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Date:
 20 August 2021

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Dear Mr. Hlanyane

TUTUKA POWER STATION'S MONTHLY STACK EMISSIONS REPORT FOR THE MONTH OF July 2021

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 July 2021. Verified emissions of particulates matter, SO₂ and NO_x (as NO₂) are also included.

Raw Materials and Products

Table 1: Quantity of Raw Materials and Products used/produced for the month of July 2021

Raw Materials and Products used	Raw Material Type	Units	Maximum Permitted Consumption / Rate (Quantity)	Consumption / Rate in Month of July 2021
	Coal	Tons/month	1 200 000	338 286
	Fuel Oil	Tons/month	10 000	5799,39
Production Rates	Product/ By-Product Name	Unit	Maximum Production Capacity Permitted (Quantity)	Production Rate in Month of July 2021
	Ash	Tons/month	not specified	83 218
	RE PM	kg/MWh	not specified	0,92

1/...

Generation Division

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 Eskom Holdings SOC Limited Reg No 2002/015527/30

Abatement Technology

Table 2: Abatement Equipment Control Technology for July 2021

Associated Unit/Stack	Technology Type	Minimum Control Efficiency (%)	Actual Efficiency (%)
			July 2021
Unit 1	ESP	95%	99,4%
Unit 2	ESP	95%	99,3%
Unit 3	ESP	95%	Unit off
Unit 4	ESP	95%	99,2%
Unit 5	ESP	95%	Unit off
Unit 6	ESP	95%	99,3%

Energy Source Characteristics

Table 3: Energy Source Material Characteristics for the month of July 2021





Characteristic	Stipulated Range (Unit)	Monthly Average Content
Sulphur Content	0.6 -2.6	0,88
Ash Content	21 -33	24,46

Table 4: Monitor Reliability

Associated Unit/Stack	PM	SOx	NOx
Unit 1	100,0	99,6	99,6
Unit 2	100,0	99,5	99,7
Unit 3	Unit off	Unit off	Unit off
Unit 4	99,2	99,4	99,4
Unit 5	Unit off	Unit off	Unit off
Unit 6	99,4	99,5	57,7

Emissions Reporting

Table 6.5: Graph Legend Description

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

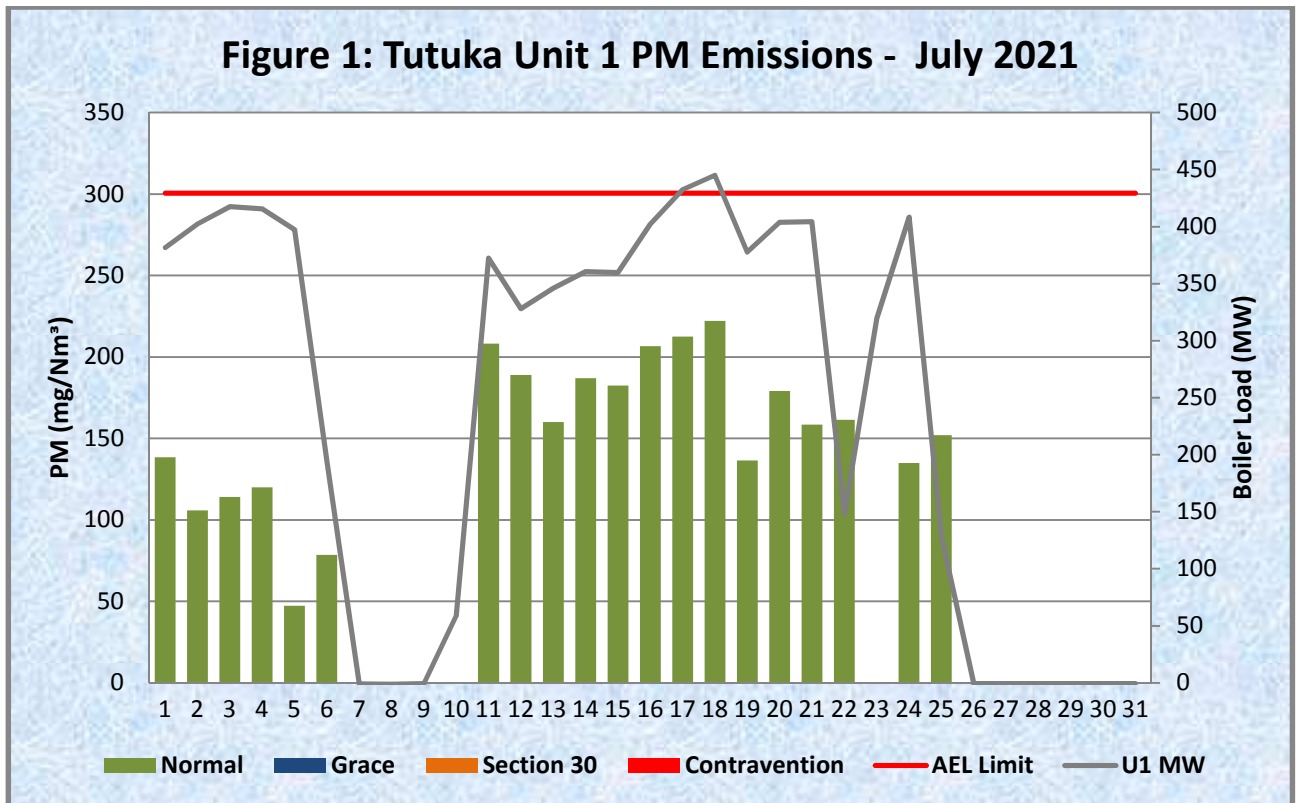


Figure 1: Unit 1 Daily Average PM emissions for the month of July 2021 (against the emission limit and load Generated)

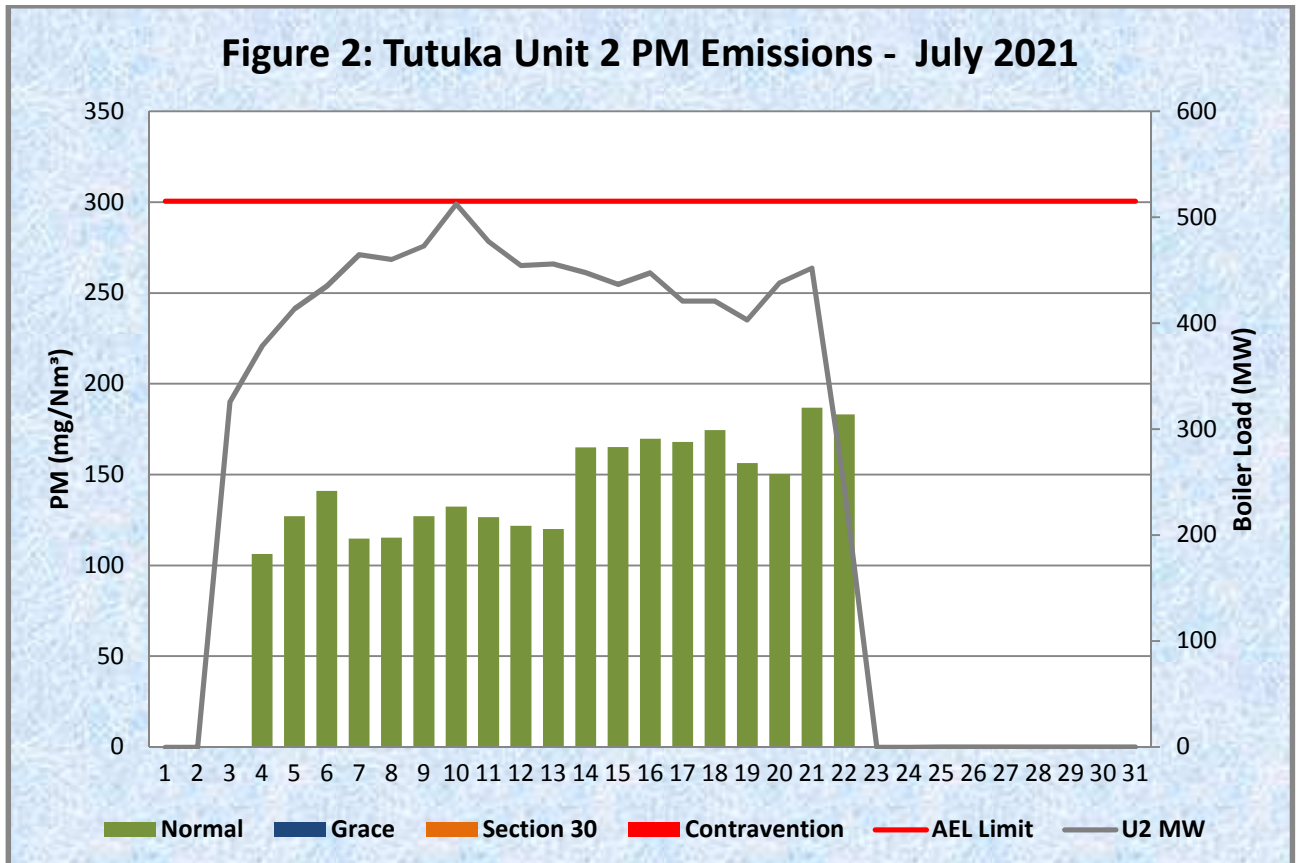


Figure 2: Unit 2 Daily Average PM emissions for the month of July 2021 (against the emission limit and load Generated)

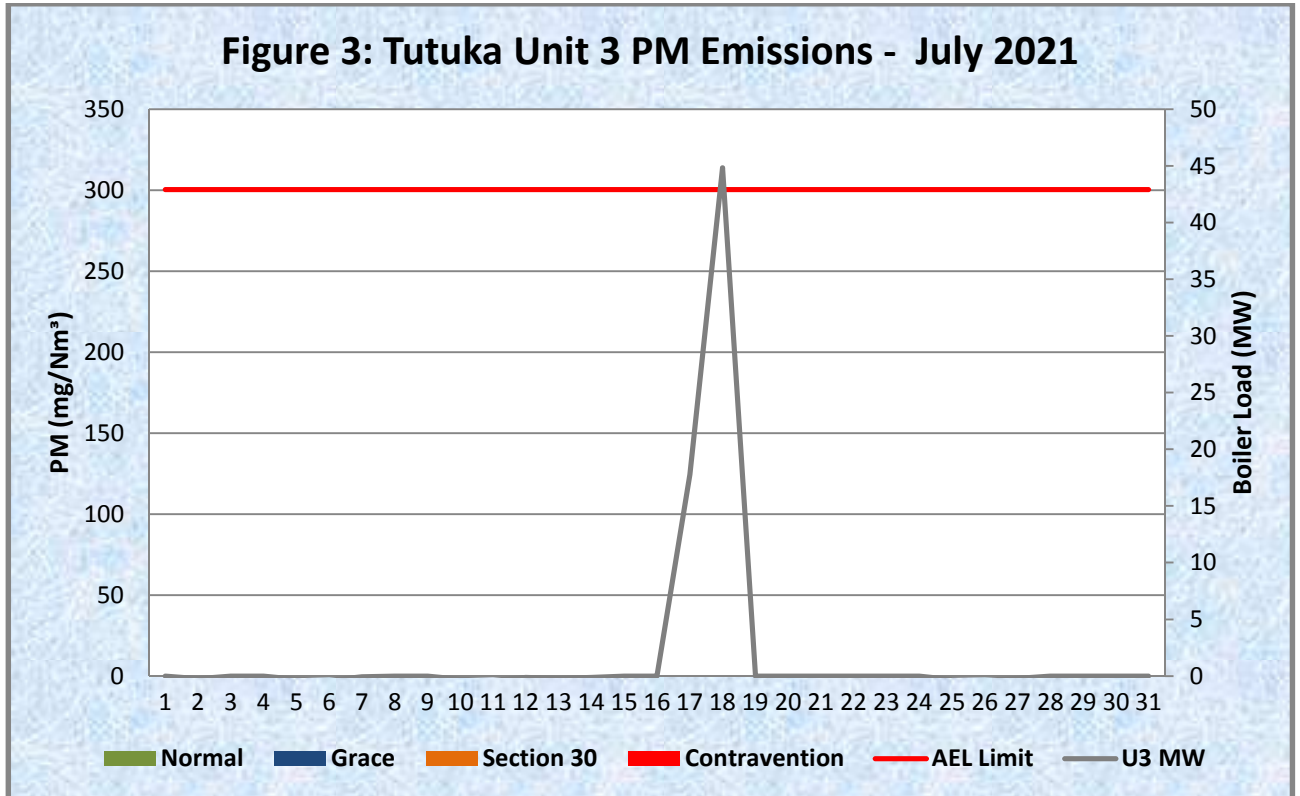


Figure 3: Unit 3 Daily Average PM emissions for the month of July 2021 (against the emission limit and load Generated)

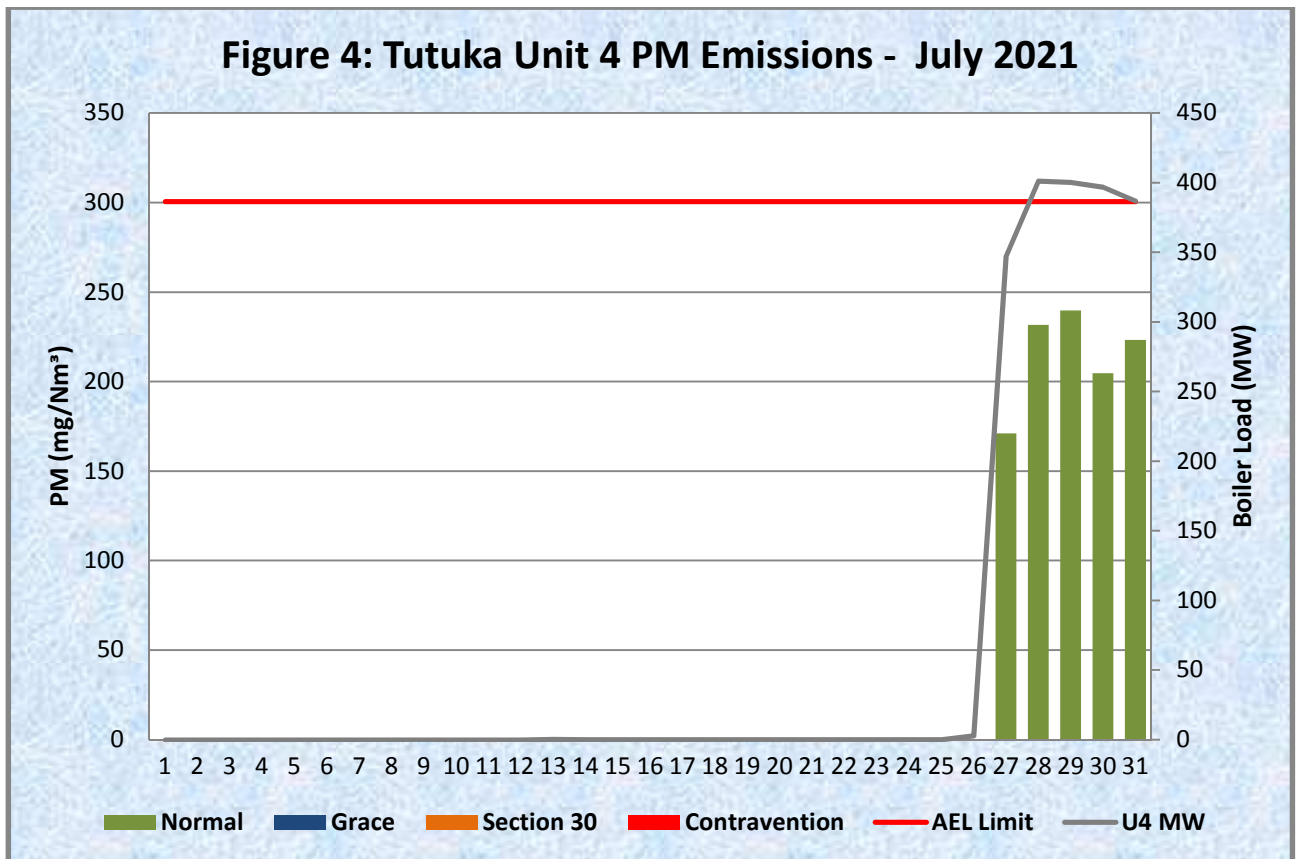


Figure 4: Unit 4 Daily Average PM emissions for the month of July 2021 (against the emission limit and load Generated)

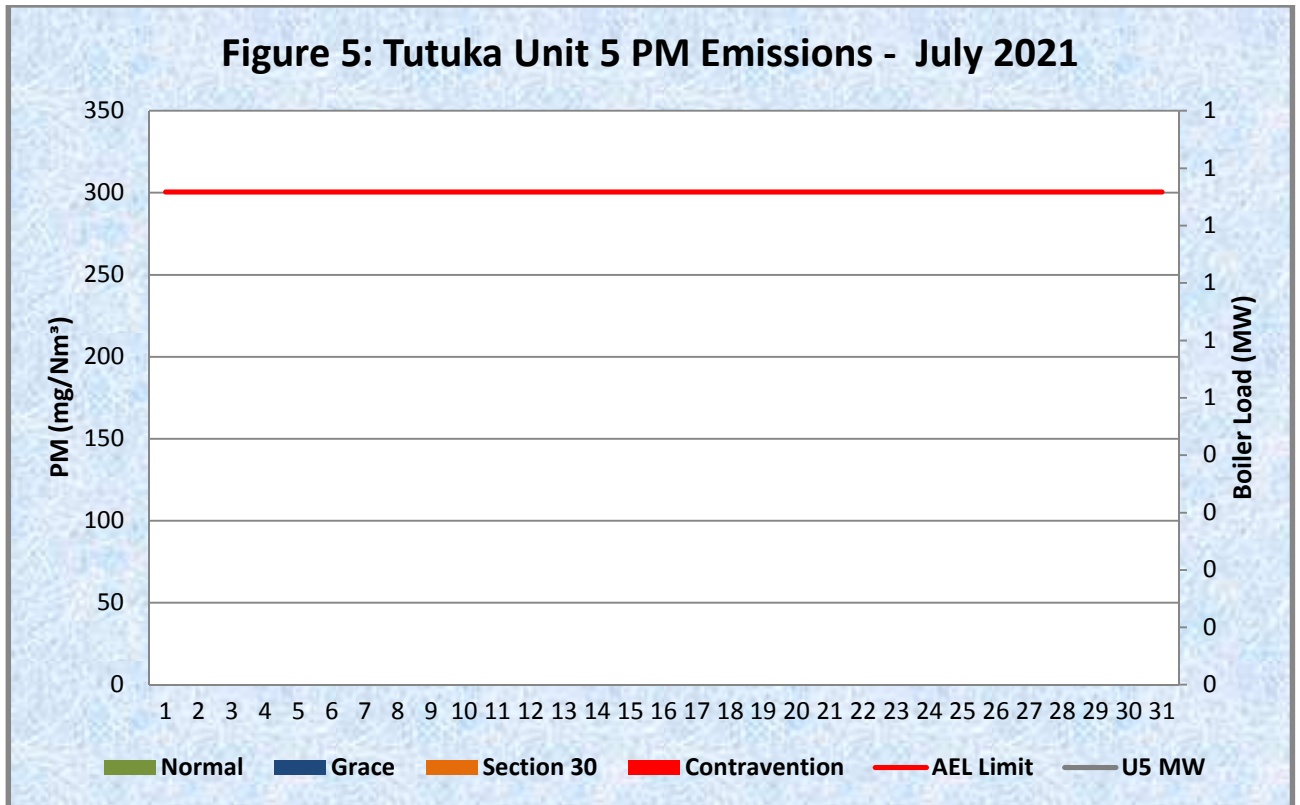


Figure 5: Unit 5 Daily Average PM emissions for the month of July 2021 (against the emission limit and load Generated)

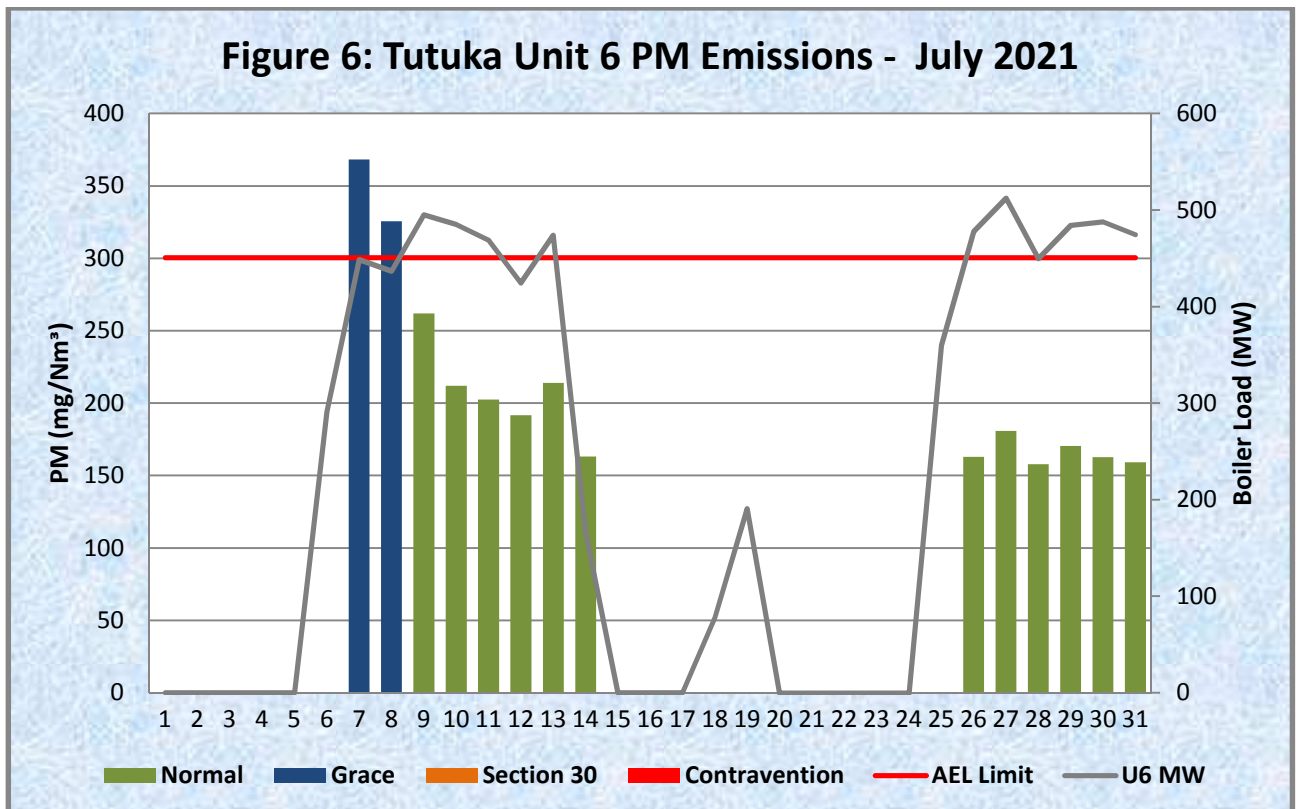


Figure 6: Unit 6 Daily Average PM emissions for the month of July 2021 (against the emission limit and load Generated)

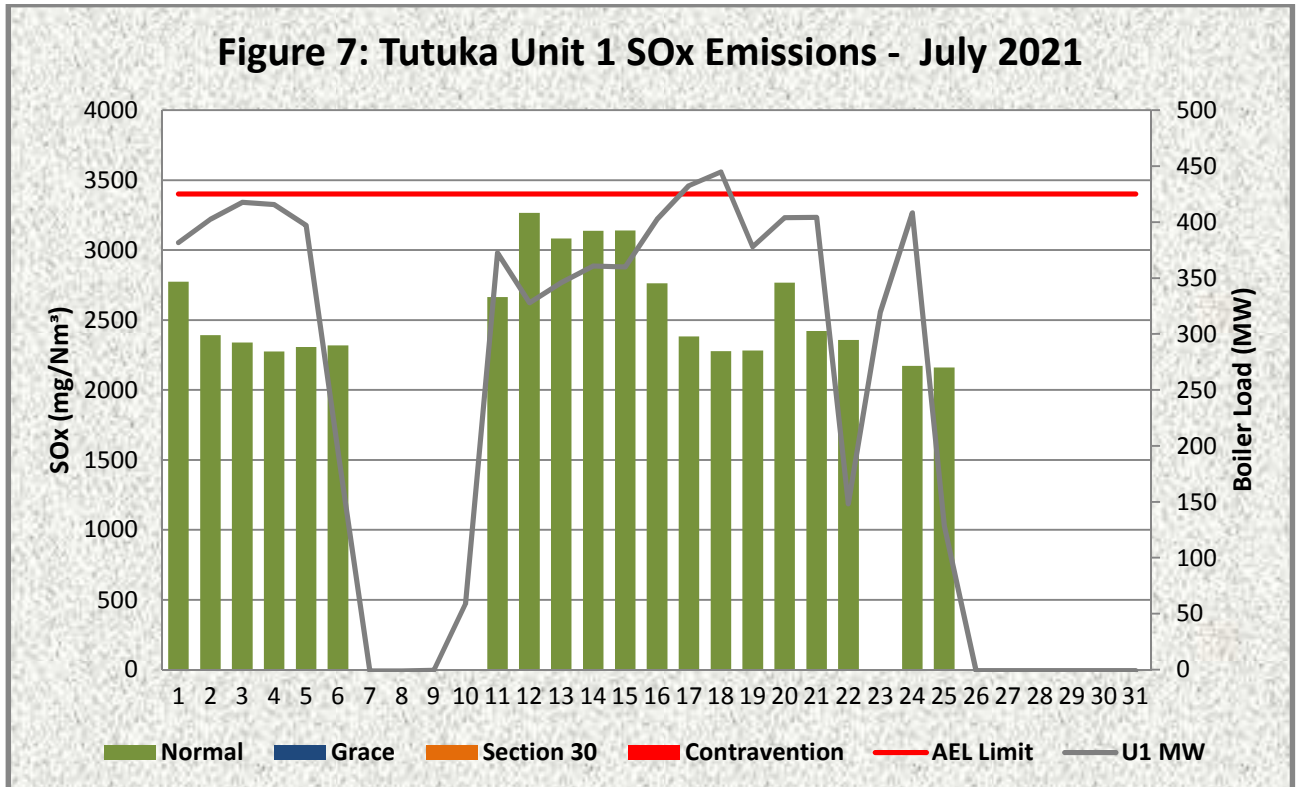


Figure 7: Unit 1 Daily Average SOx emissions for the month of July 2021 (against the emission limit and load Generated)

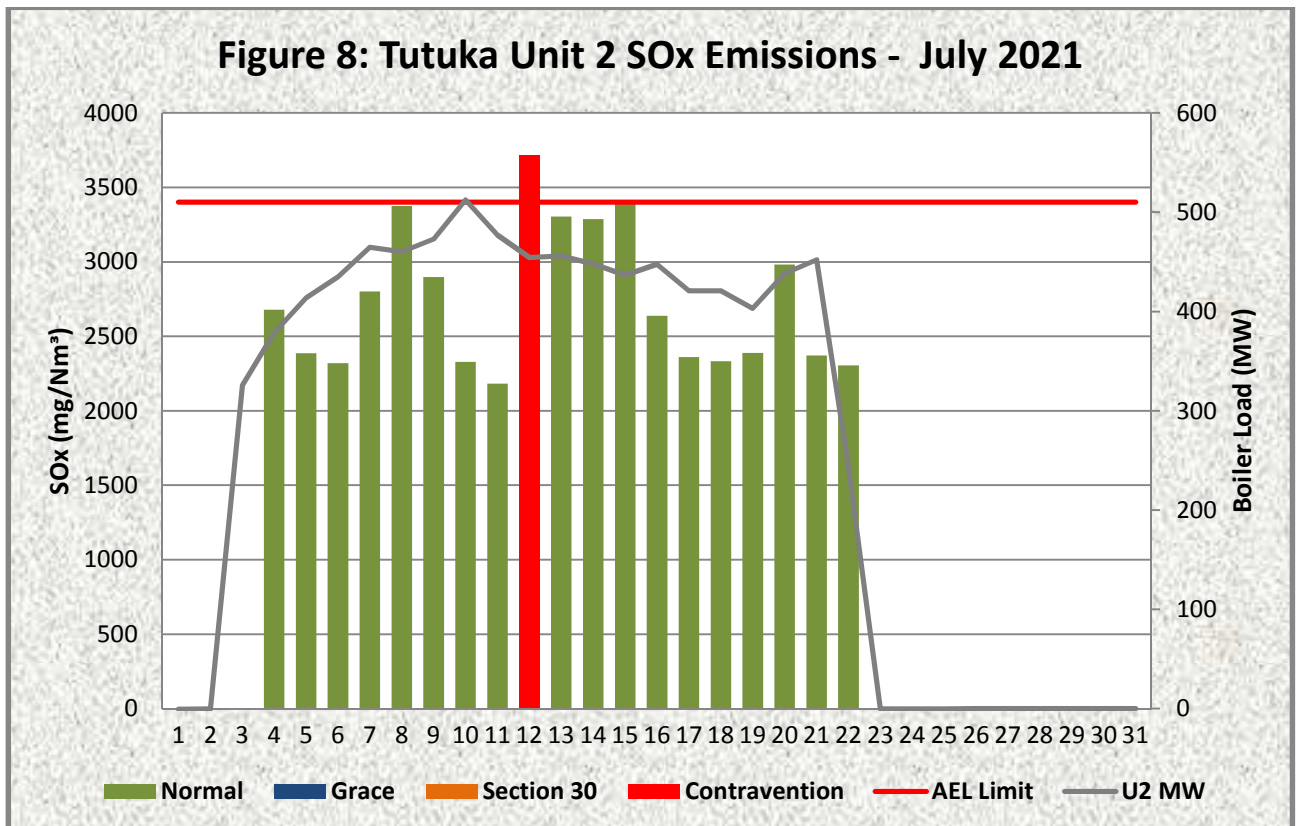


Figure 8: Unit 1 Daily Average SOx emissions for the month of July 2021 (against the emission limit and load Generated)

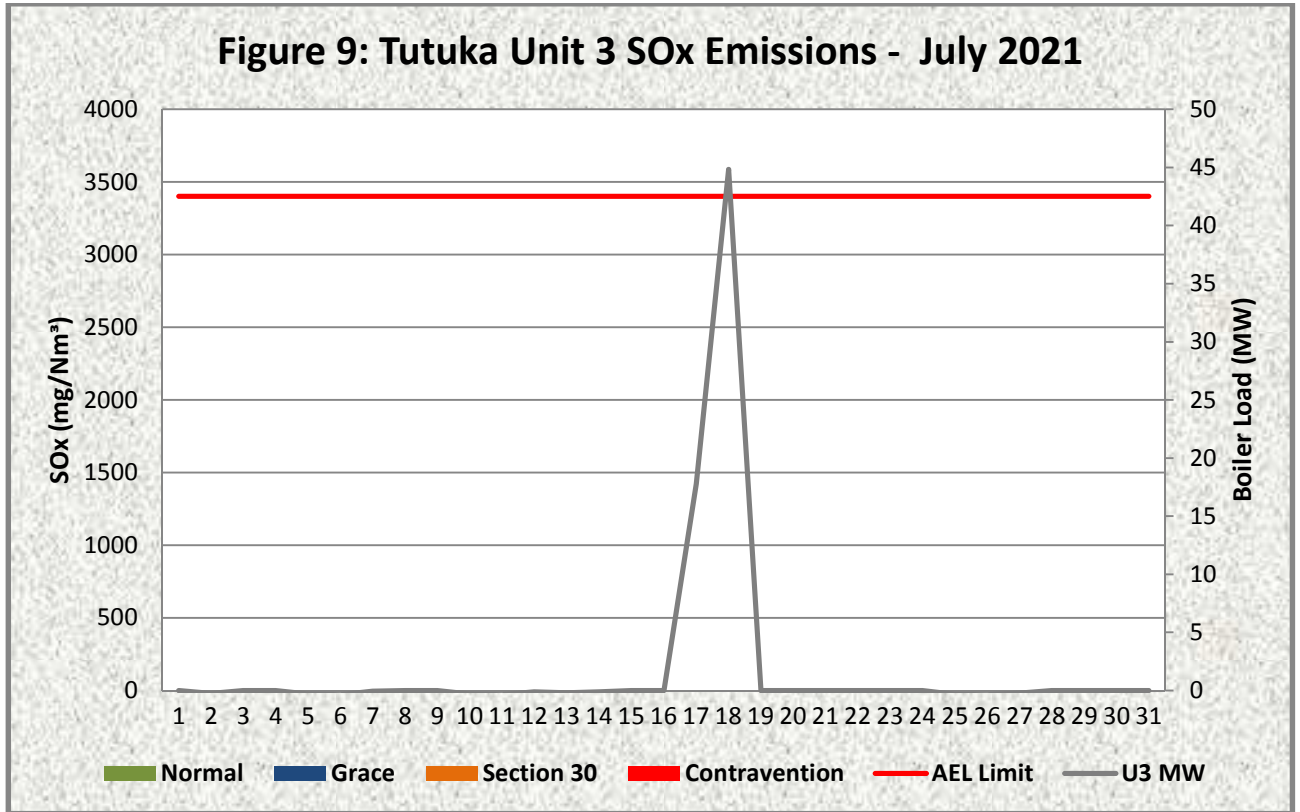


Figure 9: Unit 1 Daily Average SOx emissions for the month of July 2021 (against the emission limit and load Generated)

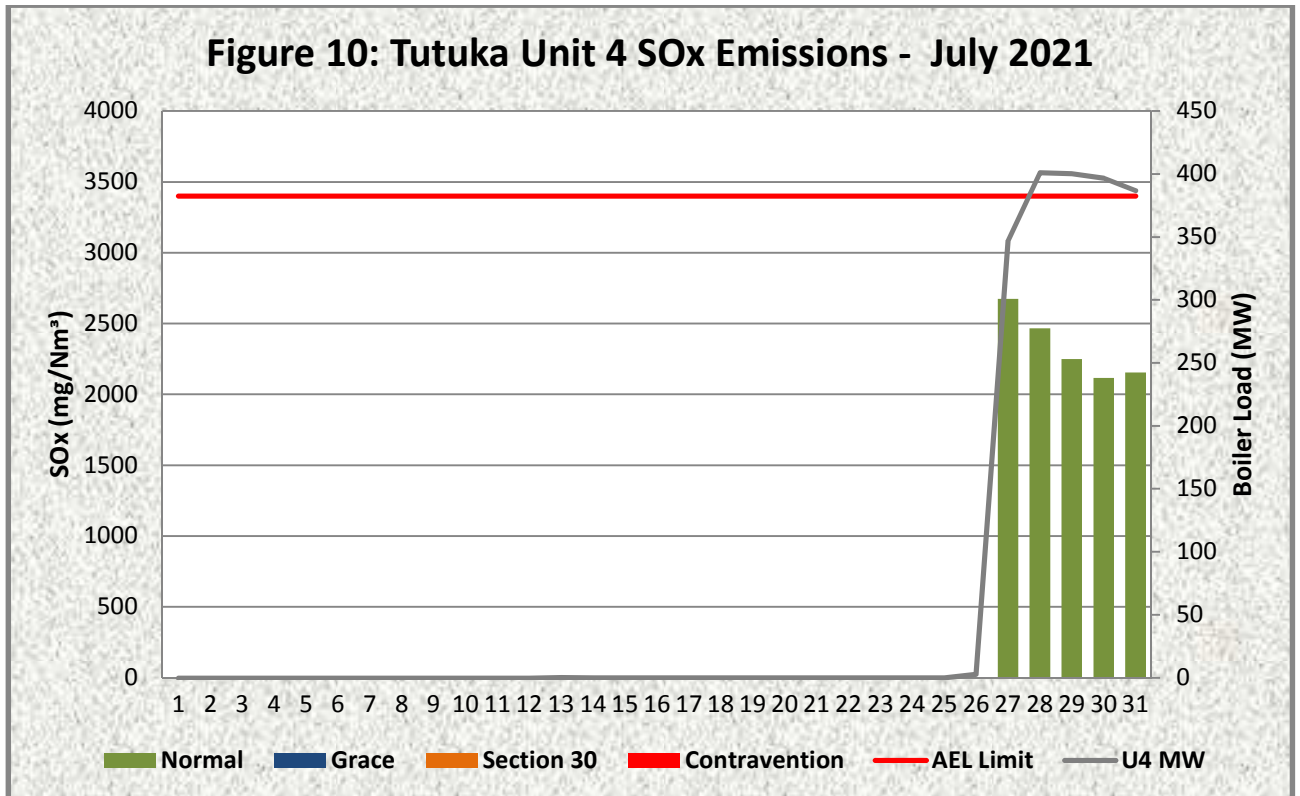


Figure 10: Unit 1 Daily Average SOx emissions for the month of July 2021 (against the emission limit and load Generated)

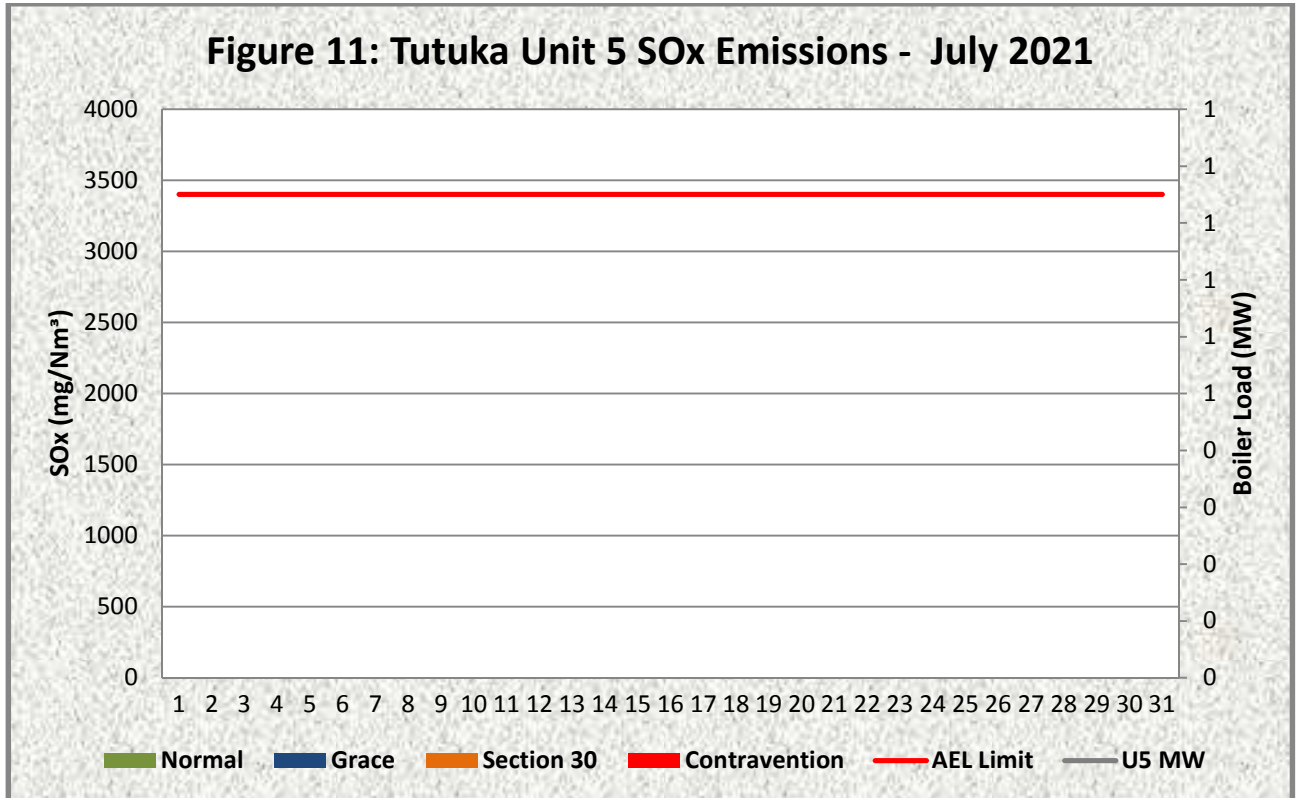


Figure 11: Unit 1 Daily Average SOx emissions for the month of July 2021 (against the emission limit and load Generated)

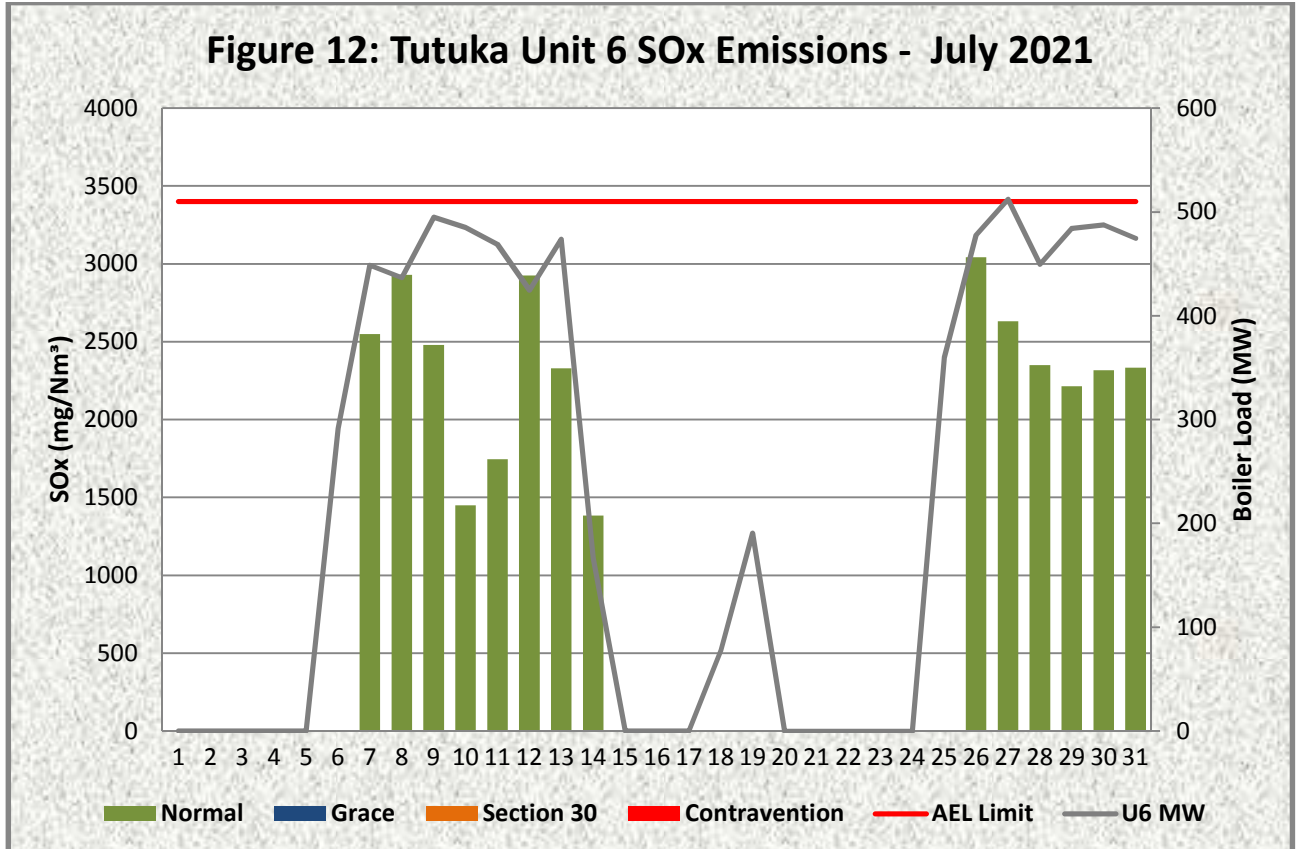


Figure 12: Unit 1 Daily Average SOx emissions for the month of July 2021 (against the emission limit and load Generated)

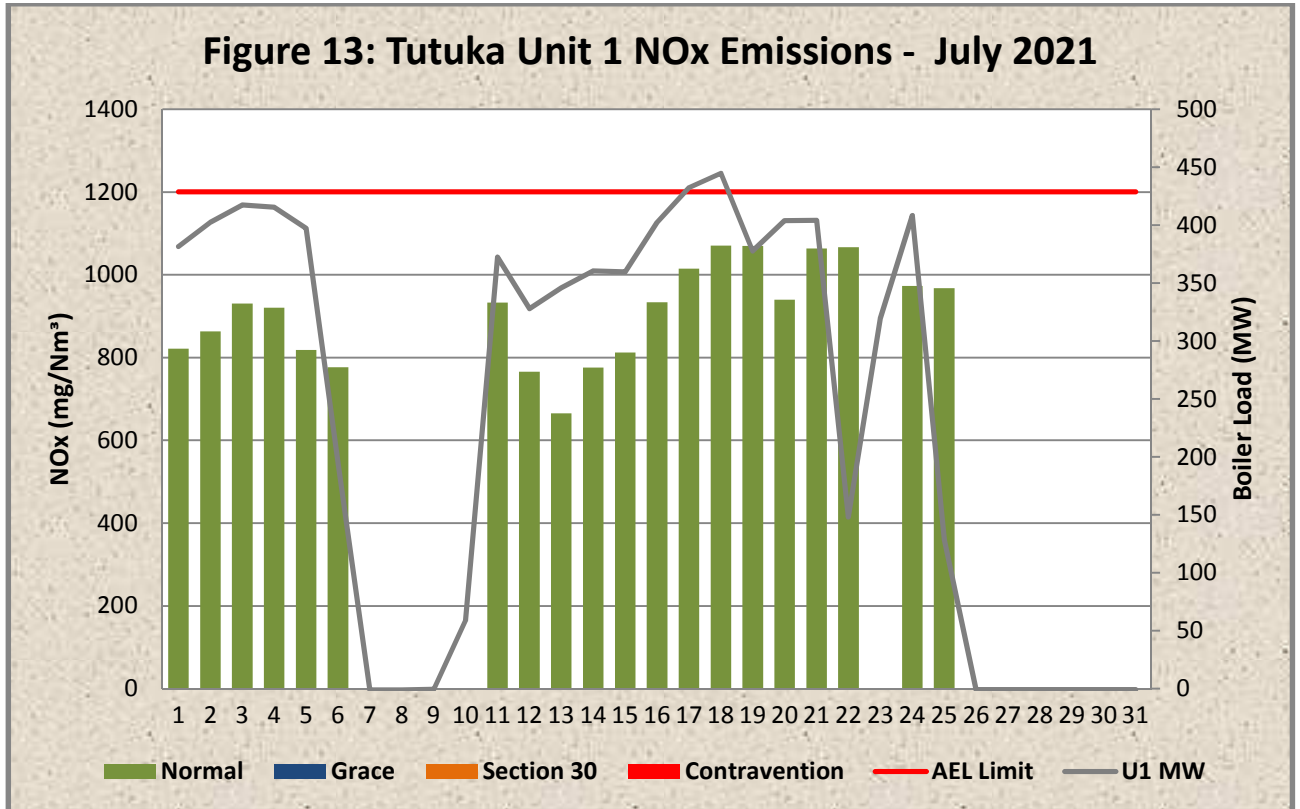


Figure 13: Unit 1 Daily Average NOx emissions for the month of July 2021 (against the emission limit and load Generated)

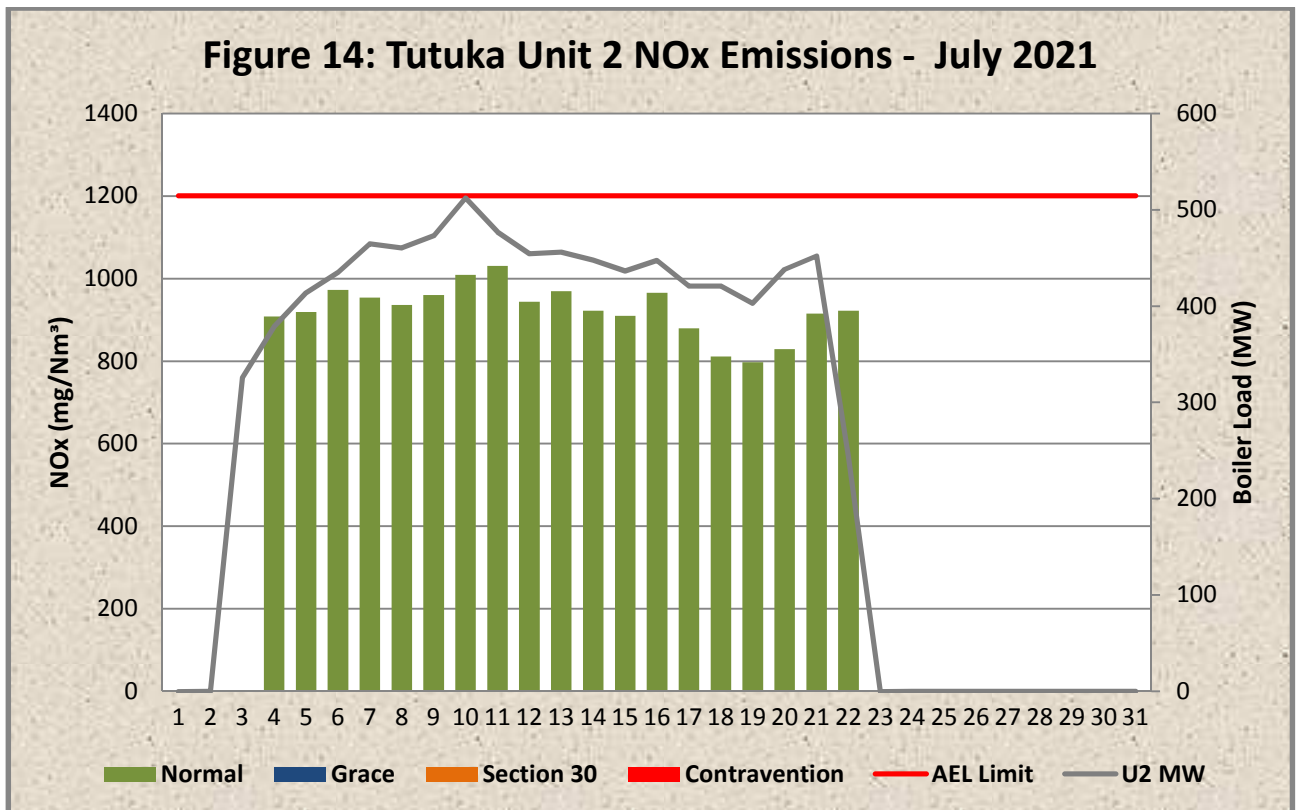


Figure 14: Unit 1 Daily Average NOx emissions for the month of July 2021 (against the emission limit and load Generated)

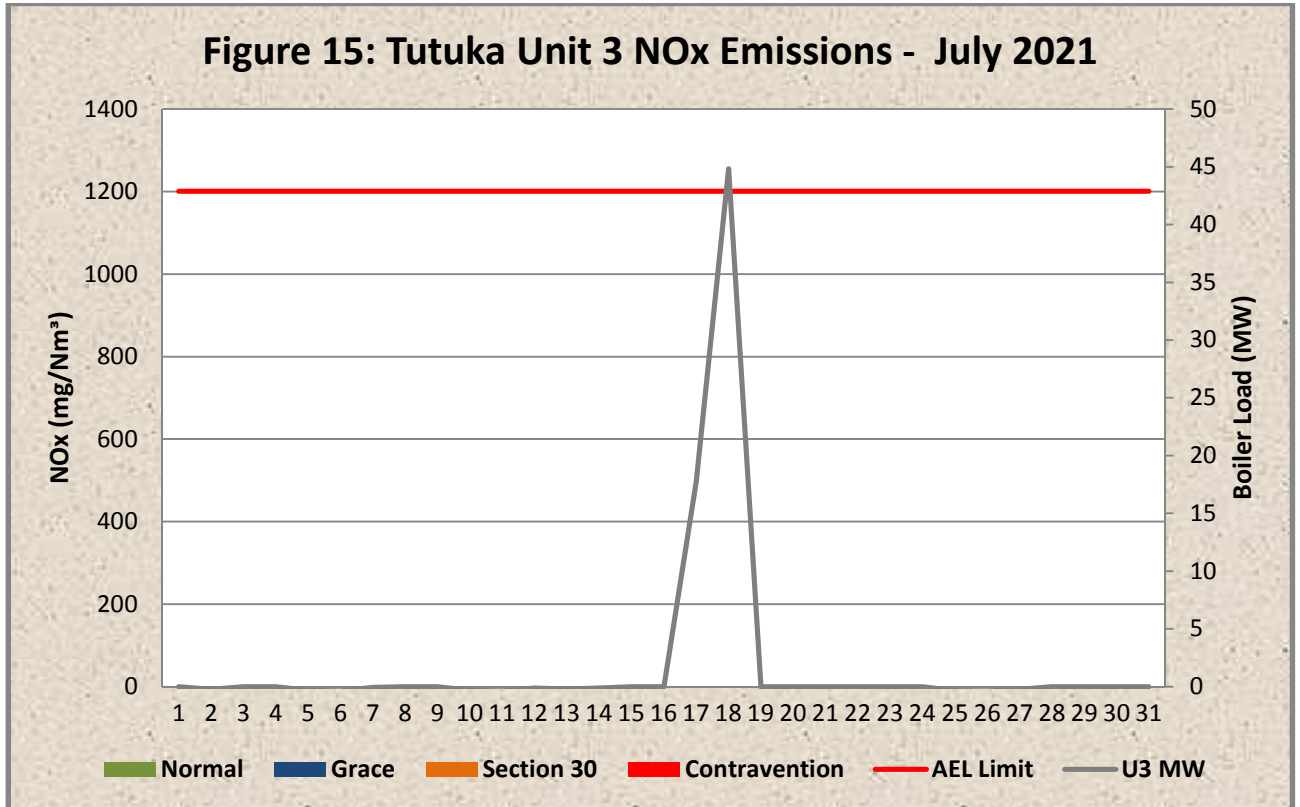


Figure 15: Unit 1 Daily Average NOx emissions for the month of July 2021 (against the emission limit and load Generated)

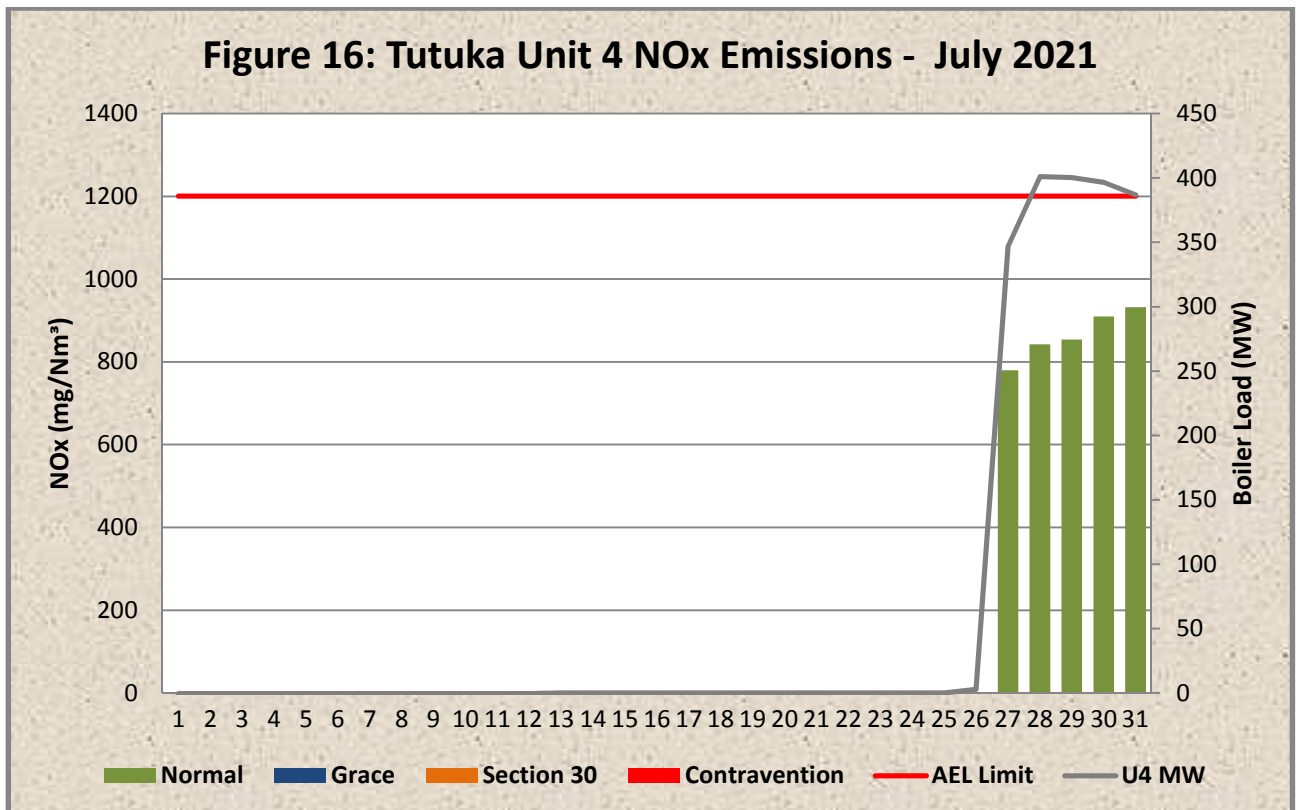


Figure 16: Unit 1 Daily Average NOx emissions for the month of July 2021 (against the emission limit and load Generated)

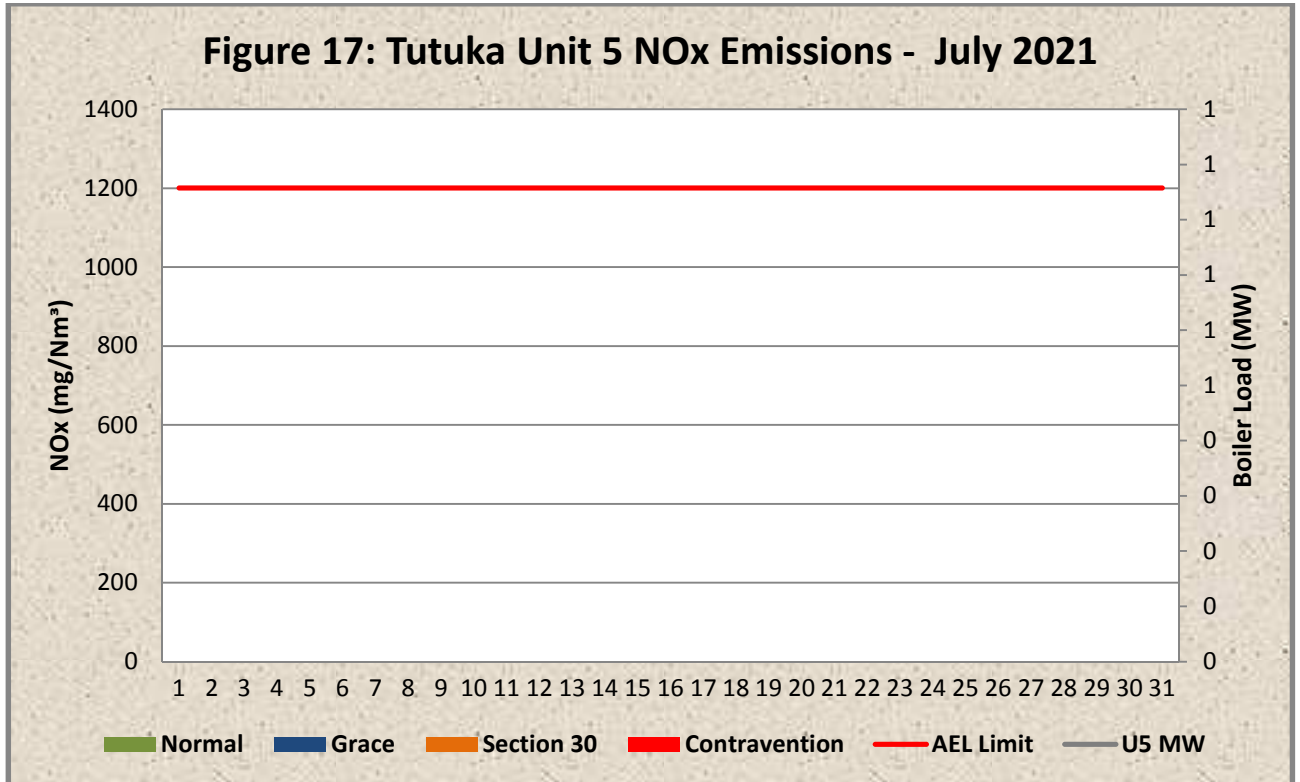


Figure 17: Unit 1 Daily Average NOx emissions for the month of July 2021 (against the emission limit and load Generated)

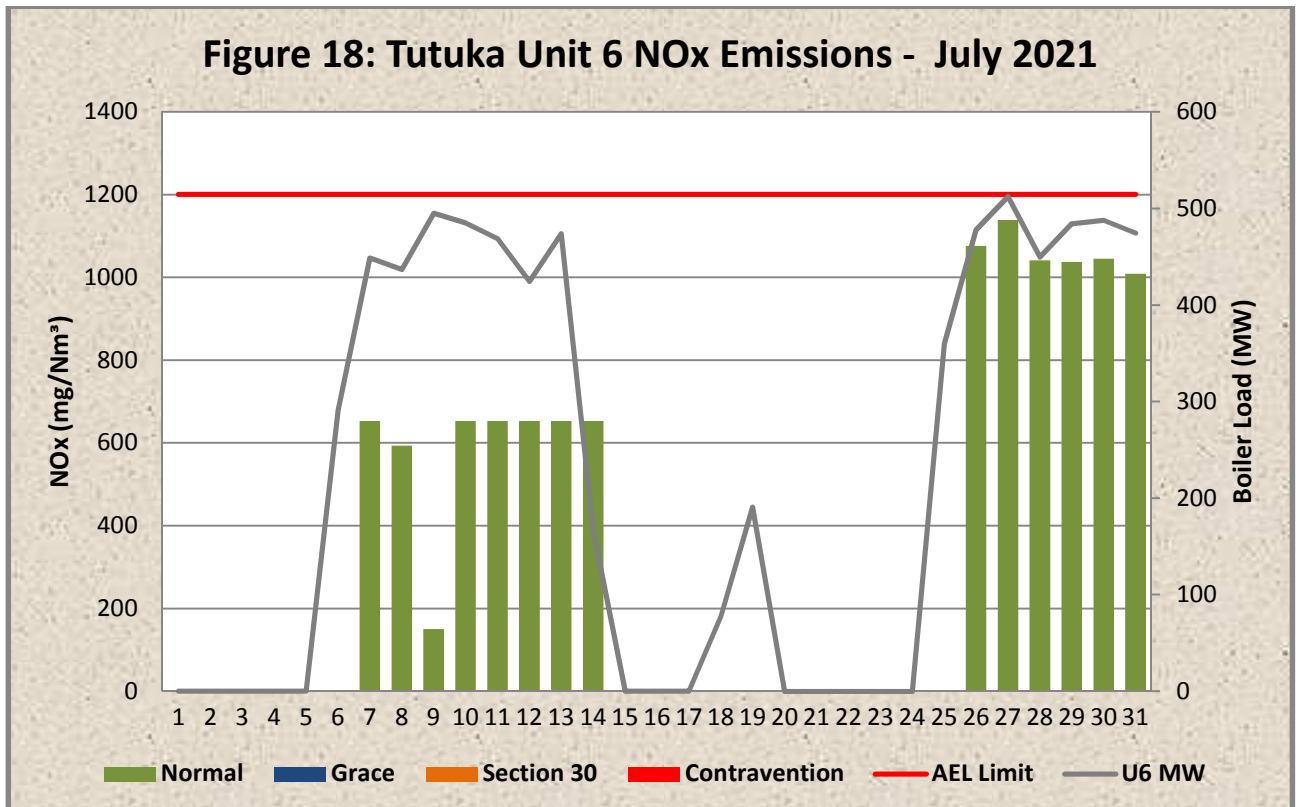


Figure 18: Unit 1 Daily Average NOx emissions for the month of July 2021 (against the emission limit and load Generated)

Table 4: Monthly tonnages for the month July 2021

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO _x (tons)
Unit 1	128,3	2 140	747
Unit 2	166,7	3 197	1 075
Unit 3	0,0	0	0
Unit 4	46,1	462	182
Unit 5	0,0	0	0
Unit 6	160,5	1 813	608
SUM	501,6	7 612	2 611

Table 5: Each unit and respective days operating under normal operation and section 30 days respectively

Table 5.1: Operating days in compliance to PM AEL Limit - July 2021

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
Unit 1	20	0	0	0	0	154,7
Unit 2	19	0	0	0	0	144,8
Unit 3	0	0	0	0	0	
Unit 4	5	0	0	0	0	214,1
Unit 5	0	0	0	0	0	
Unit 6	12	2	0	0	2	209,5
SUM	44	2	0	0	2	

Table 5.2: Operating days in compliance to SO_x AEL Limit - July 2021

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO _x (mg/Nm ³)
Unit 1	20	0	0	0	0	2 564,0
Unit 2	18	0	0	1	1	2 739,3
Unit 3	0	0	0	0	0	
Unit 4	5	0	0	0	0	2 332,1
Unit 5	0	0	0	0	0	
Unit 6	14	0	0	0	0	2 334,3
SUM	43	0	0	1	1	

Table 5.3: Operating days in compliance to NO_x AEL Limit - July 2021

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NO _x (mg/Nm ³)
Unit 1	20	0	0	0	0	909,2
Unit 2	19	0	0	0	0	924,0
Unit 3	0	0	0	0	0	
Unit 4	5	0	0	0	0	863,8
Unit 5	0	0	0	0	0	
Unit 6	14	0	0	0	0	786,3
SUM	44	0	0	0	0	

Light up information

Table 6: PM Start-up information for the month of fabricate July 2021

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

Complaints Register

Table 7: Complaints for the month of July 2021.

Source Code/ Name	Root Cause Analysis	Calculation of Impacts/ emissions associated with the incident	Dispersion modeling of pollutants where applicable	Measures implemented to prevent reoccurrence	Date by which measure will be implemented
There was no complaint related to air quality received during the month of July 2021.					

General

Particulate matter (PM10) emissions on unit 01, 02, 04 and 06 were within the **daily limit under normal operating conditions**. Unit operated for less than 10 hours while unit 05 was completely off throughout the month of July 2021; there was no reportable data generated from unit 03 and unit 05 during the month of July 2021. The gaseous (NOx & SOx) emissions on unit 01, 02, 04, and 06 were within the **daily limit** during the month of July 2021; refer to graphs above. Unit 06 SOx monitor was defective from the 7th to the 18th of July 2021; however, the issue was resolved by the 26th of July 2021.

NB: The rest of the information demonstrating compliance with the emission license conditions.

For more information contact the Tutuka environmental team.

Regards

Compiled by
Monica Mokgawa
AIR QUALITY OFFICER: TUTUKA POWER STATION

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Date: 24-02-2022

Verified by 
Mike Molepo
SENIOR CHEMIST CHEMISTRY: TUTUKA POWER STATION

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Approved by: 
Sello Mamefja
GENERAL MANAGER: TUTUKA POWER STATION

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Date: 2022/03/04