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Dear Mr Hlanyane

### TUTUKA POWER STATION'S MONTHLY REPORT FOR THE MONTH OF JULY 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 July 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.

#### 1 RAW MATERIALS AND PRODUCTS

Raw Materials and Products	Raw Material Type	Units	Max. Permitted	Actual Consumption Jul-2022
	Coal	Tons	1 200 000	440 834
	Fuel Oil	Tons	10 000	6239.18
Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Jul-2022
	Energy	GWh	2611.44	760.6
	Ash	Tons	350 000	117 967
	RE Ash	kg/MWh	not specified	2.65

#### Generation Division

Tutuka Power Station  
 Standerton/Bethal Road, Standerton  
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 Eskom Holdings SOC Ltd Reg No 2002/015527/30

## 2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristics	Units	Stipulated Range	Monthly Average Content
CV Content	MJ/kg	16-24	21.140
Sulphur Content	%	0.6 TO >2.6	1.090
Ash Content	%	21 TO >33	26.760

## 3 EMISSION LIMITS (mg/Nm<sup>3</sup>)

Associated Unit/Stack	PM	SO <sub>x</sub>	NO <sub>x</sub>
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 ABATEMET TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Jul-2022
Unit 1	<i>Electro Static Precipitators (ESP)</i>	98.8%
Unit 2	<i>Electro Static Precipitators (ESP)</i>	
Unit 3	<i>Electro Static Precipitators (ESP)</i>	
Unit 4	<i>Electro Static Precipitators (ESP)</i>	99.1%
Unit 5	<i>Electro Static Precipitators (ESP)</i>	96.1%
Unit 6	<i>Electro Static Precipitators (ESP)</i>	98.1%

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

## 5 MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO <sub>2</sub>	NO	CO <sub>2</sub>	O <sub>2</sub>
Unit 1	78.1	99.7	99.8	93.6	94.0
Unit 2					
Unit 3					
Unit 4	63.8	99.7	99.3	98.5	98.9
Unit 5	78.6	99.7	83.0	99.2	99.2
Unit 6	60.5	78.5	78.5	78.5	78.5

- Note: 1. The unit gas monitor tripped from the 1<sup>st</sup> -7<sup>th</sup> July 2022, as a result monthly average values were used.  
 2. The units 1, 5 and 6 Particulate Matter monitors maxed out on the days highlighted in yellow section 6 below. As a result, the recorded concentration could higher than what is reflected.

## 6. DUST CONCENTRATIONS FOR THE MONTH OF JULY 2022

Date	Final Dust Concentration (mg/Nm <sup>3</sup> )					
	U1	U2	U3	U4	U5	U6
01-Jul	311.7			466.1	912.3	
02-Jul	331.7			466.0		595.2
03-Jul	330.8			466.1		606.1
04-Jul	329.8			466.4		607.9
05-Jul	306.3					606.2
06-Jul	336.0			467.8		606.0
07-Jul	409.3			465.6		606.2
08-Jul	409.4				844.9	606.2
09-Jul	409.3				887.9	606.0
10-Jul	327.7					606.0
11-Jul	277.8					605.8
12-Jul	255.9					582.8
13-Jul	254.7					459.1
14-Jul						561.4
15-Jul						563.2
16-Jul					915.7	531.4
17-Jul					812.2	406.7
18-Jul					797.6	352.7
19-Jul					750.2	310.0
20-Jul				391.4	748.6	384.1
21-Jul				218.7	684.0	534.4
22-Jul				154.3	649.7	529.8
23-Jul				133.6	832.0	485.6
24-Jul				143.2	915.4	457.4
25-Jul				138.9	768.0	556.5
26-Jul				138.1	788.6	526.1
27-Jul				138.8	738.2	557.4
28-Jul				135.5	574.2	509.9
29-Jul	211.6			133.8	413.8	481.1
30-Jul	240.1			151.7	473.9	459.8
31-Jul	261.9			184.8	518.0	445.4
	<b>312.7</b>			<b>270.1</b>	<b>738.2</b>	<b>524.9</b>

## 7. EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of July-2022

Associated Unit/Stack	PM (tons)	SO <sub>2</sub> (tons)	NO <sub>x</sub> (tons)	CO <sub>2</sub> (tons)
Unit 1	224,8	1 705	560	157 847
Unit 2	0,0	0	0	0
Unit 3	0,0	0	0	0
Unit 4	192,9	1 954	735	171 884
Unit 5	843,7	2 622	917	259 820
Unit 6	873,4	3 994	1 279	361 083
<b>SUM</b>	<b>2 134,8</b>	<b>10 276</b>	<b>3 491</b>	<b>950 634</b>

Table 6.2: Operating days in compliance to PM AEL Limit - July 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm <sup>3</sup> )
Unit 1	6	2	0	8	10	312.7
Unit 2	0	0	0	0	0	
Unit 3	0	0	0	0	0	
Unit 4	11	5	0	2	7	270.1
Unit 5	0	5	0	14	19	738.2
Unit 6	0	2	0	28	30	524.9
<b>SUM</b>	<b>17</b>	<b>14</b>	<b>0</b>	<b>52</b>	<b>66</b>	

Table 6.3: Operating days in compliance to SO<sub>x</sub> AEL Limit - July 2022

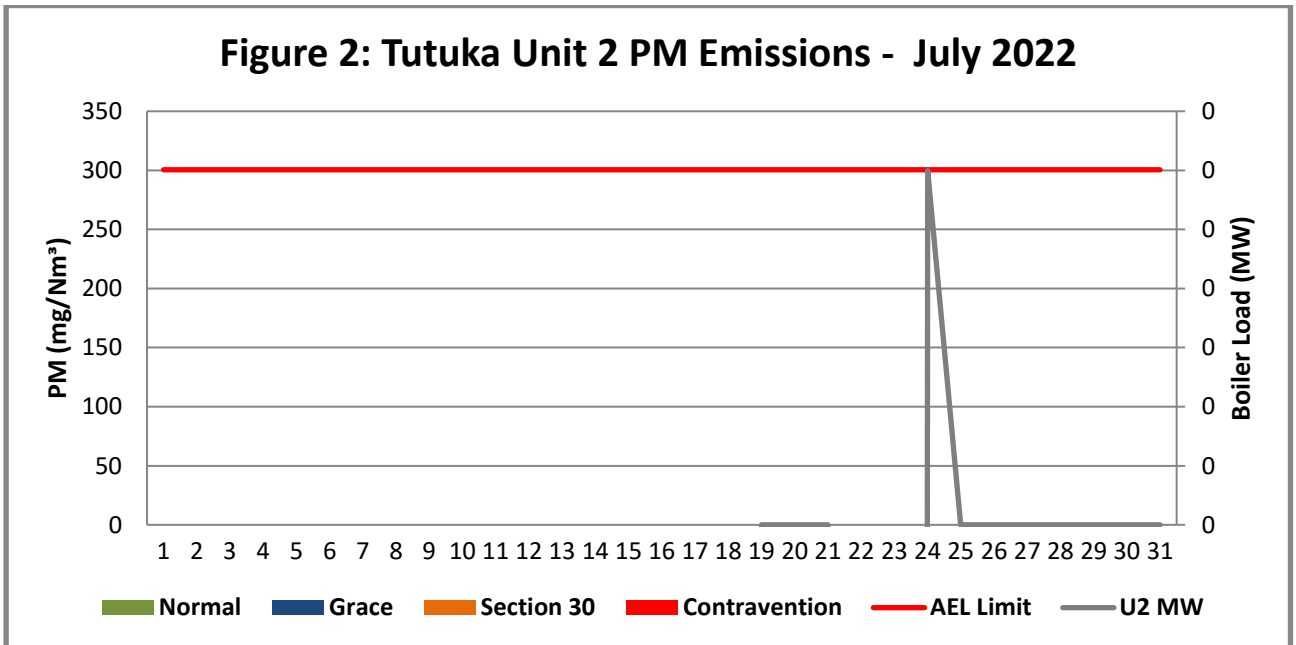
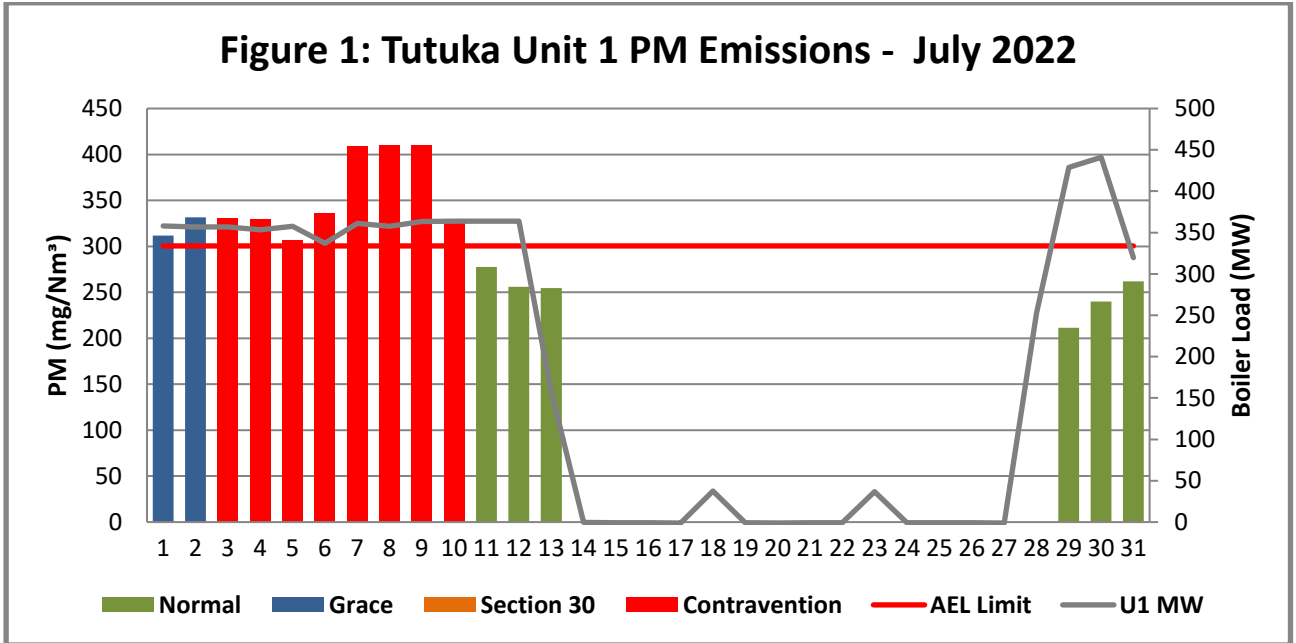
Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO <sub>x</sub> (mg/Nm <sup>3</sup> )
Unit 1	16	0	0	0	0	2 396.9
Unit 2	0	0	0	0	0	
Unit 3	0	0	0	0	0	
Unit 4	18	0	0	0	0	2 416.8
Unit 5	19	0	0	0	0	2 255.4
Unit 6	30	0	0	0	0	2 415.7
<b>SUM</b>	<b>83</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

Table 6.4: Operating days in compliance to NO<sub>x</sub> AEL Limit - July 2022

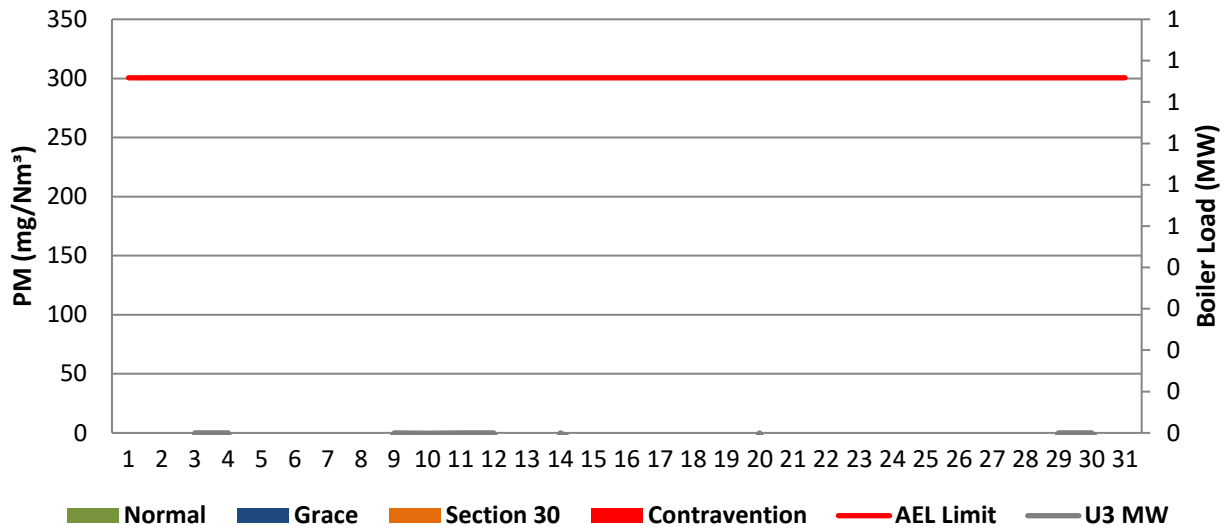
Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NO <sub>x</sub> (mg/Nm <sup>3</sup> )
Unit 1	16	0	0	0	0	785.0
Unit 2	0	0	0	0	0	
Unit 3	0	0	0	0	0	
Unit 4	18	0	0	0	0	903.9
Unit 5	19	0	0	0	0	775.0
Unit 6	30	0	0	0	0	767.3
<b>SUM</b>	<b>83</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

Table 6.5: Legend Description

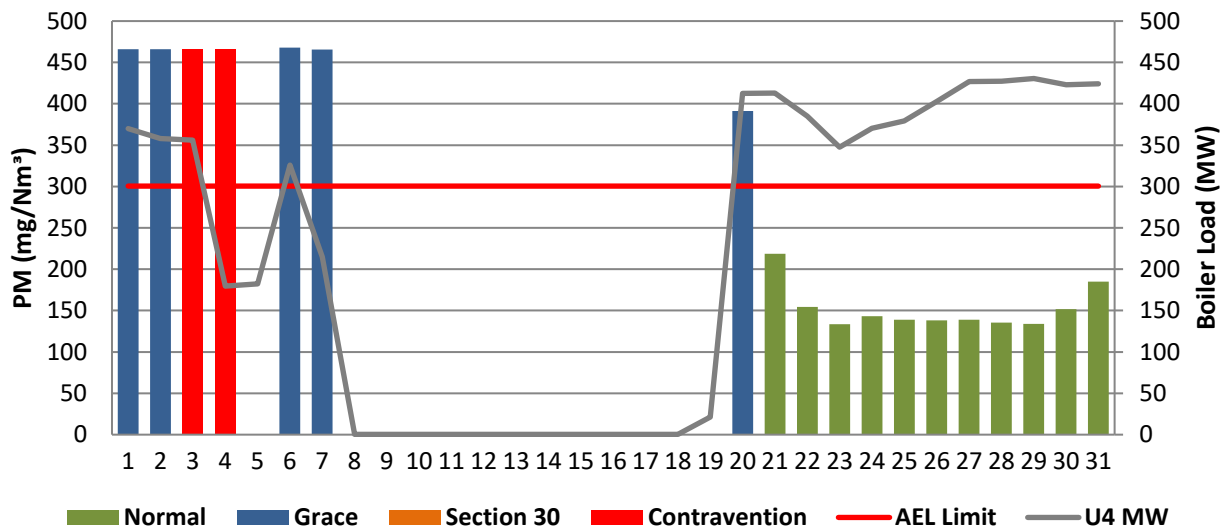
Condition	Colour	Description
Normal	Green	Emissions below Emission Limit Value (ELV)
Grace	Blue	Emissions above the ELV during grace period
Section 30	Orange	Emissions above ELV during a NEMA S30 incident
Contravention	Red	Emissions above ELV but outside grace or S30 incident conditions



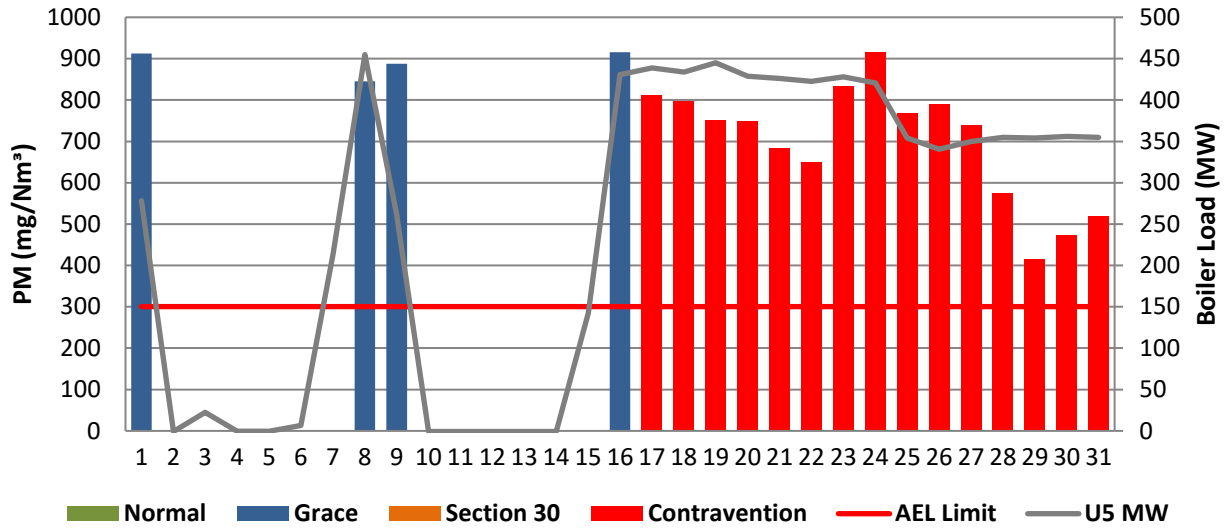
**Figure 3: Tutuka Unit 3 PM Emissions - July 2022**



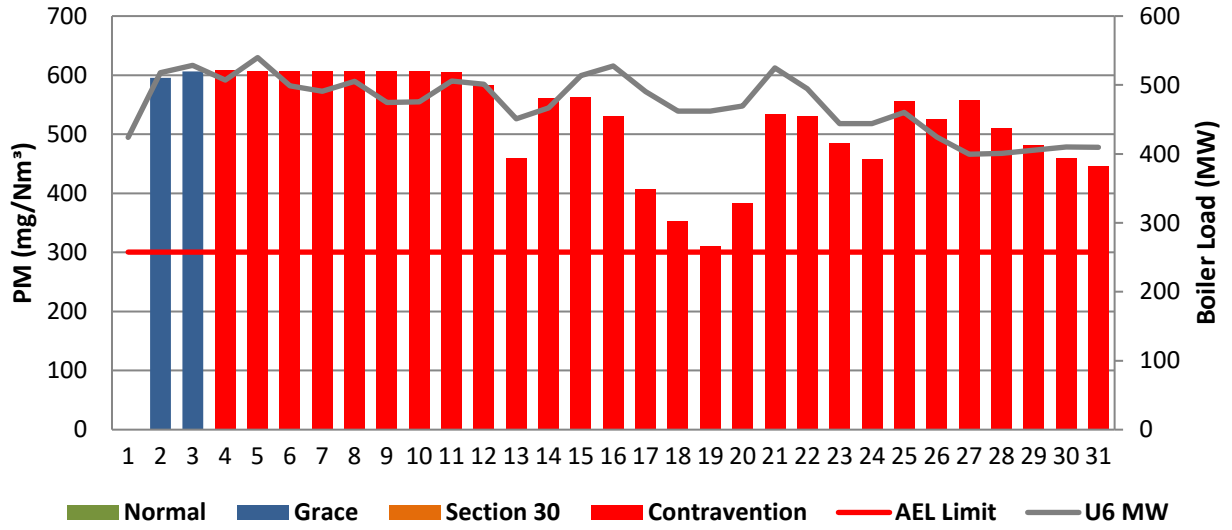
**Figure 4: Tutuka Unit 4 PM Emissions - July 2022**



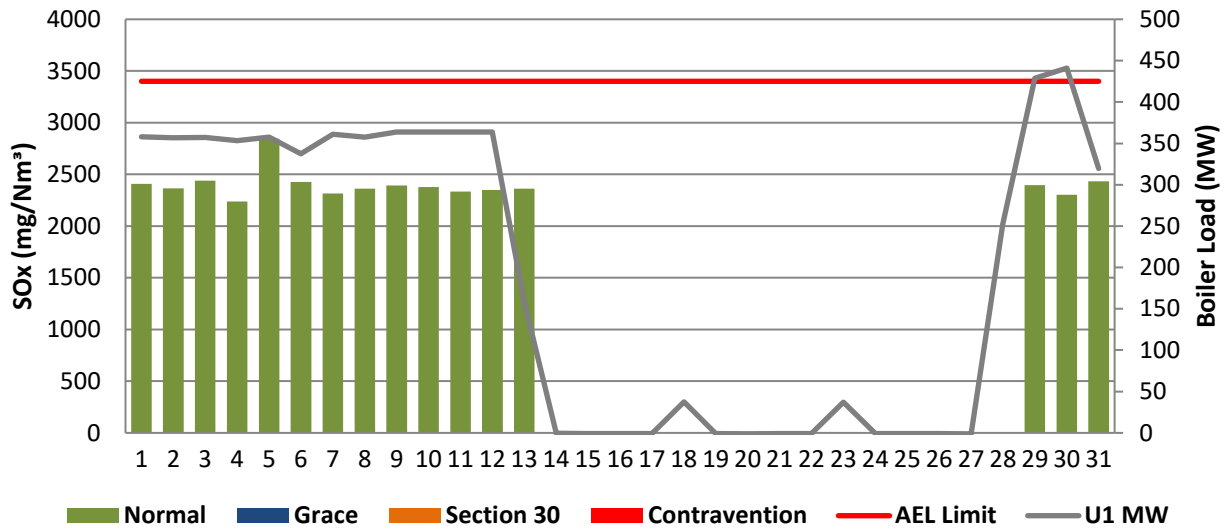
**Figure 5: Tutuka Unit 5 PM Emissions - July 2022**



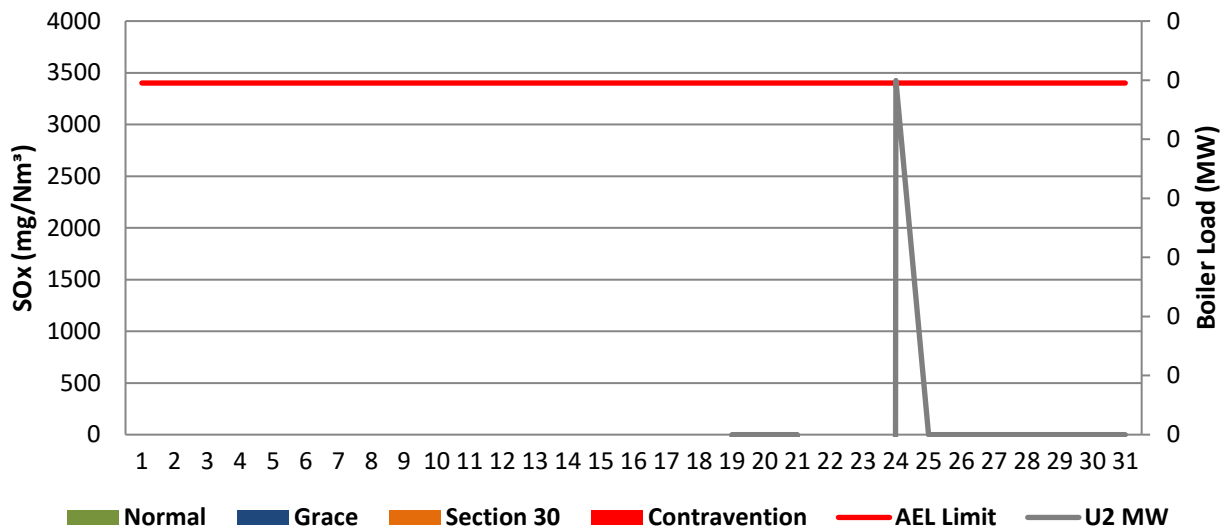
**Figure 6: Tutuka Unit 6 PM Emissions - July 2022**



**Figure 7: Tutuka Unit 1 SOx Emissions - July 2022**

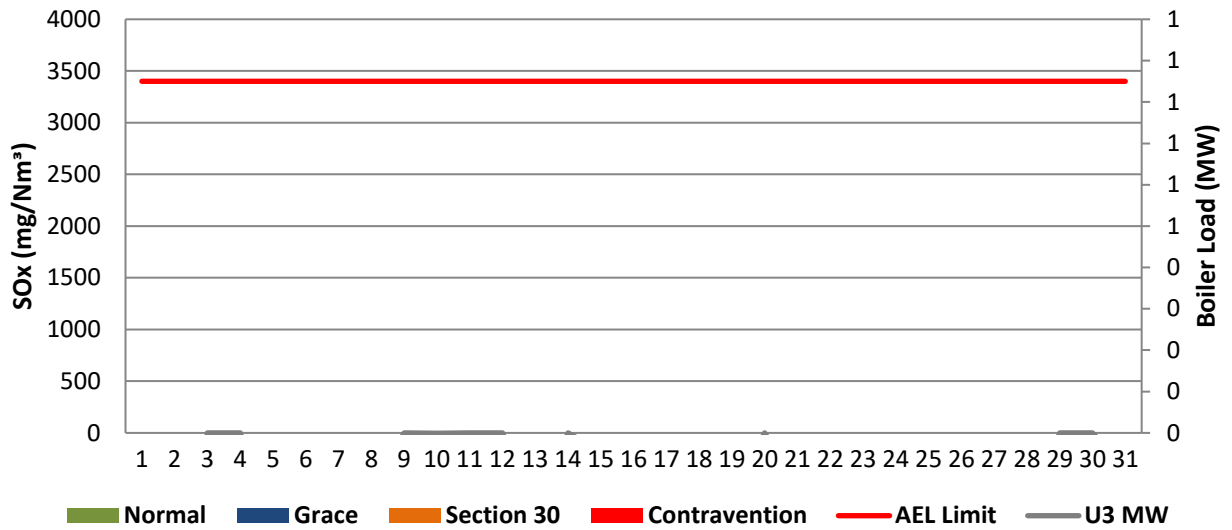


**Figure 8: Tutuka Unit 2 SOx Emissions - July 2022**

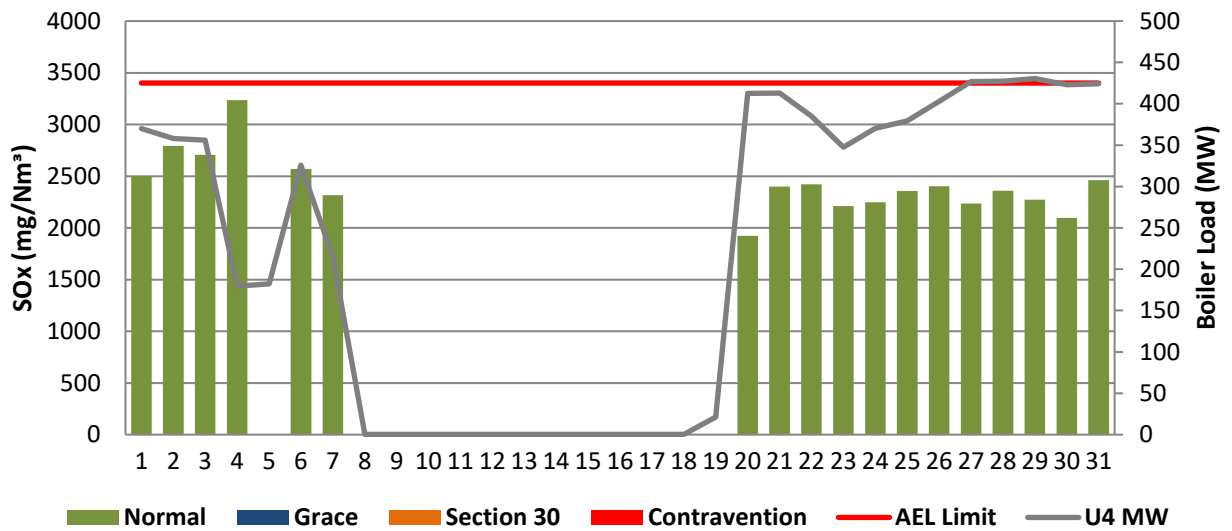




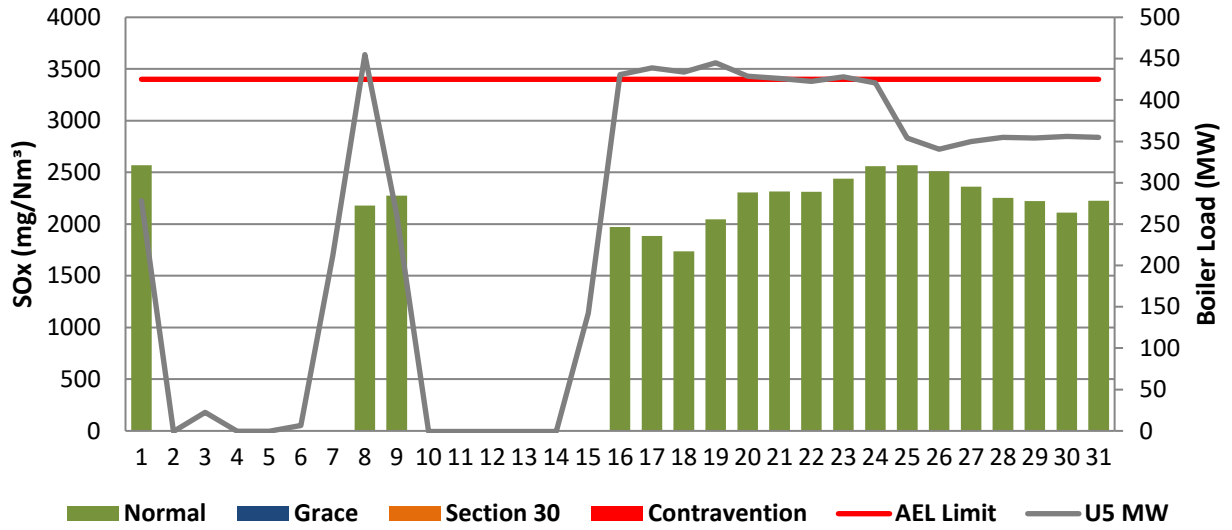
**Figure 9: Tutuka Unit 3 SOx Emissions - July 2022**



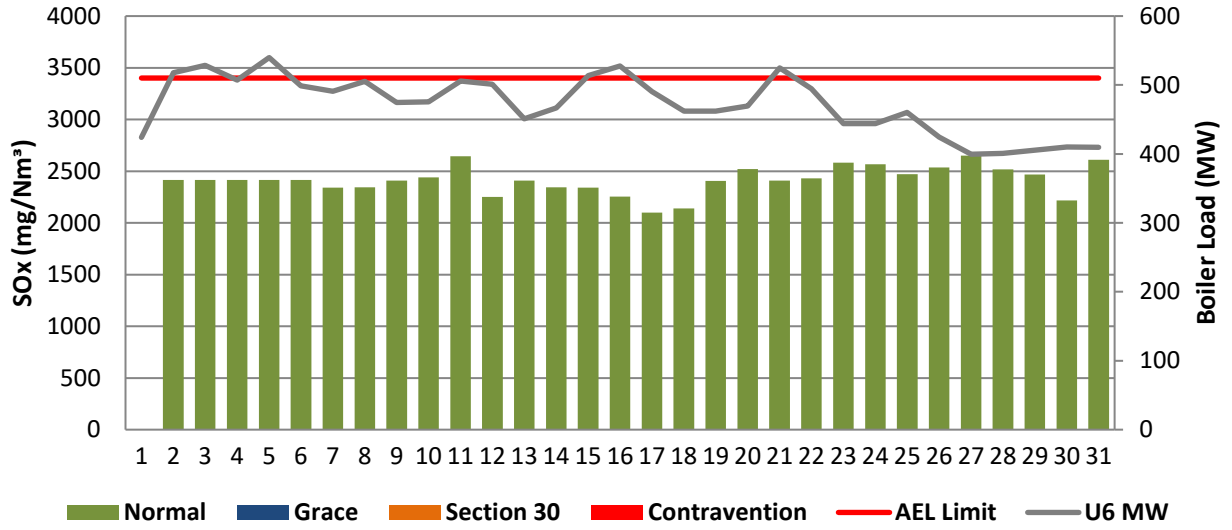
**Figure 10: Tutuka Unit 4 SOx Emissions - July 2022**



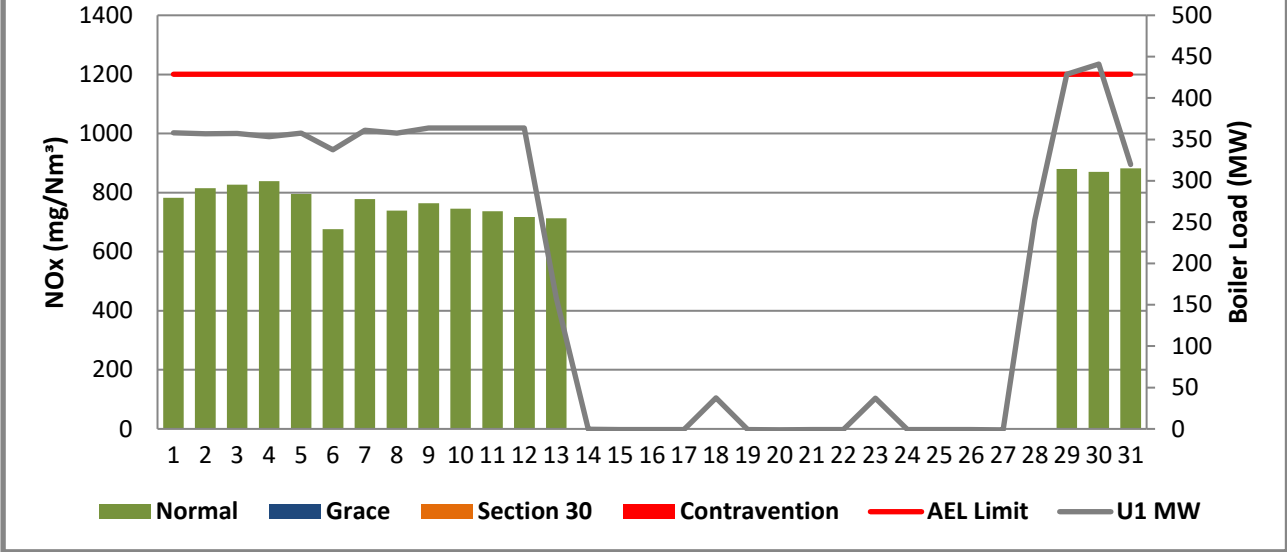
**Figure 11: Tutuka Unit 5 SOx Emissions - July 2022**



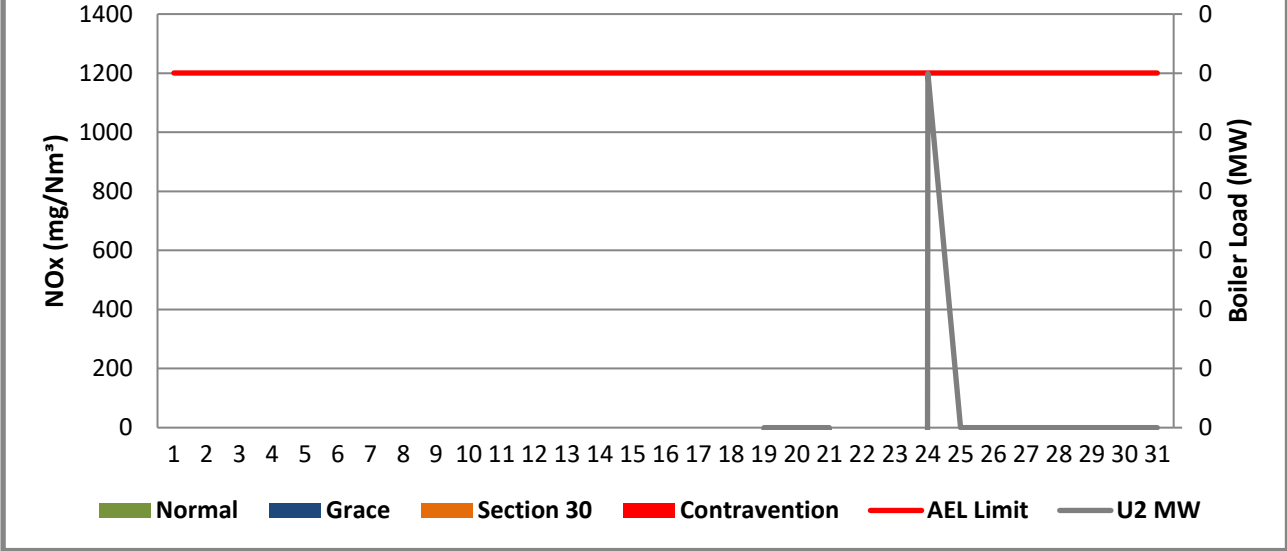
**Figure 12: Tutuka Unit 6 SOx Emissions - July 2022**



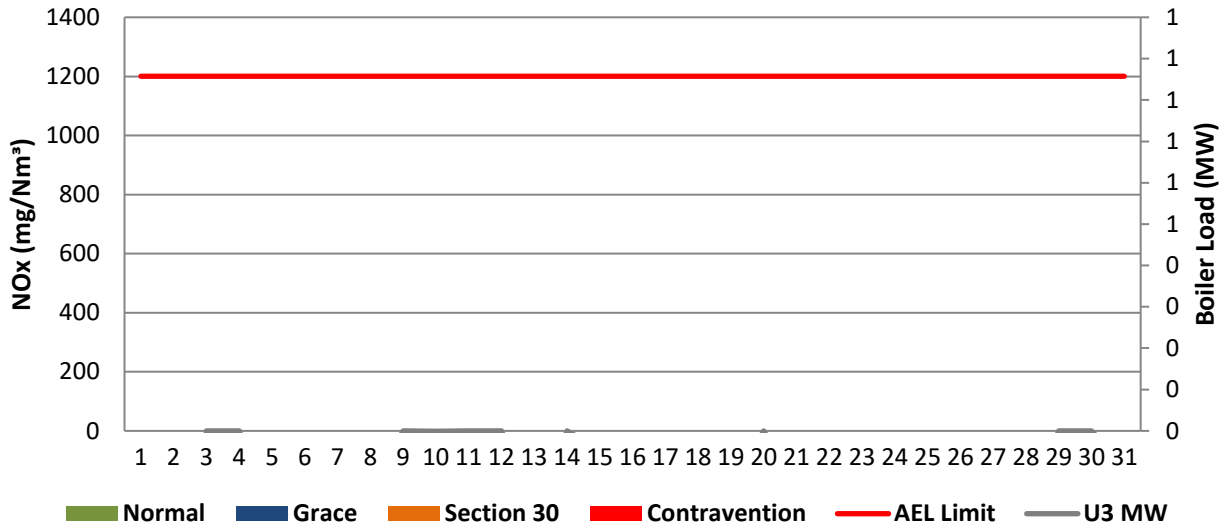
**Figure 13: Tutuka Unit 1 NOx Emissions - July 2022**



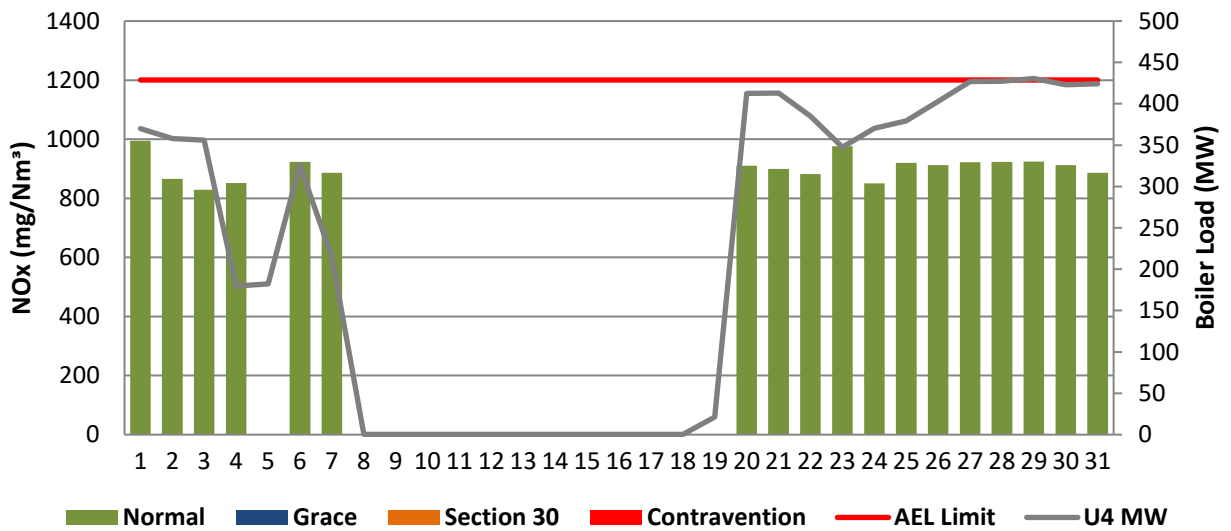
**Figure 14: Tutuka Unit 2 NOx Emissions - July 2022**



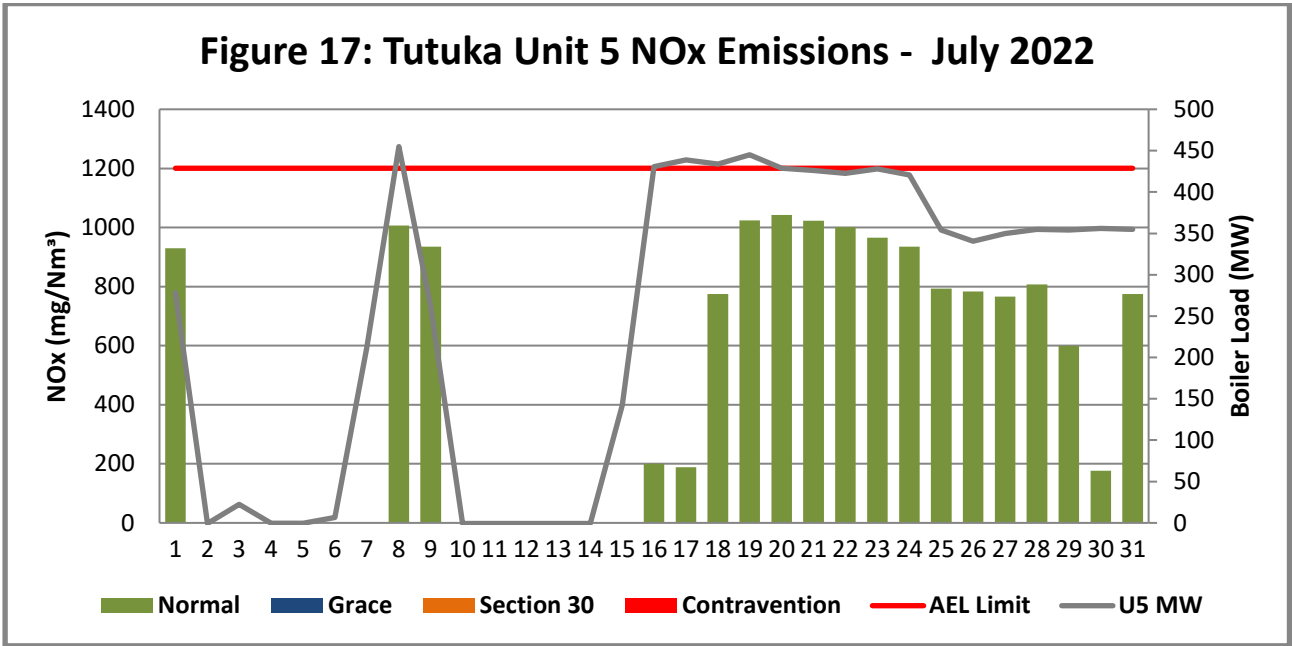
**Figure 15: Tutuka Unit 3 NOx Emissions - July 2022**



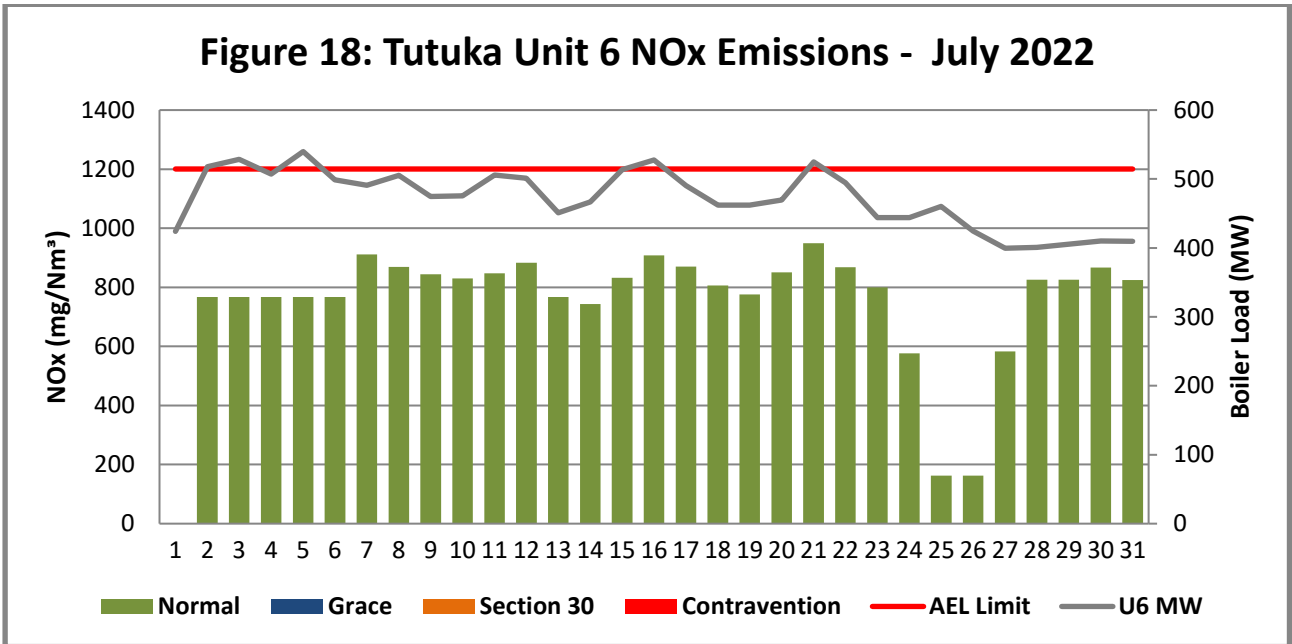
**Figure 16: Tutuka Unit 4 NOx Emissions - July 2022**



**Figure 17: Tutuka Unit 5 NOx Emissions - July 2022**



**Figure 18: Tutuka Unit 6 NOx Emissions - July 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 July 2022					




## 9. LIGHT UP INFORMATION

PM Start-up information for the month of July 2022

	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	0	0	1	1	1

For more information or enquiries contact the Tutuka environmental team.

Yours Sincerely

<p><b>Compiled by:</b> Xoli Jila</p> <p><b>SENIOR ADVISOR ENVIRONMENTAL</b></p> <p>Signature:  .....</p> <p><b>Date : 22 August 2022</b></p>	<p><b>Supported By:</b> Mike Molepo</p> <p><b>SENIOR CHEMIST: BOILER ENGINEERING</b></p> <p>Signature:  .....</p> <p><b>Date :</b> 23/08/2022</p>
<p><b>Approved by: Sello Mametja</b> <b>GENERAL MANAGER: TUTUKA POWER STATION</b></p> <p>Signature:  .....</p> <p><b>Date:</b> 2022/08/23 .....</p>	