 2.14.1 Air quality improvements 39
     - 2.14.2 Social responsibility conducted. 39
   - 2.15 Ambient air quality monitoring 40
   - 2.16 Electrostatic precipitator and Sulphur plant status 40
   - 2.17 General 41
3. Attachments 41
4. Report Conclusion 41

Table 1: Quantity of Raw Materials and Products used/produced for the month 5

Table 2: Abatement Equipment Control Technology Utilised 5

Table 3: Energy Source Material Characteristics. 6

Table 4: Total volatile compound estimates 24

Table 5: Daily power generated per unit in MWh for the month of October 2023 25

Table 6: Pollutant tonnages for the month of October 2023 32

Table 7: Operating days in compliance with PM AEL limit of October 2023 32

Table 8: Operating days in compliance with SOx AEL limit of October 2023 32
Table 9: Operating days in compliance with NOx AEL limit of October 2023 33
Table 10: Reference values for data provided, October 2023....33
Table 11: Average percentage (%) availability of monitors for the month of October 2023....33
Table 12: Dates of last conducted CEMS verification tests for PM, SO_2 and NOx 35
Table 13: Start-up information 36
Table 14: Emergency generation 38
Table 15: Complaints....39

Figures

Figure 1: Particulate matter daily average emissions against emission limit for unit 1 for the month of October 2023....6
Figure 2: Particulate matter daily average emissions against emission limit for unit 2 for the month of October 2023....7
Figure 3: Particulate matter daily average emissions against emission limit for unit 3 for the month of October 2023....8
Figure 4: Particulate matter daily average emissions against emission limit for unit 4 for the month of October 2023....9
Figure 5: Particulate matter daily average emissions against emission limit for unit 6 for the month of October 2023....11
Figure 6: SO2 daily average emissions against emission limit for unit 1 for the month of April2023....12
Figure 7: SO2 daily average emissions against emission limit for unit 2 for the month of October 2023....13
Figure 8: SO2 daily average emissions against emission limit for unit 3 for the month of October 2023....14
Figure 9: SO2 daily average emissions against emission limit for unit 4 for the month of October 2023....15
Figure 10: SO2 daily average emissions against emission limit for unit 6 for the month of October 2023....17
Figure 11: NOx daily average emissions against emission limit for unit 1 for the month of October 2023....18
Figure 12: NOx daily average emissions against emission limit for unit 2 for the month of October 2023....19
Figure 13: NOx daily average emissions against emission limit for unit 3 for the month of October 2023....20
Figure 14: NOx daily average emissions against emission limit for unit 4 for the month of October 2023....21
Figure 15: NOx daily average emissions against emission limit for unit 6 for the month of October 2023....23
Figure 16: Unit 1 daily generated power in MWh for the month of October 2023....26
Figure 17: Unit 2 daily generated power in MWh for the month of October 2023....27
Figure 18: Unit 3 daily generated power in MWh for the month of October 2023....28
Figure 19: Unit 4 daily generated power in MWh for the month of October 2023....29
Figure 20: Unit 6 daily generated power in MWh for the month of October 2023....30

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 contains the required information as specified in the license for October 2023.

During the period under review, Matimba experienced eighty-one (81) exceedances of the daily particulate matter emission limit (50mg/Nm3), twenty-six (26) of these exceedances 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 and fifty-five (55) exceedances occurred within the 48-hour grace period.

There were no exceedances of the monthly SOx limit (3500mg/Nm3) and the daily NOx emission limit (750mg/Nm3) occurred. Average figure for the month was used from 25 to 31 October 2023 due to monitor out of commission. The monitor was found to have lost the signal of the tag and was repaired restore on 31 October 2023.

The flue gas conditioning plant (SO3 Plant) availability for the month of October 2023 was 94%. Issues that affected the availability were addressed and the plants returned to operation.

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	985 876
	Fuel Oil	Tons/month	1 200	2404,304
Production Rates	**Product/ By-Product Name**	**Unit**	**Maximum Production Capacity Permitted (Quantity)**	**Production Rate**
	Energy	MW	4000	2408,281

The consumption rates for the month of October 2023 exceeded the permitted maximum limits of 1200T.The exceedance was caused by unit 1 constant combustion support during low loads for 6 days. The unit was running with only two mills, with other two mills out of commission due to defects.

2.2 Abatement technology

Table 2: Abatement Equipment Control Technology Utilised

Associated Unit	Technology Type	Minimum utilisation (%)	Efficiency (%)
Unit 1	Electrostatic Precipitator	100%	99,999%
Unit 2	Electrostatic Precipitator	100%	99,999%
Unit 3	Electrostatic Precipitator	100%	99,999%
Unit 4	Electrostatic Precipitator	100%	99,999%
Unit 5	Electrostatic Precipitator	100%	99,999%
Unit 6	Electrostatic Precipitator	100%	99,999%
Associated Unit	**Technology Type**	**Minimum utilisation (%)**	**Actual Utilisation (%)**
Unit 1	SO_3 Plant	100%	83%
Unit 2	SO_3 Plant	100%	85%
Unit 3	SO_3 Plant	100%	93%
Unit 4	SO_3 Plant	100%	98%
Unit 5	SO_3 Plant	100%	97%
Unit 6	SO_3 Plant	100%	88%

Flue gas conditioning plant availability was below the required 100% for all six (06) units due to unplanned breakdowns ad defects. Defects were addressed and plants returned to service.

Table 3: Energy Source Material Characteristics.

	Characteristic	Stipulated Range (Unit)	Monthly Average Content
Coal burned	Sulphur Content	1.6%	1,32%
	Ash Content	40%	34,33%

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

2.3 Emissions reporting

2.3.1 Particulate Matter Emissions

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

Unit 1 Particulate Emissions

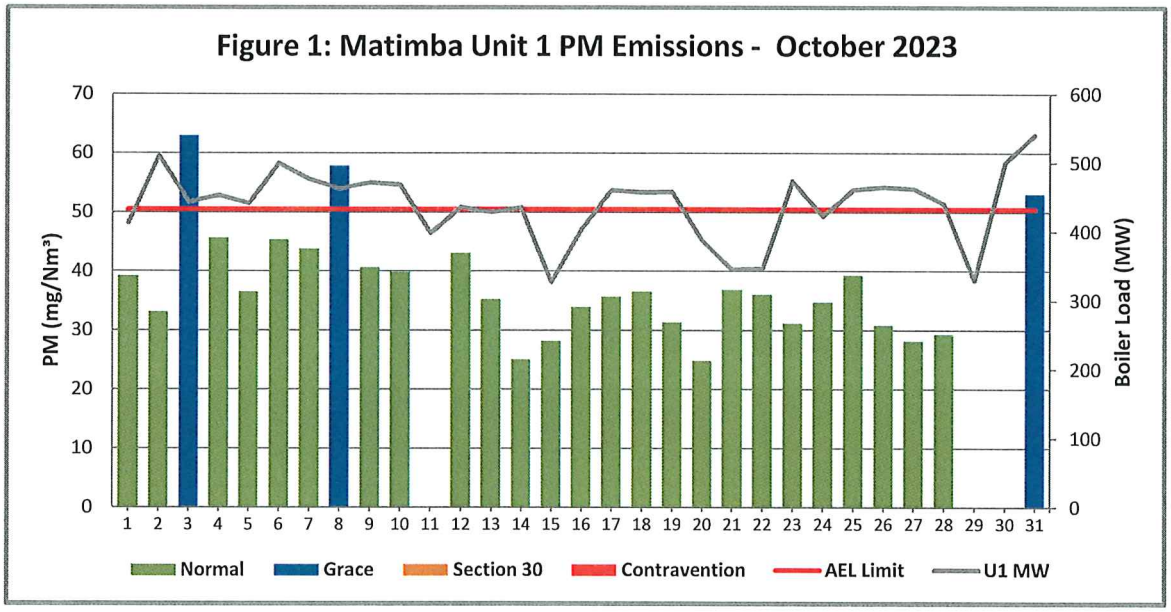

Figure 1: Particulate matter daily average emissions against emission limit for unit 1 for the month of October 2023

Interpretation:

Unit 1 exceeded the daily particulate emission limit of 50mg/Nm3 on 3,8 and 31 October 2023. The exceedance was due to unavailability of the ash conveyance system that led to ash accumulation on the dust handling plants leading to high hopper levels within the flue gas cleaning system and reducing the efficiency of the abatement technology (electrostatic precipitator fields. All exceedances remained within the 48-hour grace period

Unit 2 Particulate Emissions

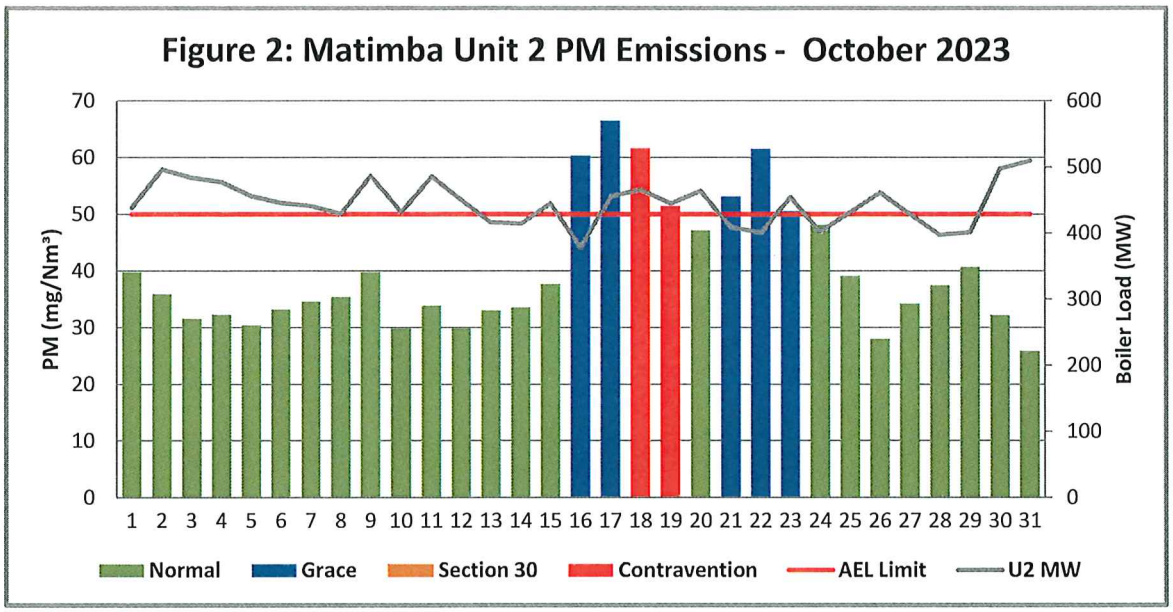

Figure 2: Particulate matter daily average emissions against emission limit for unit 2 for the month of October 2023

Interpretation:

Unit 2 exceeded the daily particulate emission limit of 50mg/Nm3 on 16 to 19and 21 and 23 October 2023. The exceedances from the 18 and 19 October 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 unavailability of the ash conveyance plant that led to accumulation of ash at the dust handling plant leading to high hopper levels within the flue gas cleaning system and reducing the efficiency of the abatement technology (electrostatic precipitator fields). 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

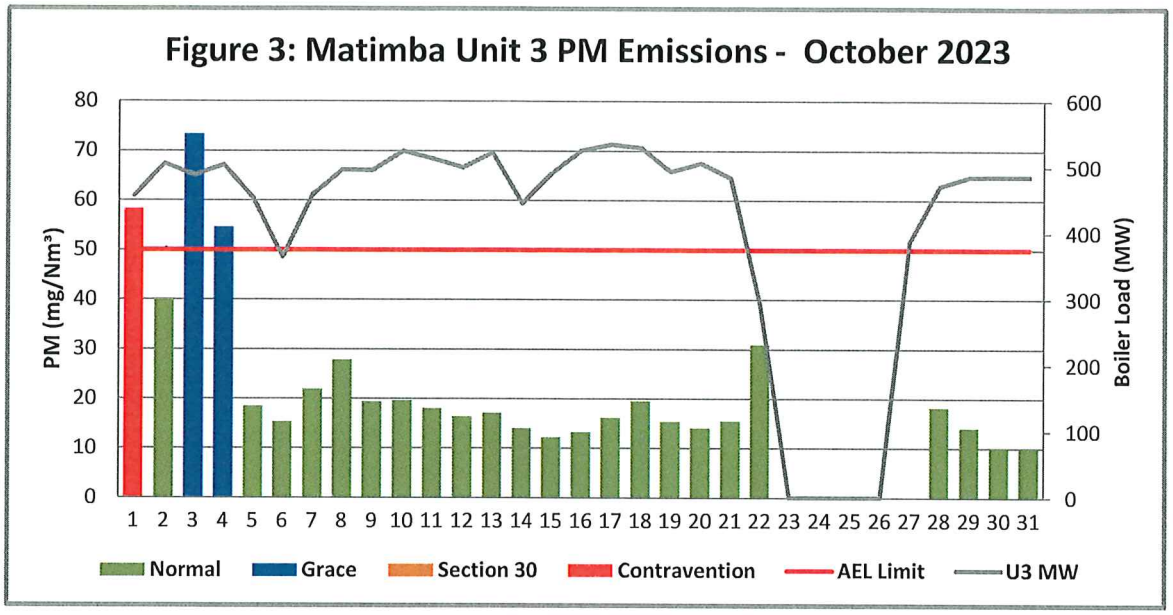

Figure 3: Particulate matter daily average emissions against emission limit for unit 3 for the month of October 2023

Interpretation:

Unit 3 exceeded the daily particulate emission limit of 50mg/Nm3 on 1,3 and 4 October 2023. Exceedances of 1 October 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 exceedance were due to unavailability of the ash conveyance system that led to ash accumulation on the dust handling plants leading to high hopper levels within the flue gas cleaning system and reducing the efficiency of the abatement technology (electrostatic precipitator fields.

Unit 4 Particulate Emissions

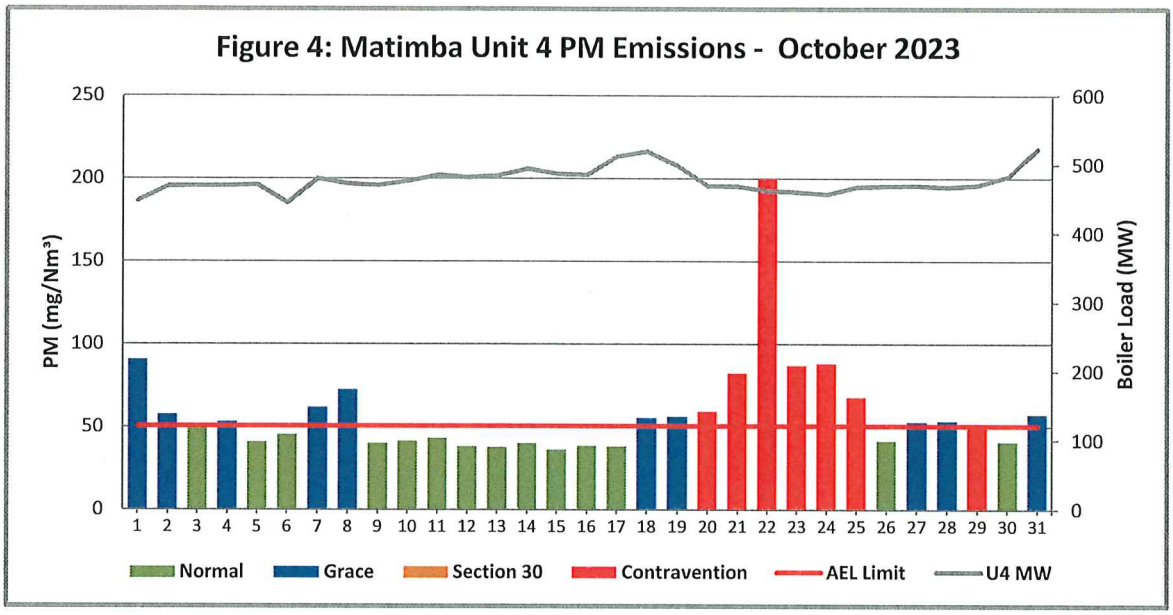

Figure 4: Particulate matter daily average emissions against emission limit for unit 4 for the month of October 2023

Interpretation:

Unit 4 Particulate matter exceeded the daily limit of 50 mg/Nm^3 on 1,2,4,7,8,15 to 25,27 to 29 and 31 October 2023. Exceedances of 15 to 25 and 29 October 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 defects on the dust handling plants leading to high hopper levels within the flue gas cleaning system and reducing the efficiency of the abatement technology (electrostatic precipitator fields). 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

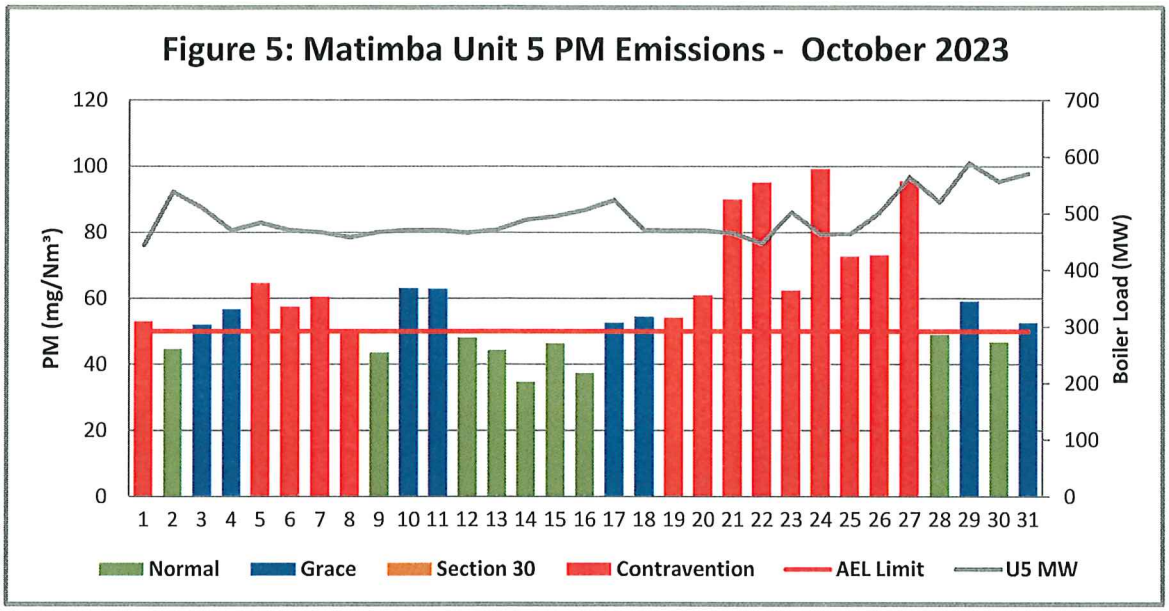

Figure 5: Particulate matter daily average emissions against emission limit for unit 5 for the month of October 2023

Interpretation:

Unit 5 Particulate matter exceeded the daily limit of 50 mg/Nm^3 on 1,3 to 8,10,11,17 to 27,29 and 31 October 2023. Exceedances of 1,5 to 8 and 19 to 27 October 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 defects on the dust handling plants leading to high hopper levels within the flue gas cleaning system and reducing the efficiency of the abatement technology (electrostatic precipitator fields). 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

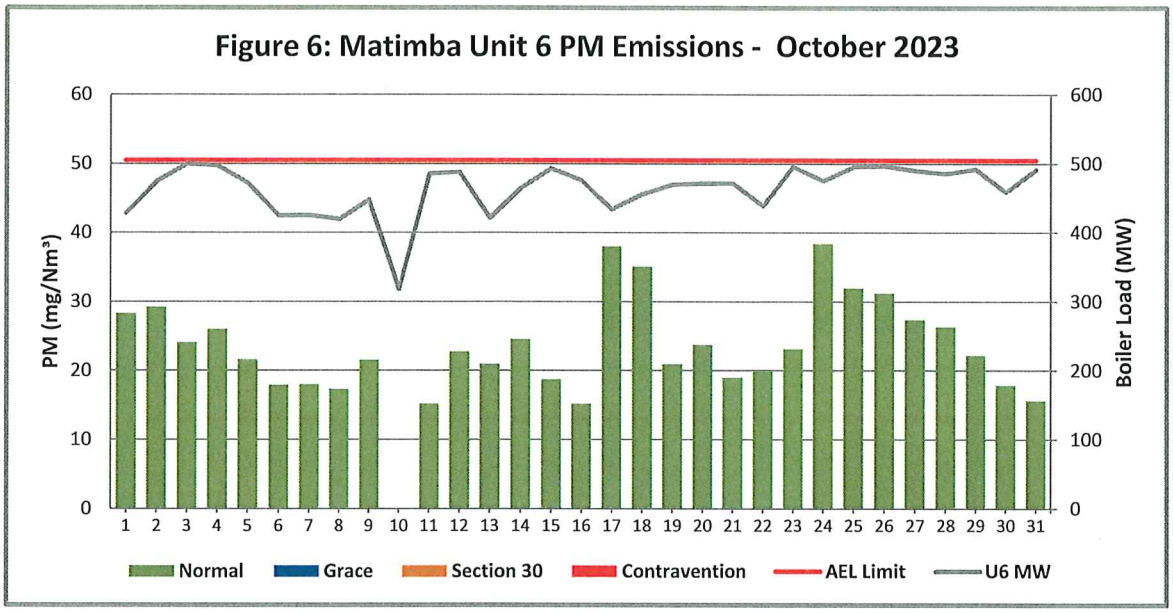

Figure 6: Particulate matter daily average emissions against emission limit for unit 6 for the month of October 2023

Interpretation:

All daily averages on unit 6 were below PM emission daily limit of 50 mg/Nm^3 .

2.3.2 Gaseous Emissions

Gaseous emissions analyzers calibration for all 6 units were performed in October 2023 as per the AEL requirements.

The quality assurance spot tests were performed on the monitors in August 2023 and the test results are used for the October 2023 emission calculation.

Unit 1 SO_2 Emissions

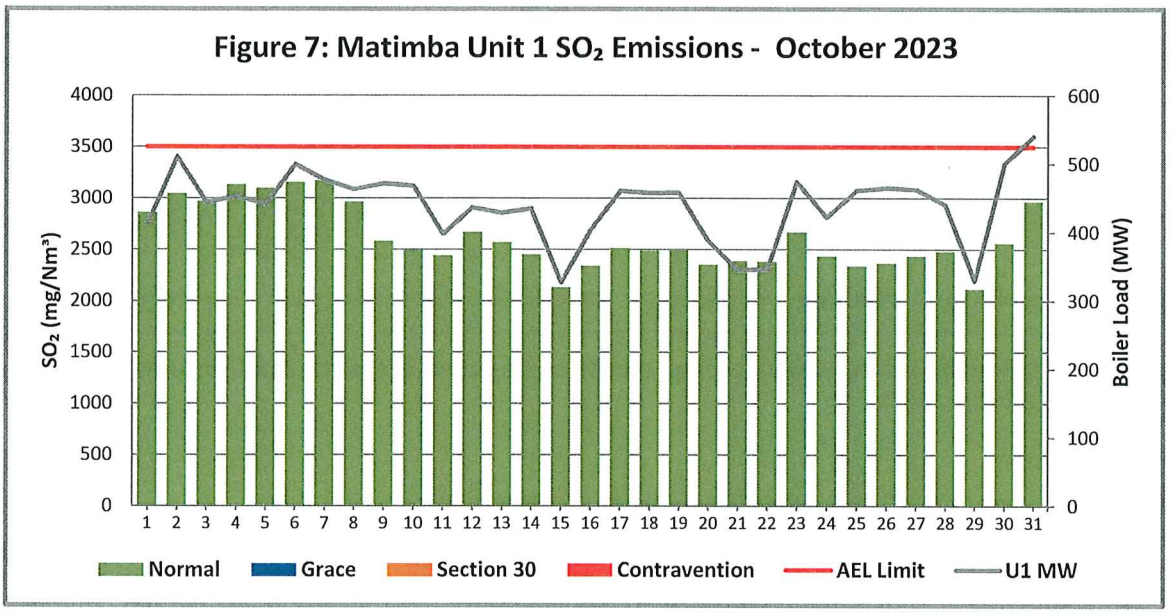

Figure 7: SO2 daily average emissions against emission limit for unit 1 for the month of October 2023

Interpretation:

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

.

Unit 2 SO_2 Emissions

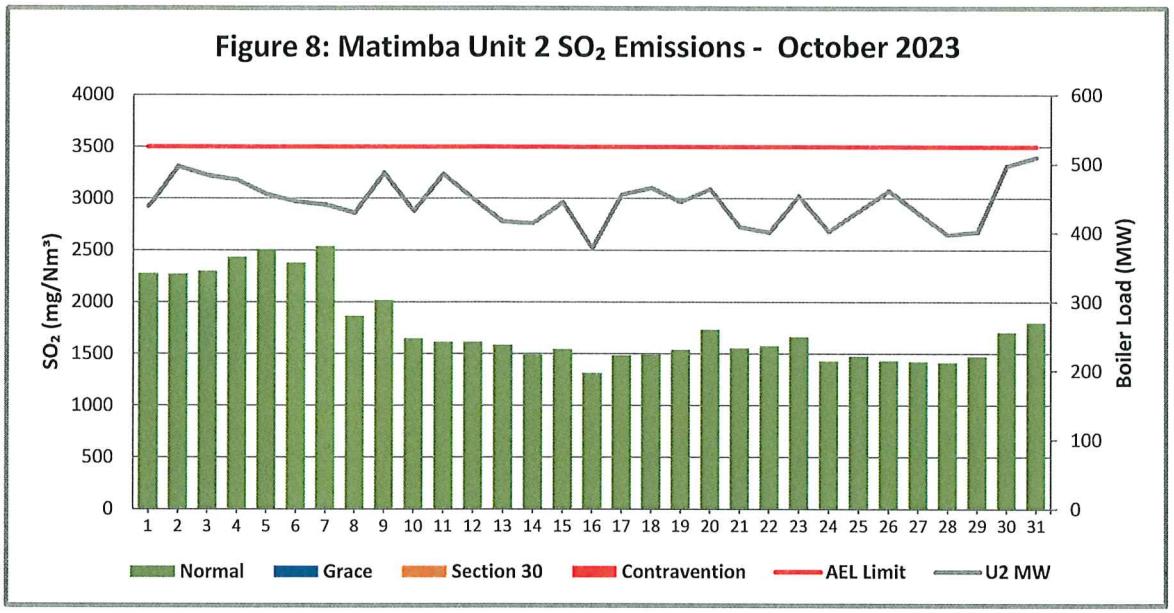

Figure 8: SO2 daily average emissions against emission limit for unit 2 for the month of October 2023

Interpretation:

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

Unit 3 SO_2 Emissions

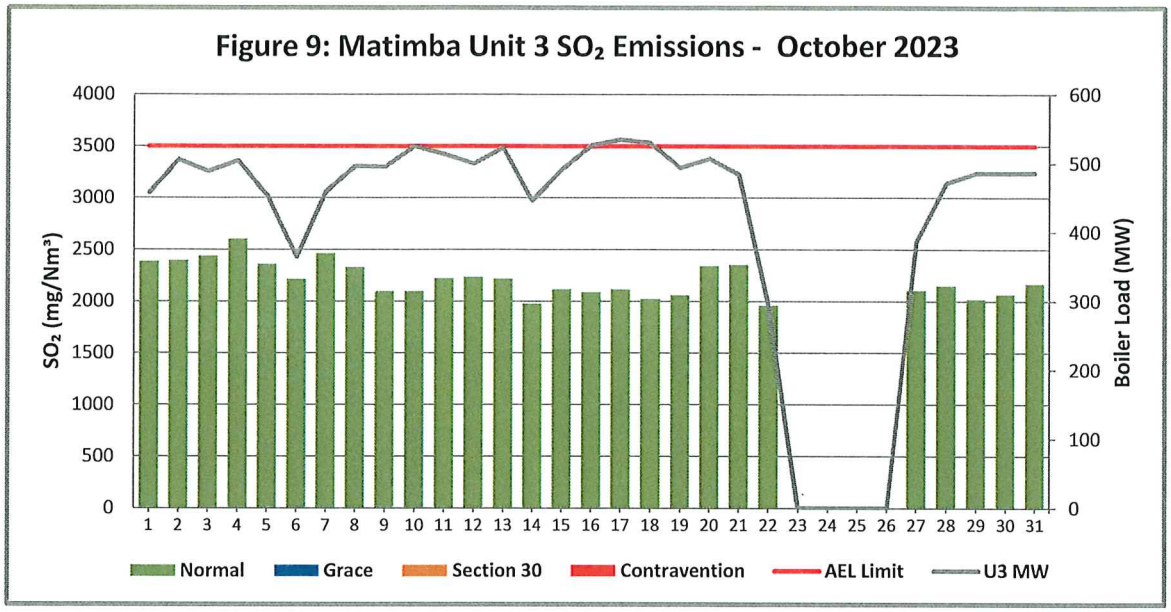

Figure 9: SO2 daily average emissions against emission limit for unit 3 for the month of October 2023

Interpretation:

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

Unit 4 SO_2 Emissions

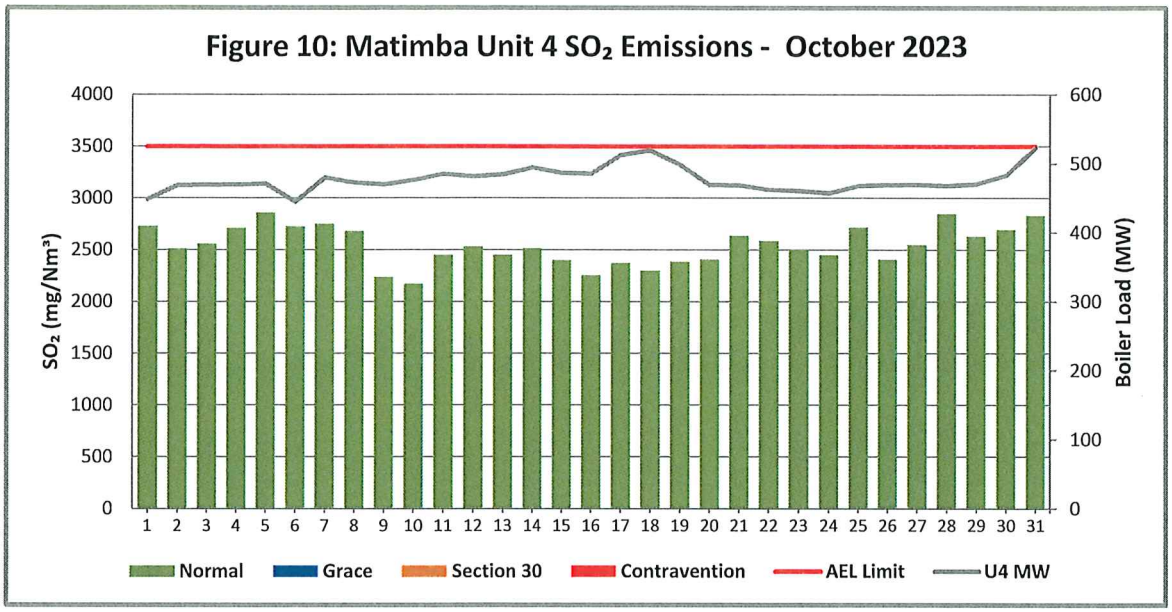

Figure 10: SO2 daily average emissions against emission limit for unit 4 for the month of October 2023

Interpretation:

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

Unit 5 SO_2 Emissions

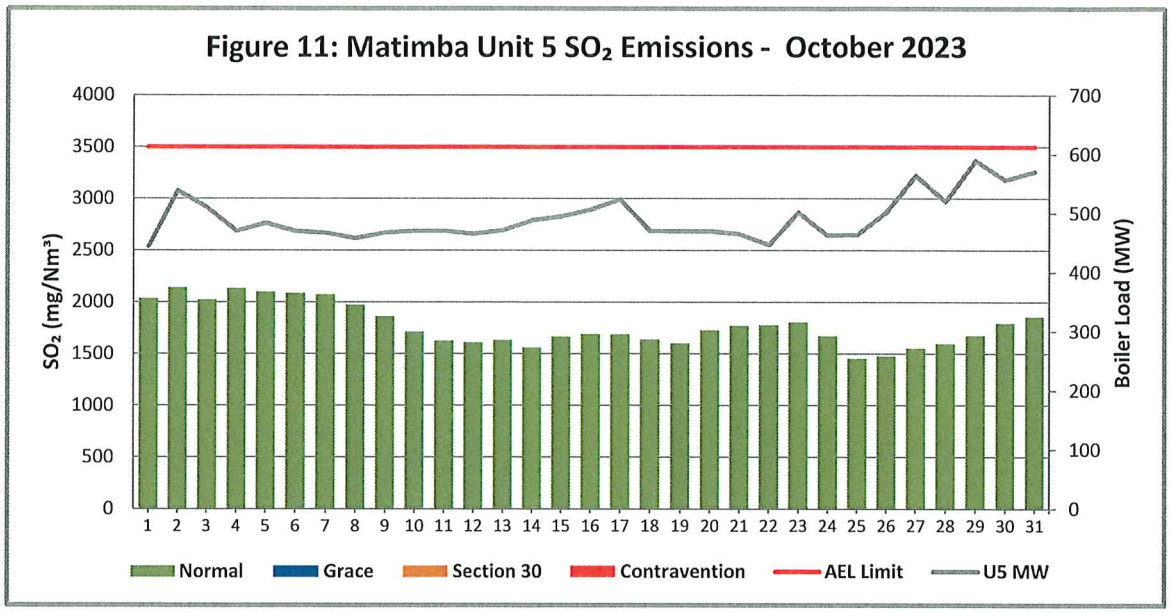

Figure 11: SO2 daily average emissions against emission limit for unit 5 for the month of October 2023

Interpretation:

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

Unit 6 SO_2 Emissions

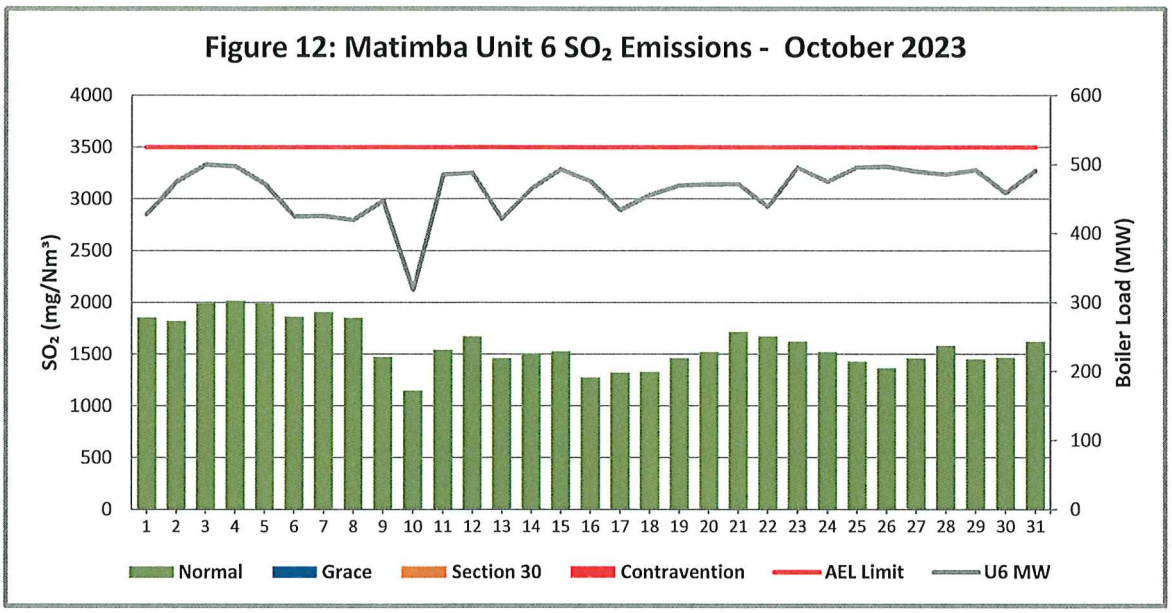

Figure 12: SO2 daily average emissions against emission limit for unit 6 for the month of October 2023

Interpretation:

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

.

Unit 1 NO_x Emissions

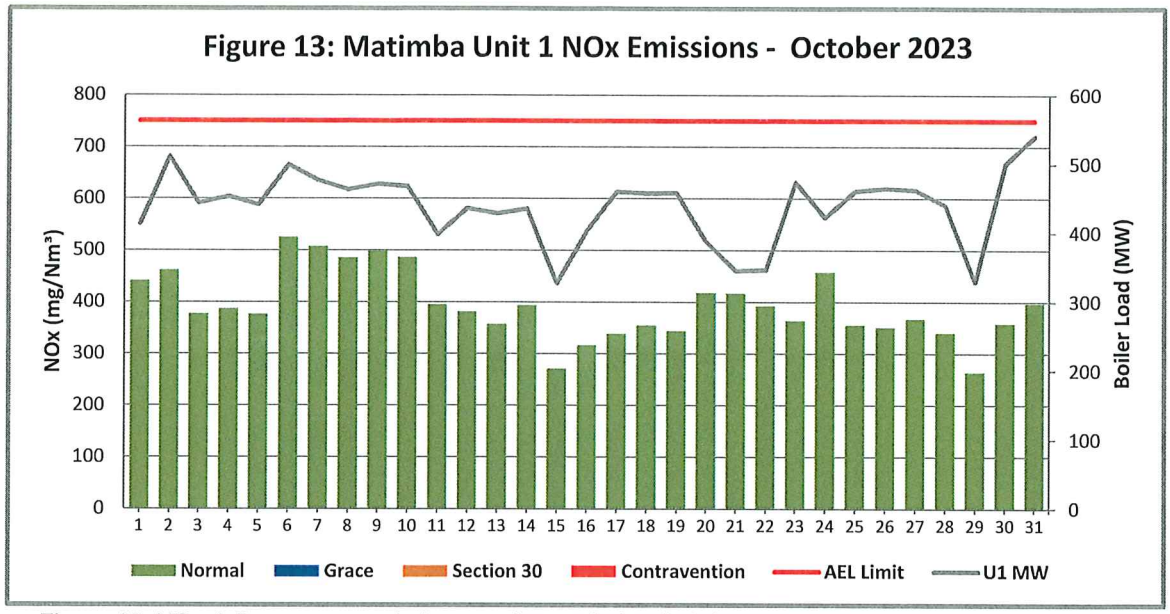

Figure 13: NOx daily average emissions against emission limit for unit 1 for the month of October 2023

Interpretation:

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

Unit 2 NO_x Emissions

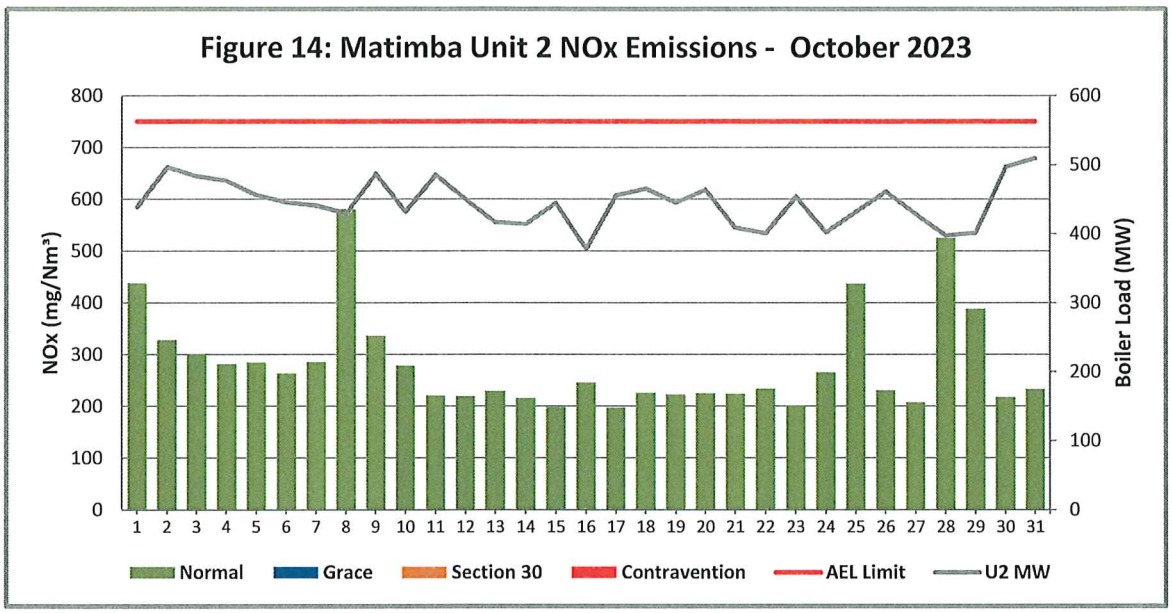

Figure 14: NOx daily average emissions against emission limit for unit 2 for the month of October 2023

Interpretation:

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

Unit 3 NO_x Emissions

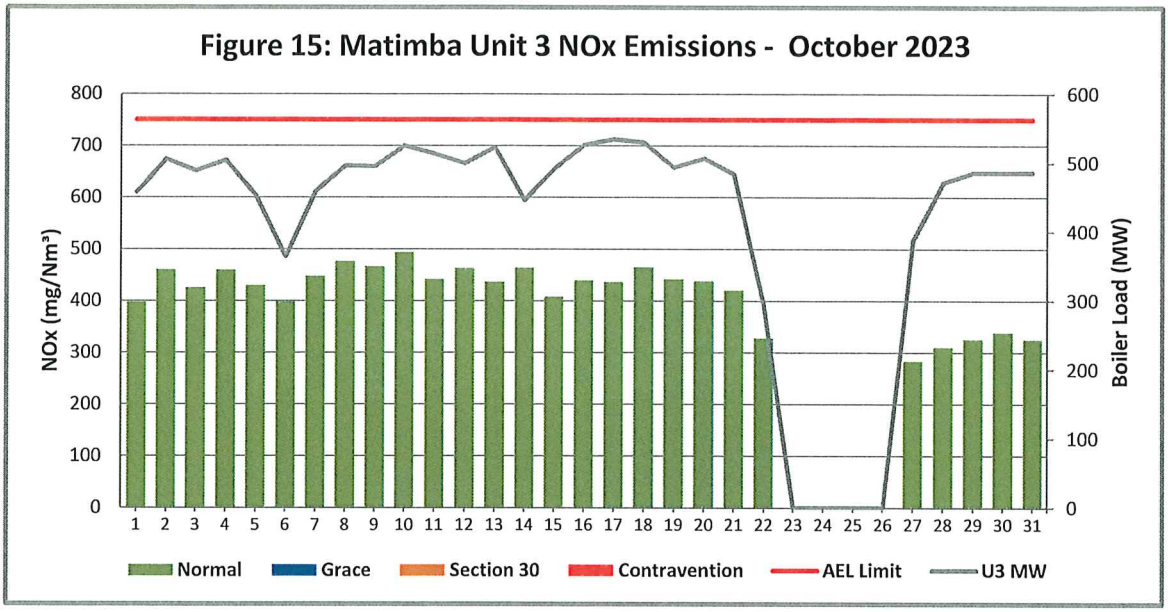

Figure 15: NOx daily average emissions against emission limit for unit 3 for the month of October 2023

Interpretation:

All daily averages below NOx emission limit of 750 mg/Nm³.

Unit 4 NO_x Emissions

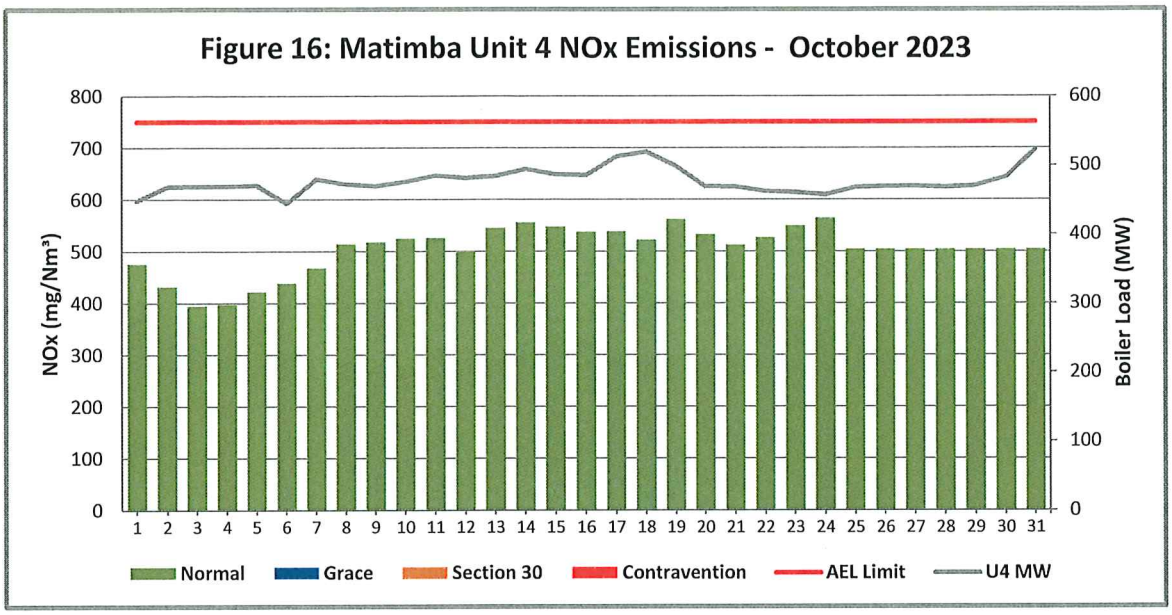

Figure 16: NOx daily average emissions against emission limit for unit 4 for the month of October 2023

Interpretation:

All daily averages below NOx emission limit of 750 mg/Nm^3.Avarage for the month figure was used from 25 to 31 due to monitor out of commission. The monitor was found to have lost the signal of the tag and was repaired restore on 31 October 2023.

Unit 5 NO_x Emissions

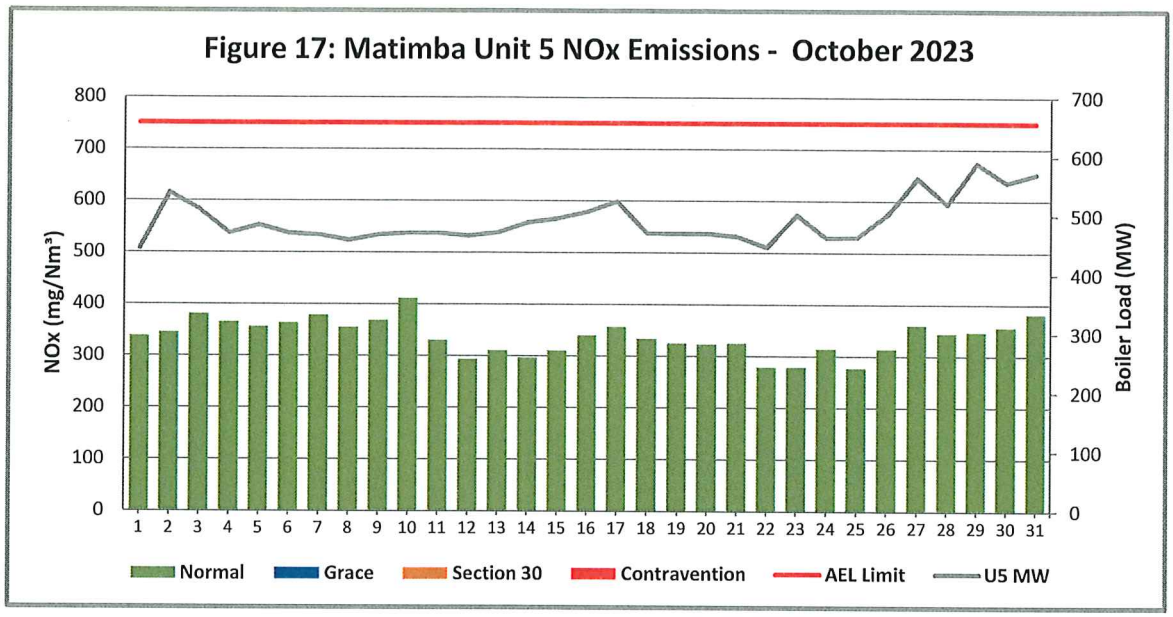

Figure 17: NOx daily average emissions against emission limit for unit 5 for the month of October 2023

Interpretation:

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

Unit 6 NO_x Emissions

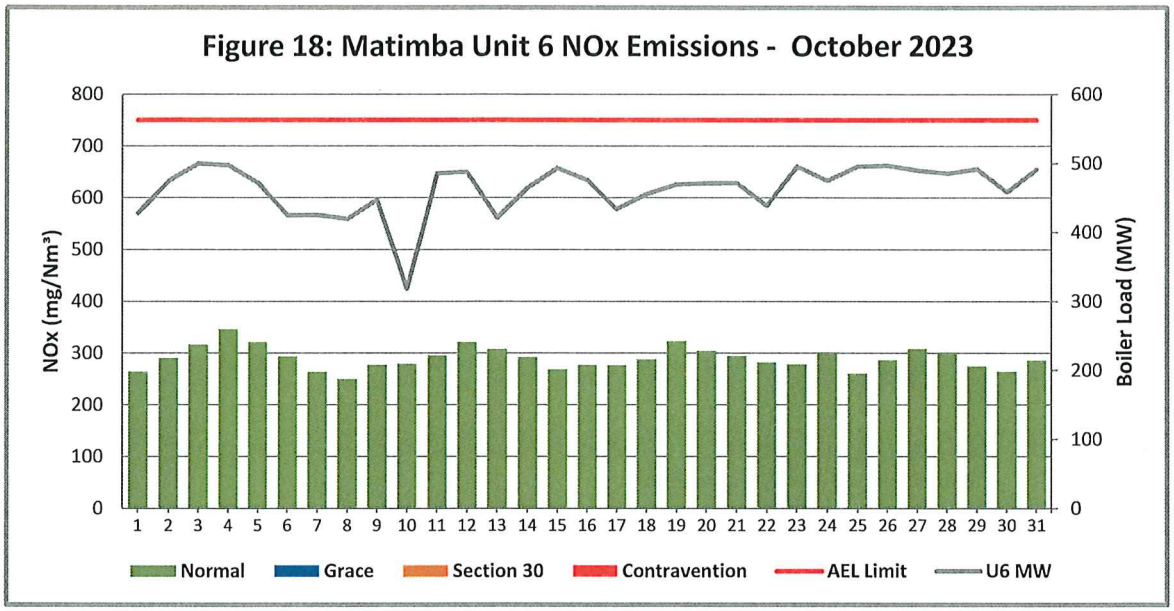

Figure 18 NOx daily average emissions against emission limit for unit 6 for the month of October 2023

Interpretation:

All daily averages below NOx emission limit of 750 mg/Nm³.

2.3.3 Total Volatile Organic Compounds

Table 4: Total volatile compound estimates

Eskom

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

Date:	Monday, 20 November 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:	October	
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:	*2404,309*	
Molecular weight of the fuel oil:	166,00	Lb/lb-mole
METEROLOGICAL DATA FOR THE MONTH	Data	Unit
Daily average ambient temperature	26,19	°C
Daily maximum ambient temperature	33,65	°C
Daily minimum ambient temperature	19,11	°C
Daily ambient temperature range	14,54	°C
Daily total insolation factor	5,81	kWh/m²/day
Tank paint colour	*Grey/medium*	NA
Tank paint solar absorbtance	0,68	NA
FINAL OUTPUT:	Result	Unit
Breathing losses:	0,60	kg/month
Working losses:	0,07	kg/month
TOTAL LOSSES (Total TVOC Emissions for the month):	0,66	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.

2.3.4 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.

2.4 Daily power generated

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

Date	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
2023/10/01	6516,25	9208,28	9949,05	9686,32	9576,13	9230,73
2023/10/02	11213,5	10530,1	11025,8	10198,4	11682,5	10227,4
2023/10/03	9719,11	10266,5	10657,8	10212,1	11065,6	10854
2023/10/04	9933,76	10120	10931,3	10206,9	10147	10773,4
2023/10/05	9659,77	9656,21	9867,76	10225,3	10441,2	10238,4
2023/10/06	10883,2	9424,39	7811,25	9605,5	10135,1	9136,09
2023/10/07	10403,7	9335,87	9897,98	10378	10072,3	9152,66
2023/10/08	10095,8	9046,96	10786,3	10206,5	9892,1	9001,22
2023/10/09	10275,8	10312,4	10771,9	10172,3	10121,4	6971,02
2023/10/10	9783,54	9124,87	11414	10305,7	10164,1	1328,73
2023/10/11	5879,63	10313,5	11163,3	10506,2	10152,6	10506,1
2023/10/12	9472,7	9553,79	10835	10415,3	10053,8	10562,4
2023/10/13	6223,51	8756,01	11367,3	10466,7	10170,5	9048,76
2023/10/14	9478,94	8710,22	9658,05	10664,1	10585,6	10023,1
2023/10/15	7101,42	9382,17	10649,2	10531,1	10709,3	10682,7
2023/10/16	8776,25	1924,21	11439,7	10513	10964,8	10302,8
2023/10/17	10109,4	9618,39	11642,1	11125,4	11344,5	9429,3
2023/10/18	10033	9879,1	11550,5	11296,2	10156,6	9822,45
2023/10/19	10003	9417,41	10742,6	10828,7	10137,9	10175
2023/10/20	8497,26	9838,82	10994,2	10167,6	10151,8	10181,9
2023/10/21	7479,82	8615,73	10526,5	10152,1	10043,1	10193,1
2023/10/22	7437,42	8411,27		9994,31	9633,1	9420,64
2023/10/23	10388,2	9647,17		9938,78	10927,2	10729,1
2023/10/24	9216,76	8492,43		9860,48	10044,4	10271,7
2023/10/25	10093,1	9083,33		10108,2	10046,9	10723
2023/10/26	10196,1	9768,81		10150,7	10848,8	10754,9
2023/10/27	10138,7	9037,6	5238,72	10165,8	12230,5	10587,4
2023/10/28	7837,81	8352,84	10262,9	10111,7	11259,3	10481,7
2023/10/29	1607,56	8420,71	10591,8	10195,5	12778,9	10638,9
2023/10/30	9538,59	10570,5	10652,7	10481,4	12077,8	9925,8
2023/10/31	11940,1	10874,6	10659,2	11420,9	12470,4	10678,5

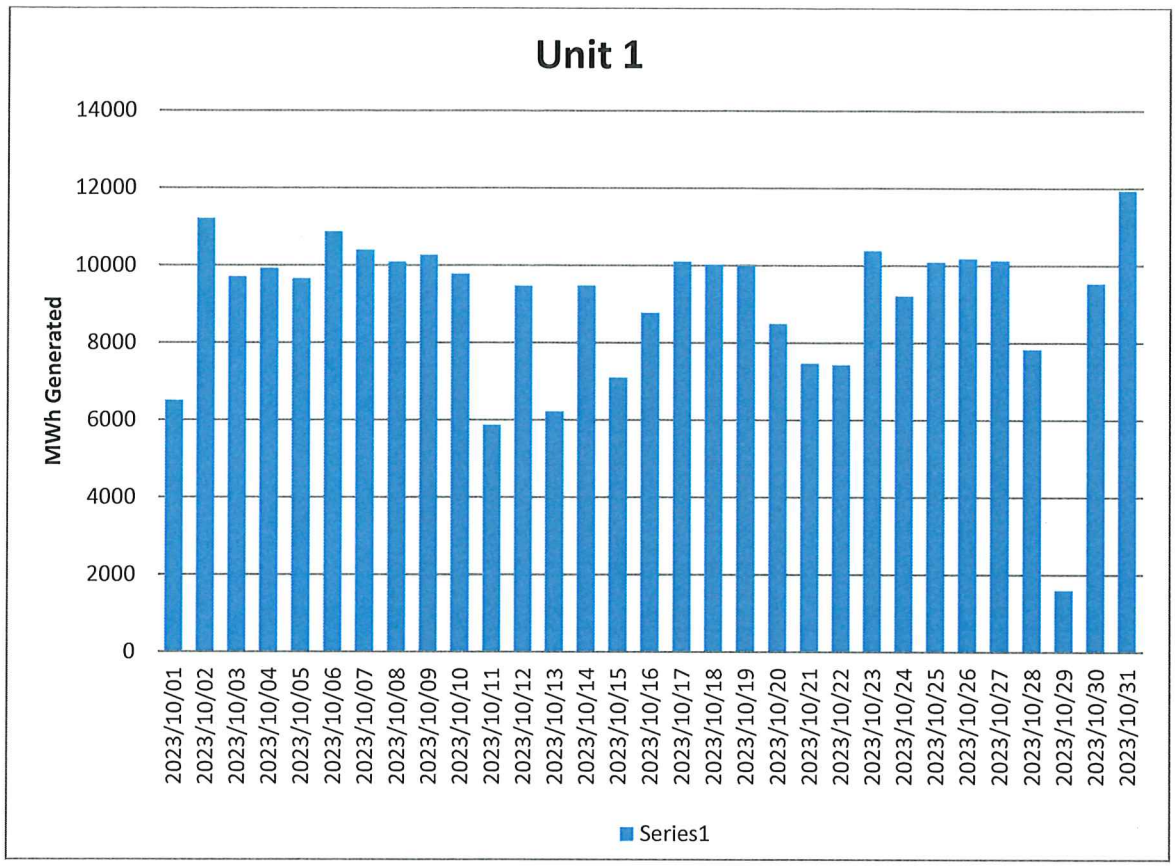

Figure 19: Unit 1 daily generated power in MWh for the month of October 2023

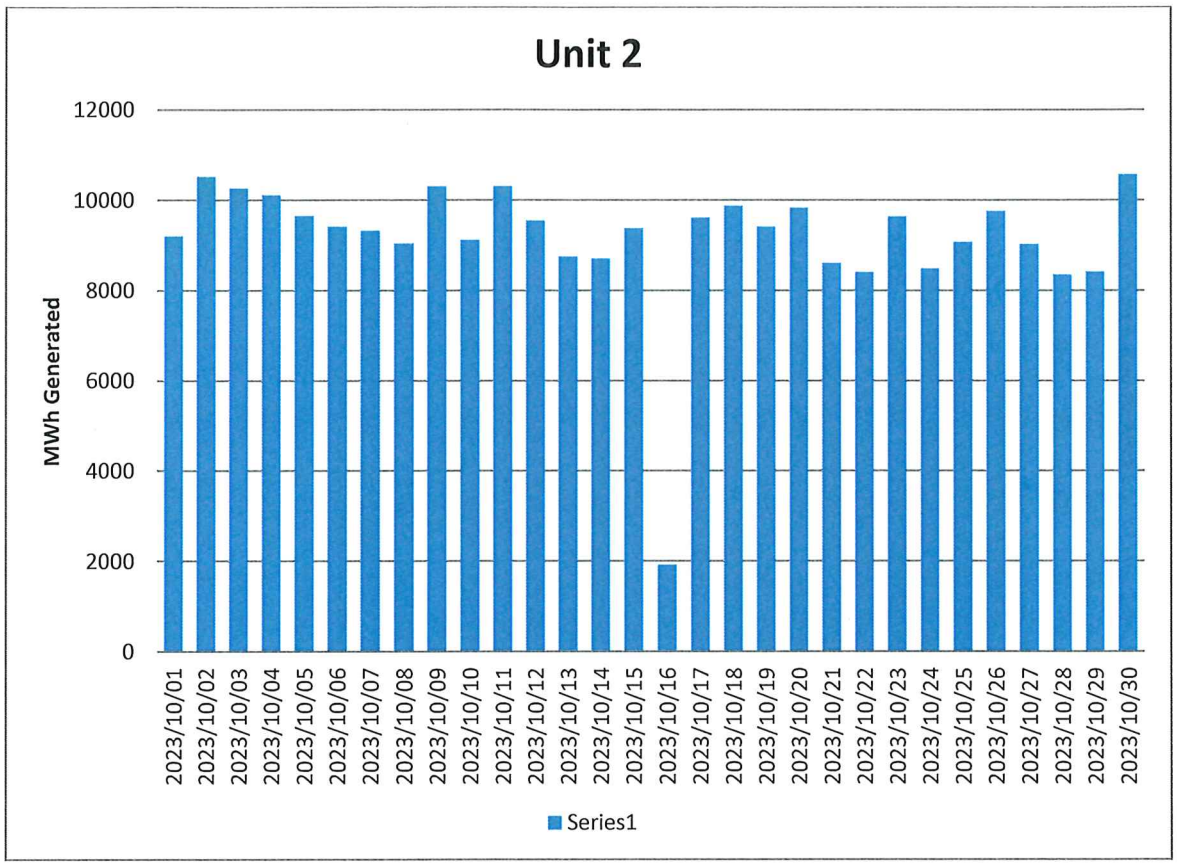

Figure 20: Unit 2 daily generated power in MWh for the month of October 2023

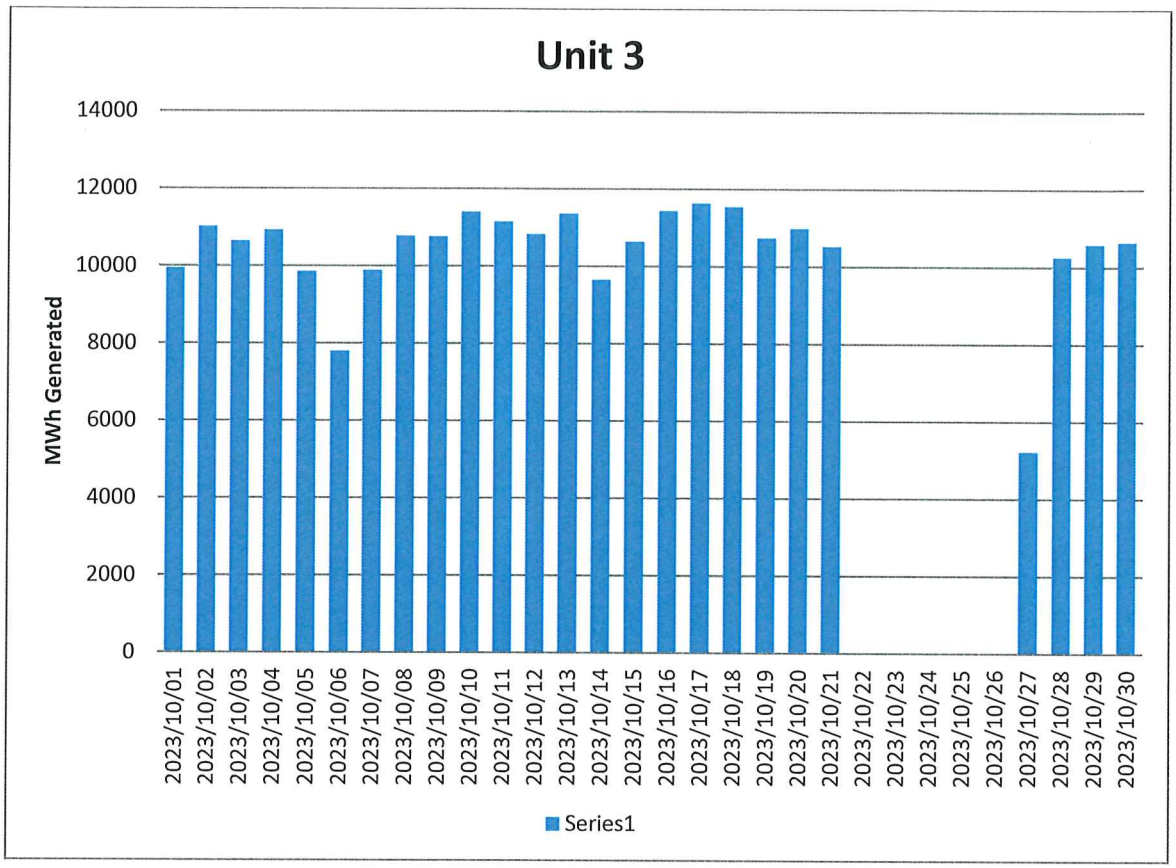

Figure 21: Unit 3 daily generated power in MWh for the month of October 2023

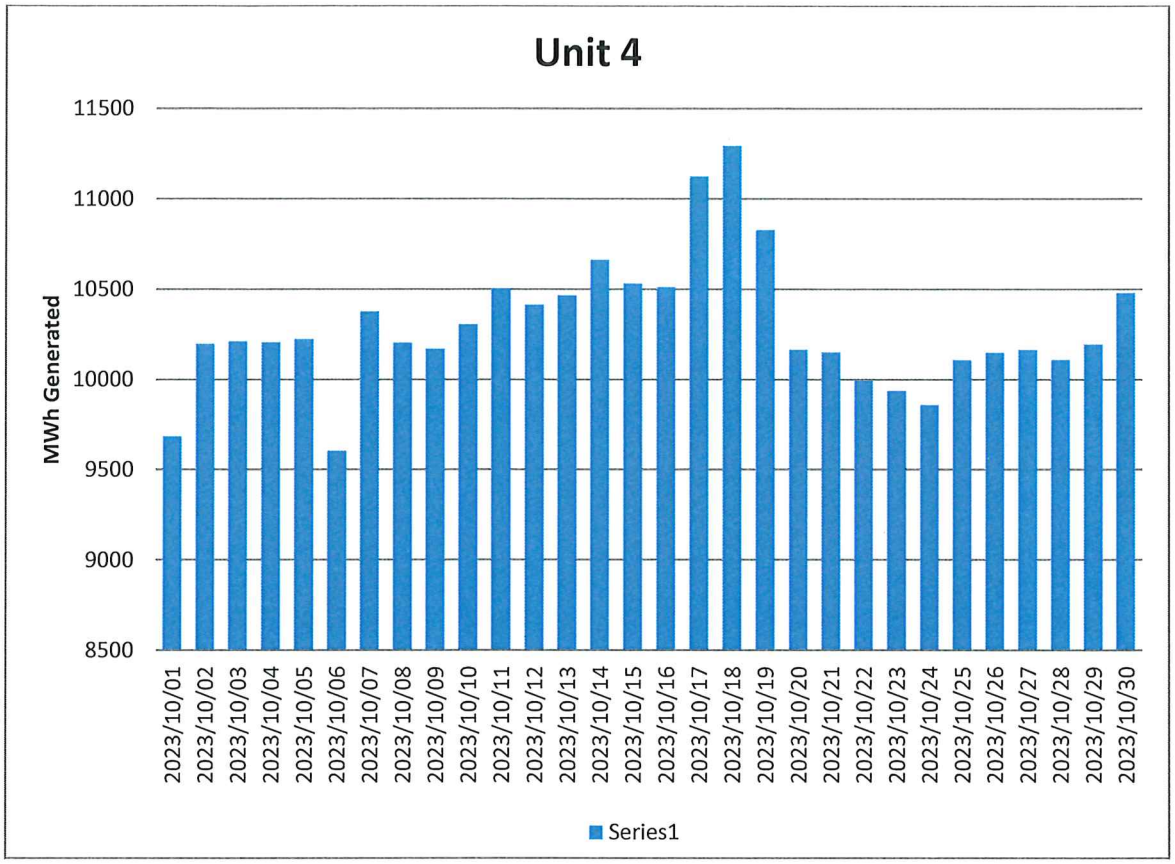

Figure 22: Unit 4 daily generated power in MWh for the month of October 2023

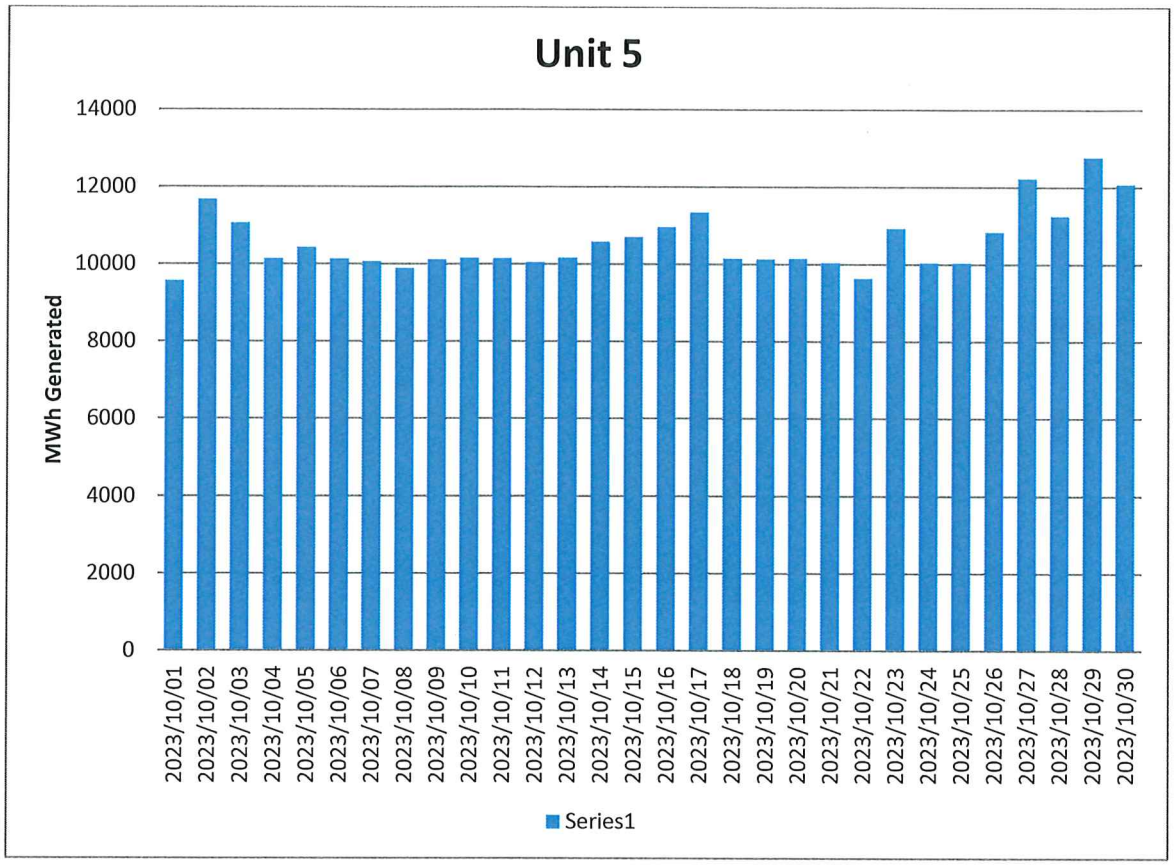

Figure 23: Unit 5 daily generated power in MWh for the month of October 2023

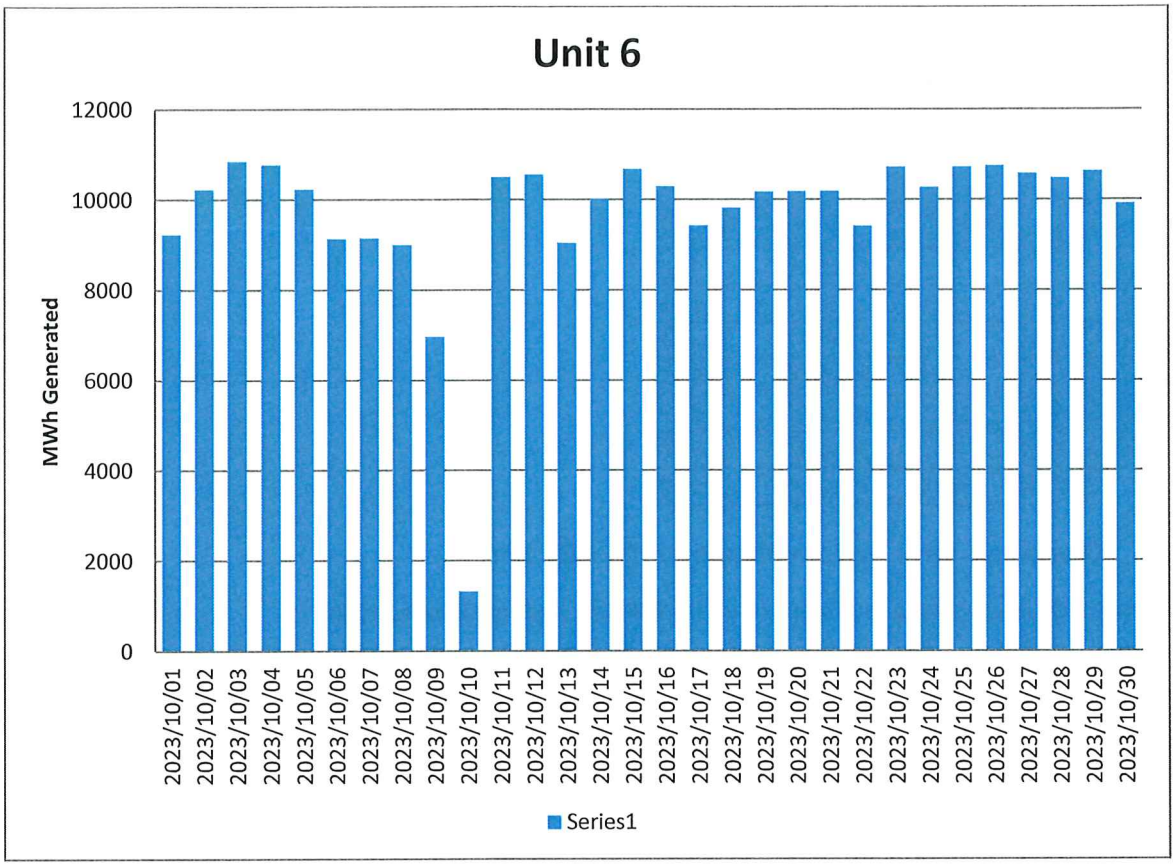

Figure 24: Unit 6 daily generated power in MWh for the month of October 2023

2.5 Pollutant Tonnages

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

Table 6: Pollutant tonnages for the month of October 2023

Associated Unit/Stack	PM (tons)	SO_2 (tons)	NO_x (tons)
Unit 1	60,7	4 882,3	737,4
Unit 2	129,8	3 753,4	591,5
Unit 3	43,0	4 376,7	832,6
Unit 4	109,7	4 793,2	1 086,1
Unit 5	147,5	3 276,7	623,8
Unit 6	44,9	3 105,6	562,6
SUM	535,6	24 187,9	4 434,0

2.6 Operating days in compliance to PM AEL Limit

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm³)
Unit 1	25	3	0	0	3	37,8
Unit 2	24	5	2	0	7	40,3
Unit 3	23	2	1	0	3	23,2
Unit 4	13	9	9	0	18	58,7
Unit 5	9	9	13	0	22	59,3
Unit 6	30	0	0	0	0	23,8
SUM	**85**	**19**	**12**	**0**	**31**	

2.7 Operating days in compliance to SOx AEL Limit

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO_2 (mg/Nm³)
Unit 1	31	0	0	0	0	2 616,4
Unit 2	31	0	0	0	0	1 762,0
Unit 3	27	0	0	0	0	2 208,1
Unit 4	31	0	0	0	0	2 544,9
Unit 5	31	0	0	0	0	1 775,7
Unit 6	31	0	0	0	0	1 595,9
SUM	**120**	**0**	**0**	**0**	**0**	

2.8 Operating days in compliance to NOx AEL Limit

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm³)
Unit 1	31	0	0	0	0	393,3
Unit 2	31	0	0	0	0	282,2
Unit 3	27	0	0	0	0	415,9
Unit 4	31	0	0	0	0	576,5
Unit 5	31	0	0	0	0	337,5
Unit 6	31	0	0	0	0	290,2
SUM	**120**	**0**	**0**	**0**	**0**	

2.9 Reference values

Table 10: Reference values for data provided, October 2023

Compound / Parameter	Units of Measure	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Oxygen	%	7,52	7,45	5,45	7,60	7,43	7,28
Moisture	%	3,51	3,54	3,71	2,95	3,75	2,04
Velocity	m/s	23,7	24,5	24,7	22,7	21,7	25,4
Temperature	°C	140,7	119,1	129,0	131,0	126,9	161,4
Pressure	mBar	928,6	936,0	916,5	927,2	936,6	910,6

2.10 Continuous Emission Monitors

2.10.1 Reliability

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

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

Associated Unit/Stack	PM	SO_2	NO
Unit 1	100,0	99,7	99,7
Unit 2	100,0	95,8	75,0
Unit 3	100,0	99,8	99,8
Unit 4	100,0	100,0	100,0
Unit 5	100,0	100,0	100,0
Unit 6	100,0	99,3	99,3

2.10.2 Changes, downtime, and repairs

Unit 1

- No adjustments done on the CEMs.
- No downtime or repairs done on the particulate monitors

Unit 2

- No adjustments done on the CEMs.
- No downtime or repairs done on the particulate monitors

Unit 3

- No adjustments done on the CEMs.
- No downtime or repairs done on the particulate monitors

Unit 4

- No adjustments done on the CEMs.
- No downtime or repairs done on the particulate monitors

Unit 5

- No adjustments done on the CEMs.
- No downtime or repairs done on the particulate monitors

Unit 6

- No adjustments done on the CEMs.
- No downtime or repairs done on the particulate monitors

2.10.3 Sampling dates and times

Table 12: Dates of last conducted CEMS verification tests for PM, SO_2 and NOx

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	2020/09/30 06h04	2020/09/09 13h00	2020/09/09 13h00	2020/09/09 13h00
2	2021/01/26 04h52	2021/01/27 13h00	2021/01/27 13h00	2021/01/27 13h00
3	2021/08/10 12h05	2020/09/24 07h00	2020/09/24 07h00	2020/09/24 07h00
4	2021/07/13 14h31	2020/09/16 02h00	2020/09/16 02h00	2020/09/16 02h00
5	2020/10/06 05h39	2020/10/08 02h30	2020/10/08 02h30	2020/10/08 02h30
6	2020/09/09 06h41	2020/09/09 13h00	2020/09/09 13h00	2020/09/09 13h00

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.

Dates of last conducted CEMS Spot verification tests for PM, SO_2 and NOx

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	2020/09/30 06h04	2023/08/01 19:33	2023/08/01 19:33	2023/08/01 19:33
2	2021/01/26 04h52	2023/07/29 21:17	2023/07/29 21:17	2023/07/29 21:17
3	2021/08/10 12h05	2023/08/06 03:00	2023/08/06 03:00	2023/08/06 03:00
4	2021/07/13 14h31	2023/08/04 19:39	2023/08/04 19:39	2023/08/04 19:39
5	2020/10/06 05h39	2023/08/05 07:30	2023/08/05 07:30	2023/08/05 07:30
6	2020/09/09 06h41	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 all units failed.

2.11 Units Start-up information

Table 13: Start-up information

Unit	1	
Fires in	2023/10/01	15h47
Synchronization with Grid	2023/10/01	21h49
Emissions below limit	2023/10/02	16h12
Fires in, to synchronization	6,2	HOURS
Synchronization to < Emission limit	18,23	HOURS

Unit	1	
Fires in	2023/10/11	01h34
Synchronization with Grid	2023/10/11	07h07
Emissions below limit	2023/10/11	08h02
Fires in, to synchronization	5,3	HOURS
Synchronization to < Emission limit	0,53	HOURS

Unit	1	
Fires in	2023/10/13	16h03
Synchronization with Grid	2023/10/13	23h35
Emissions below limit	2023/10/13	23h35
Fires in, to synchronization	7,32	HOURS
Synchronization to < Emission limit	0	HOURS

Unit	1	
Fires in	2023/10/29	12h48
Synchronization with Grid	2023/10/29	16h10
Emissions below limit	2023/10/29	20h00
Fires in, to synchronization	3,22	HOURS
Synchronization to < Emission limit	3,50	HOURS

Unit	1	
Fires in	2023/10/30	22h28
Synchronization with Grid	2023/10/31	03h02
Emissions below limit	2023/10/31	03h02
Fires in, to synchronization	4,34	HOURS
Synchronization to < Emission limit	0	HOURS

Unit	2	
Fires in	2023/10/16	07h55
Synchronization with Grid	2023/10/16	21h19
Emissions below limit	2023/10/17	02h00
Fires in, to synchronization	13,24	HOURS
Synchronization to < Emission limit	4,41	HOURS

Unit	3	
Fires in	2023/10/27	03h26
Synchronization with Grid	2023/10/27	08h20
Emissions below limit	2023/10/27	10h00
Fires in, to synchronization	4,54	HOURS
Synchronization to < Emission limit	1,40	HOURS

Unit	6	
Fires in	2023/10/10	13h01
Synchronization with Grid	2023/10/10	17h51
Emissions below limit	2023/10/11	04h01
Fires in, to synchronization	4,50	HOURS
Synchronization to < Emission limit	10,9	HOURS

2.12 Emergency generation

Table 14: Emergency generation

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Emergency Generation hours declared by national Control	536	565	455	582	582	558
Emergency Hours declared including hours after stand down	547	576	466	593	593	569
Days over the Limit during Emergency Generation	3	26	3	49	0	0

2.13 Complaints register.

Table 15: 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
None					

2.14 Air quality improvements and social responsibility conducted.

2.14.1 Air quality improvements

None

2.14.2 Social responsibility conducted.

None

2.15 Ambient air quality monitoring

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

2.16 Electrostatic precipitator and Sulphur plant status

Unit 1

- 9 fields out of service, will be repaired during next opportunity.
- No abnormalities on the SO3 plant. Preventive maintenance done during the month.

Unit 2

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

Unit 3

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

Unit 4

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

Unit 5

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

Unit 6

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

SO3 common plant

- No abnormalities on the sulphur storage plant.

2.17 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. S23° 40' 2.8" E027° 36' 34.8" 175m from ground level and 75m from the top.
    b. Gas:
        i. S23° 40' 2.8" E027° 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° 40' 14.8" E027° 36' 47.5" 175m from ground level and 75m from the top.
    b. Gas:
        i. S23° 40' 14.8" E027° 36' 47.5" 100m from ground level and 150m from the top.
    c. Stack height
        i. 250 meter 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

GENERAL MANAGER: MATIMBA POWER STATION