

The Municipal Manager
Gert Sibande District Municipality
PO Box 1748
ERMELO
2350

Date: 14 March 2023
Enquiries: X. Jila
Tel: +27 17 749 5100

E-mail: records@gsibande.gov.za

E-mail: dan.hlanyane@gsibande.gov.za

Dear Mr Hlanyane

TUTUKA POWER STATION'S MONTHLY REPORT FOR THE MONTH OF FEBRUARY 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 February 2023

The report presents monthly trends for each pollutant monitored from all the units, except units 3 and 6 which were out of service for the month of February 2023. There were PM exceedances recorded which fell outside the 48-hour grace period in units 2 and 4, these were due to electrical defects linked to MCS3 controllers, mechanical defects, and faulty transformers. These units have since been switched off and the defects are being attended to.

Generation Division

Tutuka Power Station
Standerton/Bethal Road, Standerton
Private Bag X2016, STANDERTON, 2430, SA
Tel +27 17 7495700 Fax +27 17 7495736 www.eskom.co.za
Eskom Holdings SOC Ltd Reg No 2002/015527/30

1 RAW MATERIALS AND PRODUCTS

Raw Materials and Products	Raw Material Type	Units	Max. Permitted	Actual Consumption Feb-2023
	Coal	Tons	1 200 000	544 027
	Fuel Oil	Tons	10 000	4646.26

Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Feb-2023
	Energy	GWh	2358.72	719.2
	Ash	Tons	350 000	141 719
	RE Ash	kg/MWh	not specified	1.83

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristics	Units	Stipulated Range	Monthly Average Content
CV Content	MJ/kg	16-24	21.160
Sulphur Content	%	0.6 TO >2.6	1.030
Ash Content	%	21 TO >33	26.050

3 EMISSION LIMITS (mg/Nm³)

Associated Unit/Stack	PM	SO _x	NO _x
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 Feb-2023
Unit 1	Electro Static Precipitators (ESP)	99.2%
Unit 2	Electro Static Precipitators (ESP)	99.0%
Unit 3	Electro Static Precipitators (ESP)	
Unit 4	Electro Static Precipitators (ESP)	99.1%
Unit 5	Electro Static Precipitators (ESP)	98.1%
Unit 6	Electro Static Precipitators (ESP)	

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	99.8	99.9	99.9	99.9
Unit 2	80.1	91.7	91.7	91.3
Unit 3				
Unit 4	98.8	99.4	99.7	99.5
Unit 5	100.0	97.5	93.8	99.2
Unit 6				

Note: Reliability recorded for all monitored parameters is within the threshold of 80% and above.

6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of February-2023

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO _x (tons)
Unit 1	307.6	2 663	1 398
Unit 2	159.7	510	142
Unit 3	0.0	0	0
Unit 4	401.4	2 646	1 317
Unit 5	407.9	2 668	1 264
Unit 6	0.0	0	0
SUM	1 276.7	8 487	4 121

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
Unit 1	25	1	0	0	1	226.5
Unit 2	0	4	0	2	6	372.6
Unit 3	0	0	0	0	0	
Unit 4	17	7	0	3	10	297.9
Unit 5	12	10	0	0	10	289.9
Unit 6	0	0	0	0	0	
SUM	54	22	0	5	27	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO ₂ (mg/Nm ³)
Unit 1	28	0	0	0	0	1 961.0
Unit 2	11	0	0	0	0	2 056.7
Unit 3	0	0	0	0	0	
Unit 4	28	0	0	0	0	2 062.8
Unit 5	23	0	0	0	0	1 900.1
Unit 6	0	0	0	0	0	

SUM	67	0	0	0	0
------------	-----------	----------	----------	----------	----------

Table 6.4: Operating days in compliance to NOx AEL Limit - February 2023

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm ³)
Unit 1	28	0	0	0	0	1 023.4
Unit 2	11	0	0	0	0	690.8
Unit 3	0	0	0	0	0	
Unit 4	26	0	0	2	2	1 019.6
Unit 5	23	0	0	0	0	899.2
Unit 6	0	0	0	0	0	
SUM	65	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

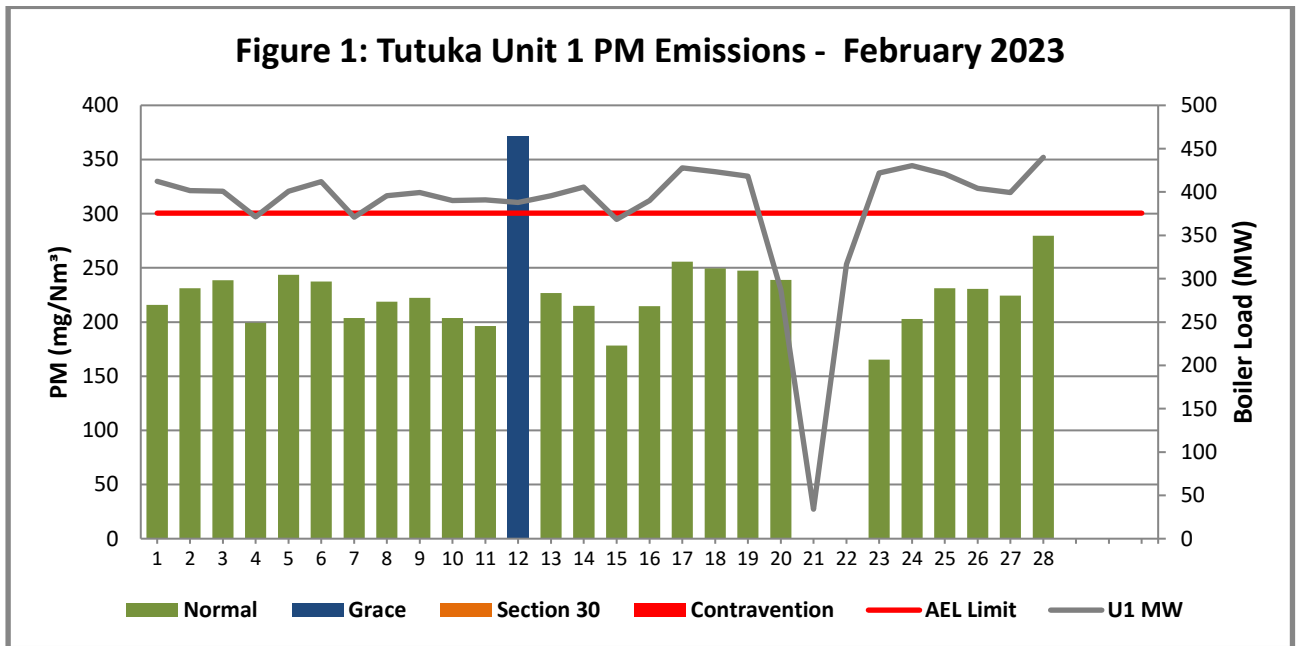
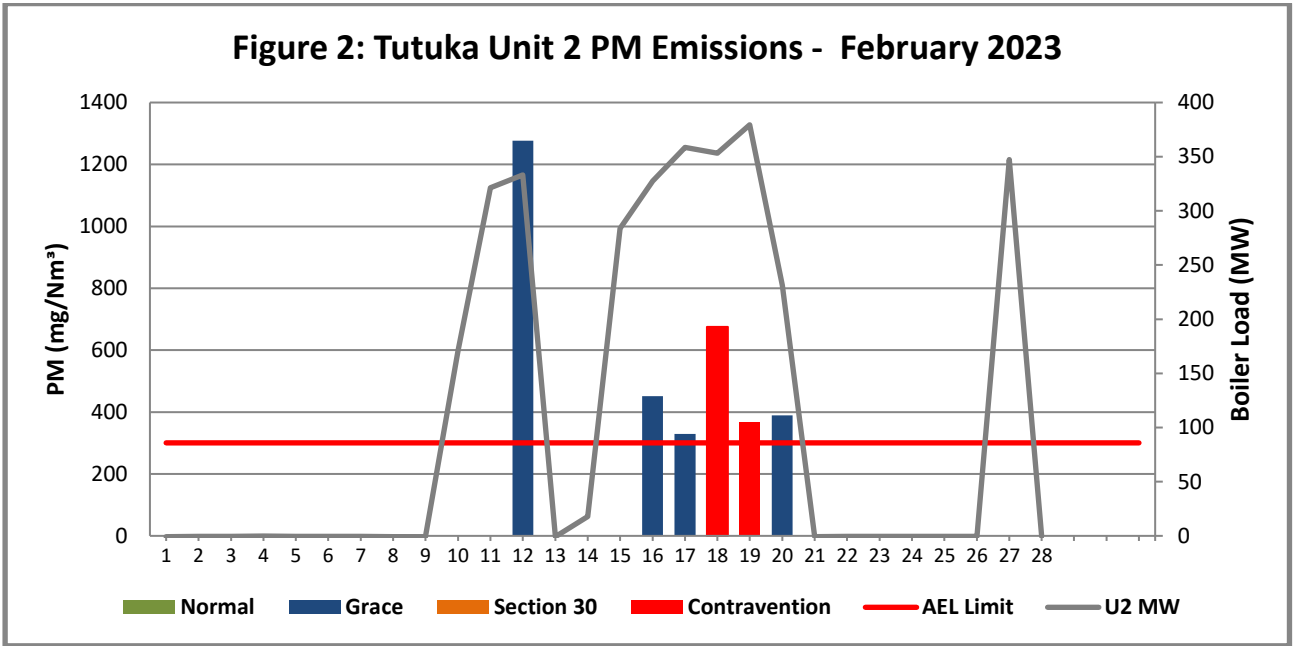


Figure 2: Tutuka Unit 2 PM Emissions - February 2023



Note: exceeding due to electrical defects linked to MCS3 controllers, the unit has been taken off and the defects are being attended to.

Figure 3: Tutuka Unit 3 PM Emissions - February 2023

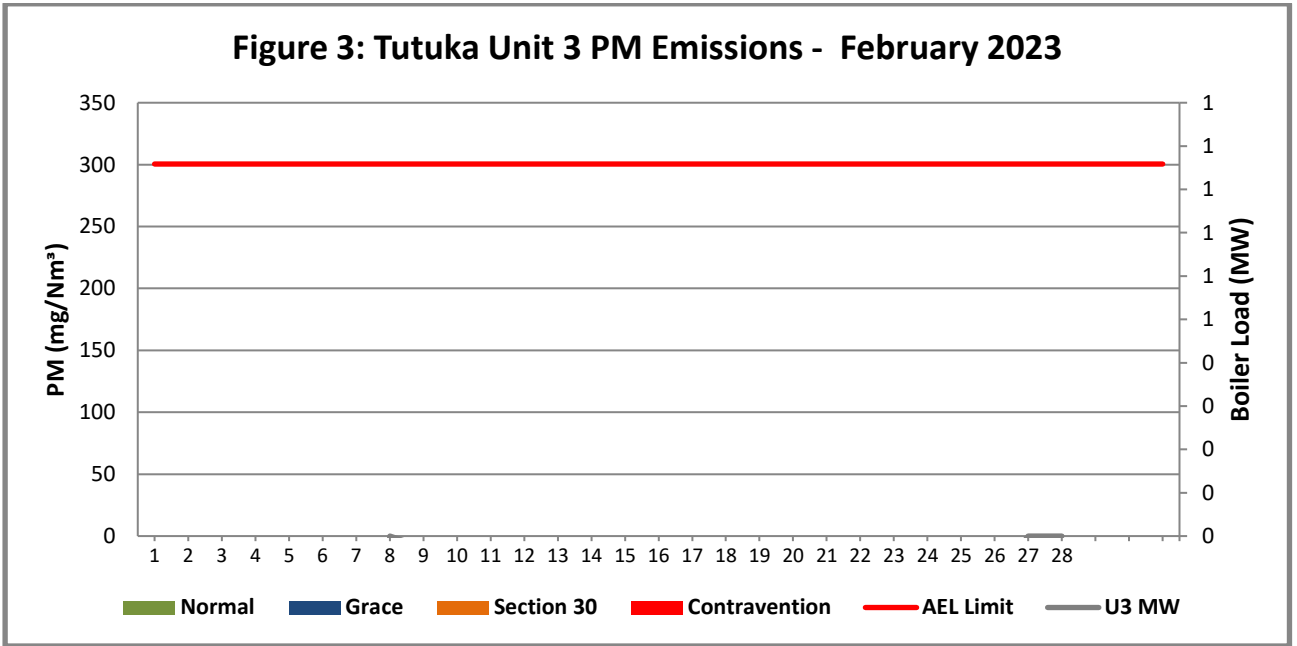
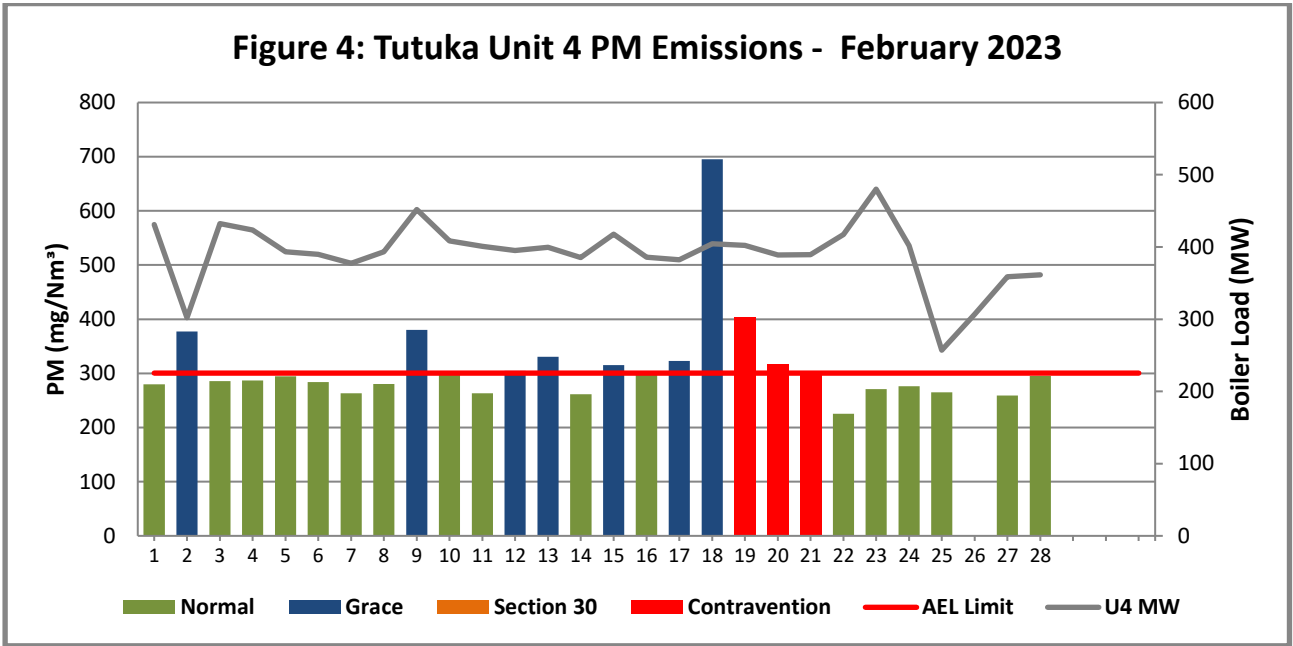


Figure 4: Tutuka Unit 4 PM Emissions - February 2023



Note: exceedances due to mechanical defects and faulty transformers, the units has been switched off and to attend to the defects.

Figure 5: Tutuka Unit 5 PM Emissions - February 2023

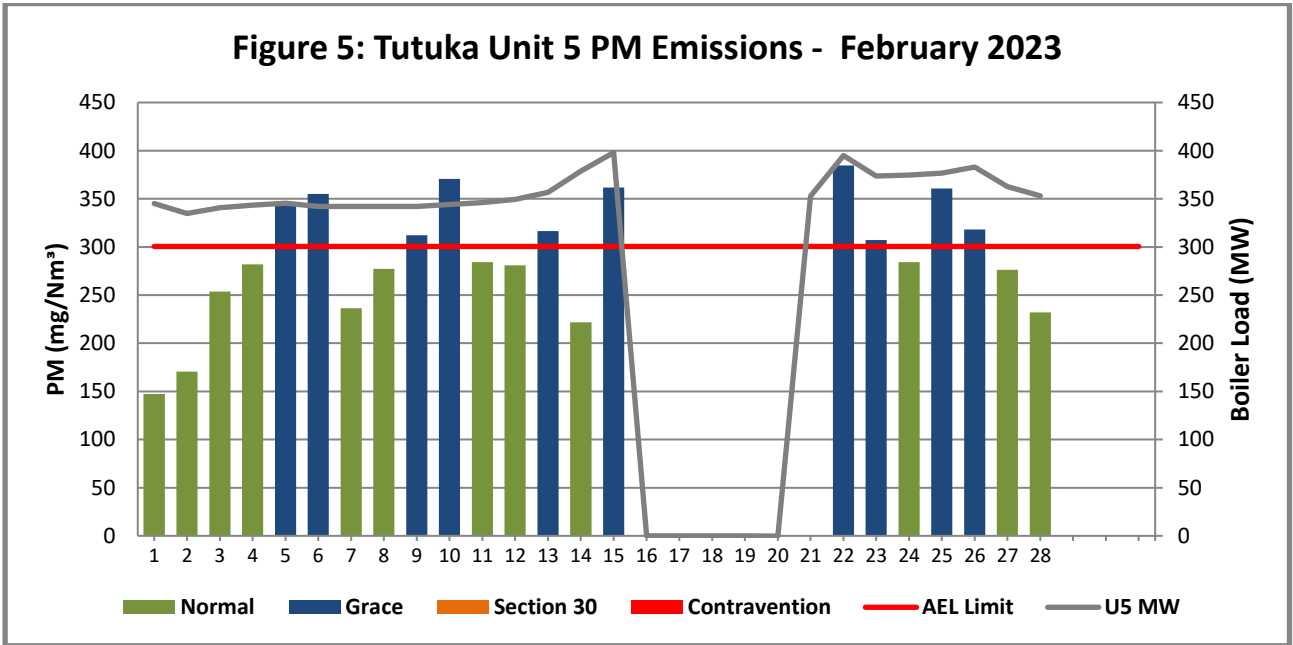


Figure 6: Tutuka Unit 6 PM Emissions - February 2023

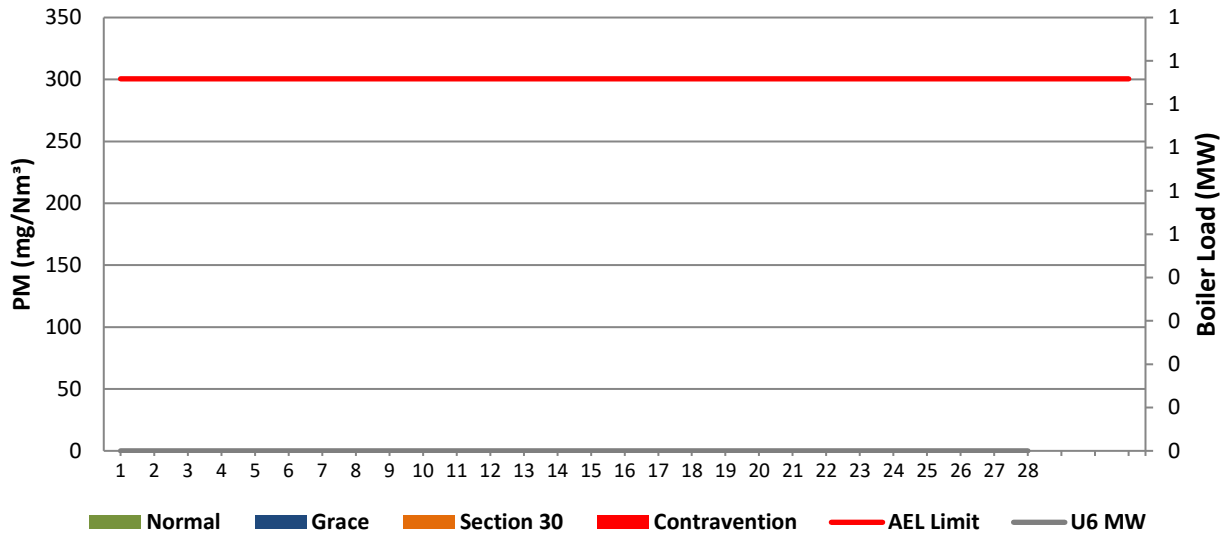


Figure 7: Tutuka Unit 1 SO₂ Emissions - February 2023

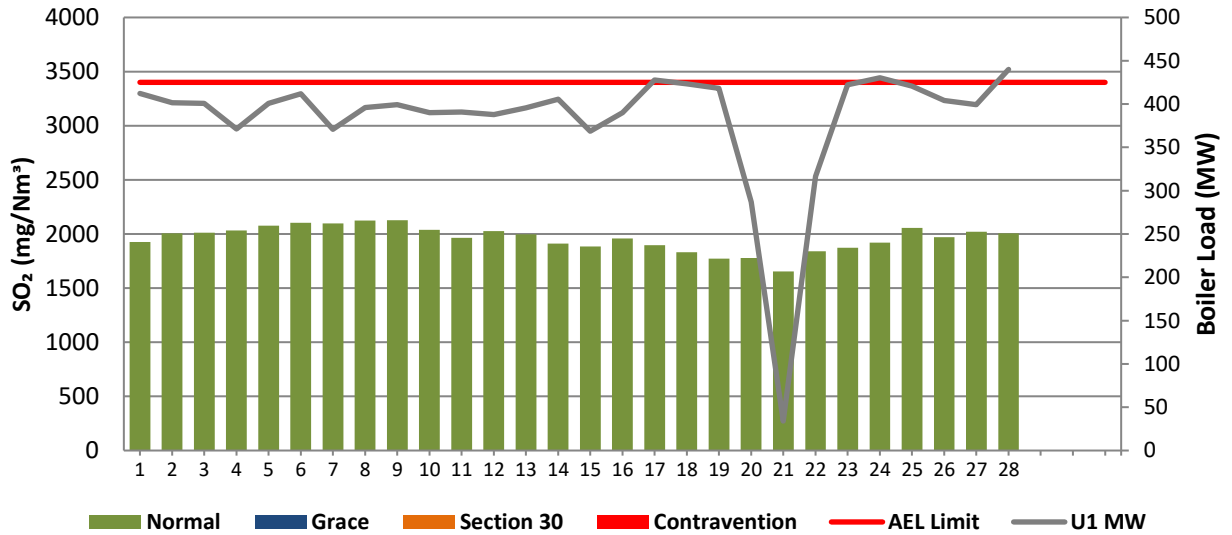


Figure 8: Tutuka Unit 2 SO₂ Emissions - February 2023

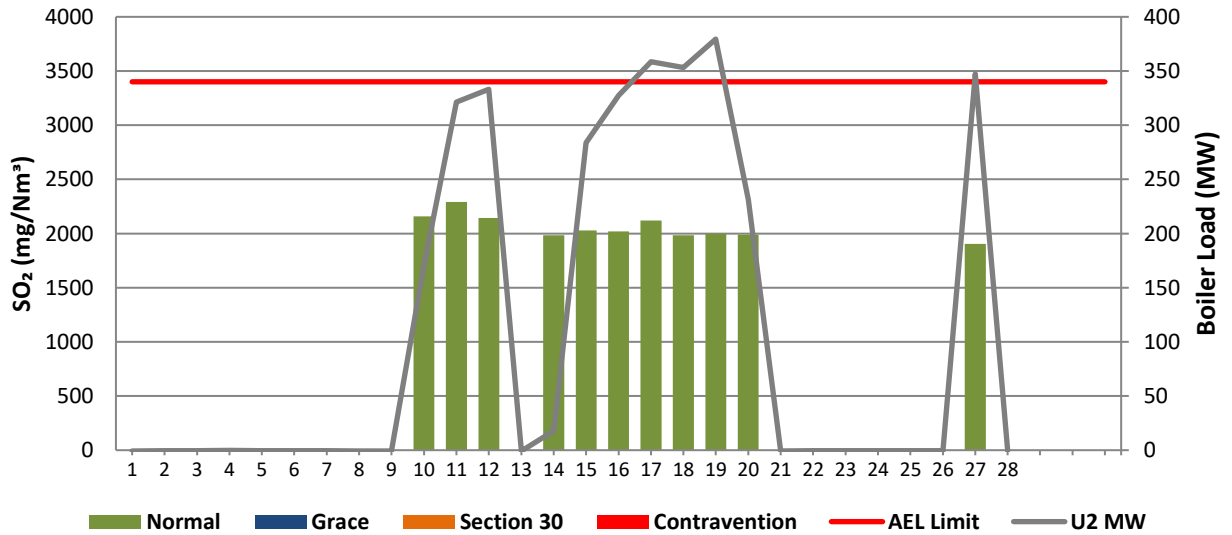


Figure 9: Tutuka Unit 3 SO₂ Emissions - February 2023

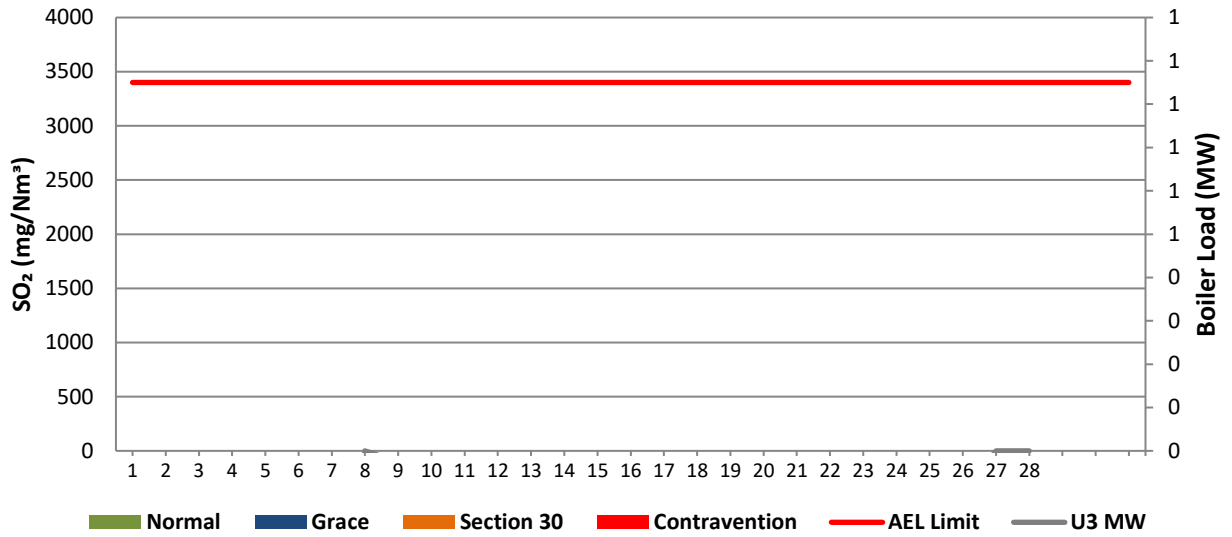


Figure 10: Tutuka Unit 4 SO₂ Emissions - February 2023

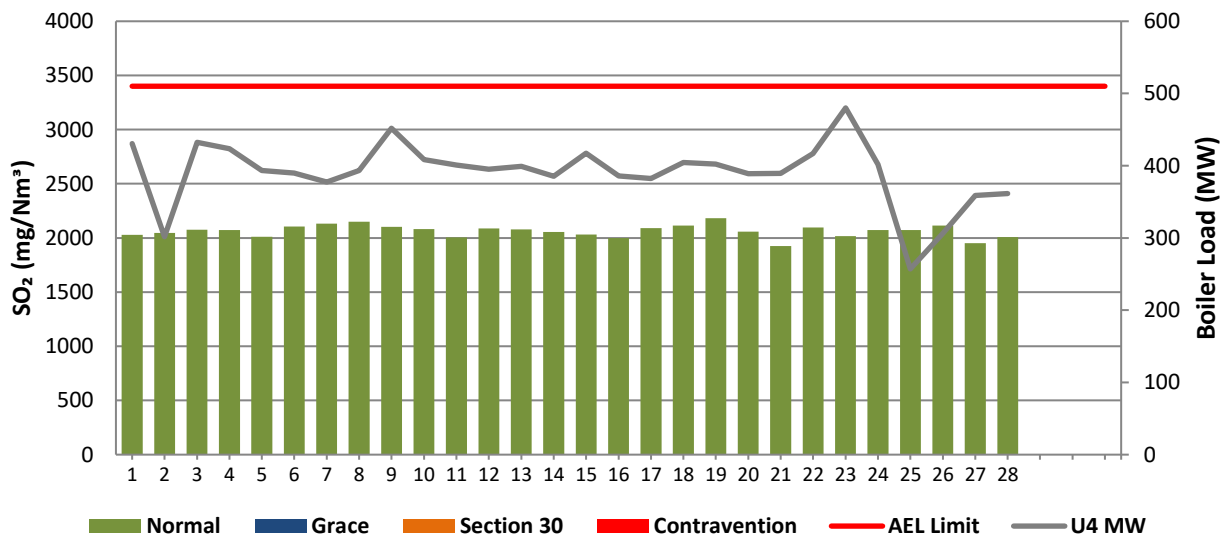


Figure 11: Tutuka Unit 5 SO₂ Emissions - February 2023

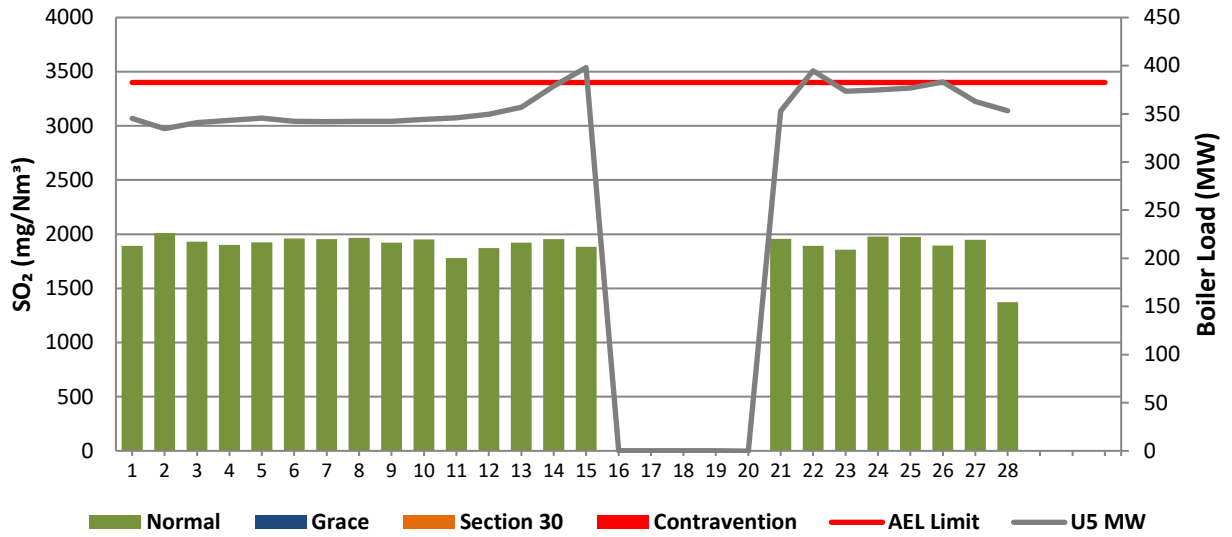


Figure 12: Tutuka Unit 6 SO₂ Emissions - February 2023

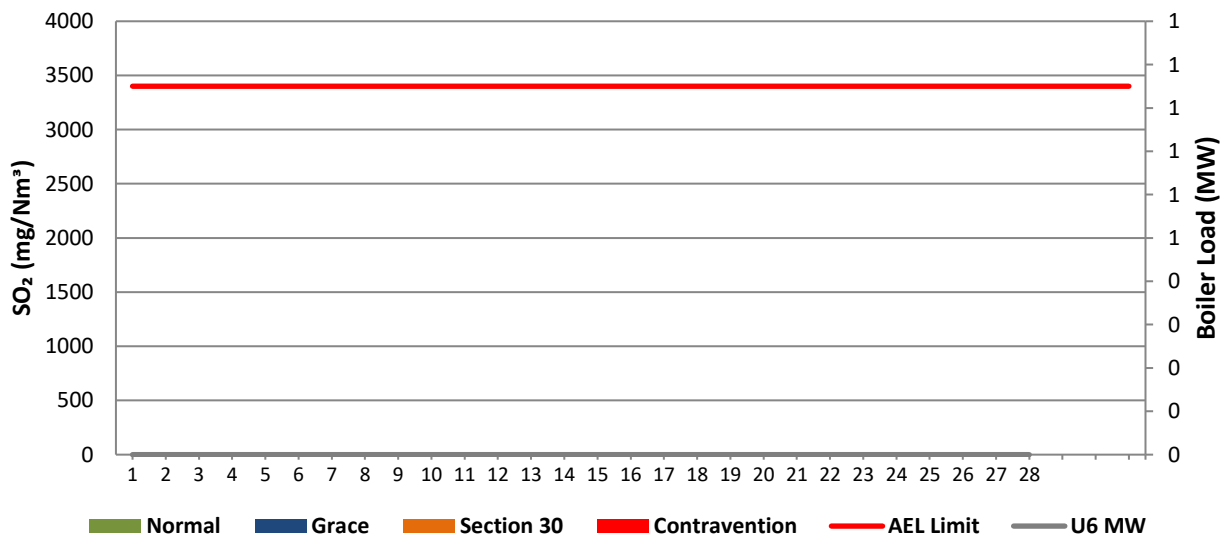


Figure 13: Tutuka Unit 1 NOx Emissions - February 2023

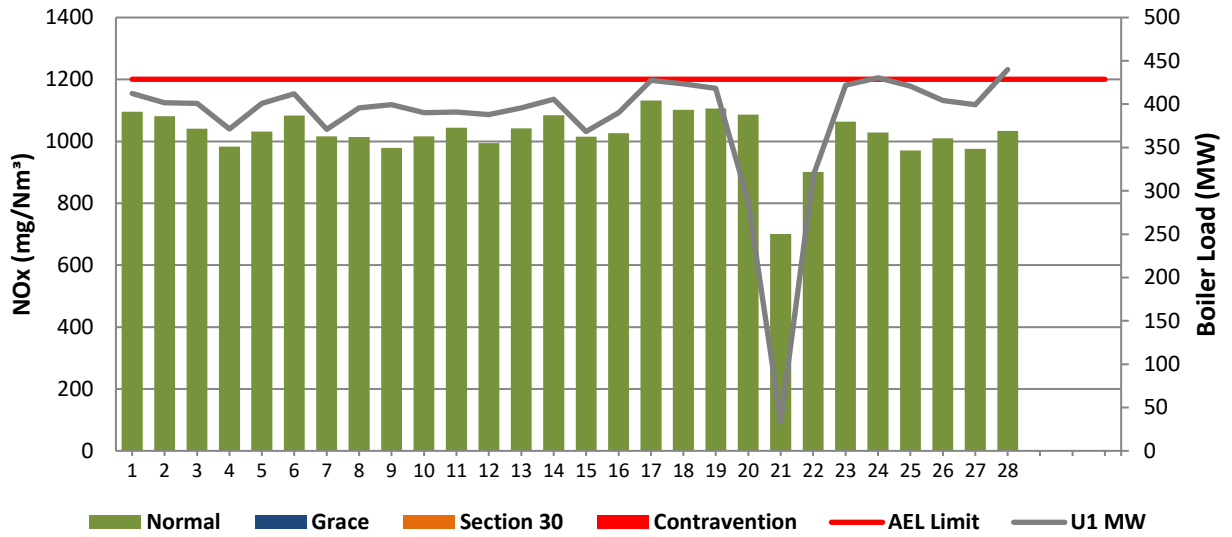


Figure 14: Tutuka Unit 2 NOx Emissions - February 2023

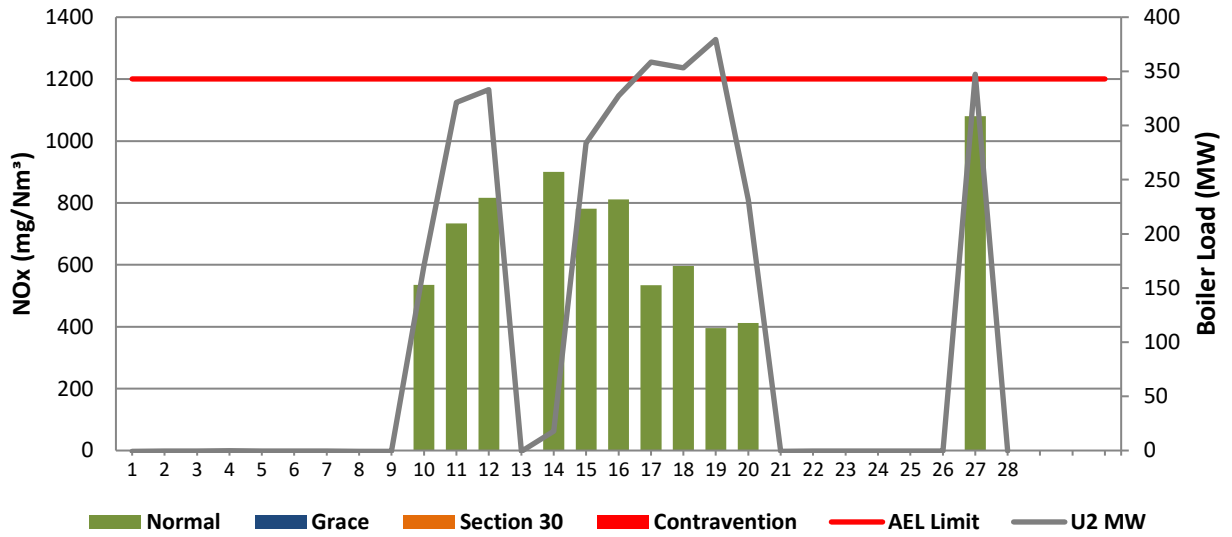


Figure 15: Tutuka Unit 3 NOx Emissions - February 2023

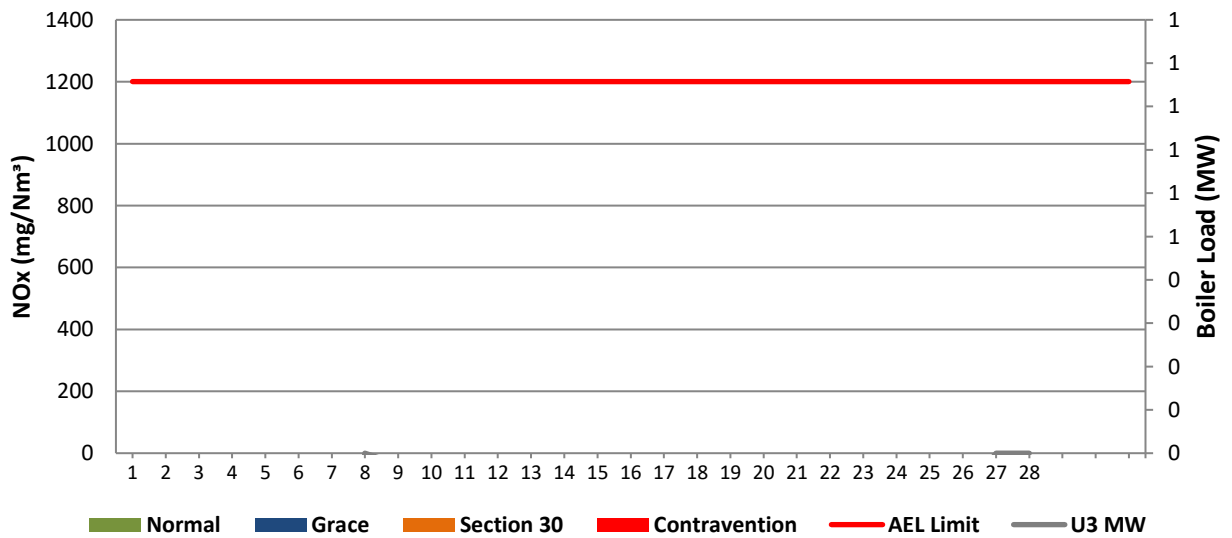
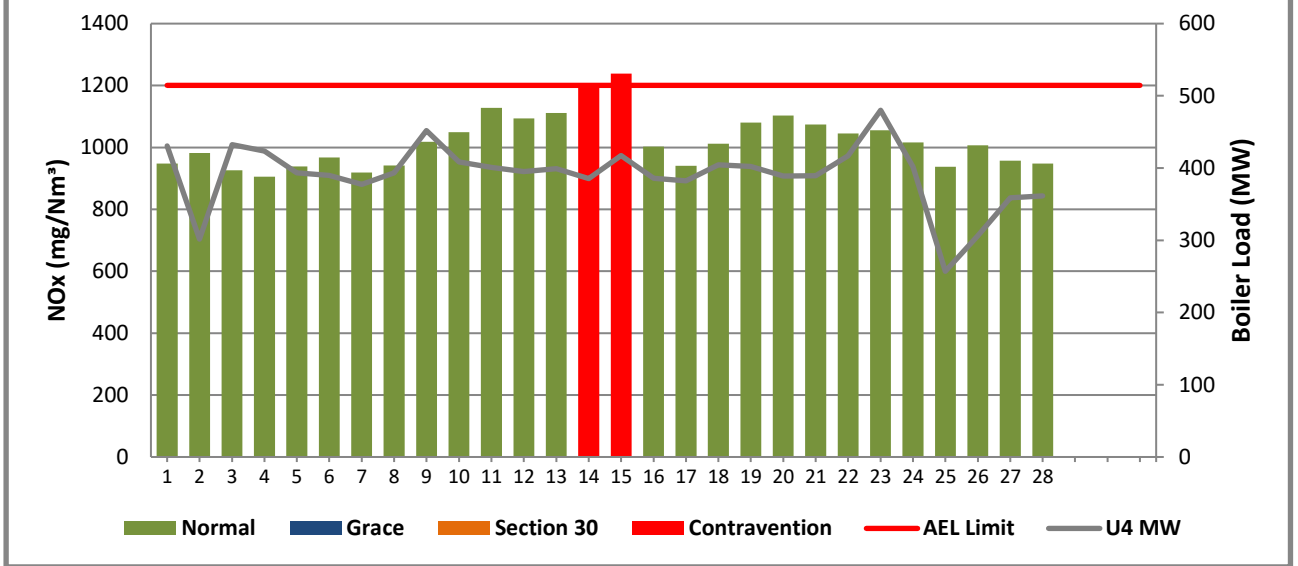
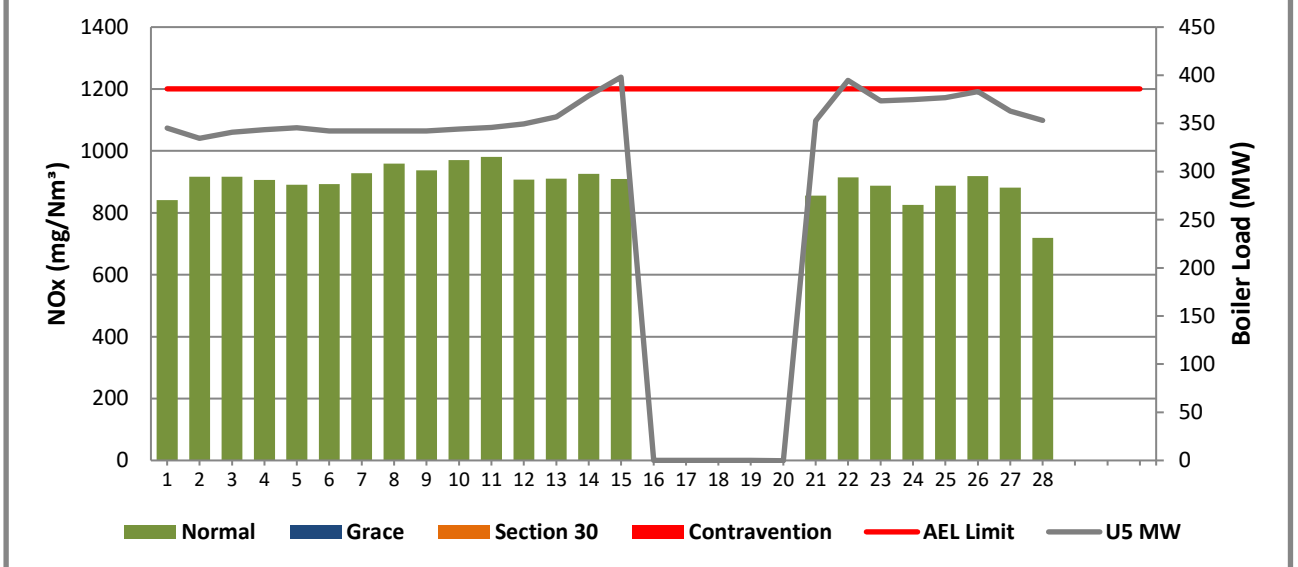


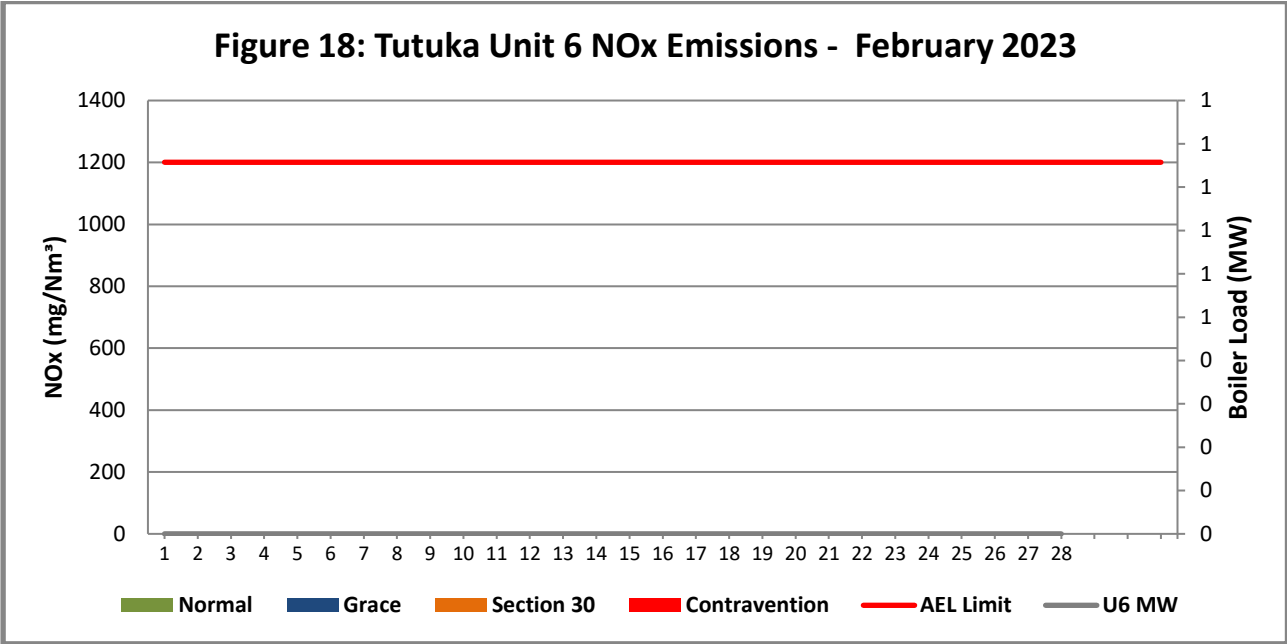
Figure 16: Tutuka Unit 4 NOx Emissions - February 2023



Note: The course of exceedance under investigation

Figure 17: Tutuka Unit 5 NOx Emissions - February 2023





8. 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 February 2023					



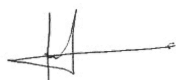
9. LIGHT UP INFORMATION

PM Start-up information for the month of February 2023

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Number of Hot Starts (Off-Load<30Hrs)	0	0	0	0	0	0
Number of Cold Starts (Off-Load>30hrs)	1	2	0	1	1	0

For more information or enquiries contact the Tutuka environmental team.

Yours Sincerely

Compiled by: Xoli Jila SENIOR ADVISOR ENVIRONMENTAL  Signature:..... Date: 14 March 2023	Supported By: Mike Molepo SENIOR CHEMIST: BOILER ENGINEERING  Signature:..... Date: 14/03/2023
Approved by: Mxolisi Ntanz ACTING GENERAL MANAGER: TUTUKA POWER STATION  Signature:..... Date: 2023/03/15.....	