

The Municipal Manager
Gert Sibande District Municipality
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Date: 11 October 2022
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Dear Mr Hlanyane

TUTUKA POWER STATION'S MONTHLY REPORT FOR THE MONTH OF AUGUST 2022

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 August 2022

The report presents monthly trends for each pollutant monitored from all the units, except unit 2 which has been out of service for the month of June 2022. There were PM exceedances recorded which fell outside the 48-hour grace period in units 1, 4, 5 and 6, these were due to challenges with the dust handling plant. Units 2 and 3 were off load for the month of August 2022.

Note: Possible errors in data have been identified and station is assessing these and the need to update the report at a later stage.

Generation Division

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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 Aug-2022
	Coal	Tons	1 200 000	418 354
	Fuel Oil	Tons	10 000	8914.92
Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Aug-2022
	Energy	GWh	2611.44	672.4
	Ash	Tons	350 000	111 952
	RE Ash	kg/MWh	not specified	2.54

2. ENERGY SOURCE CHARACTERISTICS

Coal Characteristics	Units	Stipulated Range	Monthly Average Content
CV Content	MJ/kg	16-24	21.130
Sulphur Content	%	0.6 TO >2.6	1.180
Ash Content	%	21 TO >33	26.760

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 Aug-2022
Unit 1	Electro Static Precipitators (ESP)	95.5%
Unit 2	Electro Static Precipitators (ESP)	100.0%
Unit 3	Electro Static Precipitators (ESP)	100.0%
Unit 4	Electro Static Precipitators (ESP)	98.2%
Unit 5	Electro Static Precipitators (ESP)	77.2%
Unit 6	Electro Static Precipitators (ESP)	98.0%

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

5 MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO ₂	NO	O ₂
Unit 1	72.5	99.5	99.5	98.7
Unit 2				
Unit 3		100.0	100.0	64.5
Unit 4	70.2	99.4	62.8	99.1
Unit 5	61.2	99.0	91.3	99.5
Unit 6	70.1	99.2	96.7	99.8

Note: 1. The units 1, 4, 5 and 6 Particulate Matter (PM) monitors maxed out on the days highlighted in yellow in section 6 below. As a result, the recorded concentration could be higher than what is reflected in the table.

6. DUST CONCENTRATION FOR THE MONTH OF AUGUST 2022

Day	Date	Unit 1	Unit 4	Unit 5	Unit 6
Mon	01-Aug		176.41	589.30	505.11
Tue	02-Aug	220.90	855.88	710.15	640.20
Wed	03-Aug	233.02	269.41	615.45	438.90
Thu	04-Aug	223.62	247.08	882.66	427.93
Fri	05-Aug	258.74	267.64	1265.41	448.17
Sat	06-Aug	256.21	288.28	1026.95	409.95
Sun	07-Aug	268.39	318.12	1268.75	387.54
Mon	08-Aug	283.26	232.53	1105.08	397.09
Tue	09-Aug	290.18	524.05		336.96
Wed	10-Aug	537.56	800.23		546.69
Thu	11-Aug	1500.00	1324.53		1135.61
Fri	12-Aug	1500.00	1500.00		1585.08
Sat	13-Aug	1500.00	1370.61	1499.42	1483.13
Sun	14-Aug	1500.00		1000.00	2000.00
Mon	15-Aug	1500.00		1355.78	2000.00
Tue	16-Aug	772.85		1383.47	787.03
Wed	17-Aug			1660.34	
Thu	18-Aug	632.35		1163.74	
Fri	19-Aug	407.65		519.89	
Sat	20-Aug	312.17		1066.02	
Sun	21-Aug			1000.00	
Mon	22-Aug			947.77	
Tue	23-Aug			544.43	
Wed	24-Aug	176.57		470.60	
Thu	25-Aug	169.12		531.63	
Fri	26-Aug	169.50		546.03	649.02
Sat	27-Aug			461.21	552.80
Sun	28-Aug	160.92			682.95
Mon	29-Aug	179.66			
Tue	30-Aug	165.36			
Wed	31-Aug	168.85			

7. EMISSION PERFORMANCE

Table 7.1: Monthly tonnages for the month of August-2022

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO _x (tons)
Unit 1	663.8	2 748	1 003
Unit 2	0.0	0	0
Unit 3	0.0	0	0
Unit 4	399.1	1 571	484
Unit 5	1 173.2	2 880	1 065
Unit 6	716.4	2 194	670
SUM	2 952.4	9 392	3 222

7.2: Operating days in compliance to PM AEL Limit - August 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
Unit 1	15	4	0	6	10	279.9
Unit 2	0	0	0	0	0	
Unit 3	0	0	0	0	0	
Unit 4	6	4	0	3	7	318.2
Unit 5	0	4	0	19	23	1 177.7
Unit 6	0	4	0	15	19	482.2
SUM	21	16	0	43	59	

Table 7.3: Operating days in compliance to SO₂ AEL Limit - August 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO ₂ (mg/Nm ³)
Unit 1	31	0	0	0	0	2 376.2
Unit 2	0	0	0	0	0	
Unit 3	1	0	0	0	0	2 481.8
Unit 4	14	0	0	0	0	2 390.8
Unit 5	24	0	0	0	0	2 196.8
Unit 6	20	0	0	0	0	2 536.4
SUM	46	0	0	0	0	

Table 7.4: Operating days in compliance to NO_x AEL Limit - August 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NO _x (mg/Nm ³)
Unit 1	31	0	0	0	0	849.6
Unit 2	0	0	0	0	0	
Unit 3	1	0	0	0	0	1 091.4
Unit 4	14	0	0	0	0	758.7
Unit 5	24	0	0	0	0	834.2
Unit 6	20	0	0	0	0	777.1
SUM	46	0	0	0	0	

Table 7.5: 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

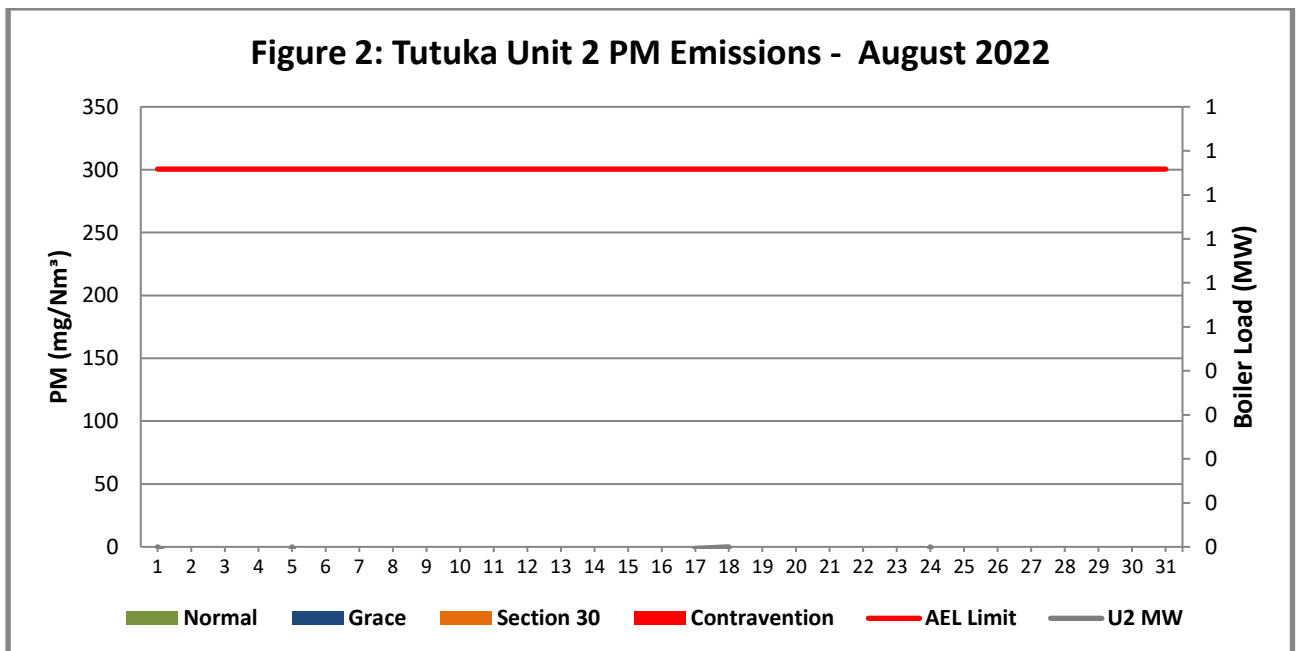
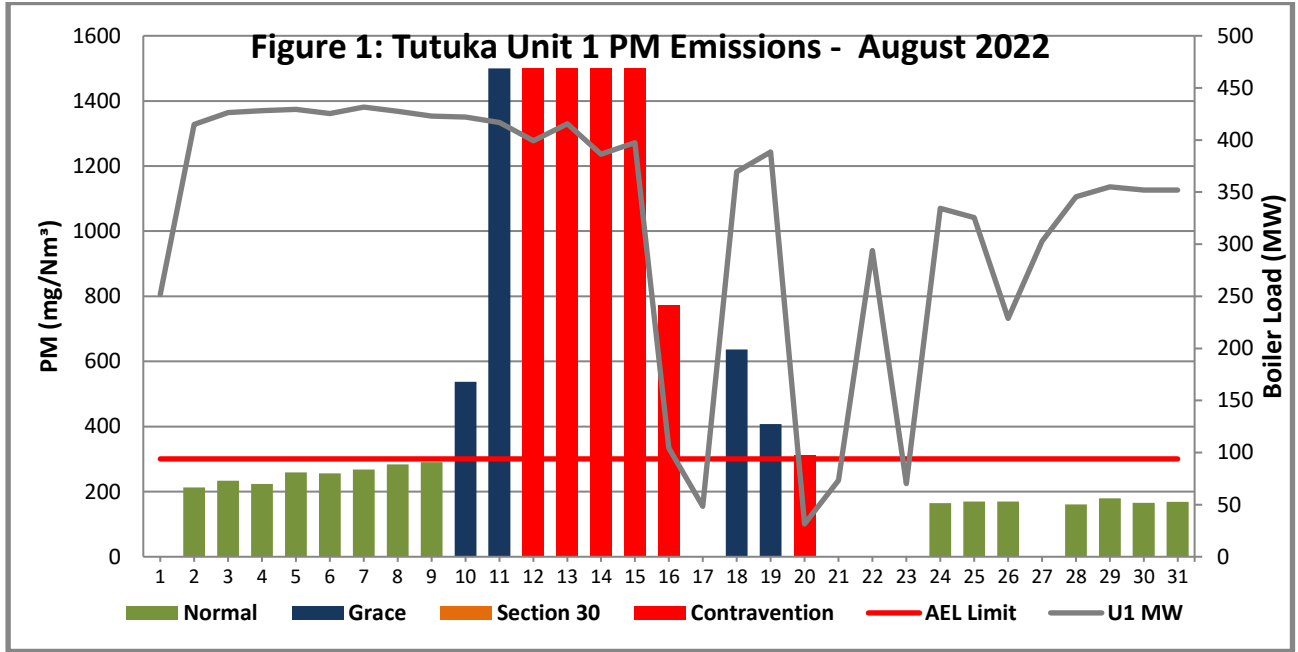


Figure 3: Tutuka Unit 3 PM Emissions - August 2022

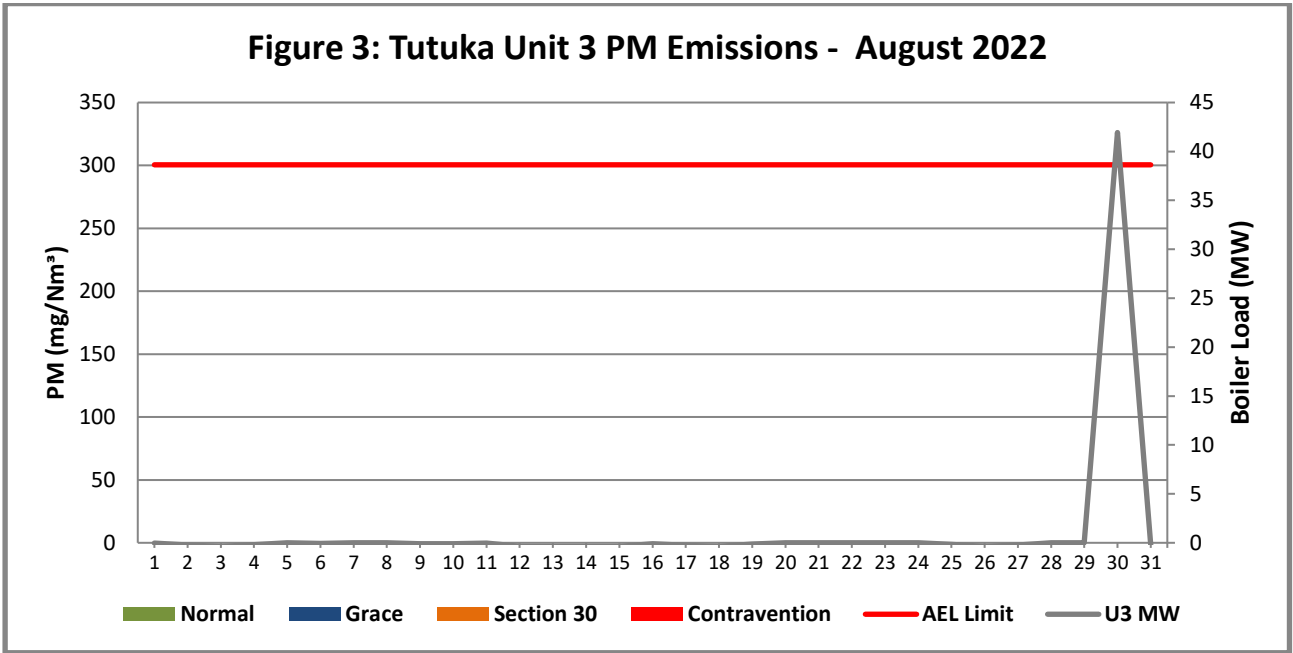


Figure 4: Tutuka Unit 4 PM Emissions - August 2022

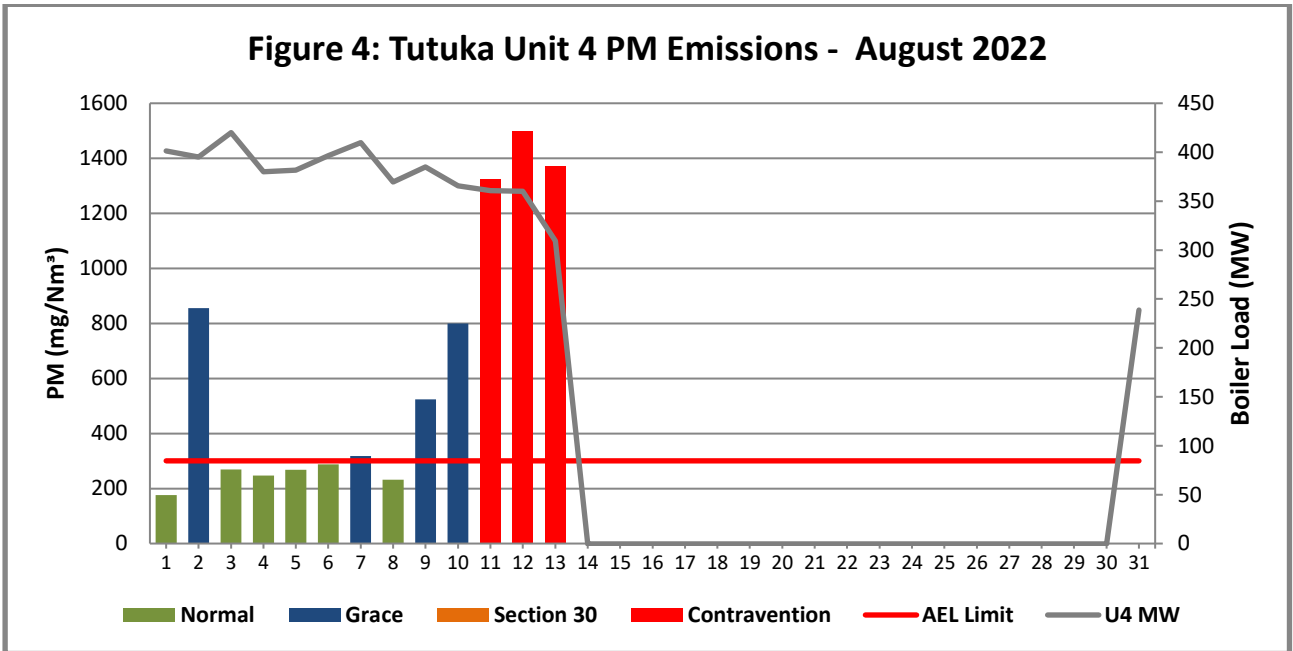


Figure 5: Tutuka Unit 5 PM Emissions - August 2022

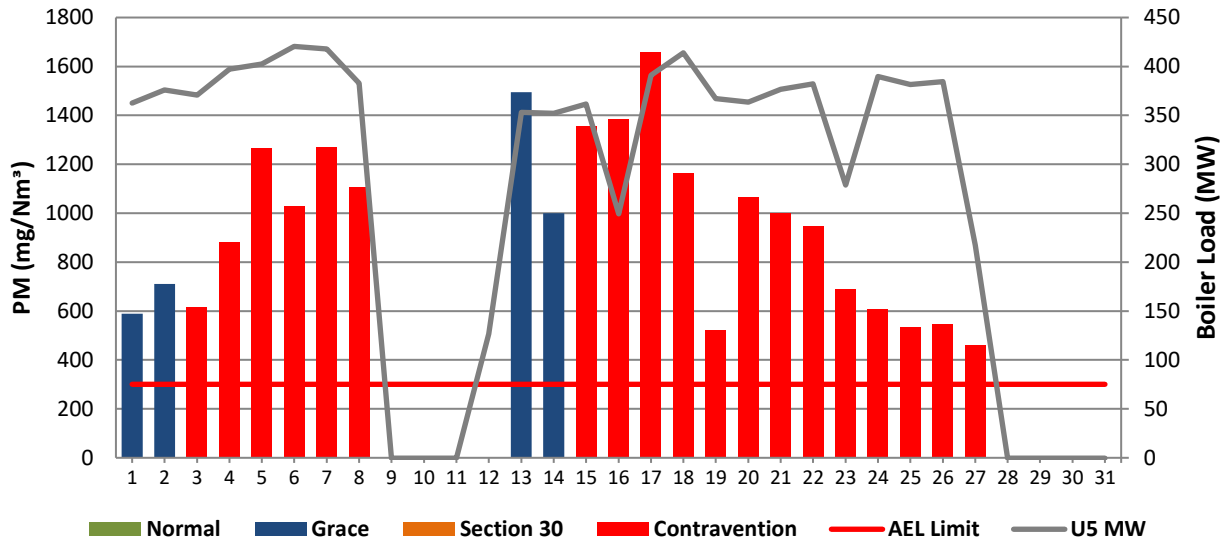


Figure 6: Tutuka Unit 6 PM Emissions - August 2022

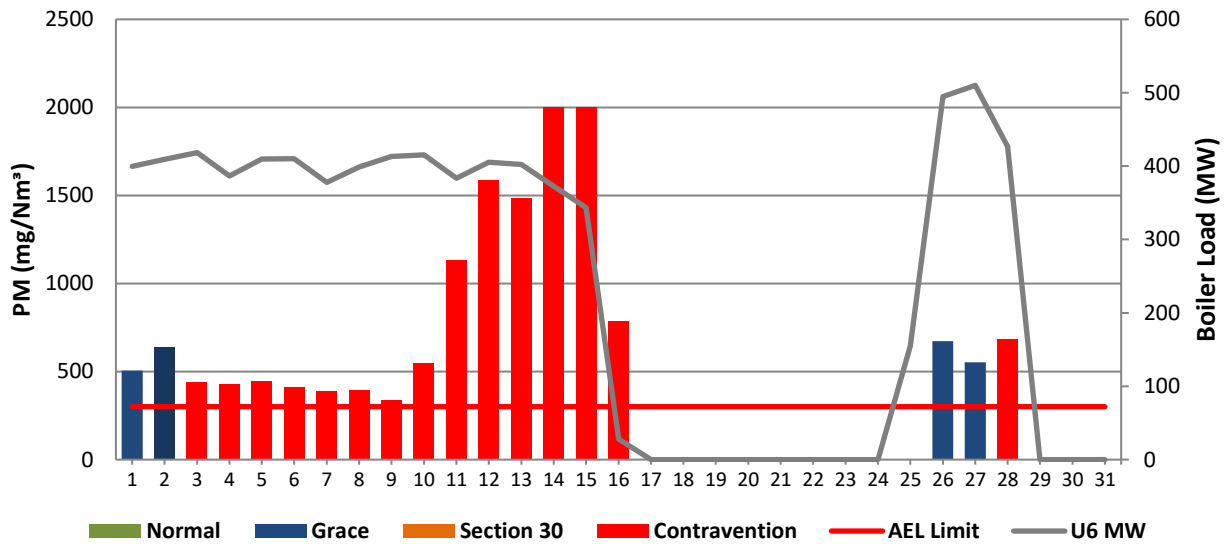


Figure 8: Tutuka Unit 2 SO₂ Emissions - August 2022

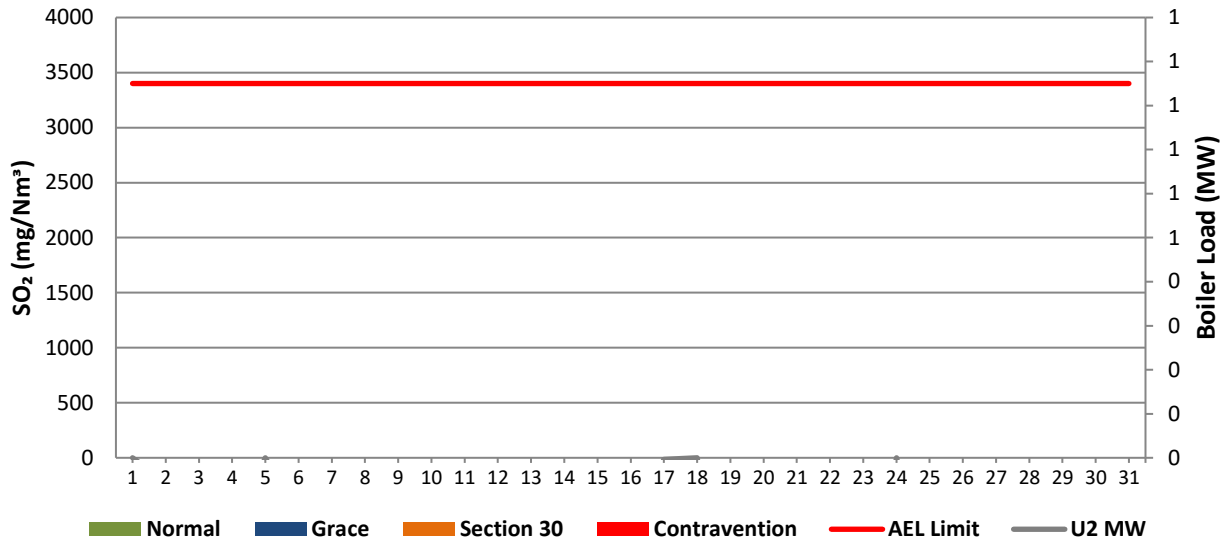


Figure 9: Tutuka Unit 3 SO₂ Emissions - August 2022

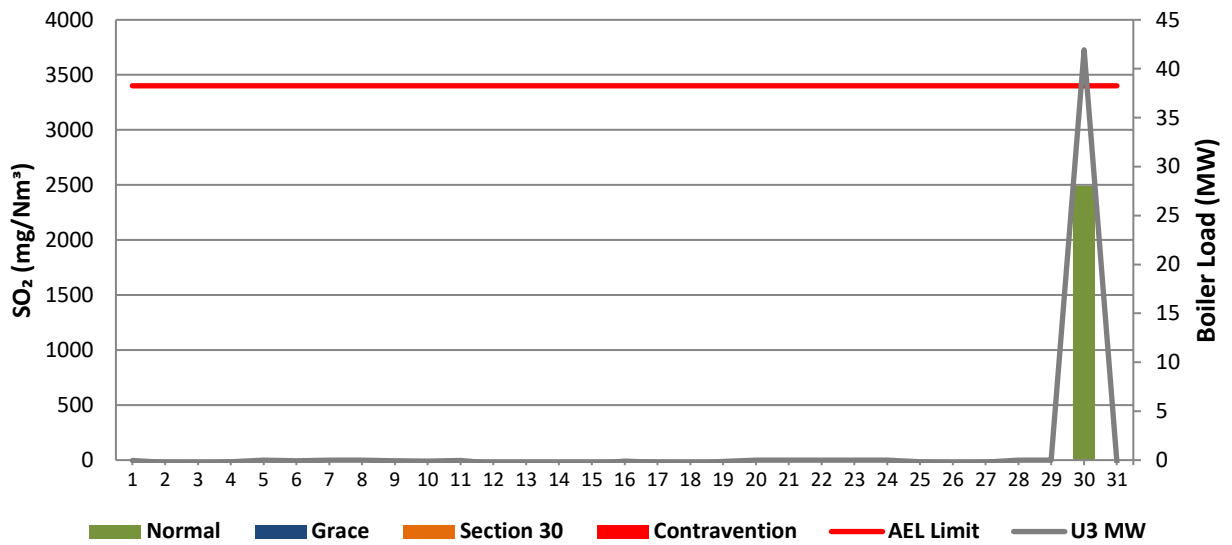


Figure 10: Tutuka Unit 4 SO₂ Emissions - August 2022

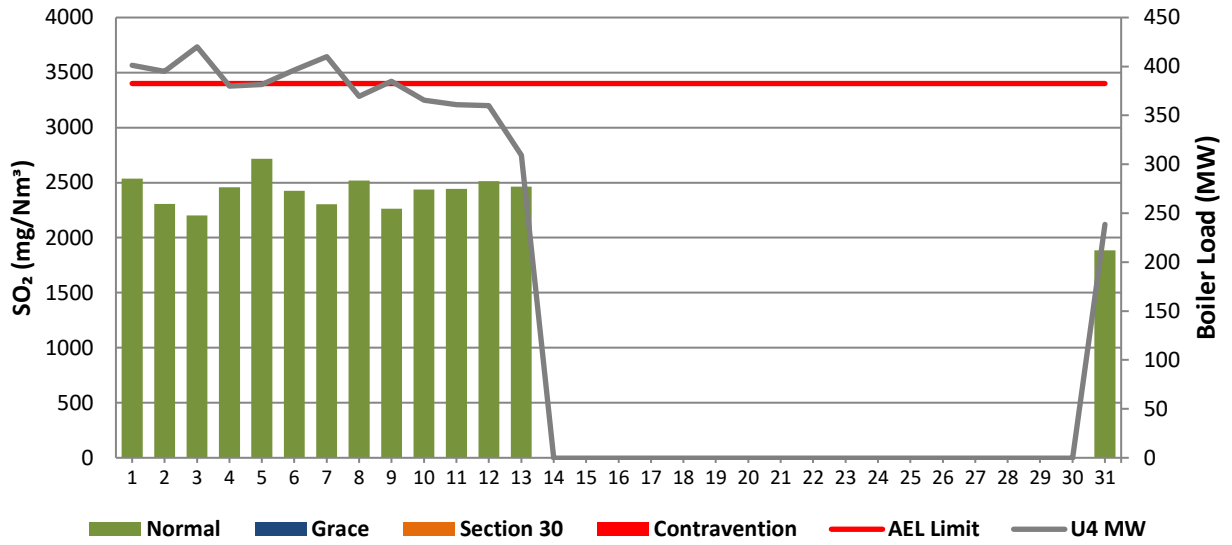


Figure 11: Tutuka Unit 5 SO₂ Emissions - August 2022

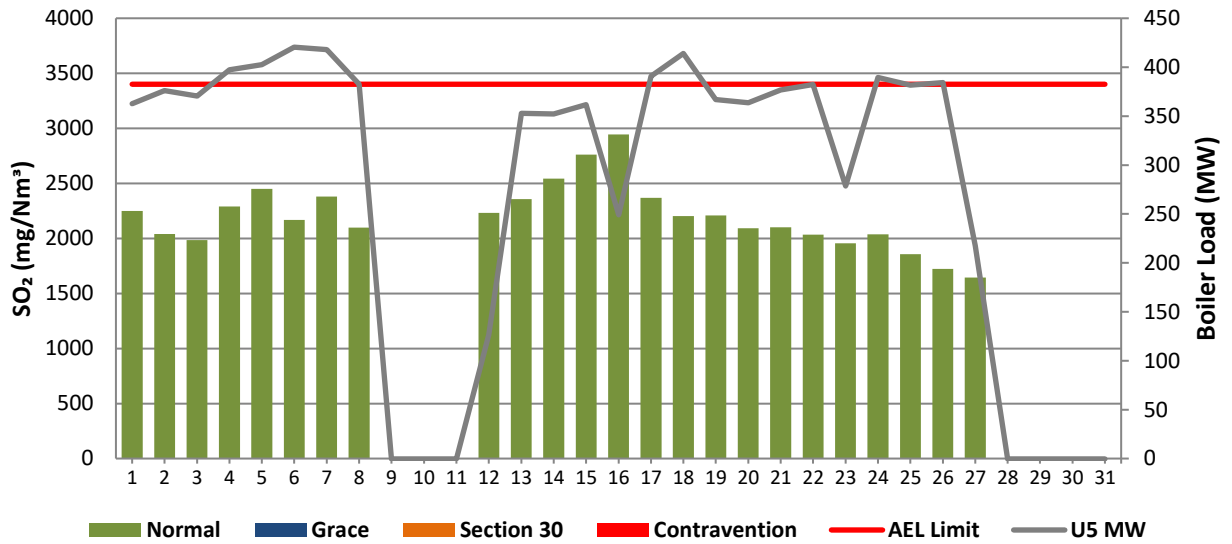


Figure 12: Tutuka Unit 6 SO₂ Emissions - August 2022

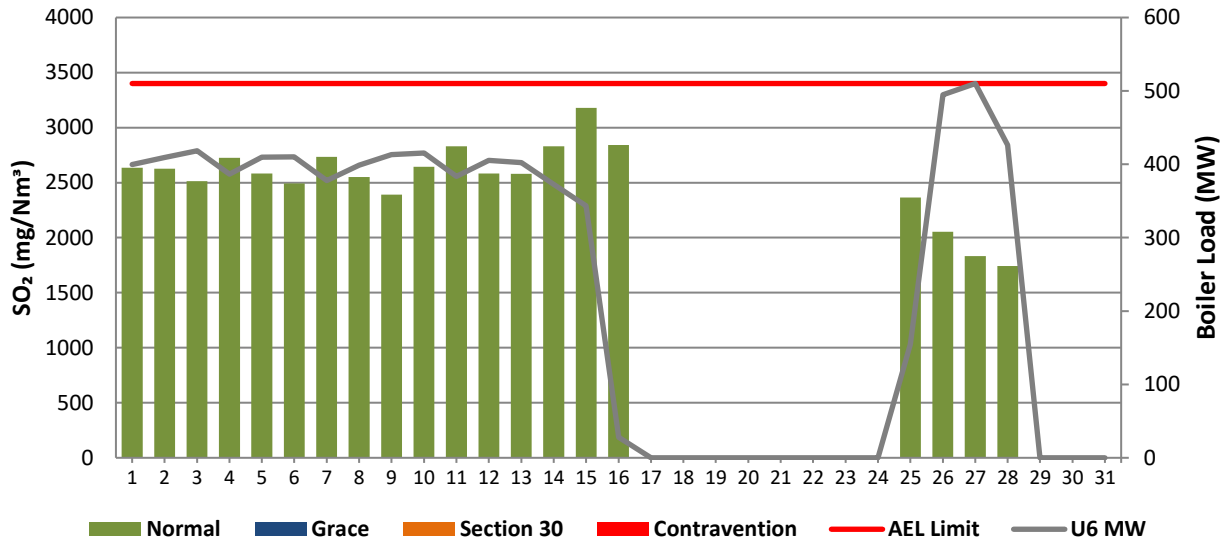


Figure 13: Tutuka Unit 1 NO_x Emissions - August 2022

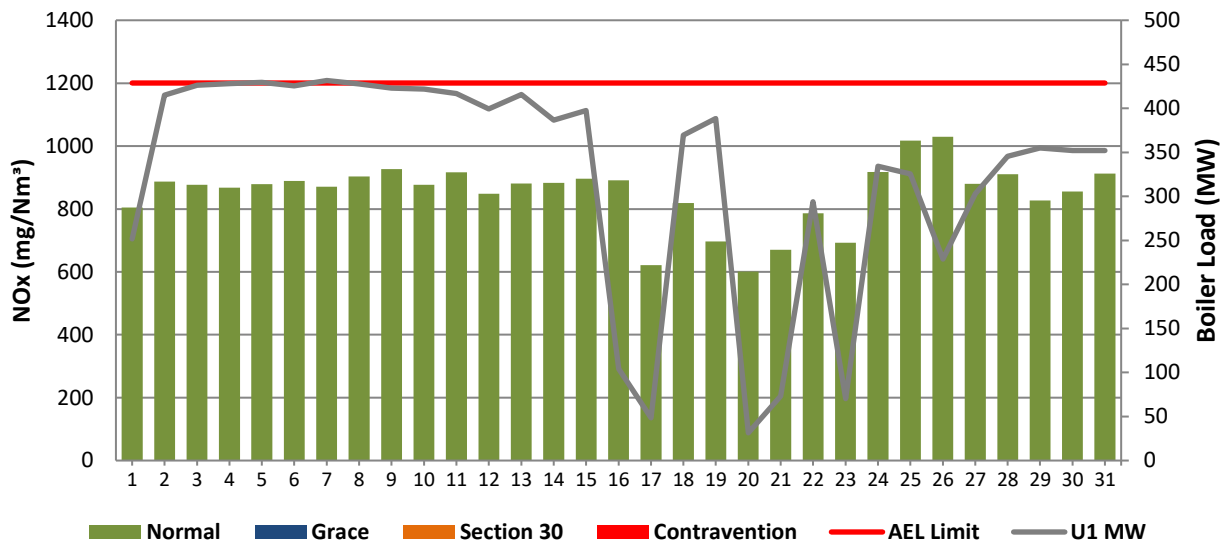


Figure 14: Tutuka Unit 2 NOx Emissions - August 2022

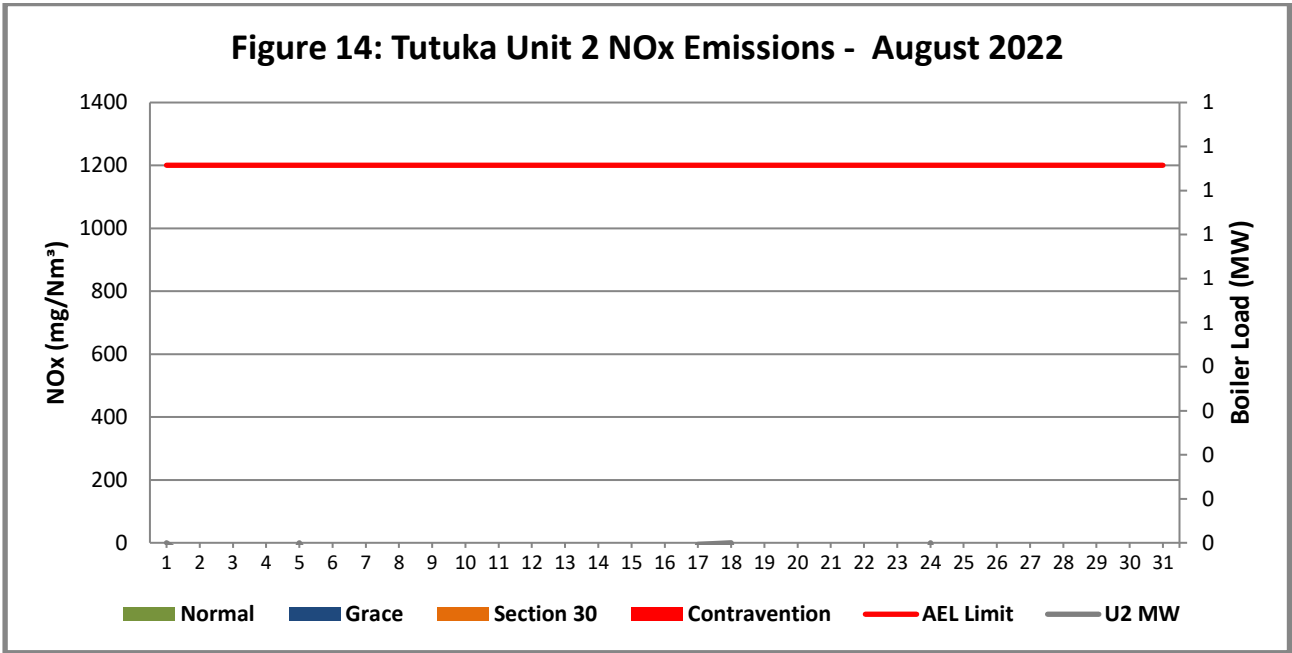


Figure 15: Tutuka Unit 3 NOx Emissions - August 2022

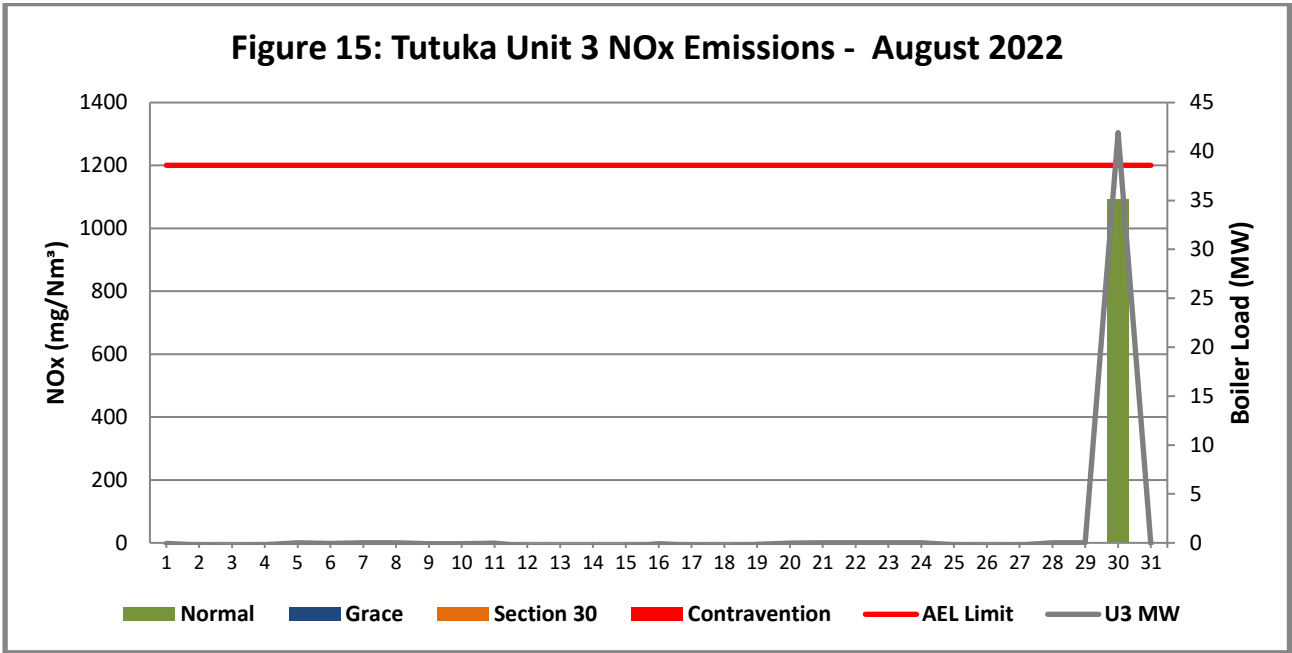


Figure 16: Tutuka Unit 4 NOx Emissions - August 2022

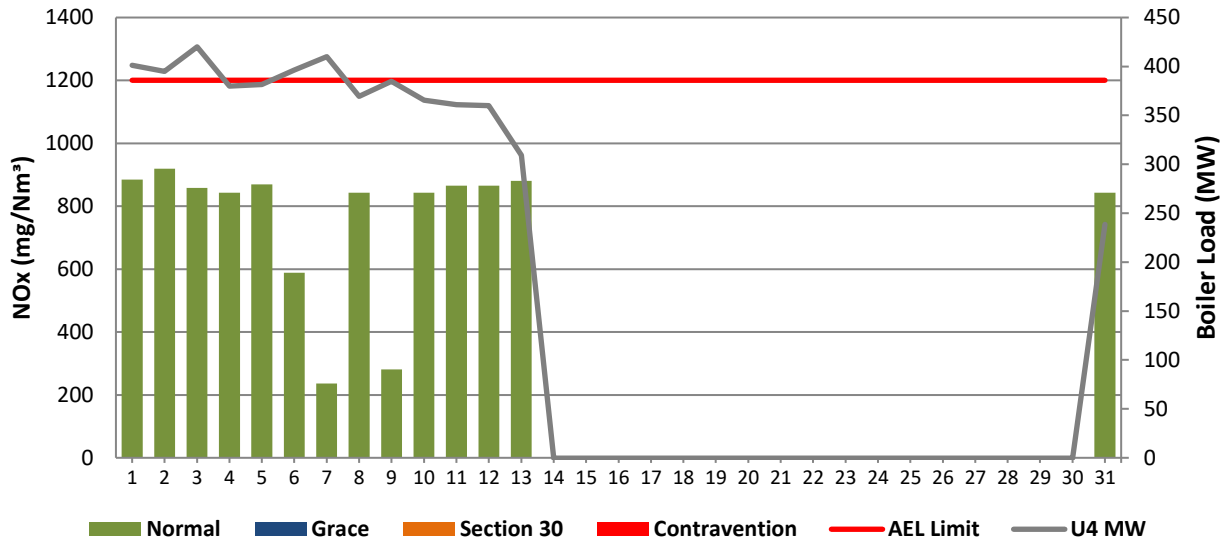
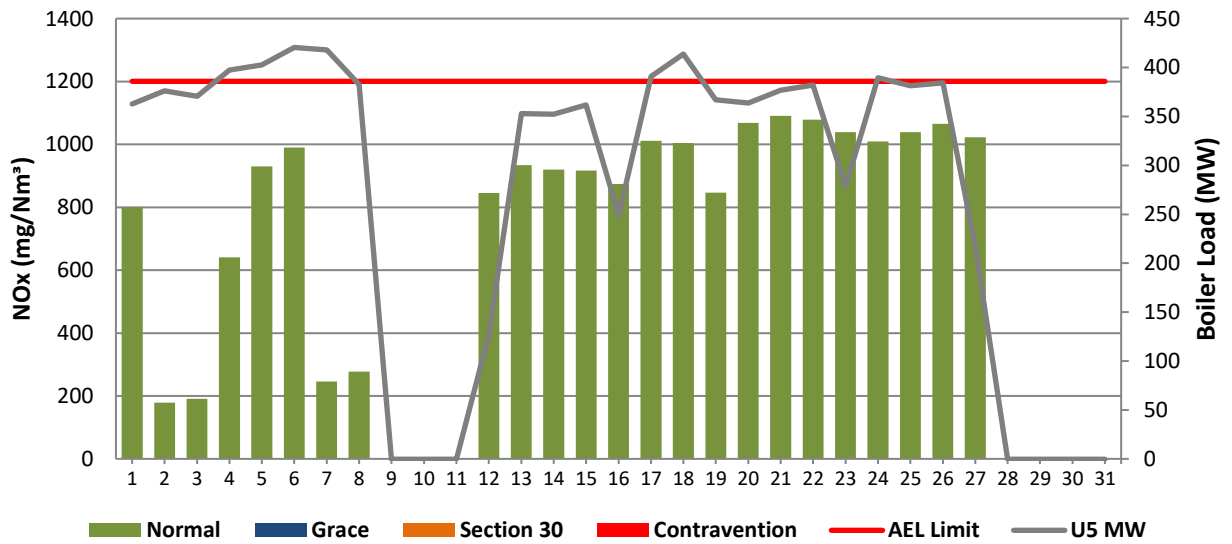
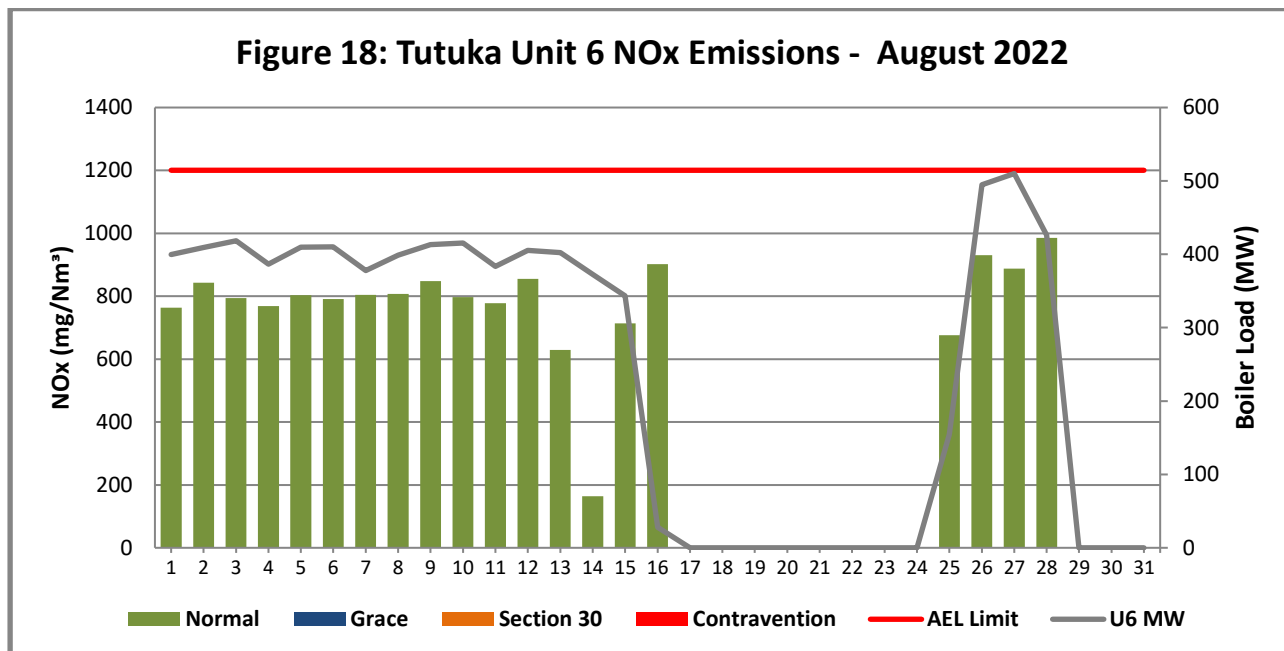


Figure 17: Tutuka Unit 5 NOx Emissions - August 2022





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 August 2022					


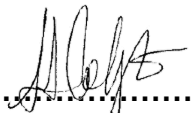

9. LIGHT UP INFORMATION

PM Start-up information for the month of August 2022

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

For more information or enquiries contact the Tutuka environmental team.

Yours Sincerely

<p>Compiled by: Xoli Jila</p> <p>SENIOR ADVISOR ENVIRONMENTAL</p> <p>Signature: </p> <p>Date :11 October 2022</p>	<p>Supported By: Mike Molepo</p> <p>SENIOR CHEMIST: BOILER ENGINEERING</p> <p>Signature: </p> <p>Date : 11/10/2022</p>
<p>Approved by: Sello Mametja</p> <p>GENERAL MANAGER: TUTUKA POWER STATION</p> <p>Signature: </p> <p>Date:..2022/10/11.....</p>	