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Date:
 14 June 2023

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Dear Mr Hlanyane

TUTUKA POWER STATION MONTHLY REPORT FOR MAY 2023

This serves as the monthly report required in terms of Section 7.4 of Tutuka Power Station's Atmospheric Emission License (16/4/Lekwa/Eskom H SOC Ltd TPS/0013/2019/f03). The report includes verified emissions of Particulate Matters, Sulphur, and Nitrogen dioxides for the month of May 2023

The report presents monthly trends for each monitored pollutant. Units 1 and 6 were offload for the month of May 2023. There were PM exceedances recorded which fell outside the 48-hour grace period incurred in units 2, 3, 4 and 5, these were due to challenges with the dust handling plant. The rest of the information demonstrates compliance with the emission license conditions.

1 RAW MATERIALS AND PRODUCTS

Raw Materials and Products	Raw Material Type	Units	Max. Permitted	Actual Consumption May-2023
	Coal	Tons	1 200 000	397 514
	Fuel Oil	Tons	10 000	6343.98
Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate May-2023
	Energy	GWh	2611.44	590.7
	Ash	Tons	350 000	110 270
	RE Ash	kg/MWh	not specified	2.65

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristics	Units	Stipulated Range	Monthly Average Content
CV Content	MJ/kg	16-24	20.520
Sulphur Content	%	0.6 TO >2.6	1.050
Ash Content	%	21 TO >33	27.740

3 EMISSION LIMITS (mg/Nm³)

Associated Unit/Stack	PM	SOx	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 May-2023
Unit 1	<i>Electro Static Precipitators (ESP)</i>	
Unit 2	<i>Electro Static Precipitators (ESP)</i>	97.8%
Unit 3	<i>Electro Static Precipitators (ESP)</i>	99.0%
Unit 4	<i>Electro Static Precipitators (ESP)</i>	99.2%
Unit 5	<i>Electro Static Precipitators (ESP)</i>	98.3%
Unit 6	<i>Electro Static Precipitators (ESP)</i>	

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

5 MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO ₂	NO	O ₂
Unit 1	<i>Unit off-load</i>			
Unit 2	69.6	100.0	0.7	100.0
Unit 3	97.2	49.3	49.3	36.6
Unit 4	98.0	15.4	15.4	15.4
Unit 5	98.7	8.5	0.0	99.5
Unit 6	<i>Unit off-loads</i>			

Note:

1. There were challenges with the maintenance contract for gas monitors, hence maintenance of monitors was not conducted once during month of May 2023. This affected the monitor reliability for Noxious gases in units 2, 3, 4 and 5.

2. The PM monitor for unit 2 maxed up due to upset operational conditions

6 EMISSION PERFORMANCE

Table 6.1 Monthly tonnages for the month of May-2023

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO _x (tons)
Unit 1	0.0	0	0
Unit 2	813.5	2.210	9
Unit 3	286.4	2.377	1.074
Unit 4	110.2	824	308
Unit 5	331.5	1.917	902
Unit 6	0.0	0	0
SUM	1.541.6	7.328	2.293

Table 6.2 Operating days in compliance to PM AEL Limit - May 2023

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
Unit 1	0	0	0	0	0	
Unit 2	8	4	0	12	16	304.5
Unit 3	18	3	0	0	3	256.3
Unit 4	6	3	0	0	3	276.3
Unit 5	10	8	0	1	9	296.4
Unit 6	0	0	0	0	0	
SUM	42	18	0	13	31	

Table 6.3 Operating days in compliance to SO₂ AEL Limit - May 2023

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO ₂ (mg/Nm ³)
Unit 1	0	0	0	0	0	
Unit 2	24	0	0	0	0	1.724.4
Unit 3	23	0	0	0	0	2.108.5
Unit 4	10	0	0	0	0	2.084.2
Unit 5	10	0	0	0	0	706.5
Unit 6	0	0	0	0	0	
SUM	57	0	0	0	0	

Table 6.4. Operating days in compliance to NO_x AEL Limit - May 2023

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NO _x (mg/Nm ³)
Unit 1	0	0	0	0	0	
Unit 2	1	0	0	0	0	161.9
Unit 3	21	0	0	2	2	951.5
Unit 4	10	0	0	0	0	614.1
Unit 5	0	0	0	0	0	

Unit 6	0	0	0	0	0	
SUM	32	0	0	2	2	

Table 6.5: Legend Description

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

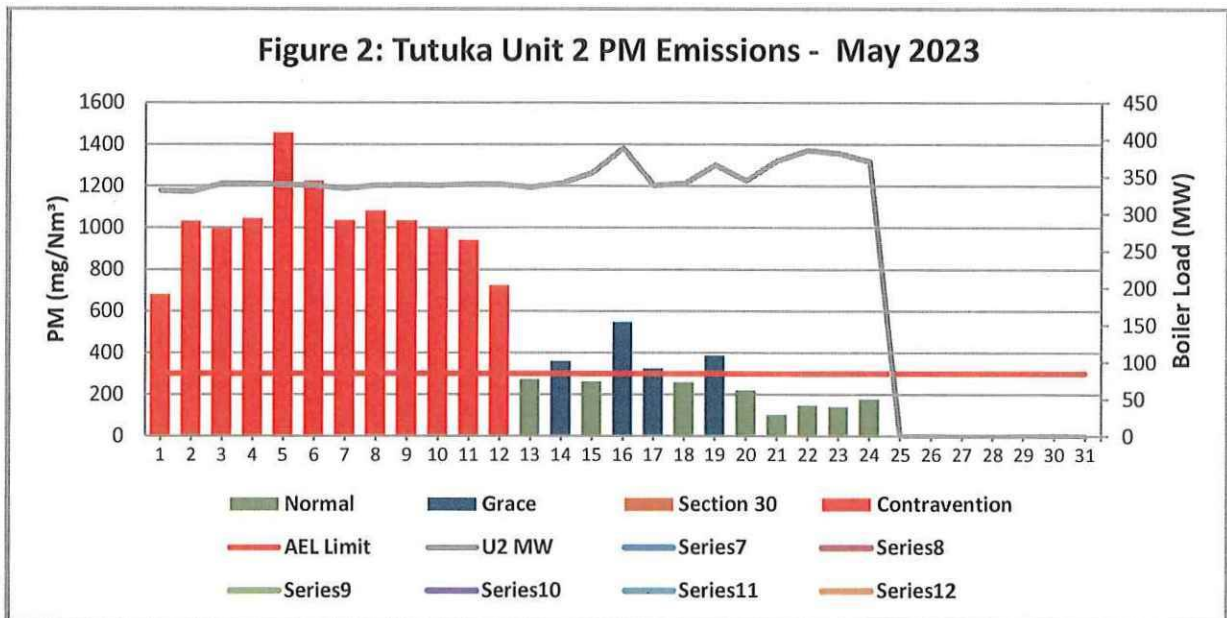
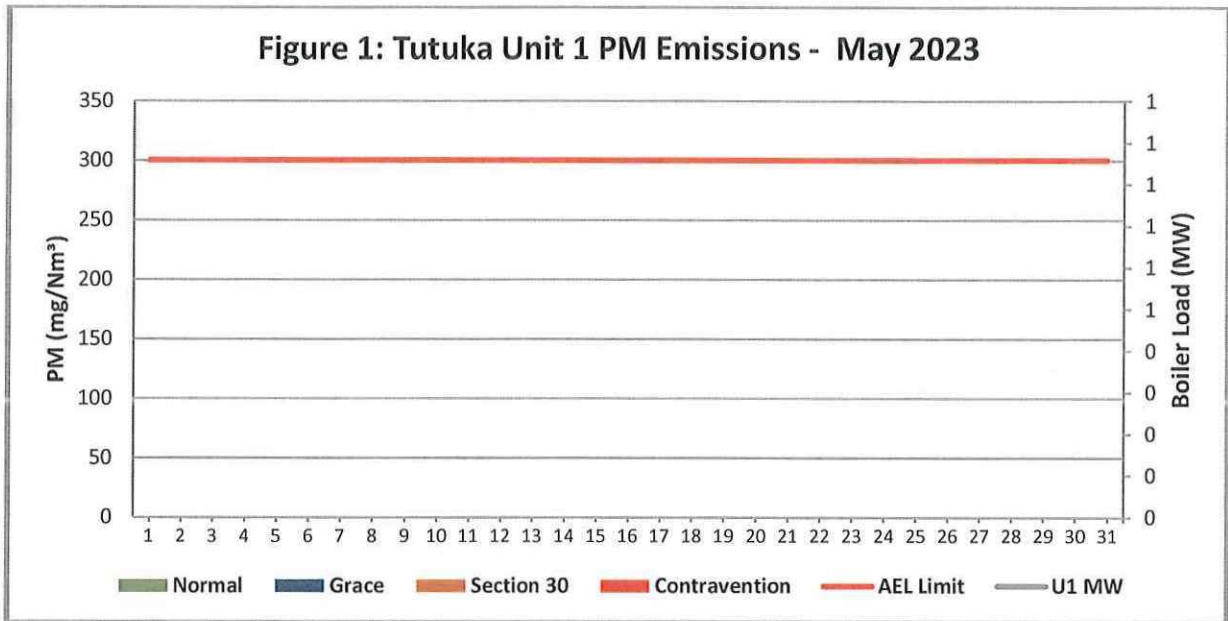


Figure 3: Tutuka Unit 3 PM Emissions - May 2023

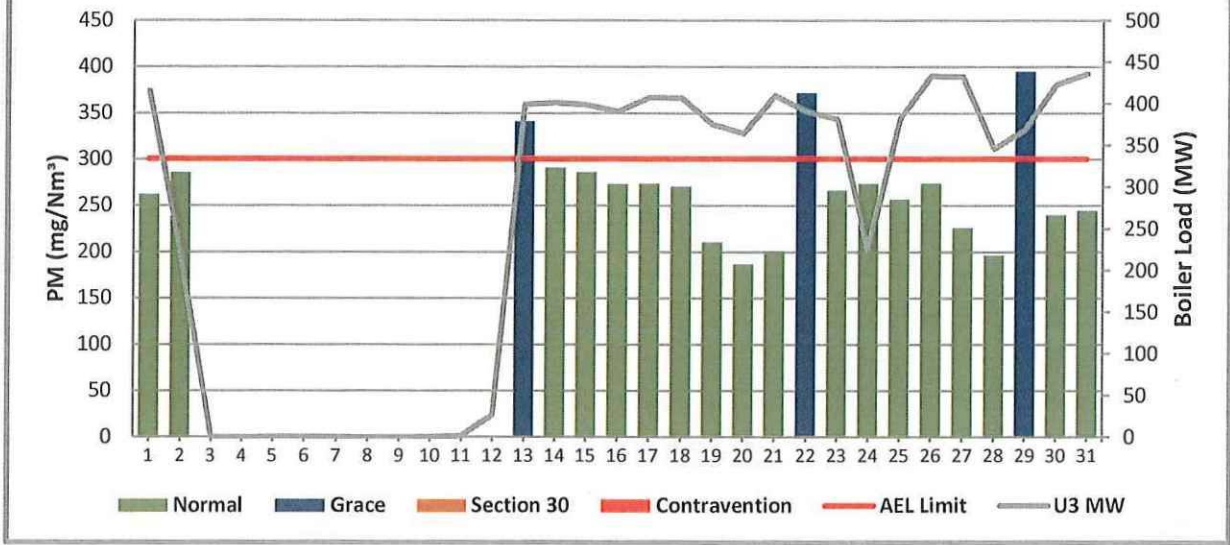


Figure 4: Tutuka Unit 4 PM Emissions - May 2023

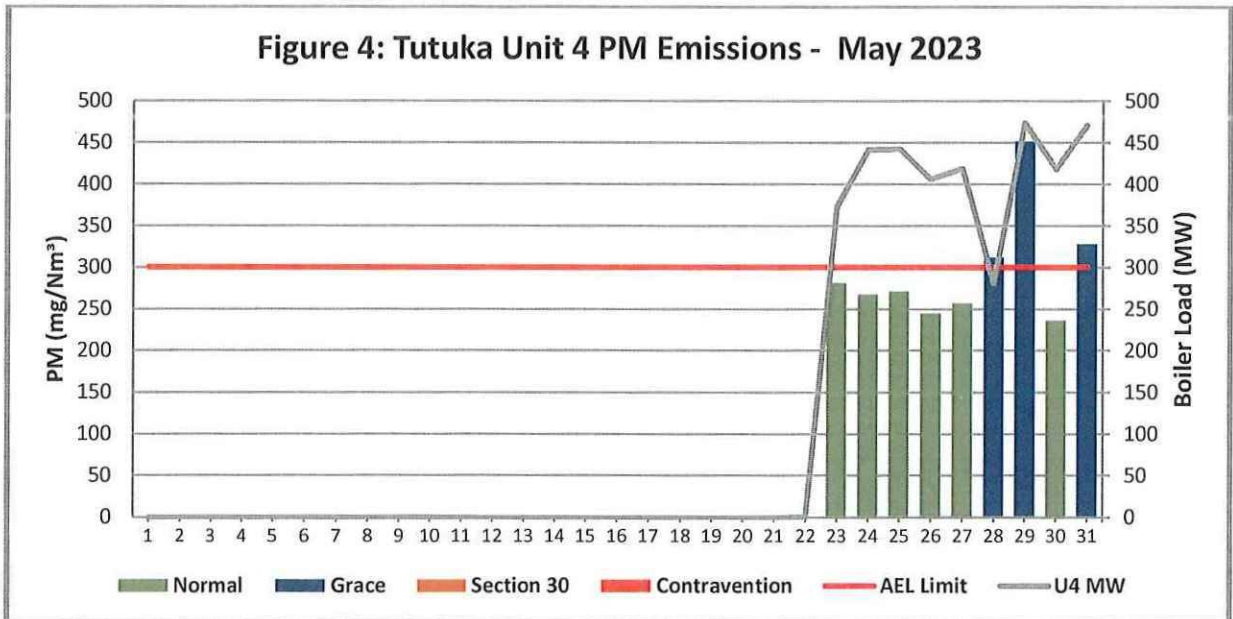


Figure 5: Tutuka Unit 5 PM Emissions - May 2023

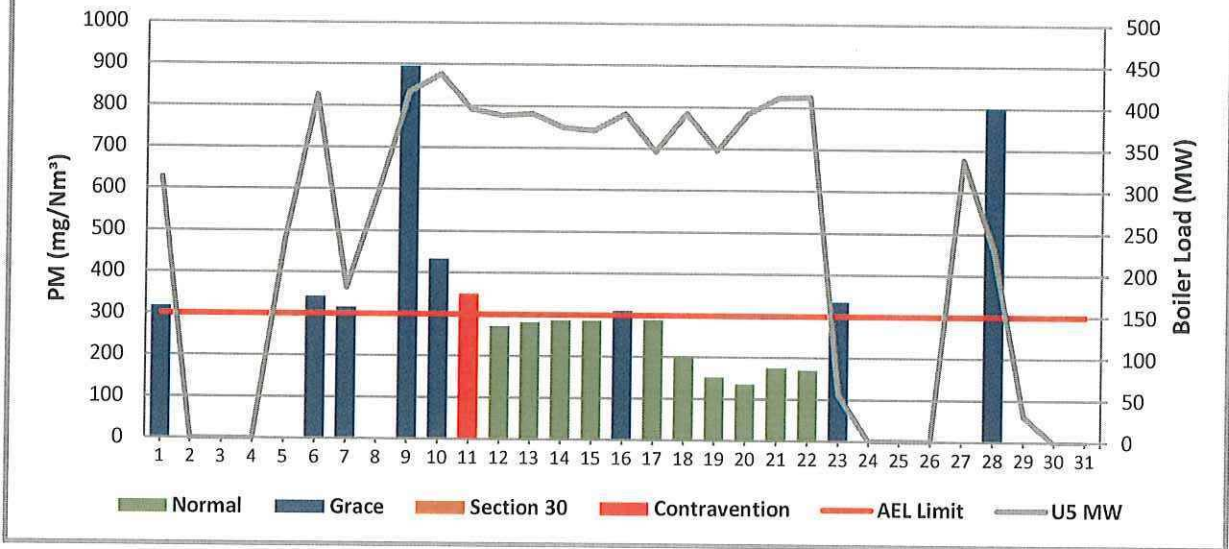


Figure 6: Tutuka Unit 6 PM Emissions - May 2023

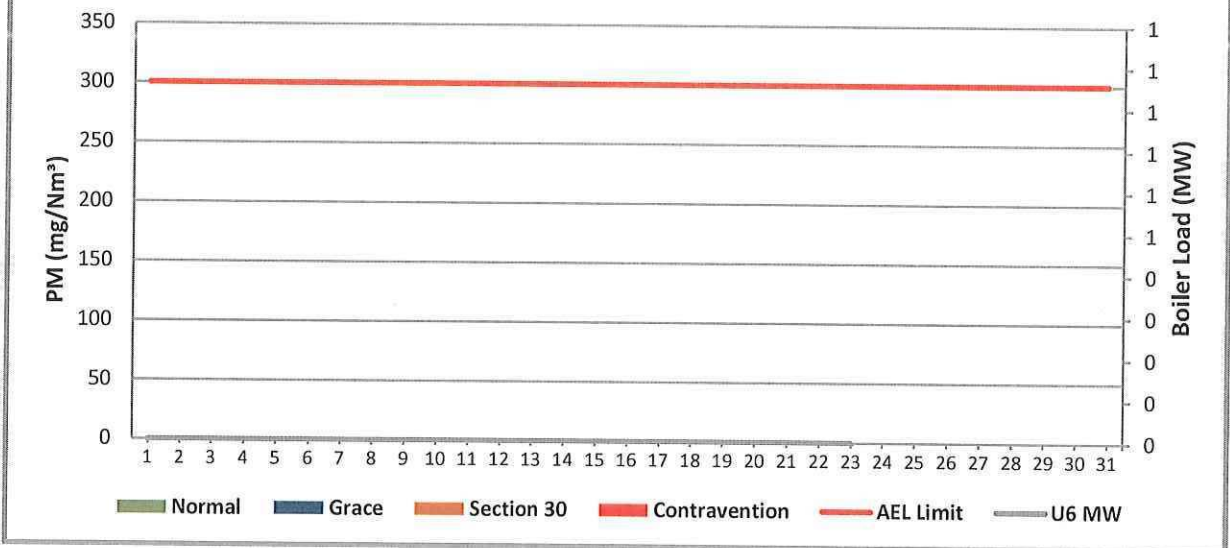


Figure 8: Tutuka Unit 2 SO₂ Emissions - May 2023

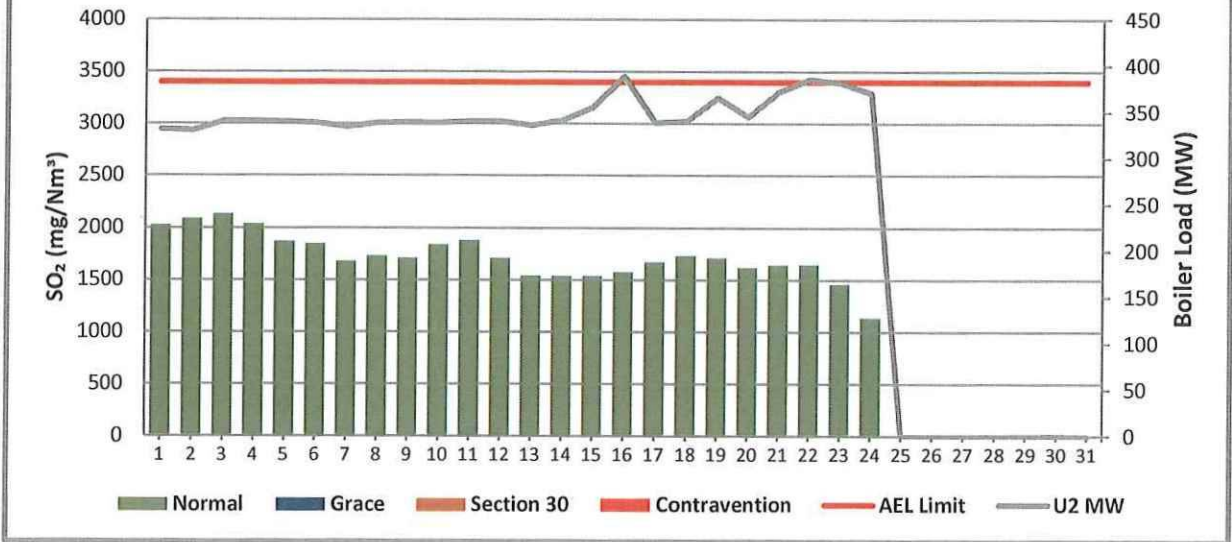


Figure 9: Tutuka Unit 3 SO₂ Emissions - May 2023

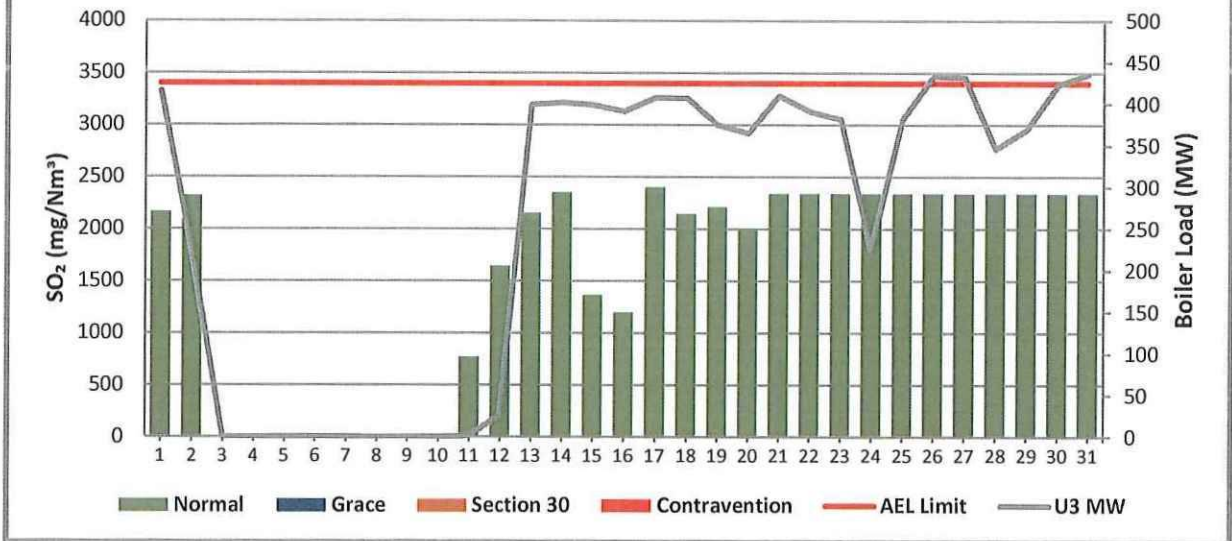


Figure 10: Tutuka Unit 4 SO₂ Emissions - May 2023

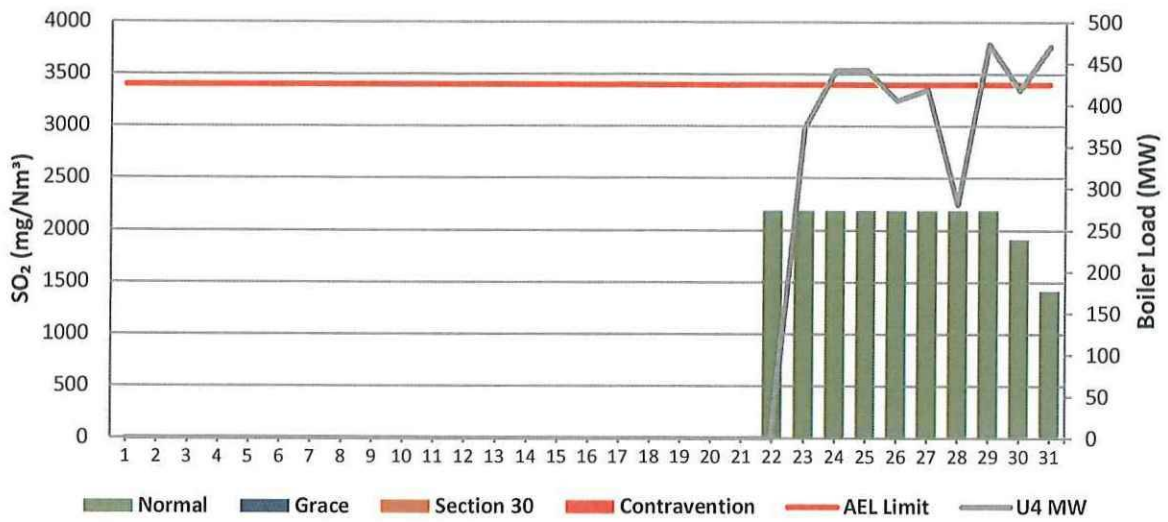


Figure 11: Tutuka Unit 5 SO₂ Emissions - May 2023

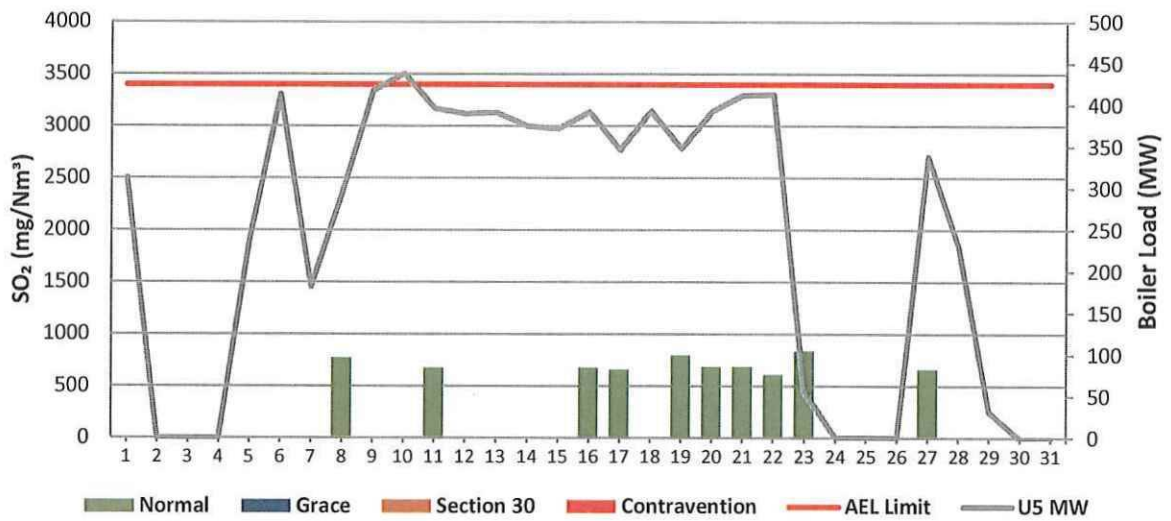


Figure 12: Tutuka Unit 6 SO₂ Emissions - May 2023

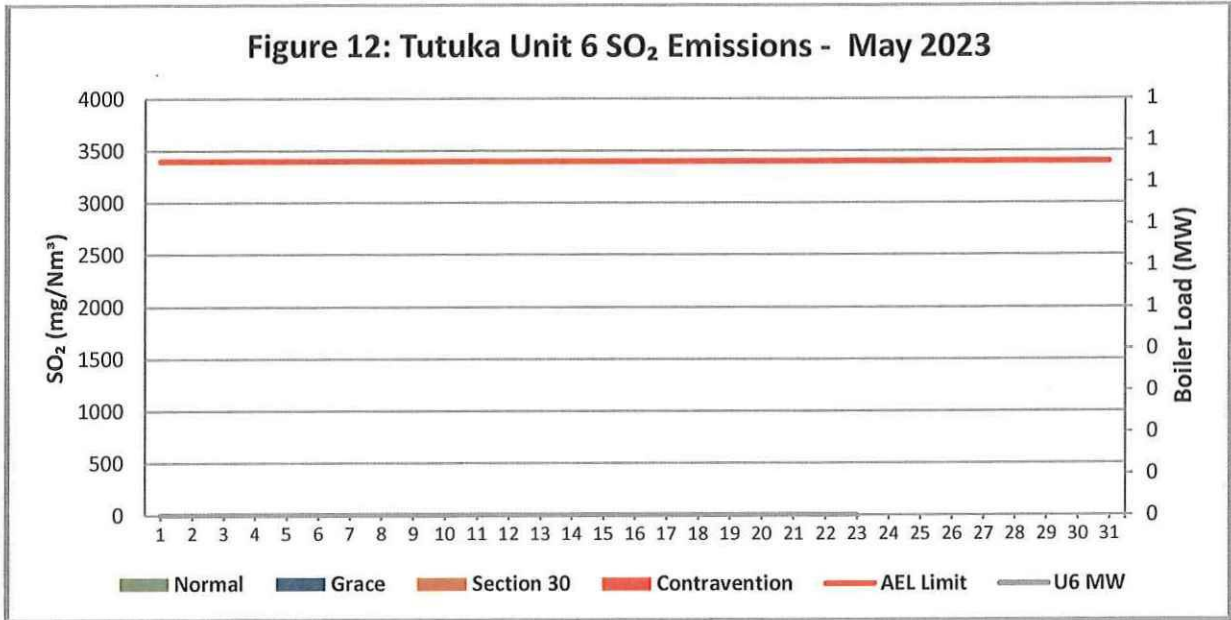


Figure 13: Tutuka Unit 1 NO_x Emissions - May 2023

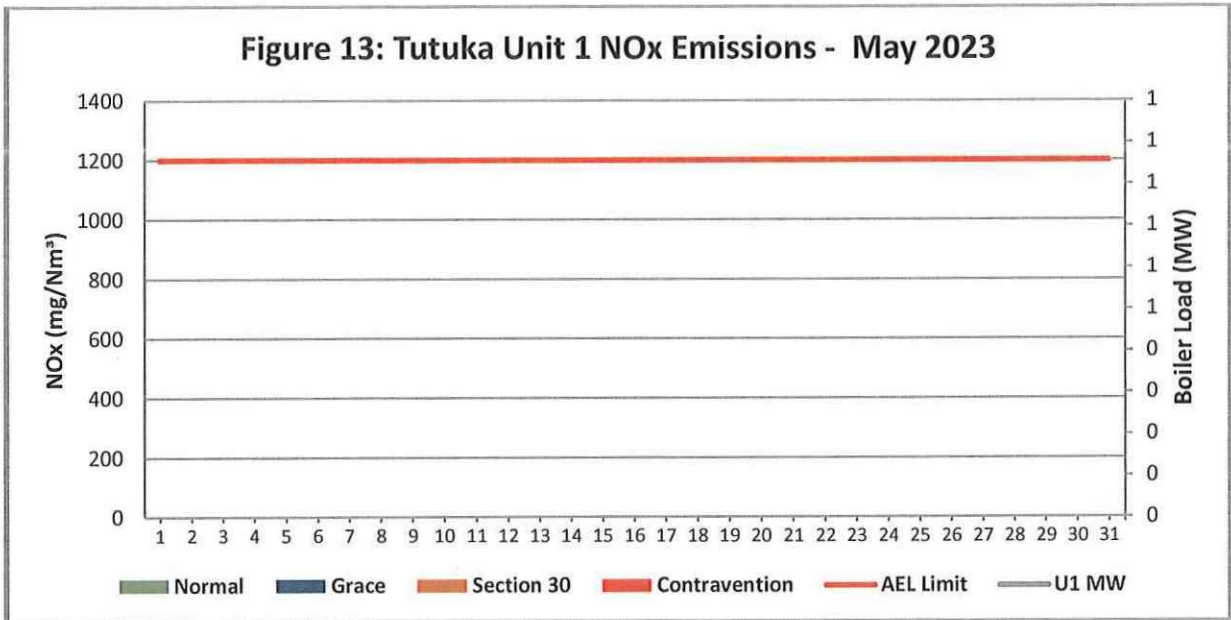


Figure 14: Tutuka Unit 2 NOx Emissions - May 2023

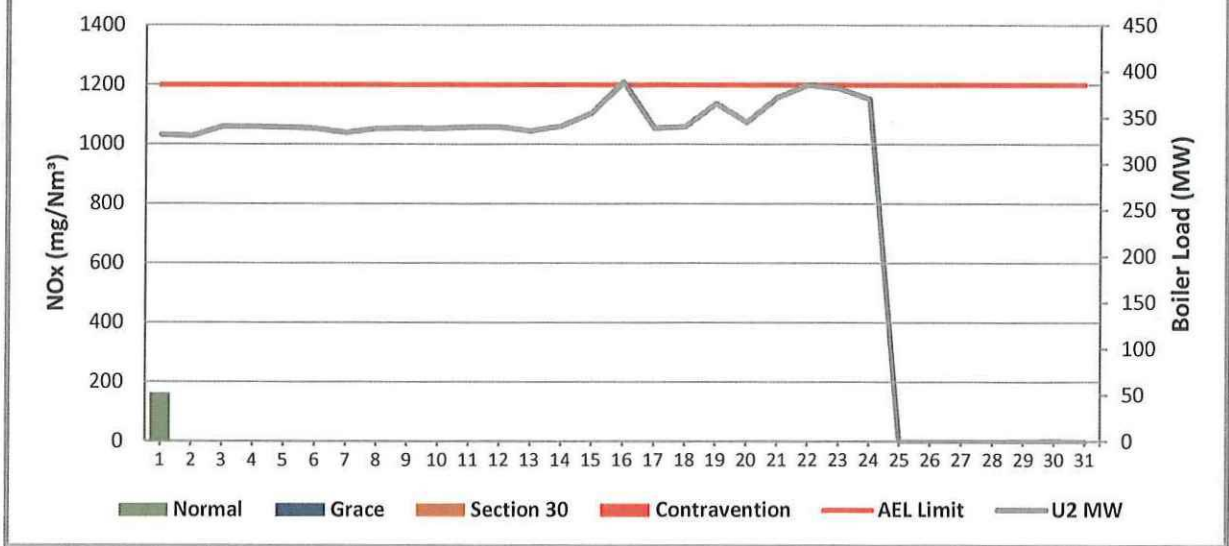


Figure 15: Tutuka Unit 3 NOx Emissions - May 2023

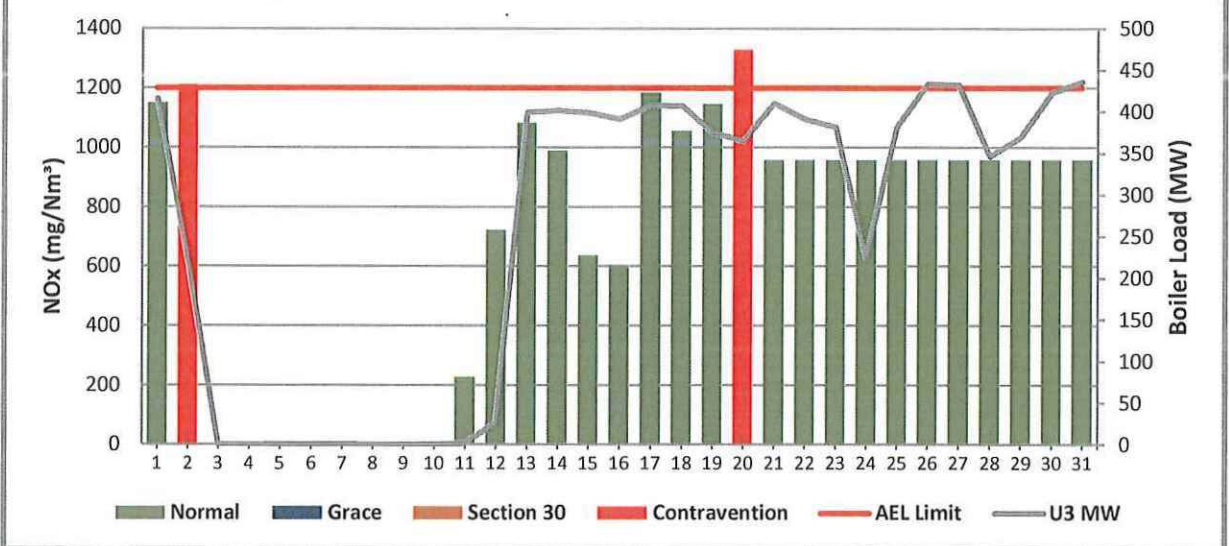


Figure 16: Tutuka Unit 4 NOx Emissions - May 2023

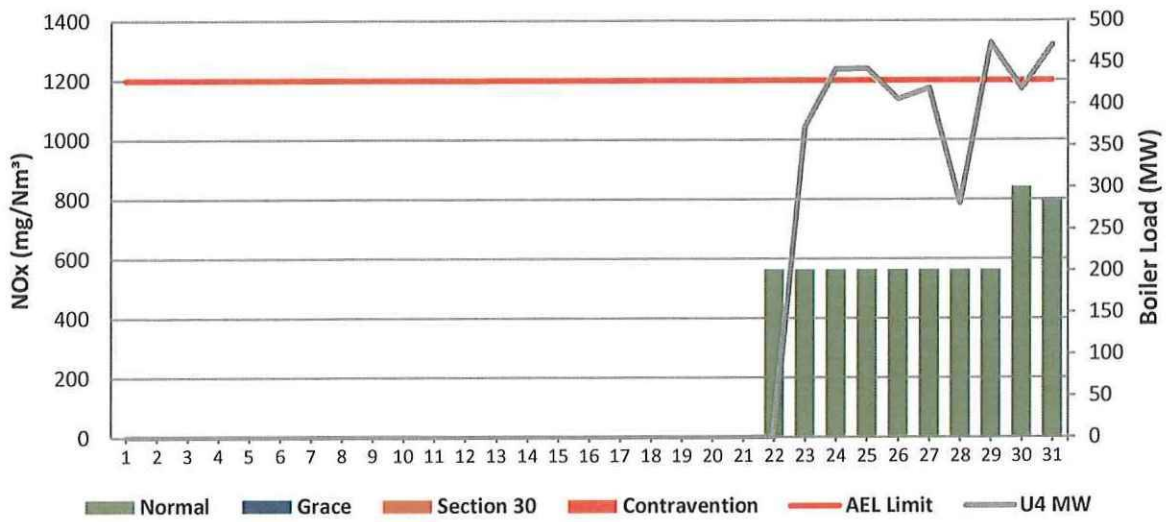
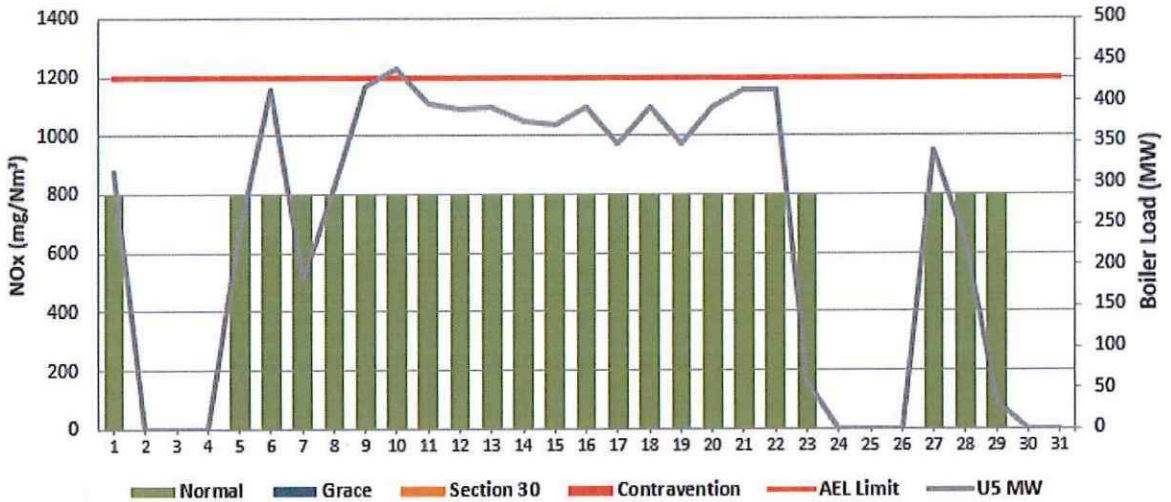
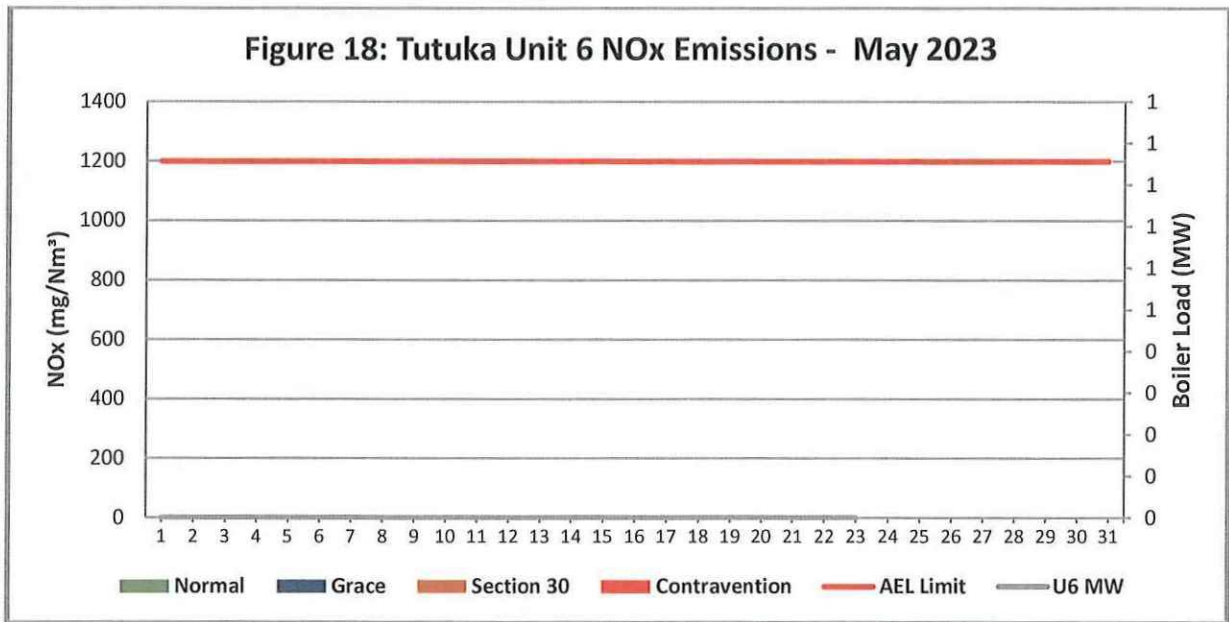


Figure 17: Tutuka Unit 5 NOx Emissions - May 2023





1. 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 were received for the month of May 2023					

For more information or enquiries contact the Tutuka environmental team.

Yours Sincerely

<p>Compiled by: Xoli Jila</p> <p>SENIOR ADVISOR ENVIRONMENT</p> <p style="text-align: center;"><i>Xoli Jila</i></p> <p>Signature:.....</p> <p>Date : 22 June 2023</p>	<p>Supported By: Mike Molepo</p> <p>SENIOR CHEMIST: BOILER ENGINEERING</p> <p style="text-align: center;"><i>Mike Molepo</i></p> <p>Signature:.....</p> <p>Date : 23/06/2023</p>
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Approved by: Bruce Moyo

GENERAL MANAGER: TUTUKA POWER STATION

Signature: 

Date: 2023/06/28