

CONTROLLED DISCLOSURE

Production Rates	Product/ By-Product Name	Unit	Maximum Production Permitted (Quantity)	Production Rate in Month of March2024
	Ash Emitted	Tons/month	not specified	202.9
Raw Materials and Products used	Raw Material Type	Unit	Maximum Permitted Consumption/ Rate (Quantity)	Consumption – March2024
	Coal	Tons/month	1 875 000	842 045
	Fuel Oil	Tons/month	20 000	1 219
	Energy	GWh	3 571.2	1 707.084

TABLE 1: QUANTITY OF RAW MATERIALS AND PRODUCTS CONSUMPTION IN MARCH 2024

1. Raw Materials and Products

This document serves as the monthly emissions report required in terms of Section 7.7.1 of Medupi Power Station Provisional Atmospheric Emission License (AEL), H16/1/13-AEL/M1/R1.

This report reflects Unit 1, 2, 3, 5 and 6 gaseous and particulate emissions performance against the AEL limit for the month of March2024 only.

MEDUPI POWER STATION MONTHLY EMISSIONS REPORT FOR THE MONTH OF MARCH2024

Dear Mr Koenaite

Ref: H16/1/13-AEL/M1/R1 – March 2024

skoenaite@waterberg.gov.za

Stanley Koenaite
Waterberg District Municipality
Private Bag X1018
Modimole
0510

Date: 2024/04/18
Enquiries: MF Dikgale
Tel: 014 762 6820
Email: DikgaleMF@eskom.co.za

Eskom				Medupi Power Station Monthly Emissions Report			
Template		Identifier	240-43921804	Rev	6	Effective Date	
Document		Identifier	240-88543153	Rev	2	Review Date	
				September2022		September2024	

				Medupi Power Station Monthly Emissions Report				Effective Date		Review Date	
Rev 6	240-43921804	Rev	2	Identifier	Document	Identifier	240-88543153	Rev	2	September 2022	
										September 2024	

Date	Daily Reportable Hours of Operation					Coal usage	Production rate (MW)				
	U1	U2	U3	U4	U5		U1	U2	U3	U4	U5
01-Mar	24.0	24.0	24.0	0.0	0.0	24.0	22890	757	Off	696	Off
02-Mar	24.0	24.0	24.0	0.0	0.0	24.0	24062	752	Off	753	Off
03-Mar	24.0	24.0	24.0	0.0	0.0	24.0	22113	681	Off	667	Off
04-Mar	24.0	24.0	24.0	0.0	0.0	24.0	22025	746	Off	746	Off
05-Mar	24.0	24.0	24.0	0.0	0.0	24.0	21255	756	Off	717	Off
06-Mar	24.0	24.0	24.0	0.0	0.0	24.0	23304	716	Off	728	Off
07-Mar	24.0	24.0	24.0	0.0	0.0	24.0	22483	780	Off	685	Off
08-Mar	1.3	21.7	0.0	0.0	0.0	24.0	24205	744	Off	743	Off
09-Mar	24.0	24.0	24.0	0.0	0.0	24.0	27266	782	456	731	Off
10-Mar	24.0	15.7	24.0	0.0	0.0	24.0	28996	773	609	711	Off
11-Mar	24.0	24.0	24.0	0.0	0.0	24.0	29022	758	673	607	Off
12-Mar	24.0	11.3	24.0	0.0	0.0	24.0	24549	758	640	562	Off
13-Mar	24.0	0.0	24.0	0.0	0.0	24.0	22866	767	Off	588	Off
14-Mar	24.0	0.0	24.0	0.0	0.0	24.0	23317	782	Off	622	Off
15-Mar	24.0	0.0	24.0	0.0	0.0	24.0	23384	761	258	621	Off
16-Mar	24.0	4.8	24.0	0.0	0.0	24.0	32378	750	713	742	Off
17-Mar	22.0	24.0	24.0	0.0	0.0	24.0	31554	712	647	755	Off
18-Mar	0.0	24.0	24.0	0.0	0.0	24.0	23919	Off	669	760	Off
19-Mar	0.0	24.0	24.0	0.0	0.0	24.0	28893	654	659	772	Off
20-Mar	18.3	24.0	24.0	0.0	0.0	24.0	31248	732	660	777	Off
21-Mar	24.0	16.5	24.0	0.0	0.0	24.0	27359	658	690	730	Off
22-Mar	24.0	2.3	24.0	0.0	0.0	24.0	32584	756	716	753	Off
23-Mar	24.0	24.0	24.0	0.0	0.0	24.0	32372	770	726	719	Off
24-Mar	24.0	24.0	24.0	0.0	0.0	24.0	33044	734	744	738	Off
25-Mar	24.0	24.0	24.0	0.0	0.0	24.0	26234	580	578	574	Off
26-Mar	24.0	24.0	24.0	0.0	0.0	24.0	30664	580	578	574	Off
27-Mar	24.0	24.0	24.0	0.0	0.0	24.0	31157	701	688	703	Off
28-Mar	24.0	24.0	24.0	0.0	0.0	24.0	31612	740	696	699	Off
29-Mar	24.0	24.0	24.0	0.0	0.0	24.0	30047	707	642	673	Off
30-Mar	24.0	24.0	24.0	0.0	0.0	24.0	25045	602	522	523	Off
31-Mar	24.0	24.0	24.0	0.0	0.0	24.0	26928	585	577	615	Off

NB: Operating hours less than 24 highlighted in pink.

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Medupi Power Station Monthly Emissions Report

Template Identifier	Document Identifier	Effective Date	Review Date
240-43921804	240-88543153	September 2022	September 2024
Rev 6	Rev 2		

2. Abatement Technology

TABLE 2: ABATEMENT EQUIPMENT CONTROL TECHNOLOGY EFFICIENCY FOR MONTH OF MARCH 2024

Associated Unit/Stack	Technology Type	Efficiency	FFP Utilization
Unit 1	Fabric Filter Plant (FFP)	99.886%	100%
Unit 2	Fabric Filter Plant (FFP)	99.886%	100%
Unit 3	Fabric Filter Plant (FFP)	99.871%	100%
Unit 4	Fabric Filter Plant (FFP)	Off	Off
Unit 5	Fabric Filter Plant (FFP)	Off	Off
Unit 6	Fabric Filter Plant (FFP)	99.89%	100%

Note: FFP does not have bypass mode operation, hence plant 100% Utilised.

3. Energy Source Characteristics

TABLE 3: ENERGY SOURCE MATERIAL CHARACTERISTICS FOR THE MONTH OF MARCH 2024

Characteristic	Stipulated Range (% by weight on a dry basis)	Monthly Average Content (% by weight on a dry basis)
		Coal
Sulphur Content	1.3 - 2.2	1.38
Ash Content	35 - 39	35.63

TABLE 4: ENERGY SOURCE MATERIAL CHARACTERISTICS FOR THE MONTH OF MARCH 2024

Characteristic	Stipulated Range (%)	Monthly Average Content (%)
		Oil
Sulphur Content	0.5 - 3.5	2.2
Ash Content	0.02 - 0.1	0.010

4. Emissions Reporting

Medupi Power Station uses Continuous Emission Monitoring System which uses the extractive method for analysis.

The emission limits are as follows:

SO₂ Monthly = 3500 mg/Nm³
Dust Daily = 50 mg/Nm³
NO₂ Daily = 750 mg/Nm³

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4.1 PM Daily Averages

Figure 1: Medupi Unit 1 PM Emissions - March 2024

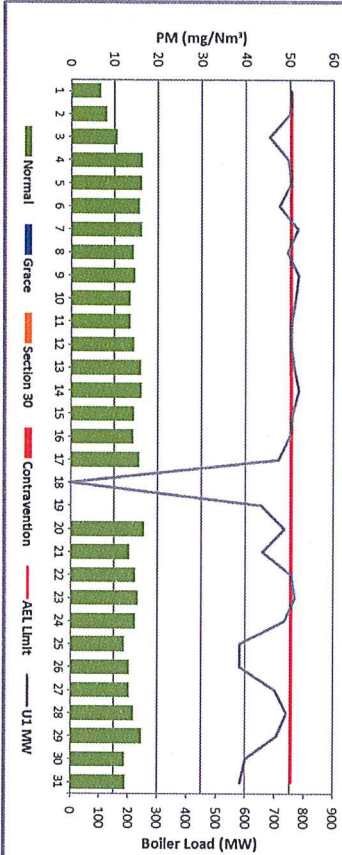


Figure 3: Medupi Unit 3 PM Emissions - March 2024

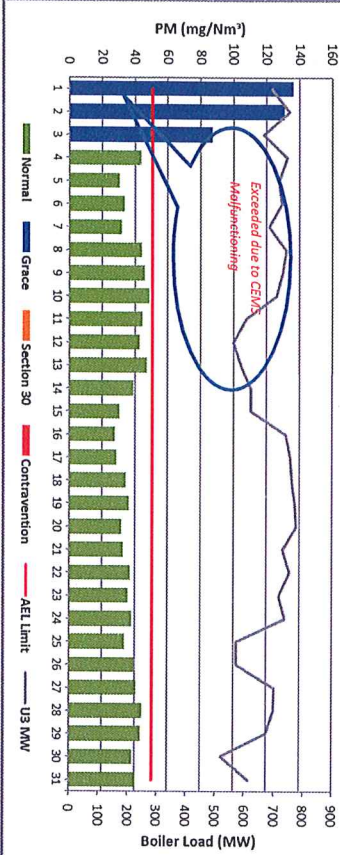


Figure 2: Medupi Unit 2 PM Emissions - March 2024

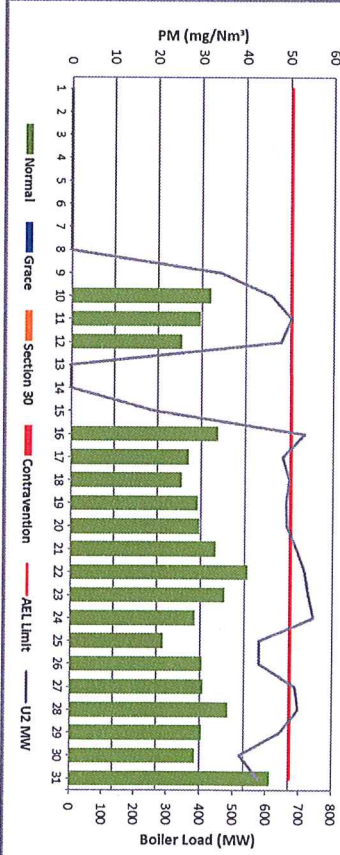
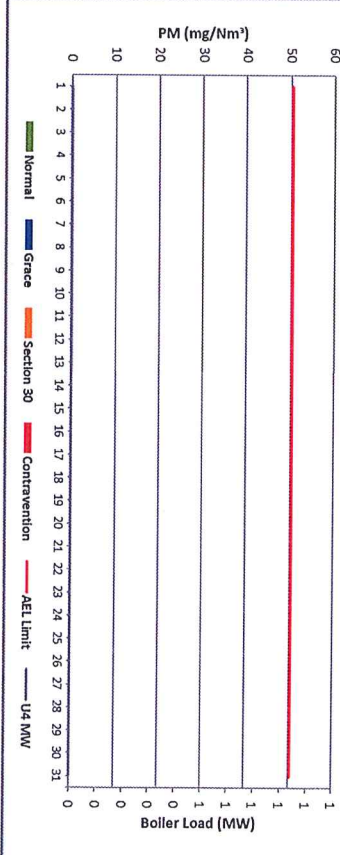


Figure 4: Medupi Unit 4 PM Emissions - March 2024



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Figure 5: Medupi Unit 5 PM Emissions - March 2024

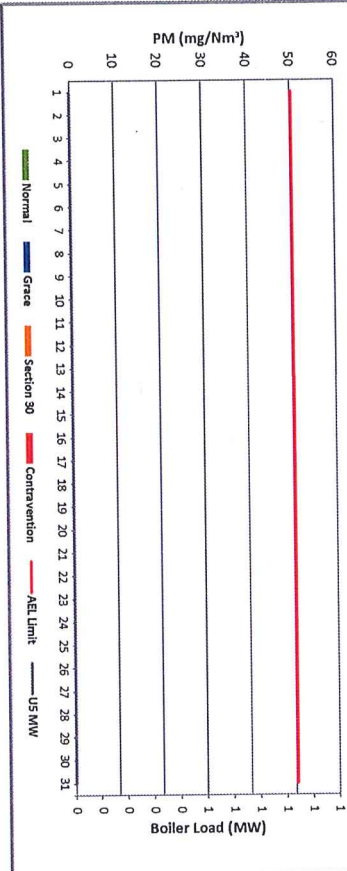
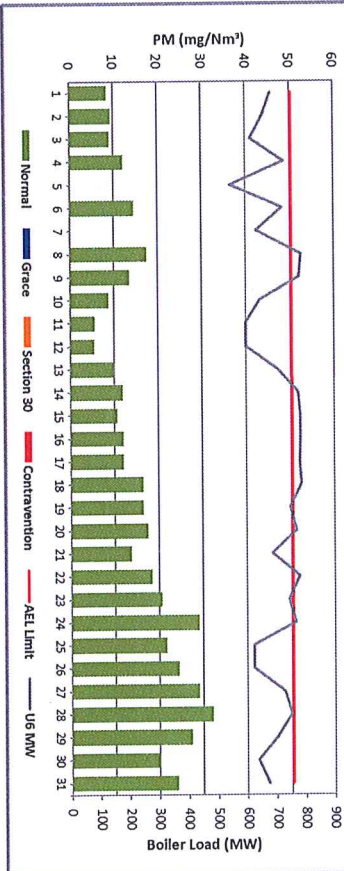


Figure 6: Medupi Unit 6 PM Emissions - March 2024



4.2SOx Daily Averages

Figure 7: Medupi Unit 1 SO₂ Emissions - March 2024

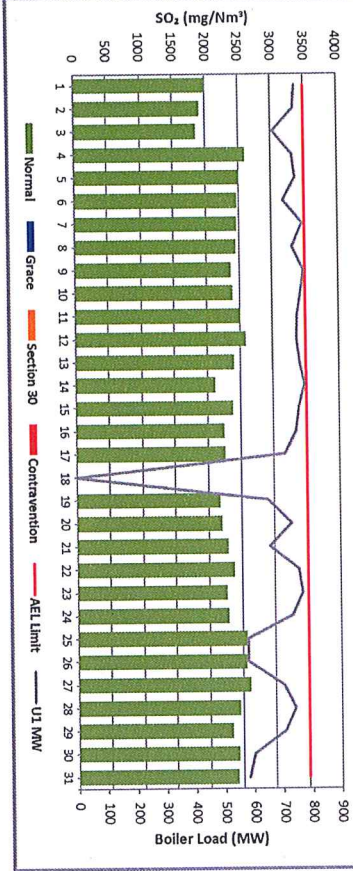
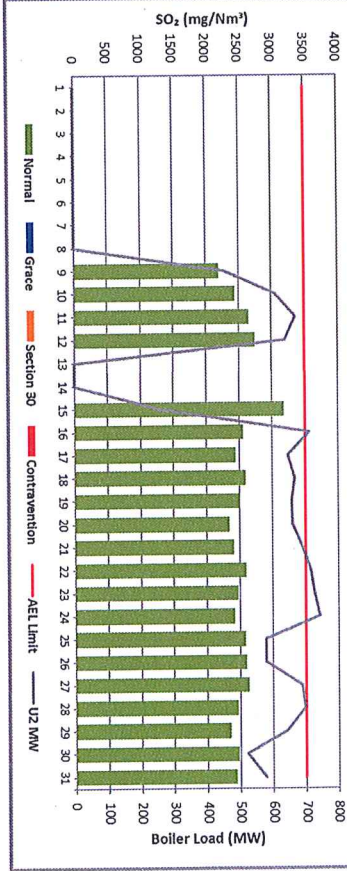


Figure 8: Medupi Unit 2 SO₂ Emissions - March 2024



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Figure 9: Medupi Unit 3 SO₂ Emissions - March 2024

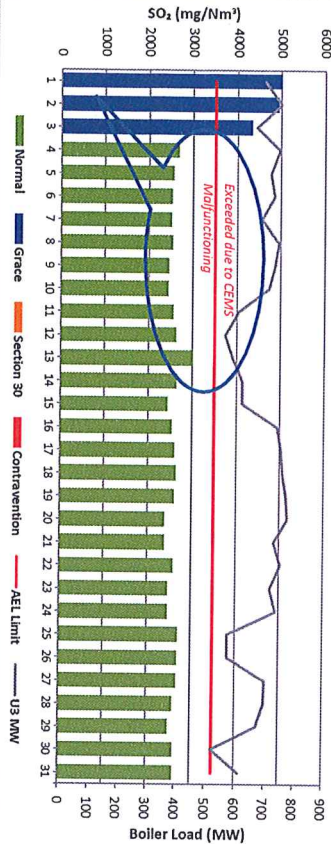


Figure 11: Medupi Unit 5 SO₂ Emissions - March 2024

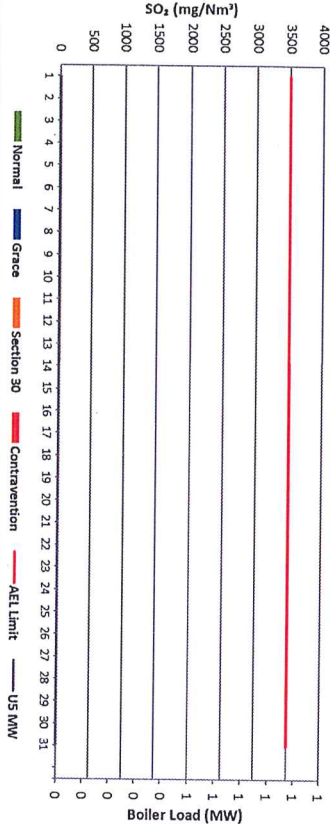


Figure 10: Medupi Unit 4 SO₂ Emissions - March 2024

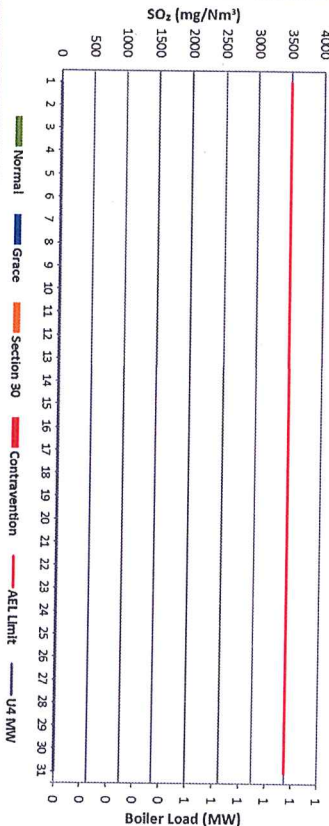
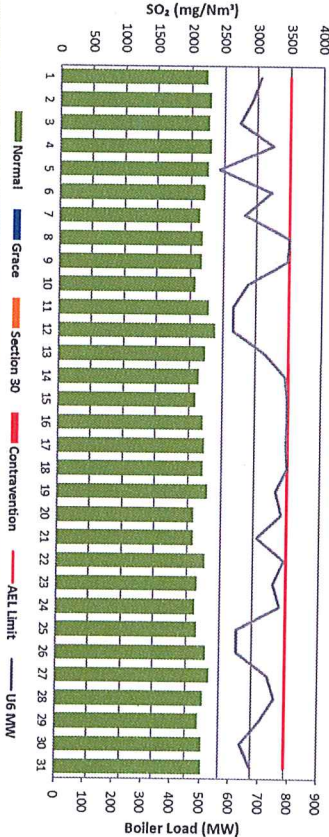


Figure 12: Medupi Unit 6 SO₂ Emissions - March 2024



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4.3 NOx Daily Averages

Figure 13: Medupi Unit 1 NOx Emissions - March 2024

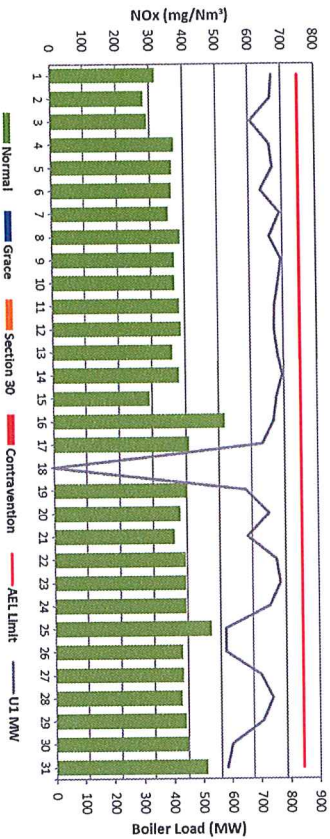


Figure 14: Medupi Unit 2 NOx Emissions - March 2024

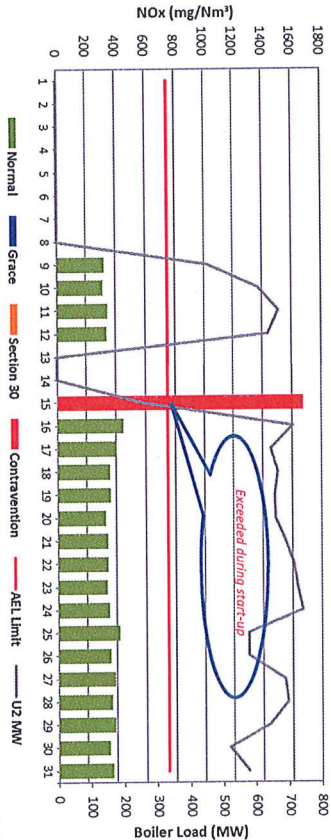


Figure 15: Medupi Unit 3 NOx Emissions - March 2024

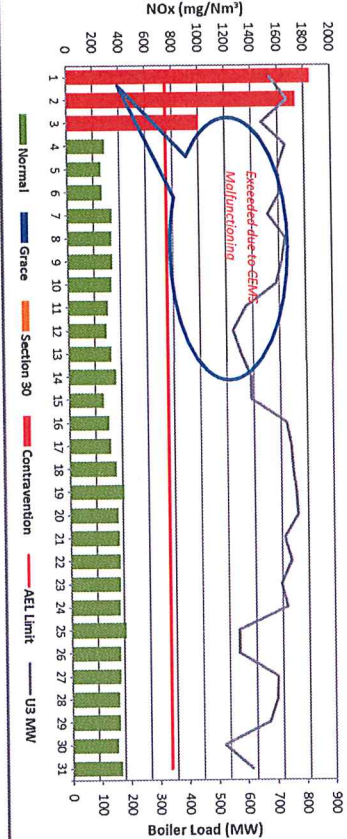
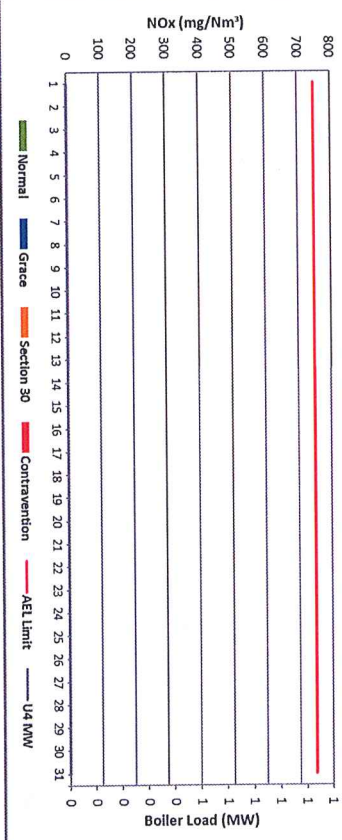


Figure 16: Medupi Unit 4 NOx Emissions - March 2024



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Figure 17: Medupi Unit 5 NOx Emissions - March 2024

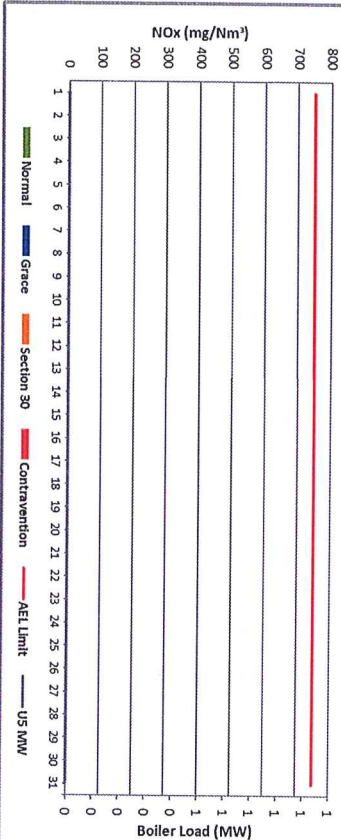
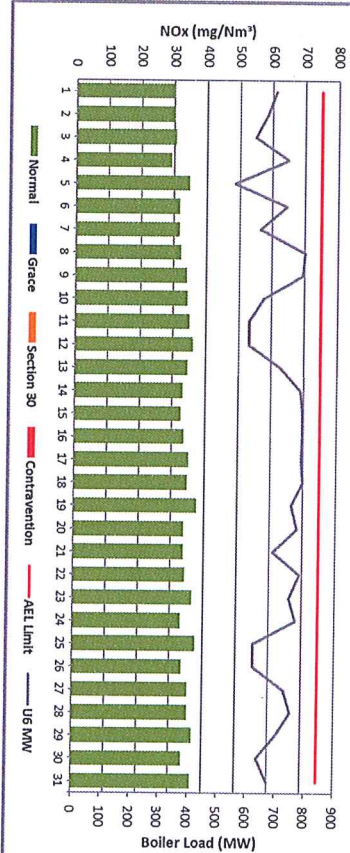


Figure 18: Medupi Unit 6 NOx Emissions - March 2024



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Date	01 – 03 March 2024	
	CEMS status	Comments
	HVAC system was off, which affected the ambient temperature.	HVAC system was repaired on 04 March 2024 and the CEMS readings normalised.

TABLE 7: PERIODS DURING WHICH CEMS WAS INOPERATIVE/MALFUNCTIONING

- Unit 1, 2, 3, 5 and 6 Continuous Emission Monitoring Systems were always in operation when the unit was on load. However, there were days where the monitors were faulty and reading incorrect values, as indicated on table 8 below.
5. Continuous Emission Monitoring Systems (CEMS)

Associated Unit/Stack	Average PM (mg/Nm³)	Average SOx (mg/Nm³)	Average NOx (mg/Nm³)
Unit 1	14.3	2 355.1	380.3
Unit 2	31.4	2 529.5	425.8
Unit 3	45.9	2 800.1	455.2
Unit 4	Off	Off	Off
Unit 5	Off	Off	Off
Unit 6	16.4	2 219.5	339.0

TABLE 6: MONTHLY AVERAGES FOR THE MONTH OF MARCH 2024

Associated Unit/Stack	PM	SO ₂	NO ₂
Unit 1	28.3	5 011.9	805.7
Unit 2	42.9	3 778.2	561.8
Unit 3	89.1	5 757.6	901.8
Unit 4	Off	Off	Off
Unit 5	Off	Off	Off
Unit 6	42.5	6 154.1	944.1
SUM (Tons)	202.9	20 701.8	3 213.5

TABLE 5: MONTHLY TONNAGES FOR THE MONTH OF MARCH 2024

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7. Ambient Air Quality Monitoring Report

The Ambient Air Quality Monitoring and Dust fall-out report for March 2024 was e-mailed to the Licensing Authority.

6.CEMS Calibration certificates and equipment used for calibration.

A service provider was appointed to calibrate CEMS equipment at Medupi Power Station, calibration certificates to be made available upon request. Verification of the CEMS after calibration is conducted internally by Eskom.

Notes: SO₂, O₂ and NO was Changed to a Unity Factor (1) for accurate reporting, there was a step change in the performance of the Unit 3 gas Monitor.

Associated Unit/Stack	PM	SO ₂	NO ₂	O ₂
Unit 1	100.0	92.4	92.8	92.3
Unit 2	100.0	99.6	99.8	98.5
Unit 3	96.2	93.4	97.4	94.4
Unit 4	Off	Off	Off	Off
Unit 5	Off	Off	Off	Off
Unit 6	100.0	99.5	99.1	99.3

TABLE 8: CEMS MONITOR RELIABILITY PERCENTAGE (%)

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8. Visual inspection of the exterior walls of the fuel oil tanks and TVOC Estimation

TABLE 9: TOTAL VOLATILE ORGANIC COMPOUND (TVOC) FOR MARCH 2024

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N/A	N/A	N/A	N/A	N/A	N/A
Name/ Source Code	Air pollution complaints received	Calculation of Impacts/ emissions associated with the incident	Date of complaint and date of response by the license holder	Results of investigation	Action taken to resolve the complaint

TABLE 10: COMPLAINTS FOR THE MONTH OF MARCH 2024

10. Complaints Register

9. Air quality improvements initiatives and public education and awareness campaigns

No awareness campaign conducted for March 2024

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Compiled By:

Ramokone Makgoka
Environmental Officer

Reviewed by:

Thabo Khoza
Snr Advisor Environmental Management

Verified by:

Malose Langa
System Engineer Boiler

Verified by:

Shu Mpangase
System Engineer C&I

Supported by:

Mokgadi Dikgale
Environmental Manager

Supported by:

Jabulani Mkhatsywa
Engineering Group Manager

I Zweli Witbooi, declares that the information provided in this report is accurate and correct.

Yours sincerely

Zweli Witbooi

GENERAL MANAGER: MEDUPI POWER STATION

Date: 2024/04/23

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