Eskom

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Date: 12 May 2025

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MAJUBA POWER STATION'S MONTHLY EMISSIONS REPORT FOR THE MONTH OF APRIL 2025

This serves as the monthly report required in terms of Majuba Power Station's Atmospheric Emission License (MPS/0014/2019/F03) under section 7 routine reporting and record keeping. The emissions are for the month of April 2025. Verified emissions of particulates are included. SO_2 and NOx (as NO_2) emissions are included for all units. Greenhouse gasses are excluded as per the agreement reached between Eskom and the Department of Forestry, Fisheries and the Environmental in the first quarter of 2017/18 financial year's MINTEC and MINMEC management meeting.

Raw Materials and Products

Table 1. Quantity of Raw Materials and Products used/produced for the month of April 2025

Raw Materials and Products used	Raw Material Type	Unit	Maximum Permitted Consumption/ Rate (Quantity)	Consumption/ Rate in Month of April 2025
	Coal	Tons/month	1 800 000	941 018
	Fuel Oil	Tons/month	6 000	7 266
Production Rates	**Product/ By-Product Name**	**Unit**	**Maximum Production Rate Permitted (Quantity)**	**Production Rate in Month of April 2025**
	Energy	*GWh	*3 058	1 592.31
	Ash	Tons/month	Not stated in the license	269 413.57

*Majuba AEL stipulates a maximum production capacity of 4110 MW. This equates to a production rate of 3058 GWh per month when converted, as indicated above. This is to align to the monthly production rates reported.

Abatement Technology

Table 2. Abatement Equipment Control Technology for the month of April 2025

Associated Unit	Technology Type	Actual Utilisation (%) for the month of July 2024	*Minimum Control Efficiency (%)
Unit 1	Fabric Filter Plant	100	99.91
Unit 2	Fabric Filter Plant	100	99.86
Unit 3	Fabric Filter Plant	100	99.93
Unit 4	Fabric Filter Plant	100	99.95
Unit 5	Fabric Filter Plant	100	99.94
Unit 6	Fabric Filter Plant	100	99.95

*Calculated from the assumption of 90% fly ash to 10% bottom ash and percentage ash as measured in coal

Energy Source Characteristics

Table 3. Energy Source Material Characteristics for the month of April 2025

Characteristic	Stipulated Limit (Unit)	Monthly Average Content
Sulphur Content	0.94%	0.61
Ash Content	30%	28.63

Emissions Reporting

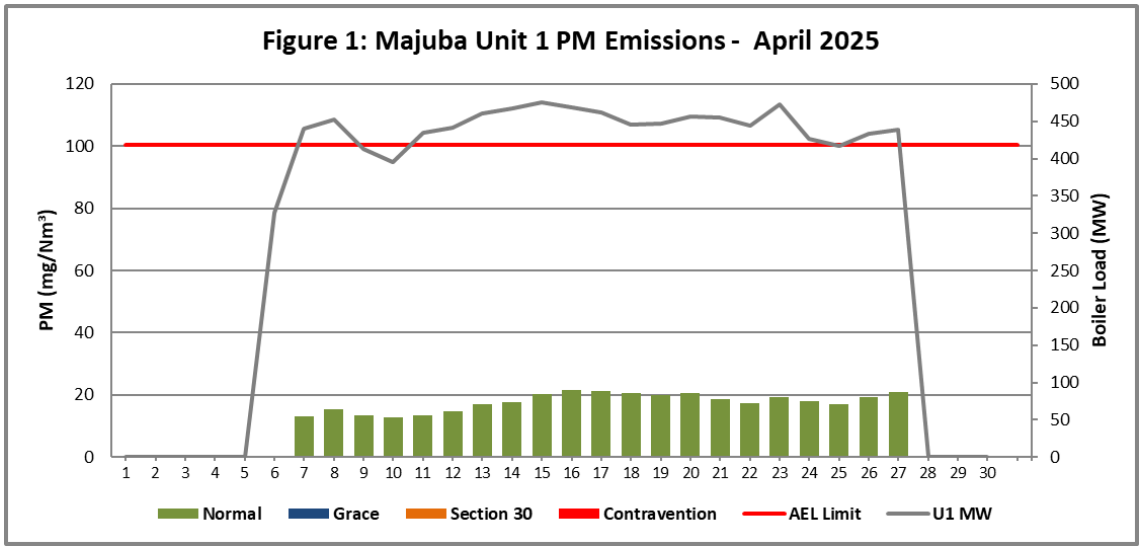


Figure 1. Particulate Matter emissions (daily averages) for the month of April 2025 against emission limit for Unit 1.

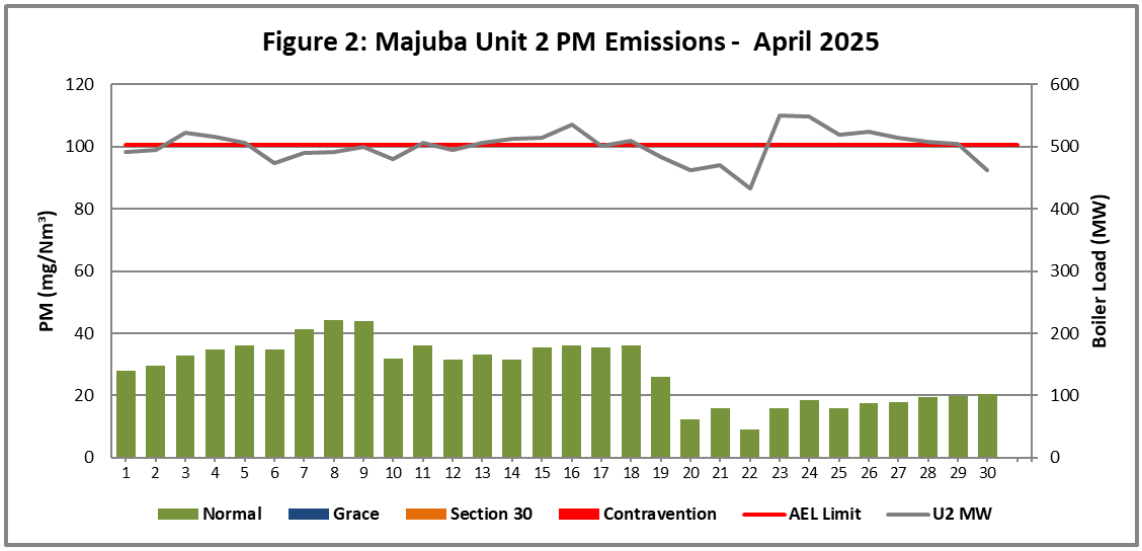


Figure 2. Particulate Matter emissions (daily averages) for the month of April 2025 against emission limit for Unit 2.

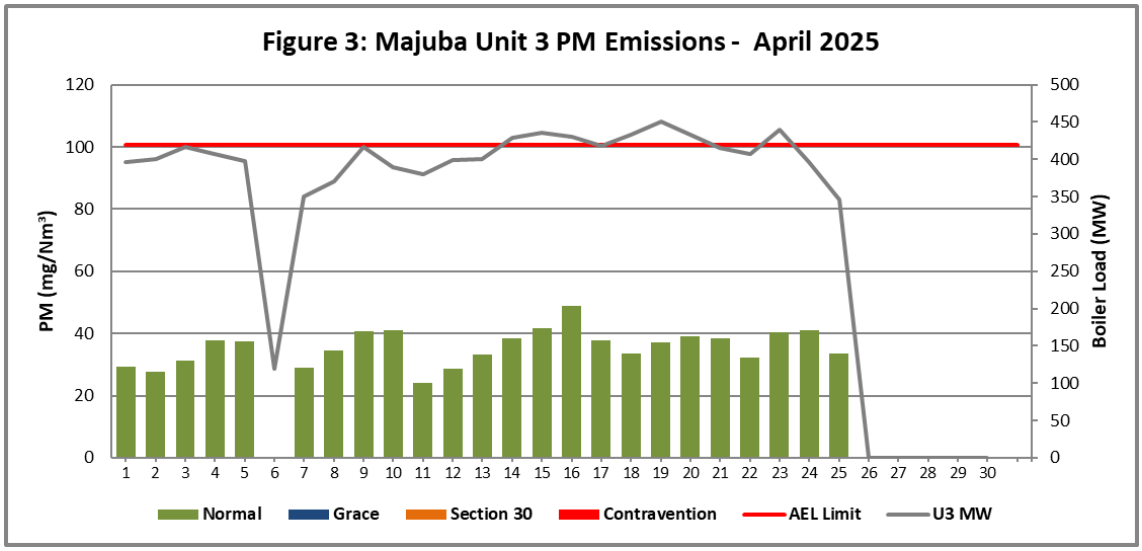


Figure 3. Particulate Matter emissions (daily averages) for the month of April 2025 against emission limit for Unit 3.

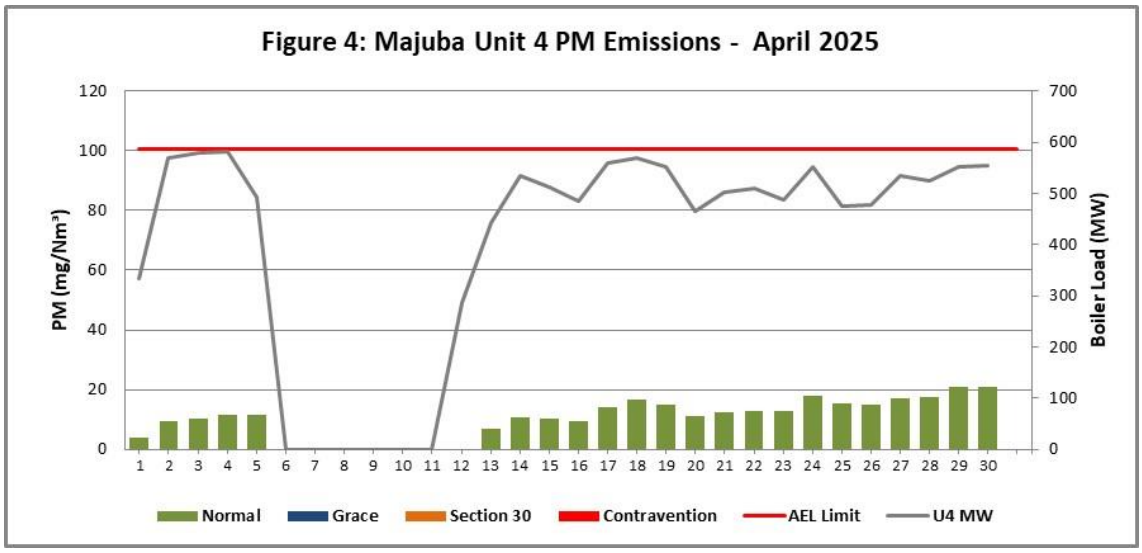


Figure 4. Particulate Matter emissions (daily averages) for the month of April 2025 against emission limit for Unit 4.

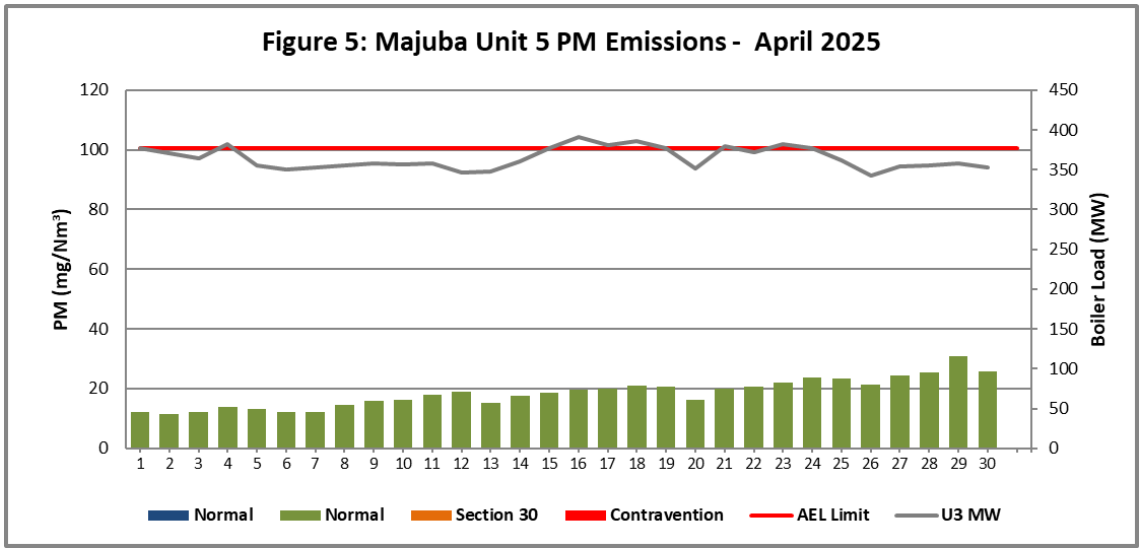


Figure 5. Particulate Matter emissions (daily averages) for the month of April 2025 against emission limit for Unit 5.

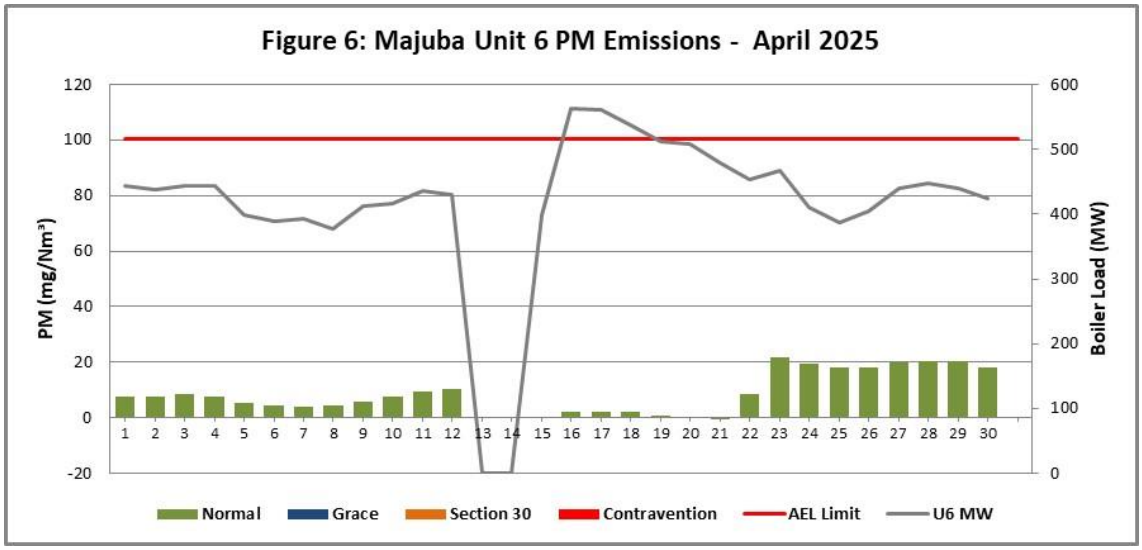


Figure 6. Particulate Matter emissions (daily averages) for the month of April 2025 against emission limit for Unit 6.

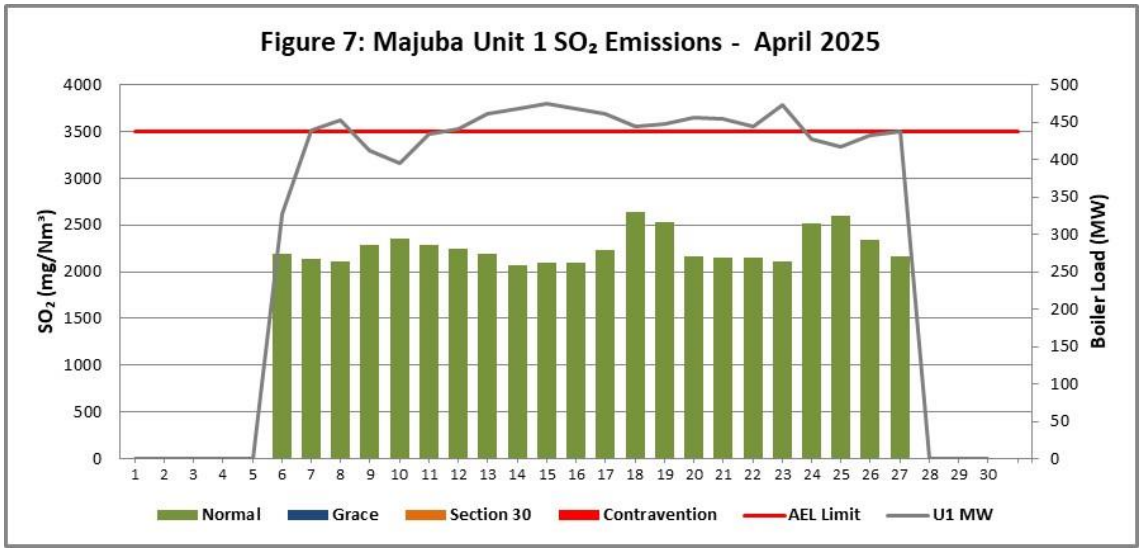


Figure 7. SO_2 emissions (daily averages) for the month of April 2025 against emission limit for Unit 1.

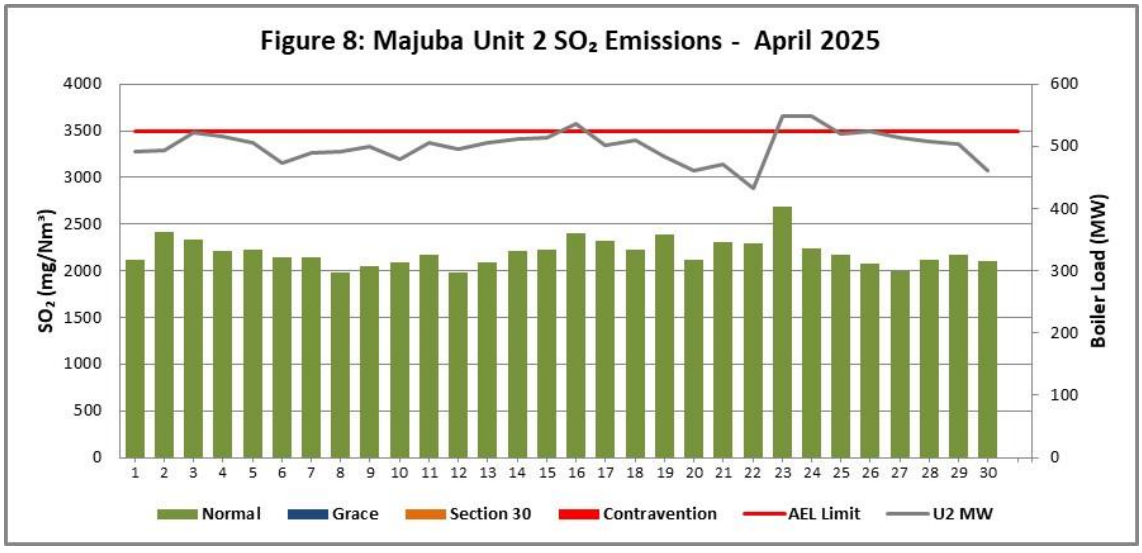


Figure 8. SO_2 emissions (daily averages) for the month of April 2025 against emission limit for Unit 2.

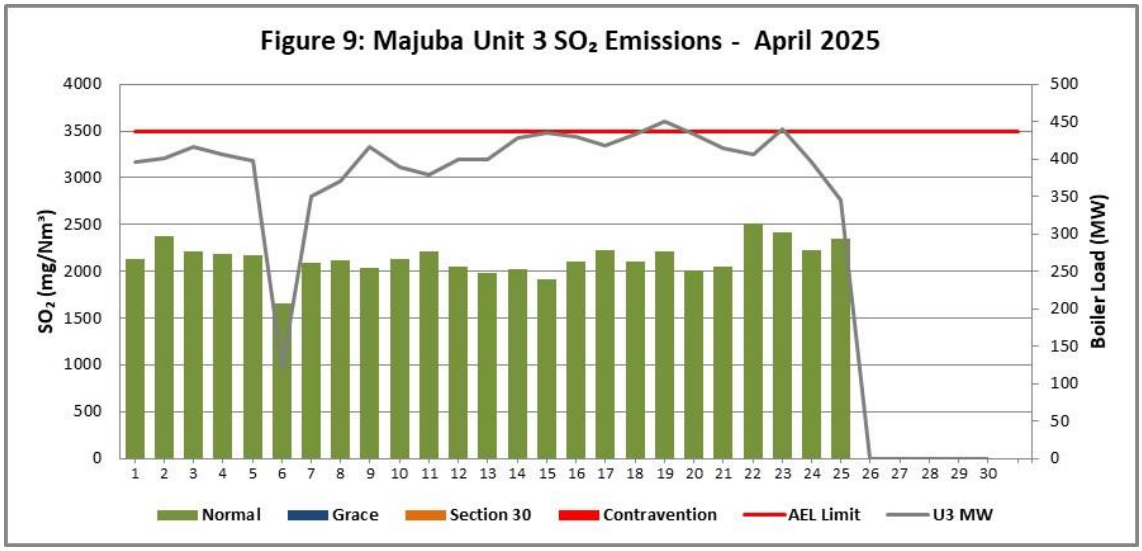


Figure 9. SO_2 emissions (daily averages) for the month of April 2025 against emission limit for Unit 3.

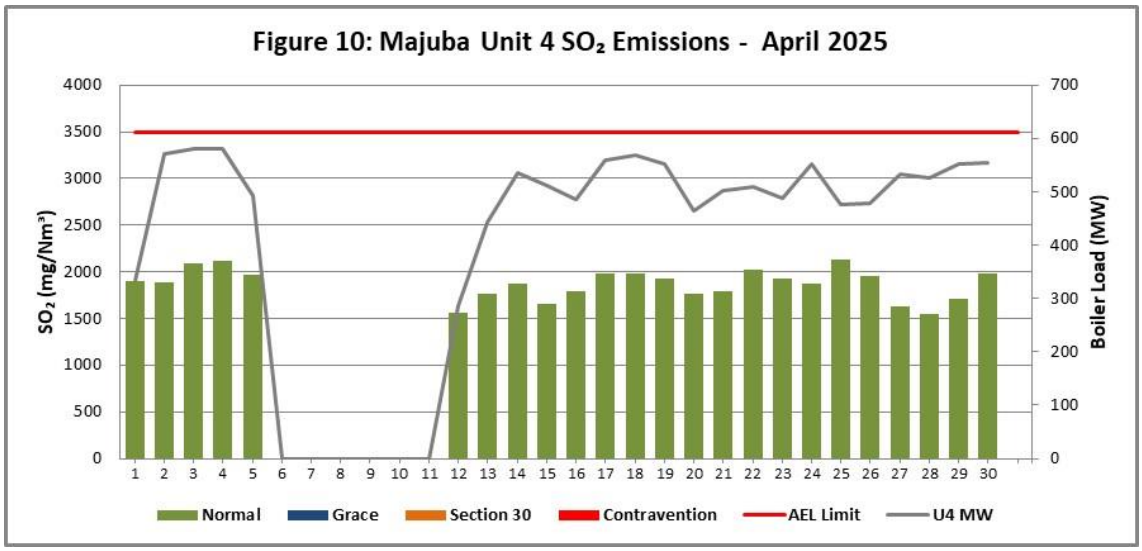


Figure 10. SO_2 emissions (daily averages) for the month of April 2025 against emission limit for Unit 4.

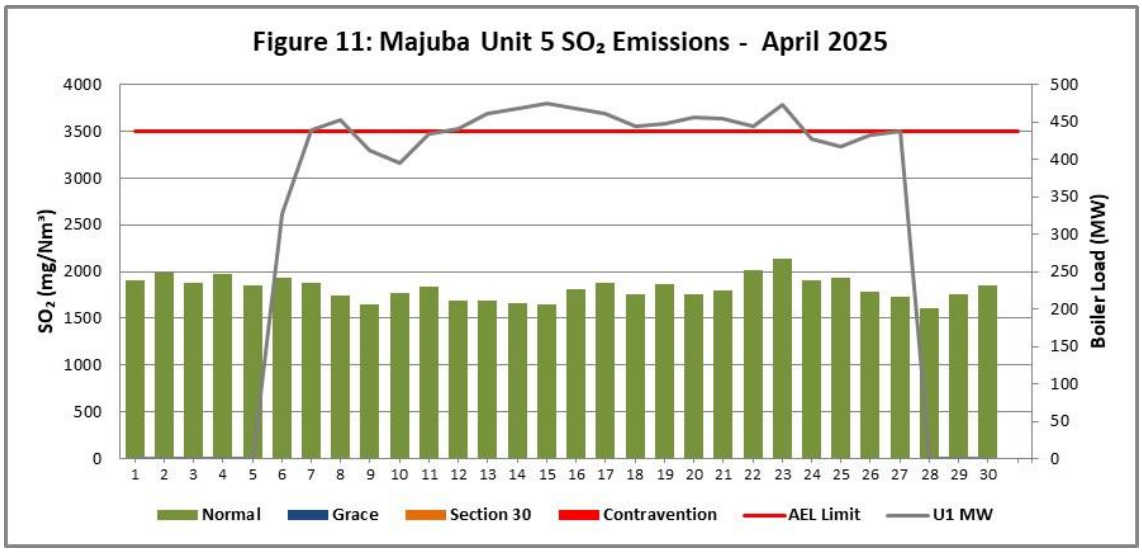


Figure 11. SO_2 emissions (daily averages) for the month of April 2025 against emission limit for Unit 5.

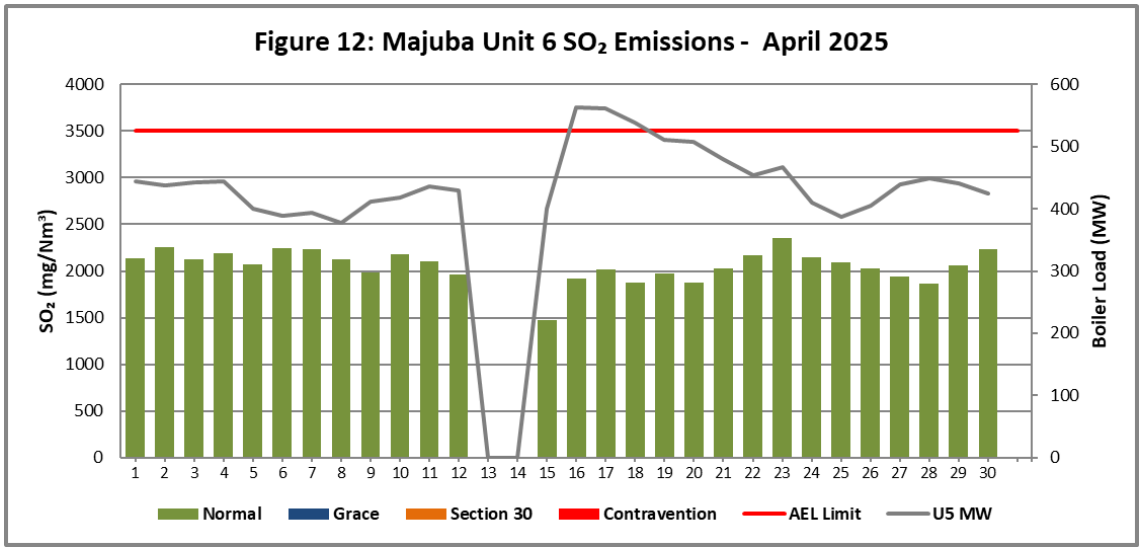


Figure 12. SO_2 emissions (daily averages) for the month of April 2025 against emission limit for Unit 6.

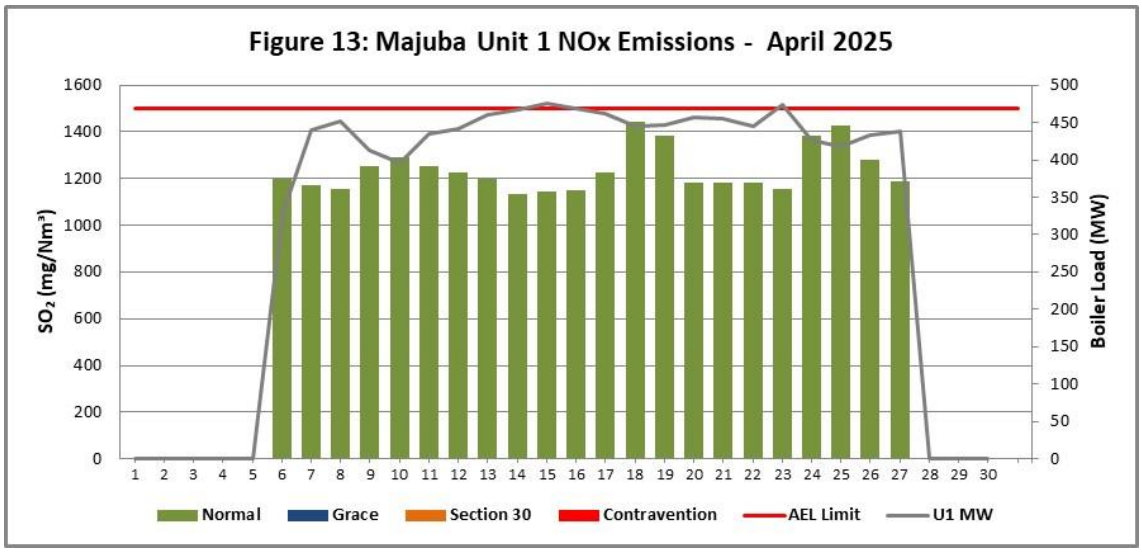


Figure 13. NOx emissions (daily averages) for the month of April 2025 against emission limit for Unit 1.

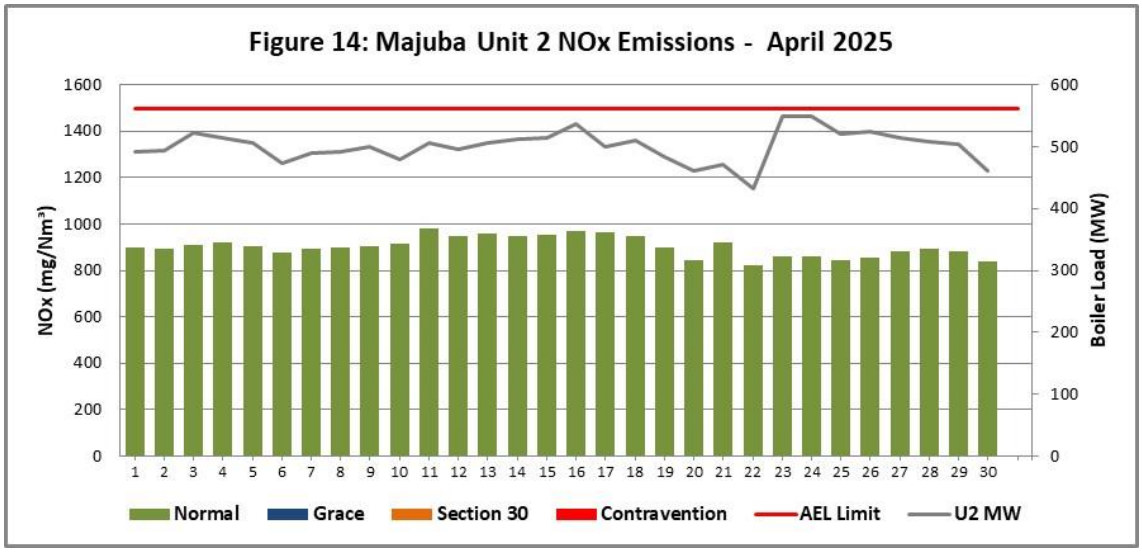


Figure 14. NOx emissions (daily averages) for the month of April 2025 against emission limit for Unit 2.

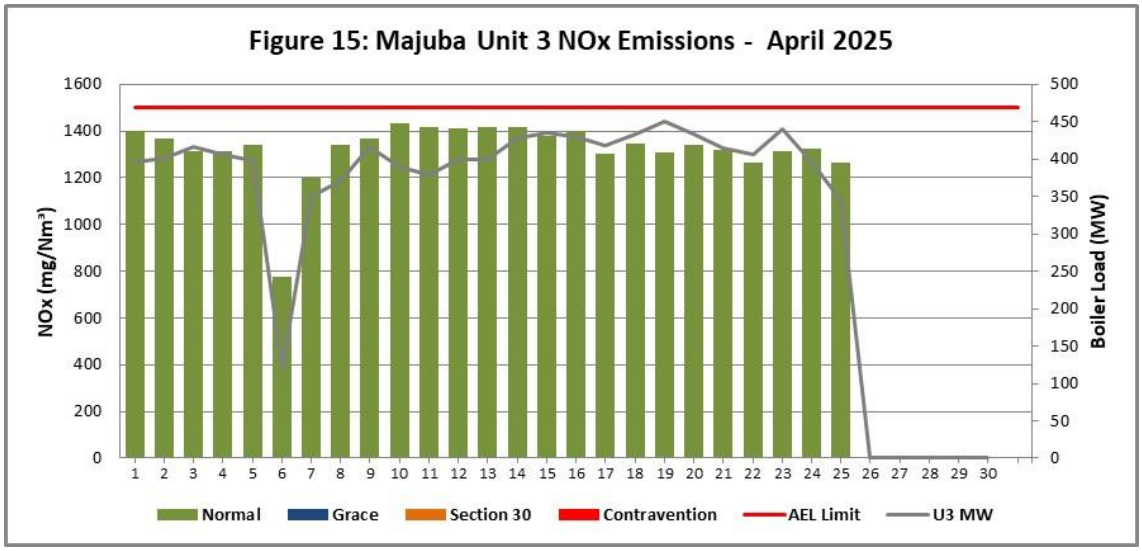


Figure 15. NOx emissions (daily averages) for the month of April 2025 against emission limit for Unit 3.

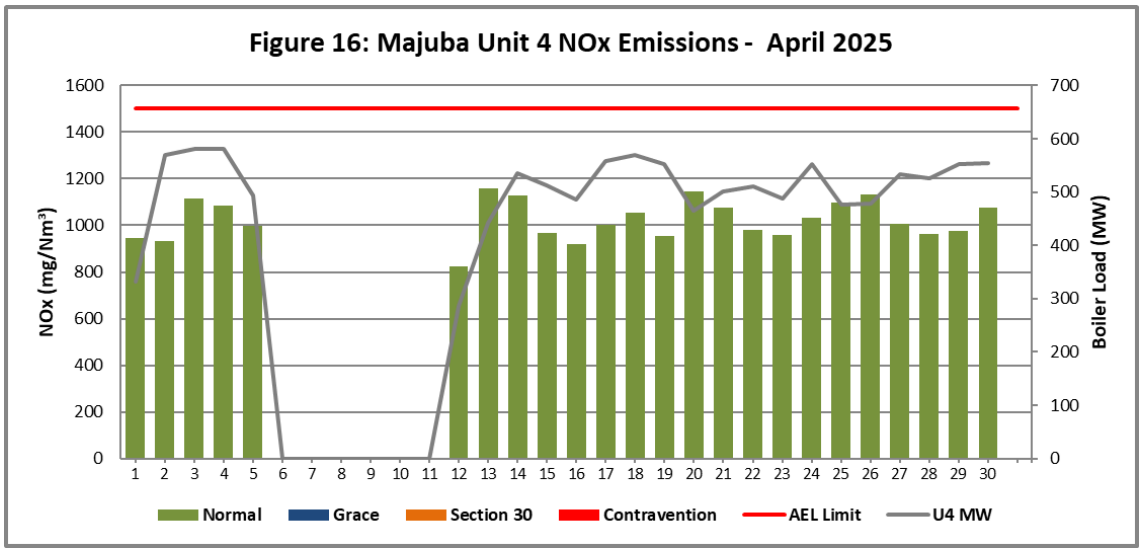


Figure 16. NOx emissions (daily averages) for the month of April 2025 against emission limit for Unit 4

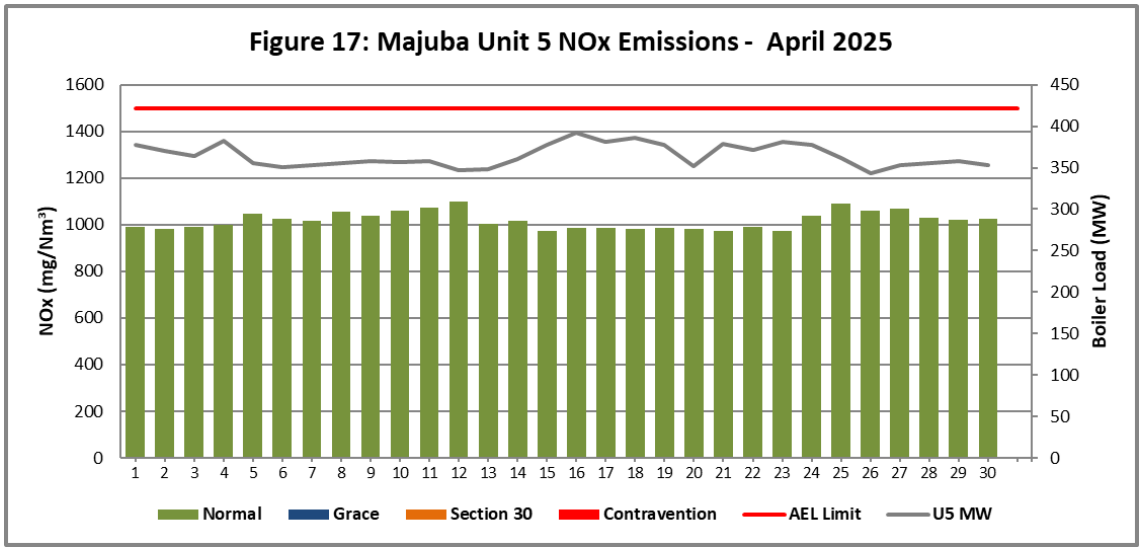


Figure 17. NOx emissions (daily averages) for the month of April 2025 against emission limit for Unit 5

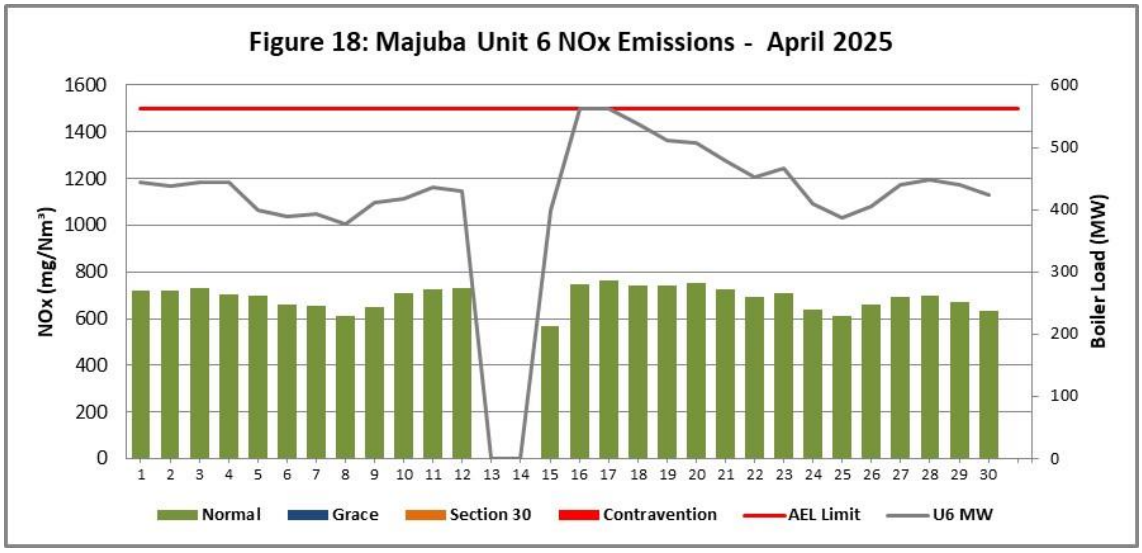


Figure 18. NOx emissions (daily averages) for the month April 2025 against emission limit for Unit 6

Table 4: Monthly tonnages for the month of April 2025

Unit	PM (tons)	SO_2 (tons)	NOx (tons)
Unit 1	27.8	3 673	2 012
Unit 2	69.4	5 418	2 224
Unit 3	22.3	1 411	879
Unit 4	18.7	2 727	1 492
Unit 5	30.8	3 038	1 693
Unit 6	17.4	4 049	1 367

Table 5: Average monthly concentrations (mg/Nm³) for the month of April 2025

Unit	PM (Mg/Nm³)	SO_2 (Mg/Nm³)	NOx (Mg/Nm³)
1	17.8	2 257.5	1 236.9
2	28.1	2 201.5	903.6
3	36.1	2 139.3	1 323.6
4	13.2	1 868.3	1 021.8
5	18.5	1 824.4	1 018.8
6	9.5	2 058.9	692.1

Table 6: Each unit and respective days operating in compliance to the AEL Emission Limits (SO_2, NOx, and PM)

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance
Unit 1	21	0	0	0	0
Unit 2	30	0	0	0	0
Unit 3	24	0	0	24	24
Unit 4	23	0	0	05	05
Unit 5	30	0	0	01	01
Unit 6	27	0	0	0	0

Table 7: MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO_2	NO	O_2
Unit 1	100.0	0.0	0.0	100.0
Unit 2	99.3	100.0	100.0	0.0
Unit 3	99.8	100.0	100.0	97.2
Unit 4	99.5	100.0	100.0	95.5
Unit 5	100.0	100.0	100.0	100.0
Unit 6	94.3	99.2	99.8	99.5

Table 8: CO_2 and O_2 deviations of the Month of April 2025

*Blank spaces indicate that the unit was offline during that period

2025/05/07	CO_2 (Actual Dry %)						Final O_2 CEMS Data (%)						SUM CO_2 + O_2 CEMS Data (%)					
Date	U1	U2	U3	U4	U5	U6	U1	U2	U3	U4	U5	U6	U1	U2	U3	U4	U5	U6
2025/04/01		8.7	8.5	7.9	11.7	10.8		10.3	12.4	13.3	9.7	12.0		19.0	20.9	21.2	21.4	22.8
2025/04/02		8.6	8.5	9.4	11.7	10.8		10.3	12.6	10.1	9.7	12.2		18.9	21.1	19.5	21.3	23.0
2025/04/03		8.9	8.5	9.5	11.6	10.7		10.3	12.4	11.9	10.0	12.2		19.2	20.9	21.4	21.6	22.9
2025/04/04		9.1	8.5	9.8	11.6	10.8		10.3	12.3	11.6	9.8	11.9		19.4	20.8	21.5	21.4	22.7
2025/04/05		9.0	8.6	9.1	11.7	10.8		10.3	12.6	12.0	10.8	13.0		19.3	21.2	21.1	22.4	23.8
2025/04/06	8.2	8.7	7.8		11.7	10.8	9.8	10.3	13.3		10.8	13.4	18.0	19.0	21.1		22.4	24.2
2025/04/07	8.3	8.8	8.4		11.7	10.8	9.7	10.3	13.2		10.6	13.2	18.0	19.1	21.7		22.2	24.0
2025/04/08	8.4	8.8	8.6		11.7	10.7	9.6	10.3	13.0		9.8	12.9	18.0	19.1	21.6		21.5	23.5
2025/04/09	7.9	8.7	8.6		11.7	10.8	10.4	10.3	12.5		9.5	12.6	18.3	19.0	21.1		21.2	23.4
2025/04/10	7.8	8.7	8.6		11.7	10.8	10.6	10.3	12.9		9.8	12.8	18.4	19.0	21.4		21.4	23.5
2025/04/11	7.8	9.1	8.5		11.6	10.8	10.3	10.3	13.0		9.8	12.4	18.1	19.4	21.5		21.5	23.1
2025/04/12	7.8	8.9	8.6	7.2	11.7	10.7	10.1	10.3	12.4	13.3	10.1	12.5	17.9	19.2	21.0	20.5	21.8	23.3
2025/04/13	7.9	9.3	8.5	8.2	11.5		9.8	10.3	12.3	13.2	10.6		17.7	19.6	20.8	21.4	22.1	
2025/04/14	7.8	9.5	8.6	9.2	11.7		9.2	10.3	11.8	12.0	9.8		17.0	19.8	20.4	21.2	21.5	
2025/04/15	7.9	9.6	8.5	9.4	11.6	13.4	9.3	10.3	11.6	11.3	9.3	10.6	17.2	19.9	20.0	20.7	20.9	24.0
2025/04/16	7.9	9.7	8.5	9.4	11.7	15.3	9.4	10.3	11.5	11.2	9.2	9.1	17.3	20.0	20.0	20.6	20.8	24.4
2025/04/17	7.9	9.2	8.2	9.6	11.5	14.8	10.0	10.3	11.9	11.0	9.2	9.5	17.9	19.5	20.2	20.6	20.7	24.3
2025/04/18	7.8	9.2	8.3	9.4	11.5	14.9	11.7	10.3	11.7	11.4	9.2	9.4	19.5	19.5	20.0	20.8	20.7	24.3
2025/04/19	7.9	9.0	8.3	9.5	11.6	14.4	11.3	10.3	11.5	10.7	9.5	9.8	19.2	19.3	19.9	20.2	21.0	24.2
2025/04/20	7.9	8.9	8.4	8.5	11.5	13.9	9.7	10.3	11.7	12.9	10.6	10.2	17.5	19.2	20.0	21.3	22.1	24.1
2025/04/21	8.0	9.0	8.4	8.8	11.6	12.7	9.6	10.3	11.9	11.8	9.5	11.1	17.6	19.3	20.3	20.6	21.1	23.8
2025/04/22	7.9	8.6	8.4	8.6	11.6	12.6	9.6	10.3	12.4	11.5	9.7	11.2	17.5	18.9	20.8	20.2	21.3	23.8
2025/04/23	7.9	9.8	8.4	8.6	11.5	13.1	9.4	10.3	11.7	11.5	9.5	10.8	17.3	20.1	20.1	20.1	21.0	23.9
2025/04/24	7.9	9.2	8.3	9.2	11.6	11.5	11.3	10.3	12.6	11.4	10.3	12.0	19.1	19.5	21.0	20.7	21.9	23.5
2025/04/25	7.9	9.1	8.4	8.3	11.6	10.4	11.6	10.3	13.5	13.2	11.0	12.9	19.5	19.4	21.8	21.5	22.6	23.3
2025/04/26	8.3	9.1		8.3	11.6	10.8	10.5	10.3		13.2	10.8	12.6	18.8	19.4		21.5	22.4	23.4
2025/04/27	8.2	9.2		9.0	11.6	11.7	9.7	10.3		11.5	10.5	11.9	17.9	19.5		20.4	22.0	23.6
2025/04/28		9.3		9.1	11.6	12.0		10.3		10.8	10.3	11.7		19.6		19.9	21.9	23.7
2025/04/29		9.5		9.3	11.6	11.7		10.3		10.8	10.1	11.9		19.8		20.1	21.7	23.6
2025/04/30		8.7		9.3	11.7	11.3		10.3		11.8	10.0	12.2		19.0		21.1	21.6	23.5

Calculation: CO_2% + O_2% = 19.5-21.5%

Emergency Generation

Table 9: Emergency Generation for the month of April 2025

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

Comments on the performance and availability of each unit

UNIT 1

The unit base loaded for most of the days during the month and off for a total of eight days. Thirty-two fabric filter bags were replaced during the month.

UNIT 2

The unit base loaded for all the days during the month. Fifty-two fabric filter bags were replaced during the month.

UNIT 3

The unit base loaded for most of the days during the month and off for a total of five days. Seventy-two and five fabric filter bags were replaced during the month.

UNIT 4

The unit base loaded for most of the days during the month and off for a total of six days. No fabric filter bags were replaced during the month.

UNIT 5

The unit base loaded for all the days during the month. Twenty-one fabric filter bags were replaced during the month.

UNIT 6

The unit base loaded for most of the days during the month and off for a total of two days.. Twenty-three fabric filter bags were replaced during the month.

Complaints Register

Table 10: Complaints for the month of April 2025

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
	No complaints were received during the month of April 2025.				

General

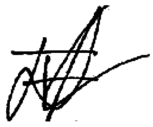
Unit 1 SO_2 & NOx monitors were faulty during the month of March and April; however the OEM came onsite, and the monitors were repaired. The NOx and SO_2 values presented for Unit 1 were calculated using February 2025 average values. Unit 2 O_2 monitor remains faulty, the Station is still in the process of sourcing spares.

Fuel oil consumption exceeded the AEL limit of 6000 tons/month. The Station experienced blockages on the primary heaters at Unit 6 resulting in low inlet and outlet temperatures. This necessitated supporting the mills with fuel oil, in line with the Fossil Fuel Firing Regulations. The blockage has since been cleared, and fuel oil support has ceased.

The Station exceeded the new exemption limit of 1100 mg/Nm^3 for NOx at Unit 3 (26 times), 4(5 times) and 5(once). The Station is currently conducting the investigation, and the report will be shared with the licensing authority once the investigation has been completed.

Yours sincerely

Report compiled by:



Faith Kagoda Date 12/05/2025
ENVIRONMENTAL MANAGER: (MAJUBA)

Report verified by:

Lindani Madonsela Date 12/05/2025
BOILER ENGINEERING MANAGER: (MAJUBA)

Report approved by:

2025/05/12

Johan Swanepoel Date
ENGINEERING MANAGER: (MAJUBA)