

Technical and Generic Report

Matimba Power Station

Title: **Matimba Power Station February**

2025 emissions report

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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 contains the required information as specified in the license for February 2025. The information recorded in the report is obtained from Matimba Emission Reporting tool V10.2024.



During the period under review, Matimba experienced eighty-four (84) exceedances of the daily particulate matter emission limit (50mg/Nm³), seventy-three (73) 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 eleven (11) exceedances occurred within the 48-hour grace period.

There were no exceedances of the monthly SOx limit (3500mg/Nm³). The were no exceedances of the daily NOx emission limit (750mg/Nm³).

Flue gas conditioning plant availability was below 90% for all units. Unit 2 SO3 plant's availability was 62% due to low load and raising temperatures during units light ups from trips. Unit 3 SO3 plant's availability was 70% due to burner air block valve faulty. Unit 4 SO3 plant's availability was 47% due to the plant being on permit to work(off) to repair sulphur control valve. Unit 5 SO3 plant's availability was 84% due to low load. Unit 6 SO3 plant's availability was 25% due to the plant being off (permit to work) to repair sulphur leak.

The consumption rates for fuel oil for the month of February 2025 exceeded the limit of 1200 tons by 6137.169 tons due to multiple units light up trips and unit 6 cold start up from outage.

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

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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
useu	Coal	Tons/month	1 500 000	567 782
	Fuel Oil	Tons/month	1 200	6137.169
Production Rates	Product/ By- Product Name	Unit	Maximum Production Capacity Permitted (Quantity)	Production Rate
113,600	Energy	MW	4000	1379.744
	Ash	Tons/month	547500	205 391.060

The consumption rates for fuel oil for the month of February 2025 exceeded the permitted maximum limits due to multiple units light up trips and combustion support.

2.2 Abatement technology

Table 2: Abatement Equipment Control Technology Utilised

Associated Unit	Technology Type	nology Type Minimum utilisation (%)	
Unit 1	Electrostatic Precipitator	100%	Off
Unit 2	Electrostatic Precipitator	100%	100.000%
Unit 3	Electrostatic Precipitator	100%	100.000%
Unit 4	Electrostatic Precipitator	100%	100.000%
Unit 5	Electrostatic Precipitator	100%	100.000%
Unit 6	Electrostatic Precipitator	100%	100.000%
Associated	Technology Type	Minimum utilisation	Actual Utilisation (%)
Unit		(%)	
Unit 1	SO₃ Plant	100%	Off
Unit 2	SO₃ Plant	100%	62%
Unit 3	SO₃ Plant	100%	70%
Unit 4	SO₃ Plant	100%	47%
Unit 5	SO₃ Plant	100%	84%
Unit 6	SO₃ Plant	100%	25%

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Flue gas conditioning plant availability was below 90% for unit 2,3,4,5 and 6. Unit 2 SO3 plant was on hold due to low load and raising temperatures during units light ups from trips. Unit 3 SO3 plant was on hold due to burner air block valve faulty. Unit 4 SO3 plant was on permit to work(off) to repair sulphur control valve. Unit 5 SO3 plant was on hold due to low load. Unit 6 SO3 plant was off (permit to work) to repair sulphur leak.

Table 3: Energy Source Material Characteristics.

	Characteristic	Stipulated Range (Unit)	Monthly Average Content
Cool burned	Sulphur Content	1.6%	1.301%
Coal burned	Ash Content	40%	36.174%

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 and parallel tests were performed on unit 2,3 and 4 in June 2024 and the curves were applied on emissions calculations for February 2025. Unit 1,5 and 6 emission calculations were done using the correlation/parallel tests curves from the spot test performed in August 2023. Unit 2 PM correlation curve applied is linear curve, Unit 3 and 4 PM correlation curve applied is polynomial curve.

Unit 1 Particulate Emissions

Unit 1 is on outage

Unit 2 Particulate Emissions

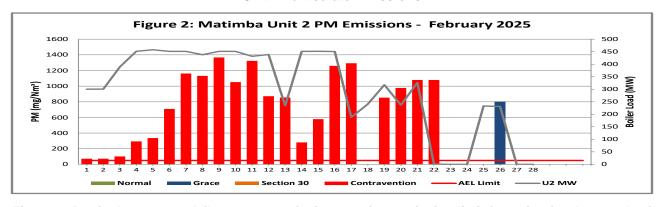


Figure 1: Particulate matter daily average emissions against emission limit for unit 2 for the month of February 2025

Interpretation: Unit 2 exceeded the daily particulate emission limit of 50mg/Nm3 on 1 to 17, 18 to 22 and 26 of February 2025. The exceedances from 1 to 17 and 19 to 22 February 2025 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 high hopper levels causing electrostatic precipitators fields to trip and have low efficiency.

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Unit 3 Particulate Emissions

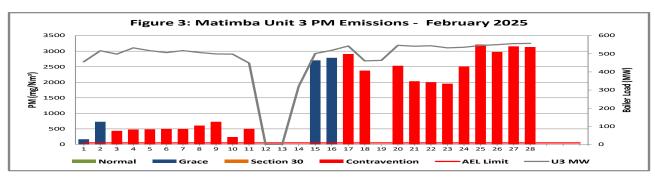


Figure 2: Particulate matter daily average emissions against emission limit for unit 3 for the month of February 2025

Interpretation: Unit 3 exceeded the daily particulate emission limit of 50mg/Nm3 on 1 to 11,15 to 18 and 20 to 28 February 2025. Exceedances from 3 to 11, 17,18 and 20 to 28 February 2025 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 high hopper levels causing electrostatic precipitators fields to trip and have low efficiency.

Unit 4 Particulate Emissions

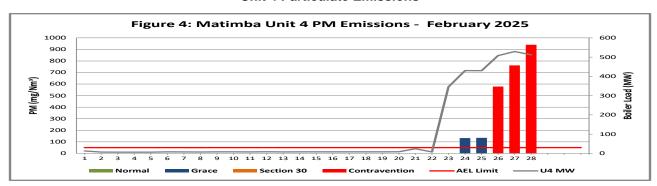


Figure 3: Particulate matter daily average emissions against emission limit for unit 4 for the month of February 2025

Interpretation: Unit 4 exceeded the daily particulate emission limit of 50mg/Nm3 on 24 to 28 February 2025. Exceedances from 26 to 28 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 high hopper levels causing electrostatic precipitators fields to trip and have low efficiency. Unit 4 dust monitor was reading almost one value in February 2025 due to the continuous blockages that were caused by the high amount of ash passing through the flue gas stack, the increase in tonnages emitted at unit 4 was due to the challenges experienced on the dust handling plant.

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Unit 5 Particulate Emissions

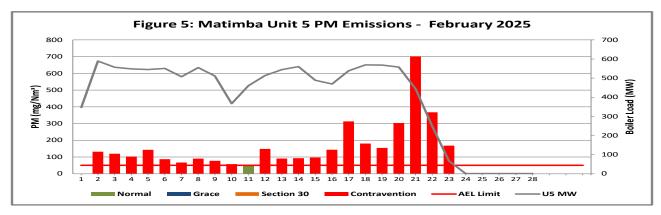


Figure 4: Particulate matter daily average emissions against emission limit for unit 5 for the month of February 2025

Interpretation: Unit 5 Particulate matter exceeded the daily limit of 50 mg/Nm³ on 1 to 10 and 12 to 23 February 2025.All exceedances occurred outside of the 48-hour grace period and was recorded on the Eskom incident management process as non-compliance to the Atmospheric Emissions Licence. The exceedances were due to high hopper levels causing electrostatic precipitators fields to trip and have low efficiency.

Unit 6 Particulate Emissions

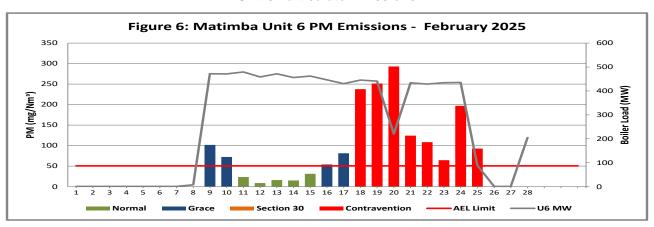


Figure 5: Particulate matter daily average emissions against emission limit for unit 6 for the month of February 2025

Interpretation: Unit 6 Particulate matter exceeded the daily limit of 50 mg/Nm³ on 9,10 and 16 to 25 February 2025. The exceedances on 18 to 25 February 2025 occurred outside of the 48-hour grace period and was recorded on the Eskom incident management process as non-compliance to the Atmospheric Emissions Licence. The exceedances were due to high hopper levels causing electrostatic precipitators fields to trip and have low efficiency.

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2.3.2 Gaseous Emissions

Gaseous emissions analyzers calibration for all 6 units were performed in February 2025 as per the Eskom emission standard requirement.

The quality assurance tests (QAL2) used for February 2025 emission calculations were performed in June 2024 for Unit 2,3 and 4. Unit 1,5 and 6 quality assurance curves utilized are spot tests performed in August 2023

2.3.2.a SOx Emissions

Unit 1 SO₂ Emissions

Unit 1 is on outage

Unit 2 SO₂ Emissions

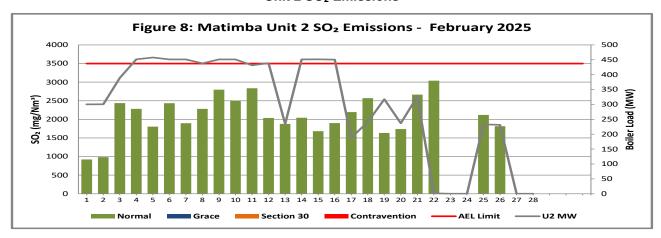


Figure 6: SO2 daily average emissions against emission limit for unit 2 for the month of February 2025

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

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Unit 3 SO₂ Emissions

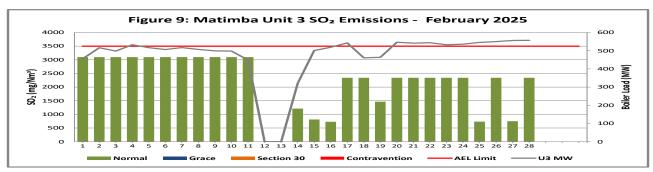


Figure 7: SO2 daily average emissions against emission limit for unit 3 for the month of February 2025

Interpretation: All daily averages below SO₂ emission monthly limit of 3500 mg/Nm³. The monitor was reported to be unavailable in February 2025 due to water ingress issue that passed to north stack from south stack. Moisture in the control air affected the efficiency of the monitor. SRM (Standard Reference Material) values from the parallel test were used to calculate the gaseous emissions for unit 3.

Unit 4 SO₂ Emissions

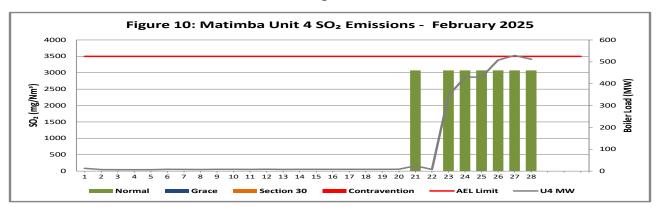


Figure 8: SO2 daily average emissions against emission limit for unit 4 for the month of February 2025

Interpretation: All daily averages below SO₂ emission monthly limit of 3500 mg/Nm³. The monitor was reported to be unavailable on the 18th of December 2025 due to water ingress. Moisture in the control air affected the efficiency of the monitor. SRM (Standard Reference Material) values from the parallel test were used to calculate the gaseous emissions for unit 4.

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Unit 5 SO₂ Emissions

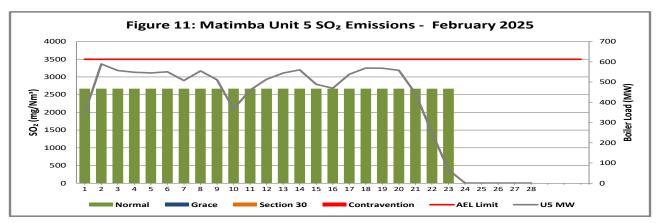


Figure 9: SO2 daily average emissions against emission limit for unit 5 for the month of February 2025

Interpretation: All daily averages below SO₂ emission monthly limit of 3500 mg/Nm³. The monitor was reported to be unavailable on the 18th of December 2025 due to water ingress. Moisture in the control air affected the efficiency of the monitor. SRM (Standard Reference Material) values from the parallel test were used to calculate the gaseous emissions for unit 5.

Unit 6 SO₂ Emissions

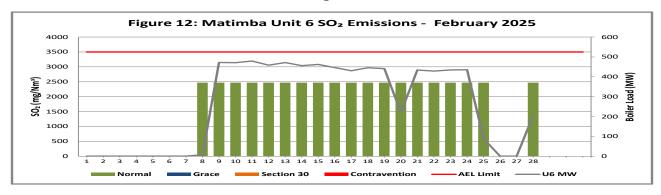


Figure 10: SO2 daily average emissions against emission limit for unit 5 for the month of February 2025

Interpretation: All daily averages below SO₂ emission monthly limit of 3500 mg/Nm³. The monitor was reported to be unavailable on the 18th of December 2025 due to water ingress. Moisture in the control air affected the efficiency of the monitor. SRM (Standard Reference Material) values from the parallel test were used to calculate the gaseous emissions for unit 6.

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2.3.2.b NOx Emissions

Unit 1 NO_x Emissions

Unit 1 is on outage

Unit 2 NO_x Emissions

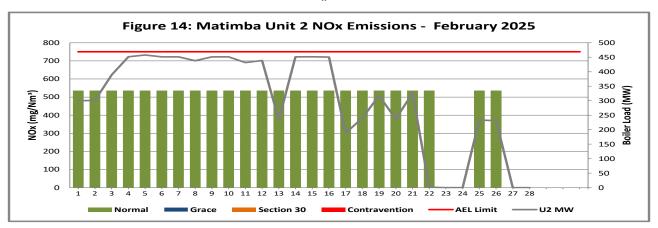


Figure 11: NOx daily average emissions against emission limit for unit 2 for the month of February 2025

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

Unit 3 NO_x Emissions

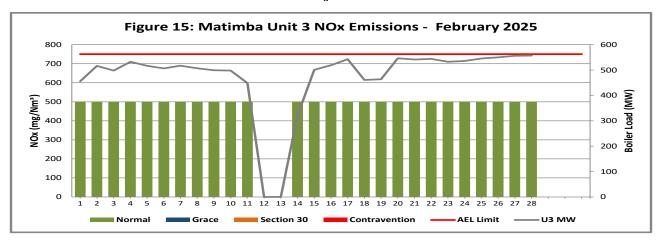


Figure 12: NOx daily average emissions against emission limit for unit 3 for the month of February 2025

Interpretation: All daily averages below SO₂ emission monthly limit of 3500 mg/Nm³. The monitor was reported to be unavailable in February 2025 due to water ingress issue that passed to north stack from south stack. Moisture in the control air affected the efficiency of the monitor. SRM (Standard Reference Material) values from the parallel test were used to calculate the gaseous emissions for unit 3.

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Unit 4 NO_x Emissions

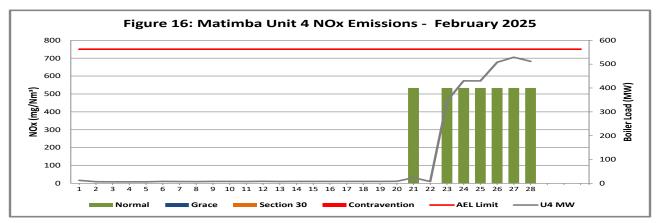


Figure 13: NOx daily average emissions against emission limit for unit 4 for the month of February 2025

Interpretation: All daily averages below SO₂ emission monthly limit of 3500 mg/Nm³. The monitor was reported to be unavailable on the 18th of December 2025 due to water ingress. Moisture in the control air affected the efficiency of the monitor. SRM (Standard Reference Material) values from the parallel test were used to calculate the gaseous emissions for unit 4.

Unit 5 NO_x Emissions

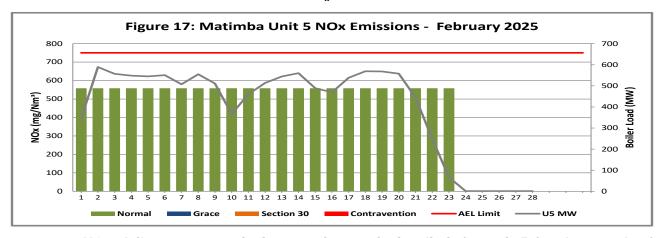


Figure 14: NOx daily average emissions against emission limit for unit 5 for the month of February 2025

Interpretation: All daily averages below SO₂ emission monthly limit of 3500 mg/Nm³. The monitor was reported to be unavailable on the 18th of December 2025 due to water ingress. Moisture in the control air affected the efficiency of the monitor. SRM (Standard Reference Material) values from the parallel test were used to calculate the gaseous emissions for unit 5.

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Unit 6 NO_x Emissions

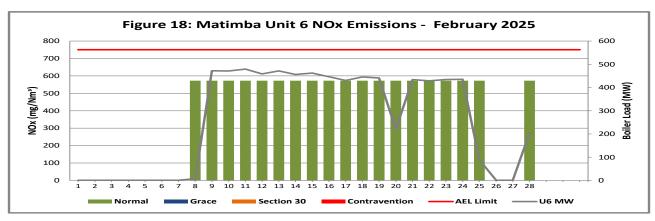


Figure 15: NOx daily average emissions against emission limit for unit 5 for the month of February 2025

Interpretation: All daily averages below SO₂ emission monthly limit of 3500 mg/Nm³. The monitor was reported to be unavailable on the 18th of December 2025 due to water ingress. Moisture in the control air affected the efficiency of the monitor. SRM (Standard Reference Material) values from the parallel test were used to calculate the gaseous emissions for unit 6.

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2.3.3 Total Volatile Organic Compounds

Table 4: Total volatile compound estimates



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

Date:	Tuesday, 11 March 2025
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 <u>blue cells</u> below Choose from a dropdown menu in the <u>green cells</u>

The total VOC emissions for the month are in the <u>red cells</u>

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

MONTH:	February			
GENERAL INFORM	ATION:	Data	Unit	
Total number of fu	el oil tanks:	4	NA	
Height of tank:			13.34	m
Diameter of tank:		_	9.53	m
Net fuel oil through	put for the month:		<u>6137.169</u>	
Molecular weight o	f the fuel oil:		166.00	Lb/lb-mole
METEROLOGICAL	DATA FOR THE MONTH		Data	Unit
Daily average ambi	ent temperature		26.20	°C
Daily maximum am	bient temperature		32.94	°C
Daily minimum amb	pient temperature		20.71	°C
Daily ambient temp	erature range		12.24	°C
Daily total insolatio	n factor		5.72	kWh/m²/day
Tank paint colour			<u>Grey/medium</u>	NA
Tank paint solar ab	sorbtance		0.68	NA
FINAL OUTPUT:			Result	Unit
Breathing losses:		0.57	kg/month	
Working losses:		0.17	kg/month	
TOTAL LOSSES (T	otal TVOC Emissions for the month):		0.74	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.

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2.3.4 Greenhouse gas (CO₂) emissions

CO₂ 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 February 2025

Date	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
2025/02/01	Unit off	6359.61	9884.57	Unit off	7066.06	Unit off
2025/02/02	Unit off	6357.51	11251.7	Unit off	12799.4	Unit off
2025/02/03	Unit off	8320.71	10831.2	Unit off	12101.2	Unit off
2025/02/04	Unit off	9773.61	11593	Unit off	11915.6	Unit off
2025/02/05	Unit off	9848.86	11250.3	Unit off	11828.3	Unit off
2025/02/06	Unit off	9629.33	10995.9	Unit off	11976.8	Unit off
2025/02/07	Unit off	9638.33	11249.2	Unit off	10992.7	Unit off
2025/02/08	Unit off	9331.43	11040.1	Unit off	12059.7	Unit off
2025/02/09	Unit off	9637.45	10852.7	Unit off	11110.6	10129.5
2025/02/10	Unit off	9642.84	10806.7	Unit off	7835.04	10206.2
2025/02/11	Unit off	9230.86	9857.62	Unit off	9899.74	10374.6
2025/02/12	Unit off	9327.62	Unit off	Unit off	11121.7	9945.31
2025/02/13	Unit off	4662.73	Unit off	Unit off	11783.9	10244.1
2025/02/14	Unit off	9646.99	6529.62	Unit off	12170.7	9901.92
2025/02/15	Unit off	9637.89	10889.2	Unit off	10630.8	10064.1
2025/02/16	Unit off	9606.08	11291.2	Unit off	10174.5	9708.53
2025/02/17	Unit off	3640.4	11807.6	Unit off	11696.8	9329.35
2025/02/18	Unit off	4758.71	10161.4	Unit off	12435.4	9629.68
2025/02/19	Unit off	6592.83	9806.44	Unit off	11245.5	9553.19
2025/02/20	Unit off	4721.71	11899.6	Unit off	10764.5	4305.64
2025/02/21	Unit off	6772.72	11787.8	Unit off	9680.91	9378.52
2025/02/22	Unit off	Unit off	11839.4	Unit off	5262.22	9249.82
2025/02/23	Unit off	2836.13	11573.7	7033.03	1378.68	9393.67
2025/02/24	Unit off	7043.88	11651.1	9209.85	Unit off	9404.68
2025/02/25	Unit off	8486.56	11860.6	9151.46	Unit off	1688.31
2025/02/26	Unit off	4810.72	11969.8	10936.3	Unit off	Unit off
2025/02/27	Unit off	Unit off	12106.6	11431.7	Unit off	Unit off
2025/02/28	Unit off	Unit off	12131	11062.3	Unit off	3949.46

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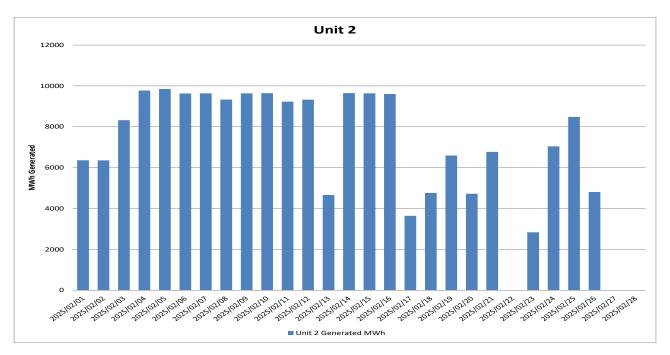


Figure 16: Unit 2 daily generated power in MWh for the month of February 2025

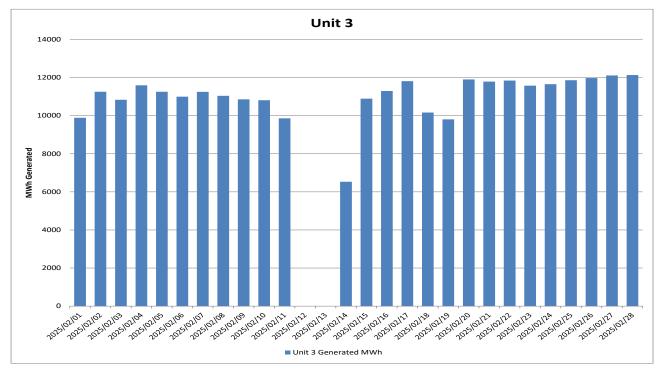


Figure 17: Unit 3 daily generated power in MWh for the month of February 2025

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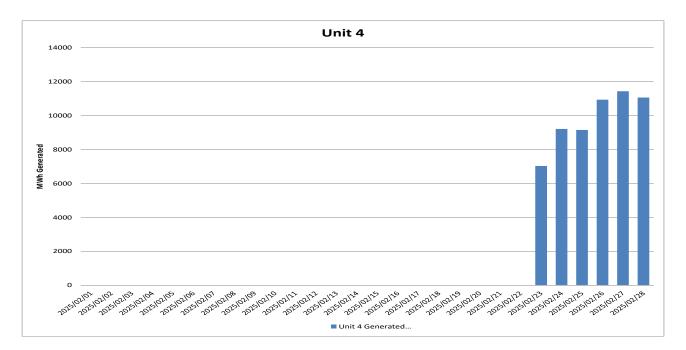


Figure 18: Unit 4 daily generated power in MWh for the month of February 2025

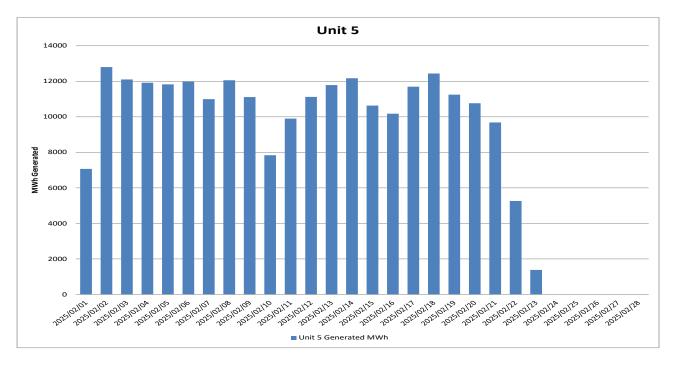


Figure 19: Unit 5 daily generated power in MWh for the month of February 2025

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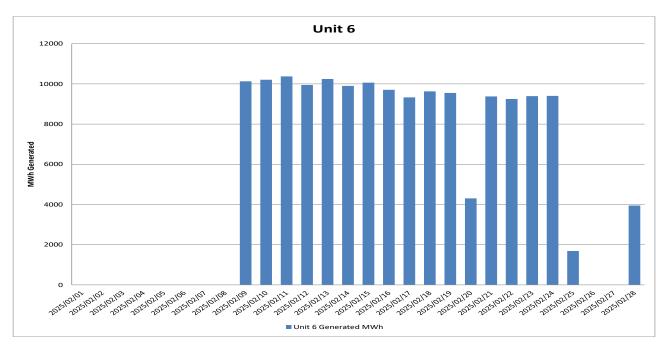


Figure 20: Unit 6 daily generated power in MWh for the month of February 2025

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2.5 Pollutant Tonnages

The emitted pollutant tonnages for February 2025 are provided in table 6.

Table 6: Pollutant tonnages for the month of February 2025

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO _x (tons)
Unit 1	Off	Off	Off
Unit 2	1 071.1	3 679.9	952.4
Unit 3	2 085.8	3 255.2	693.6
Unit 4	13.2	95.6	16.6
Unit 5	219.0	3 680.8	769.6
Unit 6	83.7	2 664.2	617.7
SUM	3 472.8	13 375.8	3 049.9

2.6 Operating days in compliance to PM AEL Limit

Table 7: Operating days in compliance with PM AEL limit of February 2025

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm³)
Unit 1	Off	Off	Off	Off	Off	Off
Unit 2	0	1	0	21	22	797.4
Unit 3	0	4	0	20	24	1 653.6
Unit 4	0	2	0	3	5	509.6
Unit 5	1	0	0	21	21	167.6
Unit 6	5	4	0	8	12	104.3
SUM	6	11	0	73	84	

2.7 Operating days in compliance to SOx AEL Limit

Table 8: Operating days in compliance with SOx AEL limit of February 2025

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO ₂ (mg/Nm³)
Unit 1	Off	Off	Off	Off	Off	Off
Unit 2	24	0	0	0	0	2 103.7
Unit 3	26	0	0	0	0	2 341.4
Unit 4	7	0	0	0	0	3 072.7
Unit 5	23	0	0	0	0	2 670.7
Unit 6	19	0	0	0	0	2 470.0
SUM	99	0	0	0	0	

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2.8 Operating days in compliance to NOx AEL Limit

Table 9: Operating days in compliance with NOx AEL limit of February 2025

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm³)
Unit 1	Off	Off	Off	Off	Off	Off
Unit 2	24	0	0	0	0	536.4
Unit 3	26	0	0	0	0	501.2
Unit 4	7	0	0	0	0	533.4
Unit 5	23	0	0	0	0	558.4
Unit 6	19	0	0	0	0	572.7
SUM	99	0	0	0	0	

2.9 Reference values

Table 10: Reference values for data provided, February 2025

Compound / Parameter	Units of Measure	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Oxygen	%	Off	7.45	9.28	7.98	7.34	9.84
Moisture	%	Off	5.76	5.53	5.92	5.12	3.65
Velocity	m/s	Off	31.6	24.4	2.1	23.7	29.1
Temperature	°C	Off	120.3	136.6	136.7	122.5	110.0
Pressure	mBar	Off	924.0	917.8	904.4	902.3	902.1

2.10 Continuous Emission Monitors

2.10.1 Reliability

Table 11: Monitor reliability percentage (%)

Associated Unit/Stack	PM	SO ₂	NO
Unit 1	Off	Off	Off
Unit 2	26.4	93.1	100.0
Unit 3	69.4	46.4	100.0
Unit 4	84.2	100.0	100.0
Unit 5	95.8	100.0	100.0
Unit 6	91.7	100.0	100.0

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Note: NOx emissions are measured as NO in PPM. Final NOx value is expressed as total NO2.

Continuous emission monitors were reliable for less than 80% of the reporting period for unit 2 and 3 PM, and unit 3 SO₂. Unit 2 PM monitor reliability was low due to the number of times the monitor kept maxing out of the monitor's range. Unit 3 PM monitor reliability was low due to the number of times the monitor kept maxing out of the monitors' range. Unit 3 gaseous monitor low reliability was caused by the monitor not being calibrated due to water ingress issue that passed to north stack from south stack. Unit 4, 5 and 6 gaseous monitor reliability is 100% due to the SRM (Standard Reference Material) values from the parallel test used to calculate the gaseous emissions for unit 4,5 and 6.

Table 12: Average percentage (%) availability of monitors for the month of February 2025.

Unit	SO ₂	NO _x	PM	CO ₂
1				
2	93.1	100.0	26.4	100.0
3	46.4	100.0	69.4	100.0
4	100.0	100.0	84.2	100.0
5	100.0	100.0	95.8	100.0
6	100.0	100.0	91.7	100.0

Continuous emission monitors were available for less than 80% of the reporting period for unit 2 and 3 PM, and unit 3 SO₂. Unit 2 PM monitor availability was low due to the number of times the monitor kept maxing out of the monitor's range. Unit 3 PM monitor availability was low due to the number of times the monitor kept maxing out of the monitors' range. Unit 3 gaseous monitor low availability was caused by the monitor not being calibrated due to water ingress issue that passed to north stack from south stack. Unit 4, 5 and 6 gaseous monitor reliability is 100% due to the SRM (Standard Reference Material) values from the parallel test used to calculate the gaseous emissions for unit 4,5 and 6.

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2.10.2 Changes, downtime, and repairs

Unit 1

- No adjustments done on the CEMs.
- Replaced PM monitor on 23 January 2025. Correlation test to be done.

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.
- Replaced PM monitor on 23 January 2025. Correlation test to be done.

Unit 4

- No adjustments done on the CEMs.
- Unit 4 monitor was reported to be unavailable from the 18th of December 2025 due to water ingress in the gas analyser system.
- Replaced PM monitor on 23 January 2025. Correlation test to be done.

Unit 5

- No adjustments done on the CEMs.
- Unit 5 monitor was reported to be unavailable from the 18th of December 2025 due to water ingress in the gas analyser system.
- Replaced PM monitor on 23 January 2025. Correlation test to be done.

Unit 6

- No adjustments done on the CEMs.
- Unit 6 monitor was reported to be unavailable from the 18th of December 2025 due to water ingress in the gas analyser system.
- No downtime or repairs done on the particulate monitors. Correlation test to be done.

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2.10.3 Sampling dates and times

Table 13: Dates of last full conducted CEMS verification tests for PM for unit 6.

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	
6	2020/09/09 06h41	New sampling tests in table 14	New sampling tests in table 14	New sampling tests in table 14	

Table 14: Dates of last conducted CEMS Spot verification tests for PM, SO₂ and NOx for unit 1, 5 and 6)

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	
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 13 above	2023/08/05 15:52	2023/08/05 15:52	2023/08/05 15:52	

Note: The CEMS Spot verification tests for PM, SO₂ and NOx were performed in August 2023. PM spot verification test results for unit 6 failed and old curves are still in use.

Table 15: Dates of last full conducted CEMS verification tests for PM for unit 2, unit 3 and 4 only

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	
2	2024/07/02 08h50	2024/07/02 12h35	2024/07/02 12h35	2024/07/02 12h35	
3	2024/06/23 16h34	2024/06/23 14h00	2024/06/23 14h00	2024/06/23 14h00	
4	2024/06/29 16h05	2024/06/29 11h00	2024/06/29 11h00	2024/06/29 11h00	

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2.11 Units Start-up information

Table 16: Start-up information

Unit	2	
Fires in	2025/02/13	06h57
Synchronization with Grid	2025/02/13	14h22
Emissions below limit	2025/02/17	09h01
Fires in, to synchronization	5.25	HOURS
Synchronization to < Emission limit	92.39	HOURS

Unit	2	
Fires in	2025/02/17	15h50
Synchronization with Grid	2025/02/17	19h25
Emissions below limit	2025/02/17	Unit did not go below the limit until it tripped
Fires in, to synchronization	3.35	HOURS
Synchronization to < Emission limit	N/A	HOURS

Unit	2		
Fires in	2025/02/18	01h26	
Synchronization with Grid	2025/02/18	06h44	
Emissions below limit	2025/02/18	Unit did not go below the limit until it tripped	
Fires in, to synchronization	5.18	HOURS	
Synchronization to < Emission limit	N/A	HOURS	

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Unit	2	
Fires in	2025/02/18	10h09
Synchronization with Grid	2025/02/20	22h03
Emissions below limit	2025/02/20	Unit did not go below the limit until it tripped
Fires in, to synchronization	59.54	HOURS
Synchronization to < Emission limit	N/A	HOURS

Unit	2	
Fires in	2025/02/23	01h17
Synchronization with Grid	2025/02/23	11h06
Emissions below limit	2025/02/26	13h00
Fires in, to synchronization	9.49	HOURS
Synchronization to < Emission limit	73.54	HOURS

Unit	3				
Fires in	2025/02/13 23h45				
Synchronization with Grid	2025/02/14 07h54				
Emissions below limit	2025/02/17	Unit did not go below the limit until it tripped			
Fires in, to synchronization	8.9	HOURS			
Synchronization to < Emission limit	N/A	HOURS			

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Unit	3				
Fires in	2025/02/19 00h04				
Synchronization with Grid	2025/02/19 03h23				
Emissions below limit	2025/02/19	Unit did not go below the limit until it tripped			
Fires in, to synchronization	3.19	HOURS			
Synchronization to < Emission limit	N/A	HOURS			

Unit	4				
Fires in	2025/02/21 07h31				
Synchronization with Grid	2025/02/21 16h46				
Emissions below limit	2025/02/21	Unit did not go below the limit until it tripped			
Fires in, to synchronization	9.15 HOURS				
Synchronization to < Emission limit	N/A	HOURS			

Unit	4		
Fires in	2025/02/23	18h00	
Synchronization with Grid	2025/02/24	03h23	
Emissions below limit	2025/02/24	10h00	
Fires in, to synchronization	9.23	HOURS	
Synchronization to < Emission limit	6.37	HOURS	

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Unit	5		
Fires in	2025/01/31 22h25		
Synchronization with Grid	2025/02/01	05h43	
Emissions below limit	2025/02/01	09h00	
Fires in, to synchronization	7.18	HOURS	
Synchronization to < Emission limit	3.17	HOURS	

Unit	5		
Fires in	2025/02/10	20h19	
Synchronization with Grid	2025/02/10	22h49	
Emissions below limit	2025/02/11	03h00	
Fires in, to synchronization	2.30	HOURS	
Synchronization to < Emission limit	4.11	HOURS	

Unit	6		
Fires in 2025/02/08		17h38	
Synchronization with Grid	2025/02/08	23h27	
Emissions below limit	2025/02/10	11h00	
Fires in, to synchronization	5.49	HOURS	
Synchronization to < Emission limit	35.33	HOURS	

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Unit	6	
Fires in	2025/02/19 22h56	
Synchronization with Grid	2025/02/20	13h10
Emissions below limit	2025/02/20	16h00
Fires in, to synchronization	14.14	HOURS
Synchronization to < Emission limit	2.50	HOURS

Unit	6				
Fires in	2025/02/28 04h15				
Synchronization with Grid	2025/02/28 11h21				
Emissions below limit	2025/02/28	Unit did not go below the limit until it tripped			
Fires in, to synchronization 7.6		HOURS			
Synchronization to < Emission limit	N/A	HOURS			

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2.12 Emergency generation

Table 17: 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 standing down	Off	558.770	617.720	155.630	529.830	412.770
Days over the Limit during Emergency Generation	0	22	24	5	21	12

During the period under review all Units were on emergency generation in force from 01 February 2025 until 28 February 2025.

2.13 Complaints register.

Table 18: 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.

Air quality improvements

None

Social responsibility conducted.

None

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2.15 Ambient air quality monitoring

Marapong ambient air quality monitoring station was relocated from the previous location to Ditheku primary school and commissioned to service on 20 March 2024. The February 2025 ambient air quality monitoring report is attached to this report as an addendum.

2.16 Electrostatic precipitator and Sulphur plant status

Unit 1

Unit on outage.

Unit 2

- 6 fields defective.
- Unit 2 SO3 plant not available for some time due to defective process air flow transmitters.

Unit 3

- 4 fields defective.
- Unit 3 SO3 plant running at low SO3 injection rate due to defective process air flow transmitters.

Unit 4

- 5 fields defective.
- No abnormalities on the SO3 plant.

Unit 5

- 4 fields defective.
- No abnormalities on the SO3 plant.

Unit 6

- 4 fields defective.
- Unit 6 SO3 plant not available for some time due to defective process air flow transmitters.

SO3 common plant

• Sulphur supply pump number 2 not available.

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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
- 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

- Fugitive dustfall out monitoring report and Ambient air quality report.
- · Marapong ambient air quality report

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.

Wikus J van Rensburg

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

Yours sincerely

2025-04-02

GENERAL MANAGER: MATIMBA POWER STATION

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