



Dan Hlanyane
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Date:
11 December 2024
Enquiries:
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Dear Mr. Hlanyane

TUTUKA POWER STATION'S MONTHLY STACK EMISSIONS REPORT FOR THE MONTH OF NOVEMBER 2024.

This serves as the monthly report required in terms of Section 7.4 in Tutuka Power Station's Atmospheric Emission License (16/4/Lekwa/Eskom H SOC Ltd TPS/0013/2019/F03 dated 25 April 2019). The emissions are for the month of November 2024. Verified emissions of particulates matter, SOx, and NOx are also included. The station had five (5) units on load for the month of November 2024. The station did not incur Section 30. There is a non-compliance on unit 1, that is caused by the shifting of rapper bars on field 12 and 34. In order to address the rapper bars defects, it will be required that the roof of the ESP's be opened/removed. Unit 6 was off-load and not included as part of the graphs for November 2024.

1. RAW MATERIALS

Raw Materials and Products	Raw Material type	Units	Max. Permitted	Actual Consumption
	Coal	Tons	1 200 000	319 824
	Fuel Oil	Tons	10 000	2317.16
Production Rates	Product/By-Product Name	Units	Mx. Production Capacity Permitted	Indicative production rate
	Energy	GWh	2 5727.200	571.8
	Ash	Tons	350 000	82 291
	Re Ash	Kg/MWh	Not specified	1.37

Note: Maximum energy rate is as per the maximum capacity stated in the AEL: [30748MW]/12x 24hrsx 31days in month/1000 to convert to GWh.

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2. ENERGY SOURCES CHARACTERISTICS

Coal Characteristics	Units	Stipulated Range	Monthly Average Content
CV Content	MJ/kg	16-24	21.330
Sulphur Content	%	0.6 TO >2.6	0.680
Ash Content	%	21 TO >33	25.730

3. EMISSIONS LIMITS (mg/Nm³)

Associated Unit/Stack	PM	SO ₂	NOx
Unit 1	300	3400	1200
Unit 2	300	3400	1200
Unit 3	300	3400	1200
Unit 4	300	3400	1200
Unit 5	300	3400	1200
Unit 6	300	3400	1200

4. ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency November-2024
Unit 1	<i>Electro Static Precipitators (ESP)</i>	98.1%
Unit 2	<i>Electro Static Precipitators (ESP)</i>	99.4%
Unit 3	<i>Electro Static Precipitators (ESP)</i>	99.4%
Unit 4	<i>Electro Static Precipitators (ESP)</i>	98.8%
Unit 5	<i>Electro Static Precipitators (ESP)</i>	99.1%
Unit 6	<i>Electro Static Precipitators (ESP)</i>	Unit Off

Note: The ESP does not have bypass mode operating, hence plant considered 100% Utilised.

5. MONITOR RELIABILITY

Associated Unit/Stack	PM	SO ₂	NO
Unit 1	100.0	100.0	100.0
Unit 2	91.7	100.0	98.3
Unit 3	100.0	100.0	100.0
Unit 4	89.9	99.2	99.2
Unit 5	96.3	99.2	99.2
Unit 6	Off	Off	Off

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6. EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of November-2024

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO _x (tons)
Unit 1	82.1	257	141
Unit 2	31.4	237	128
Unit 3	11.5	89	53
Unit 4	407.4	3 061	1 734
Unit 5	252.1	3 146	1 763
Unit 6	Off	Off	Off
SUM	784.4	6 791	3 820

Table 6.2: Operating days in compliance to PM AEL Limit - November 2024

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm³)
Unit 1	0	2	0	1	3	609.4
Unit 2	5	0	0	0	0	262.0
Unit 3	2	0	0	0	0	244.6
Unit 4	23	2	0	0	2	257.7
Unit 5	22	1	0	0	1	151.1
Unit 6	Off	Off	Off	Off	Off	Off
SUM	52	5	0	1	6	

Table 6.3: Operating days in compliance to SO₂ AEL Limit - November 2024

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO ₂ (mg/Nm³)
Unit 1	4	0	0	0	0	1 944.7
Unit 2	5	0	0	0	0	2 014.1
Unit 3	2	0	0	0	0	1 910.0
Unit 4	26	0	0	0	0	1 930.8
Unit 5	25	0	0	0	0	1 865.6
Unit 6	Off	Off	Off	Off	Off	Off
SUM	62	0	0	0	0	

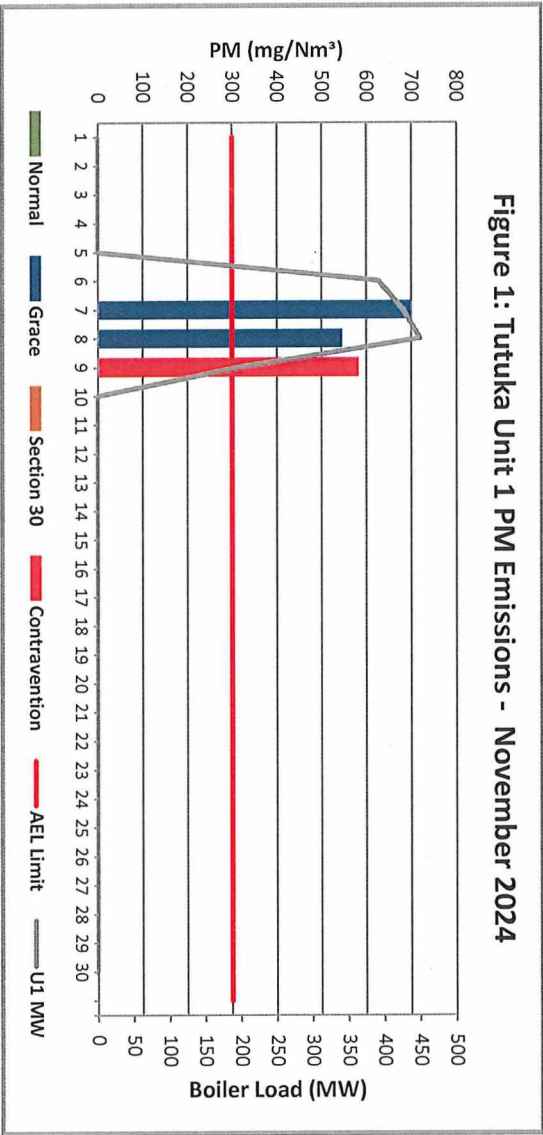
Table 6.4: Operating days in compliance to NOx AEL Limit - November 2024

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm³)
Unit 1	4	0	0	0	0	1 030.6
Unit 2	5	0	0	0	0	1 069.0
Unit 3	2	0	0	0	0	1 126.5
Unit 4	26	0	0	0	0	1 081.2
Unit 5	25	0	0	0	0	1 043.3
Unit 6	Off	Off	Off	Off	Off	Off
SUM	62	0	0	0	0	

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

Table 6.5: Legend

Condition	Colour	Description
Normal		Emissions below Emission Limit Value (ELV)
Grace		Emissions above the ELV during grace period
Section 30		Emissions above ELV during a NEMA S30 incident
Contravention		Emissions above ELV but outside grace or S30 incident conditions



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Figure 2: Tutuka Unit 2 PM Emissions - November 2024

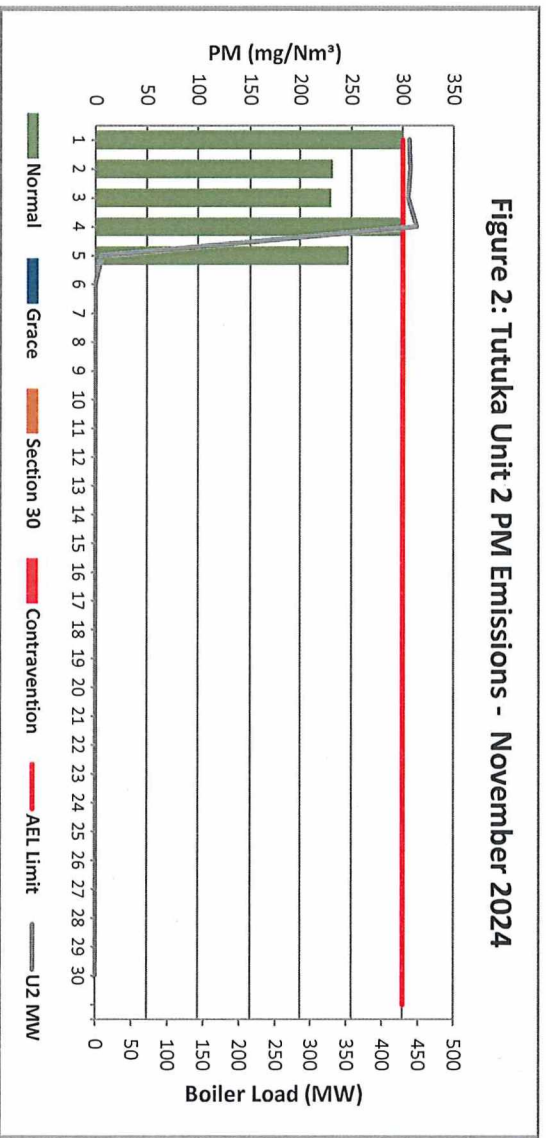
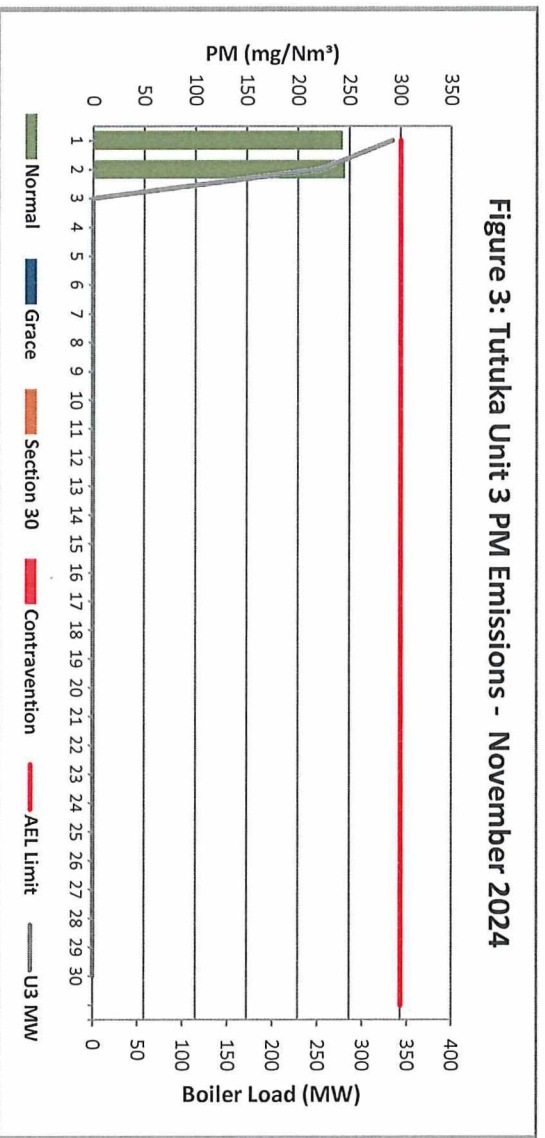


Figure 3: Tutuka Unit 3 PM Emissions - November 2024



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Figure 4: Tutuka Unit 4 PM Emissions - November 2024

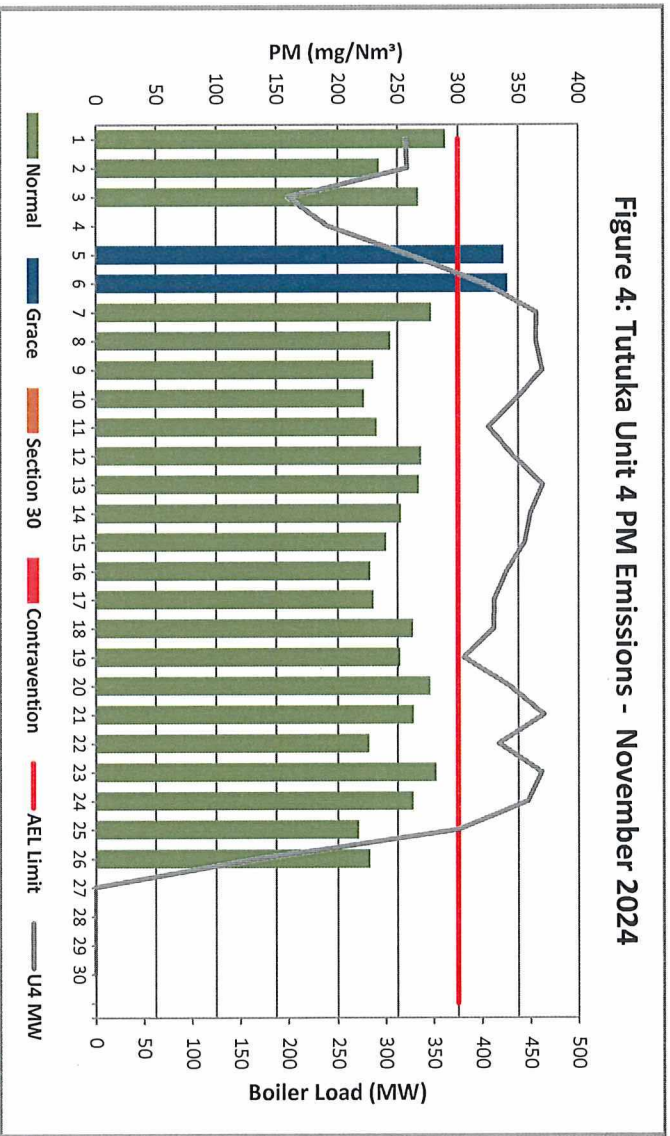
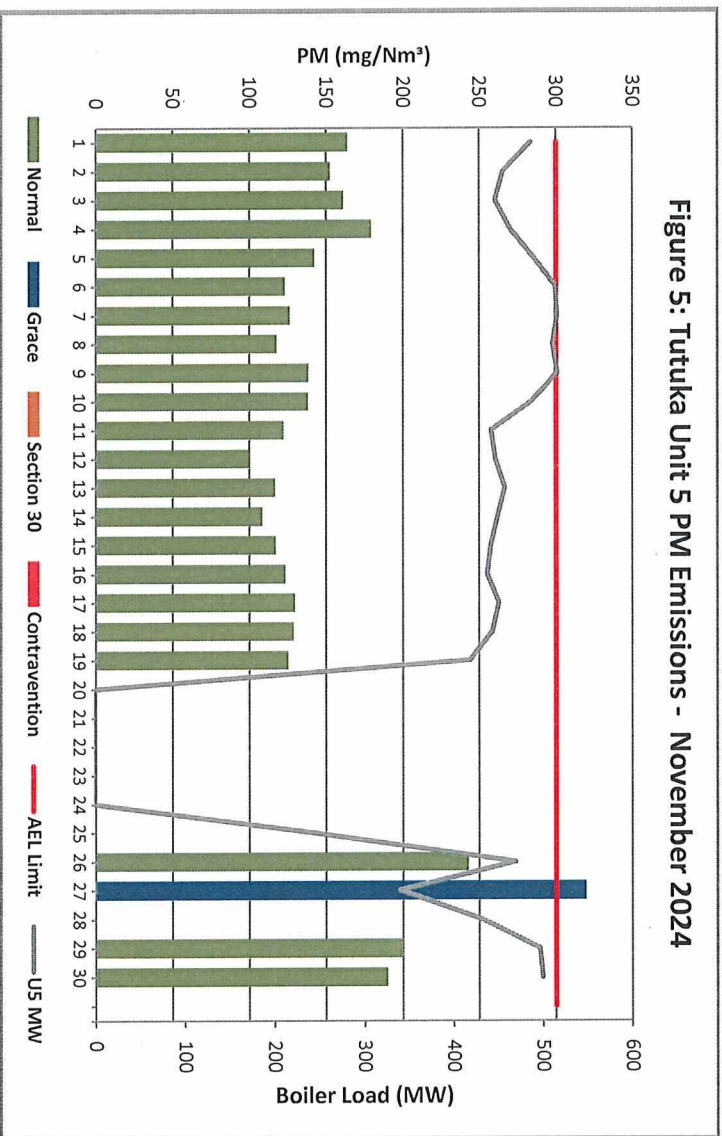


Figure 5: Tutuka Unit 5 PM Emissions - November 2024



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Figure 7: Tutuka Unit 1 SO₂ Emissions - November 2024

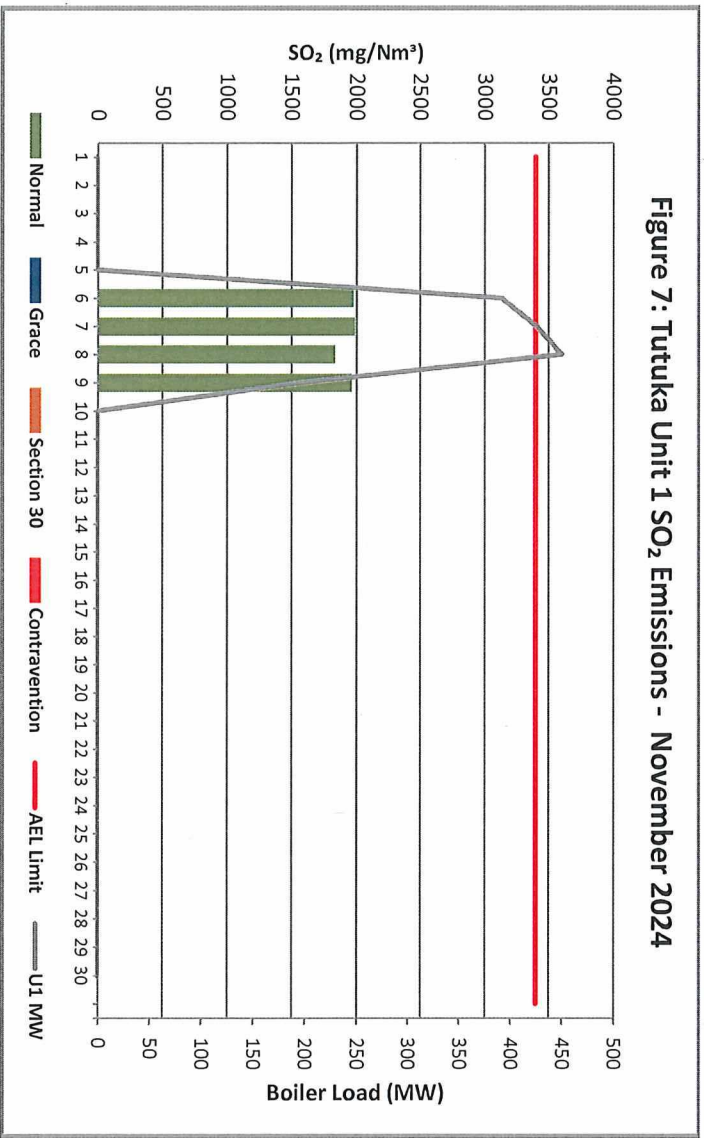


Figure 8: Tutuka Unit 2 SO₂ Emissions - November 2024

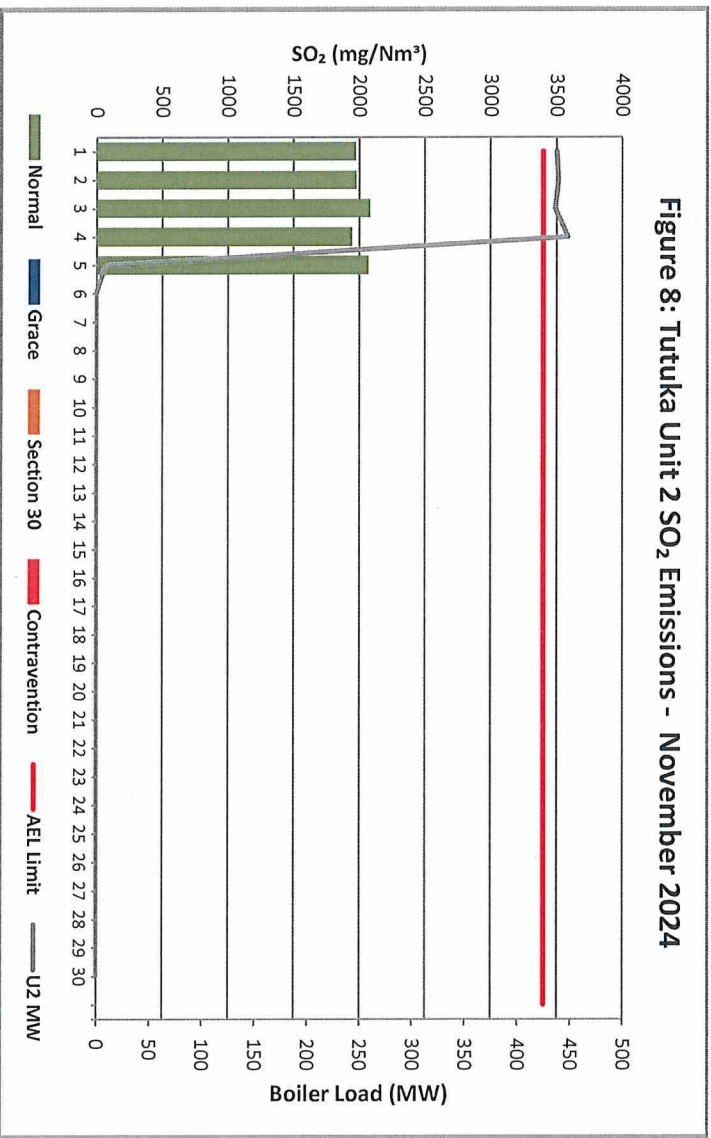


Figure 9: Tutuka Unit 3 SO₂ Emissions - November 2024

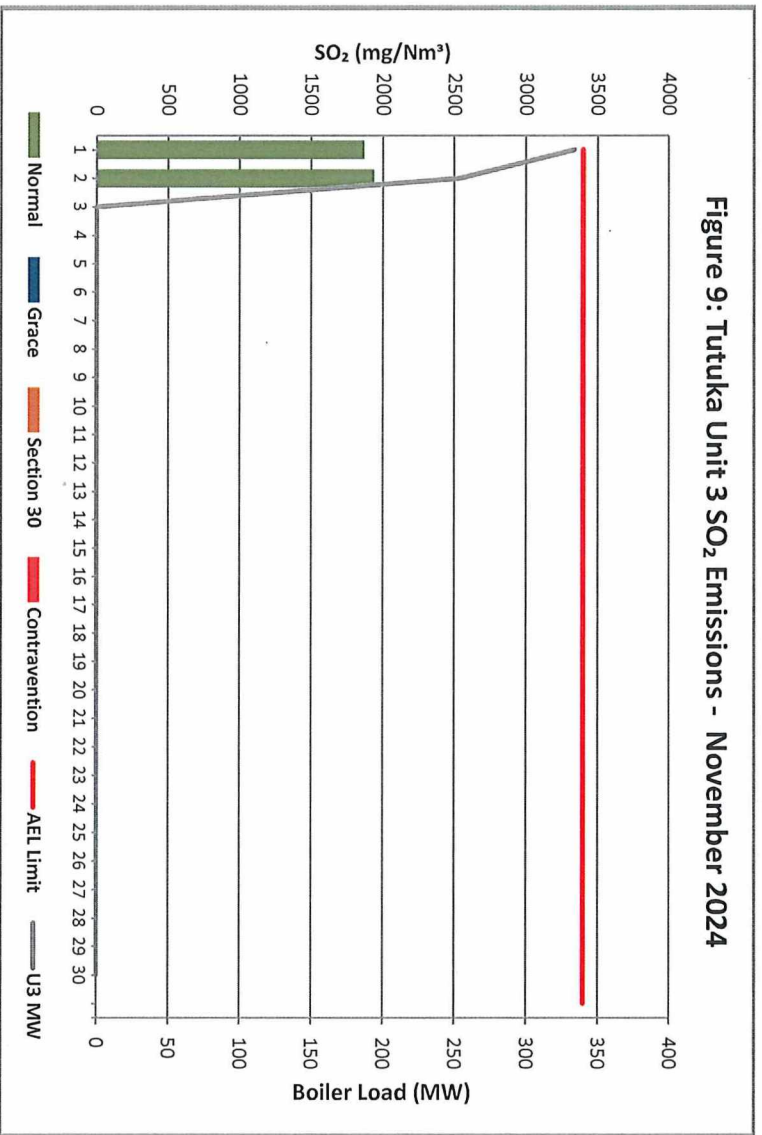
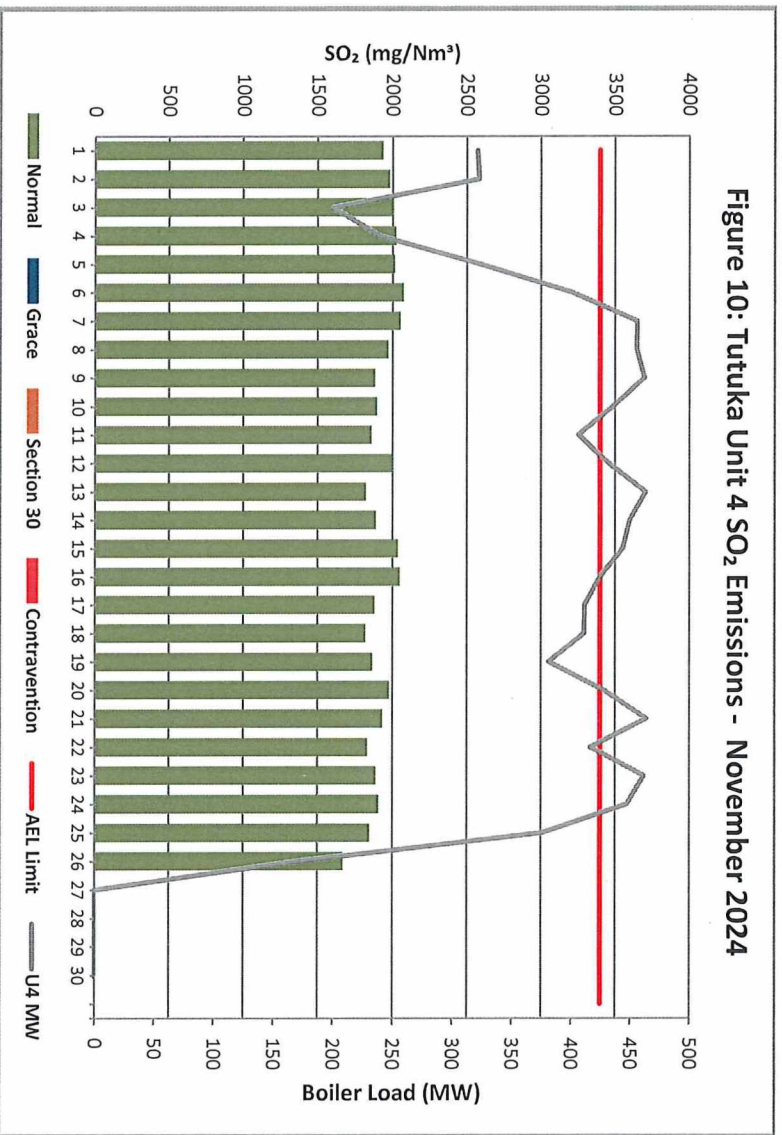


Figure 10: Tutuka Unit 4 SO₂ Emissions - November 2024



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Figure 11: Tutuka Unit 5 SO₂ Emissions - November 2024

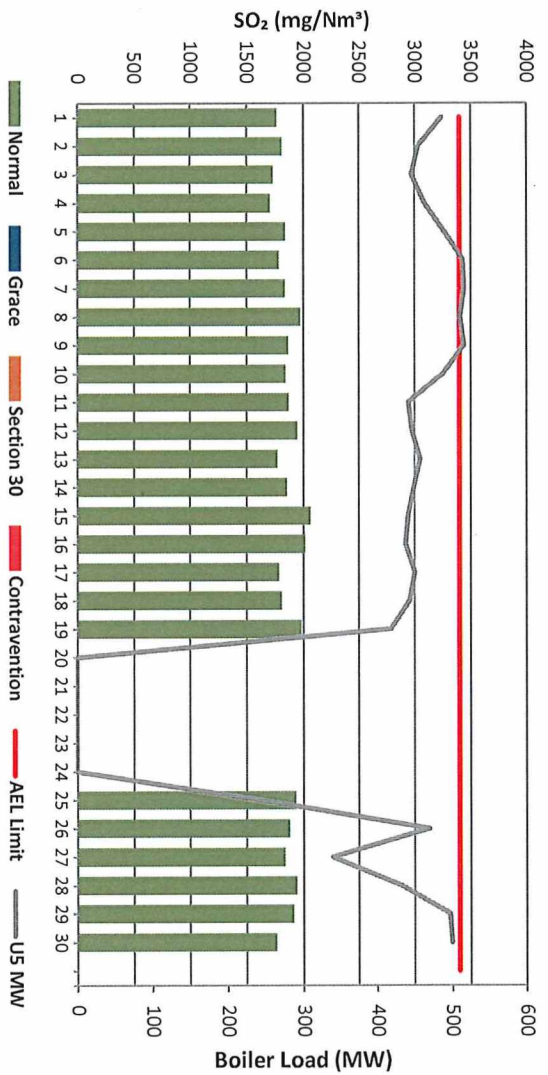
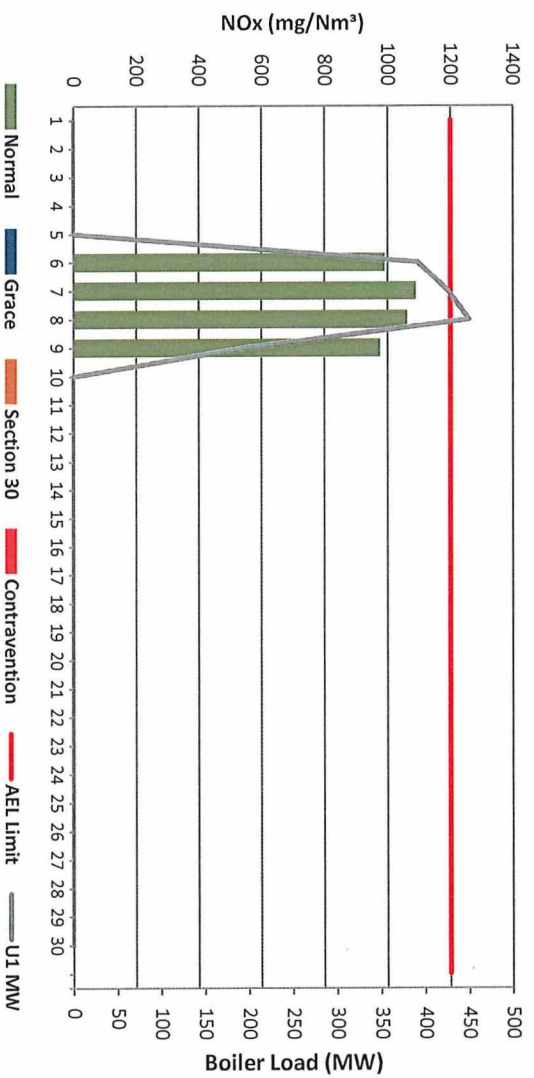


Figure 13: Tutuka Unit 1 NO_x Emissions - November 2024



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Figure 14: Tutuka Unit 2 NOx Emissions - November 2024

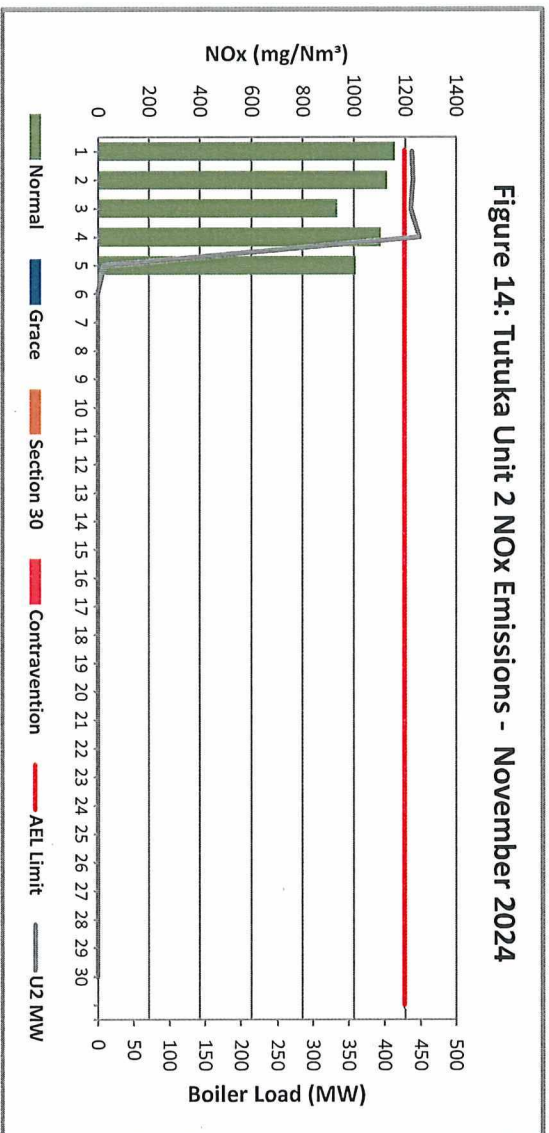
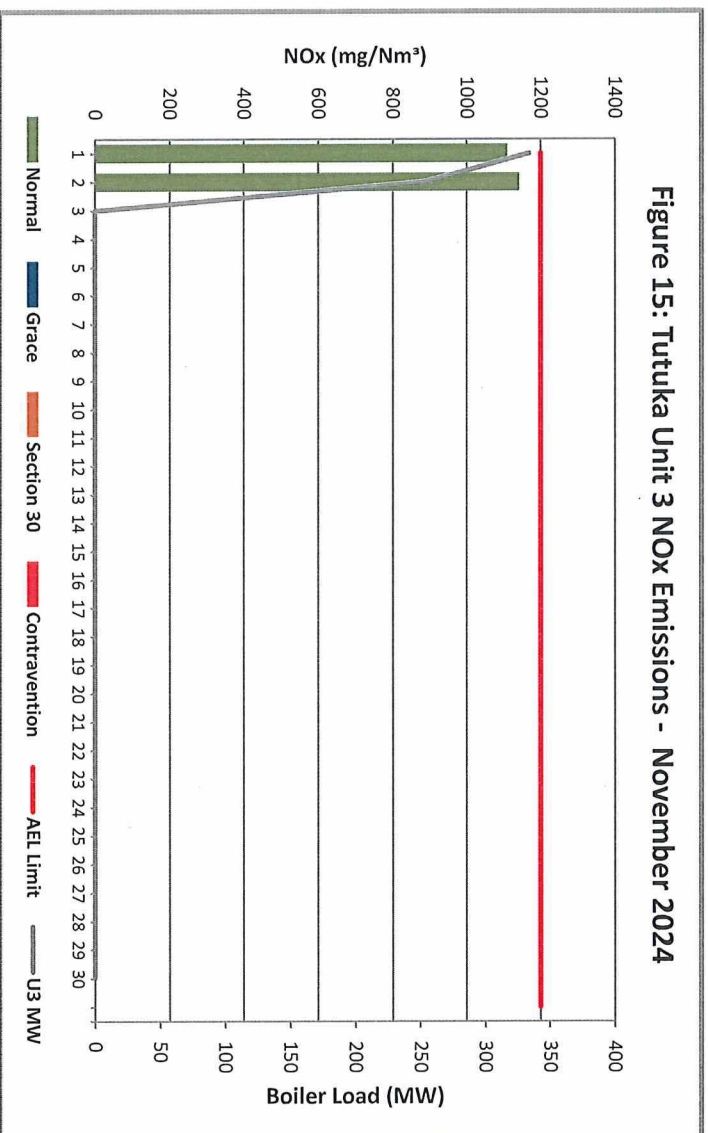


Figure 15: Tutuka Unit 3 NOx Emissions - November 2024



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Figure 16: Tutuka Unit 4 NOx Emissions - November 2024

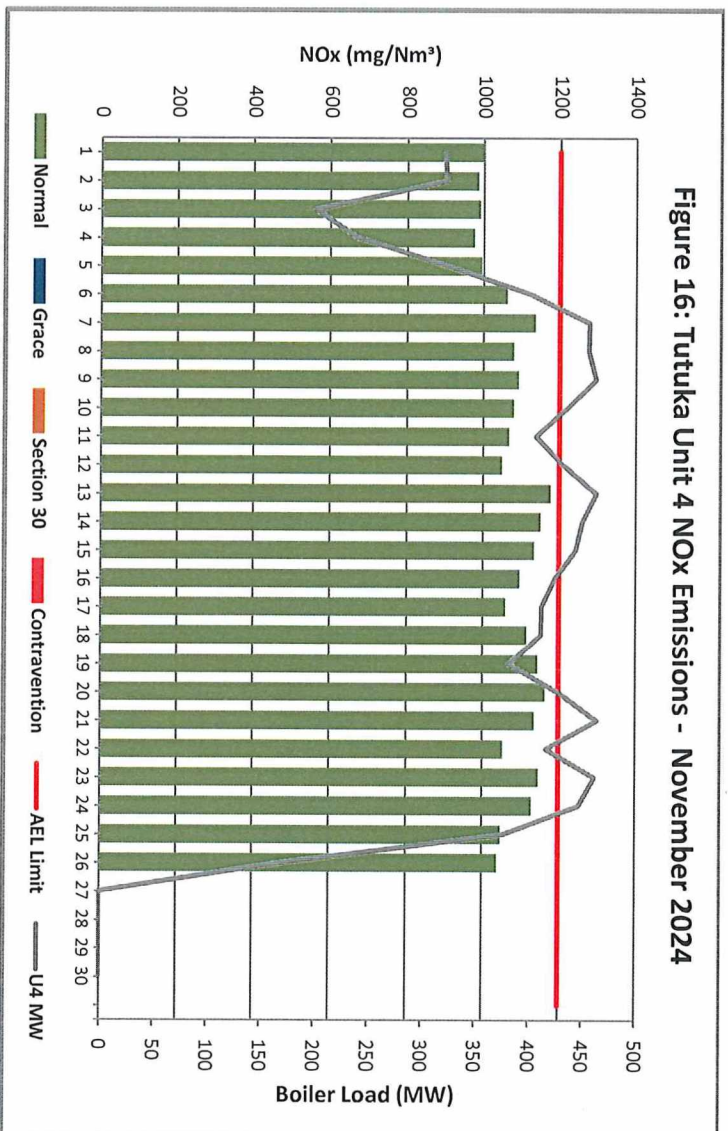
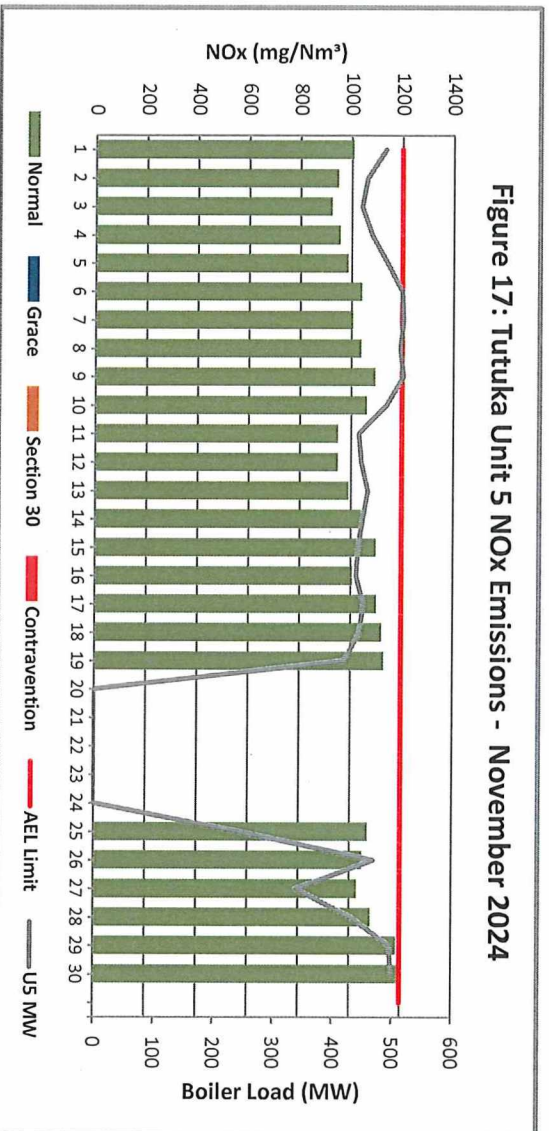


Figure 17: Tutuka Unit 5 NOx Emissions - November 2024



7.LIGHT-UP INFORMATION

PM Start-up information for the month of fabricate November 2024

Number & Type of Starts	Unit	1	2	3	4	5	6
Number Of Hot Starts (Off-Load < 30 Hrs)	-	0.00	0.00	0.00	1.00	2.00	0.00
Number Of Cold Starts (Off-Load > 30 hrs)	-	1.00	0.00	0.00	0.00	1.00	0.00

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8.GENERAL DISCUSSION

The station had PM exceedances on Unit 4 and Unit 5. The exceedances were within the grace period and were recorded when the unit had upset condition.

9.COMPLAINTS REGISTER

Source Code/Name	Root Cause Analysis	Calculation of impacts/emissions associated with the incident	Dispersion modelling of pollutants where applicable	Measures implemented to prevent recurrence	Date by which measure will be implemented
No Complaints received for the month of November 2024					

Tutuka Power station reiterate its commitment to comply with the atmospheric emission license, which to us is not just a matter of compliance, but also a commitment which is core in our principles of doing business.

Compiled by:

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Monica Mokgawa

ENVIRONMENTAL MANAGER: TUTUKA POWER STATION

Verified by:

.....
Mike Molepo

SENIOR CHEMIST (BOILER ENGINEERING): TUTUKA POWER STATION

Approved by:

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