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Date:
 24 February 2022

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Dear Mr. Hlanyane

TUTUKA POWER STATION'S MONTHLY STACK EMISSIONS REPORT FOR THE MONTH OF JANUARY 2022

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 January 2022. 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 January 2022

Raw Materials and Products used	Raw Material Type	Units	Maximum Permitted Consumption / Rate (Quantity)	Consumption / Rate in Month of January 2022
	Coal	Tons/month	1 200 000	414 351
	Fuel Oil	Tons/month	10 000	1091
Production Rates	Product/ By-Product Name	Unit	Maximum Production Capacity Permitted (Quantity)	Production Rate in Month of January 2022
	Ash	Tons/month	not specified	106 405
	RE PM	kg/MWh	not specified	1.31

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 January 2022

Associated Unit/Stack	Technology Type	Minimum Control Efficiency (%)	Actual Efficiency (%)
			January 2022
Unit 1	ESP	95%	Unit off
Unit 2	ESP	95%	Unit off
Unit 3	ESP	95%	98.9%
Unit 4	ESP	95%	99.4%
Unit 5	ESP	95%	98.7%
Unit 6	ESP	95%	98.9%

Energy Source Characteristics

Table 3: Energy Source Material Characteristics for the month of January 2022

Characteristic	Stipulated Range (Unit)	Monthly Average Content
Sulphur Content	0.6 -2.6	0.990
Ash Content	21 -33	25.680

Table 4: Monitor Reliability

Associated Unit/Stack	PM	SOx	NOx
Unit 1	Unit off	Unit off	Unit off
Unit 2	Unit off	Unit off	Unit off
Unit 3	86.3	99.3	99.3
Unit 4	99.9	83.0	79.7
Unit 5	99.4	99.7	99.7
Unit 6	100.0	99.4	99.4

Emissions Reporting

Table 6.5: Graph 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

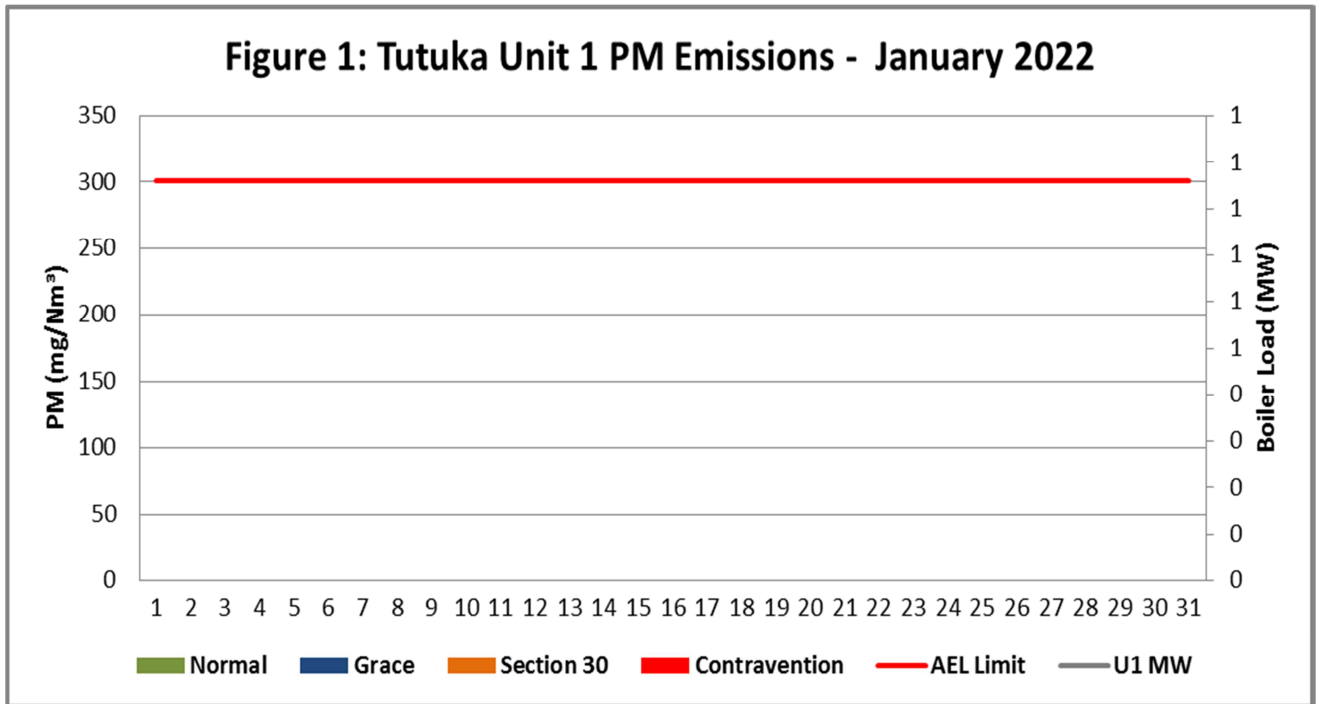


Figure 1: Unit 1 Daily Average PM emissions for the month January 2022 (against the emission limit and load Generated)

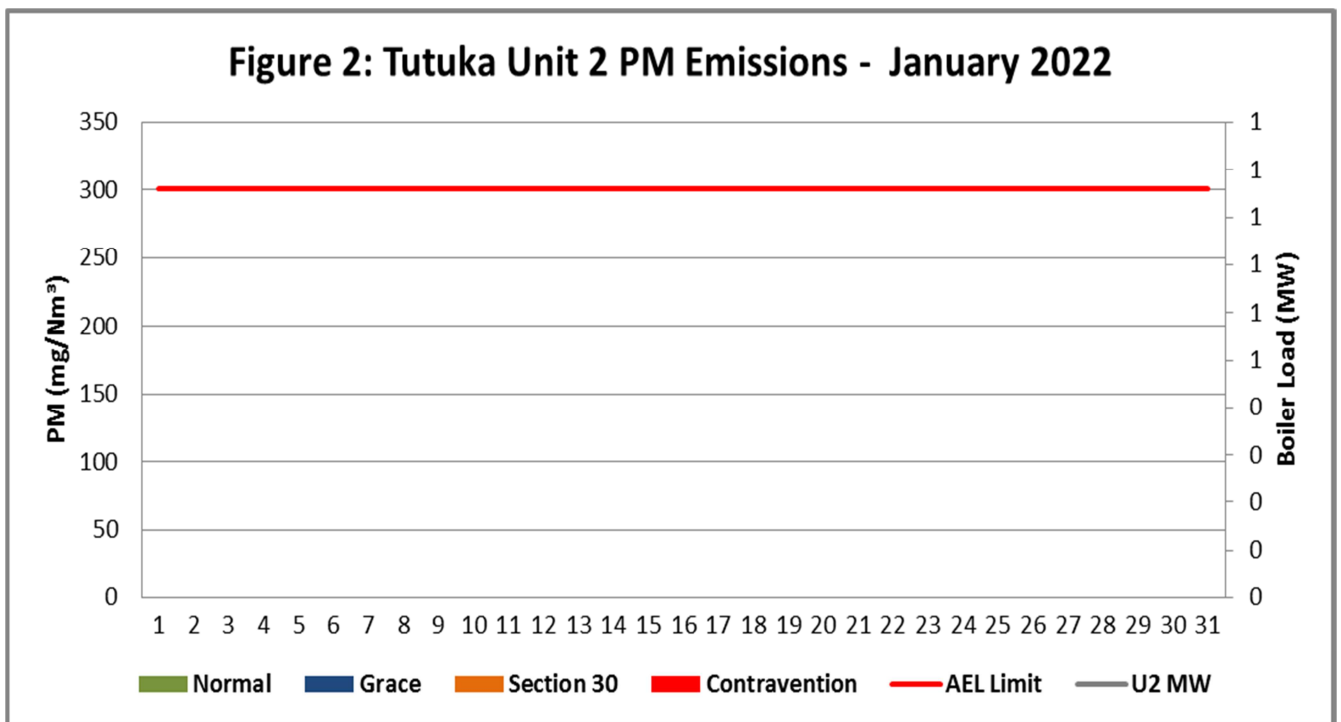


Figure 2: Unit 2 Daily Average PM emissions for the month January 2022 (against the emission limit and load Generated)

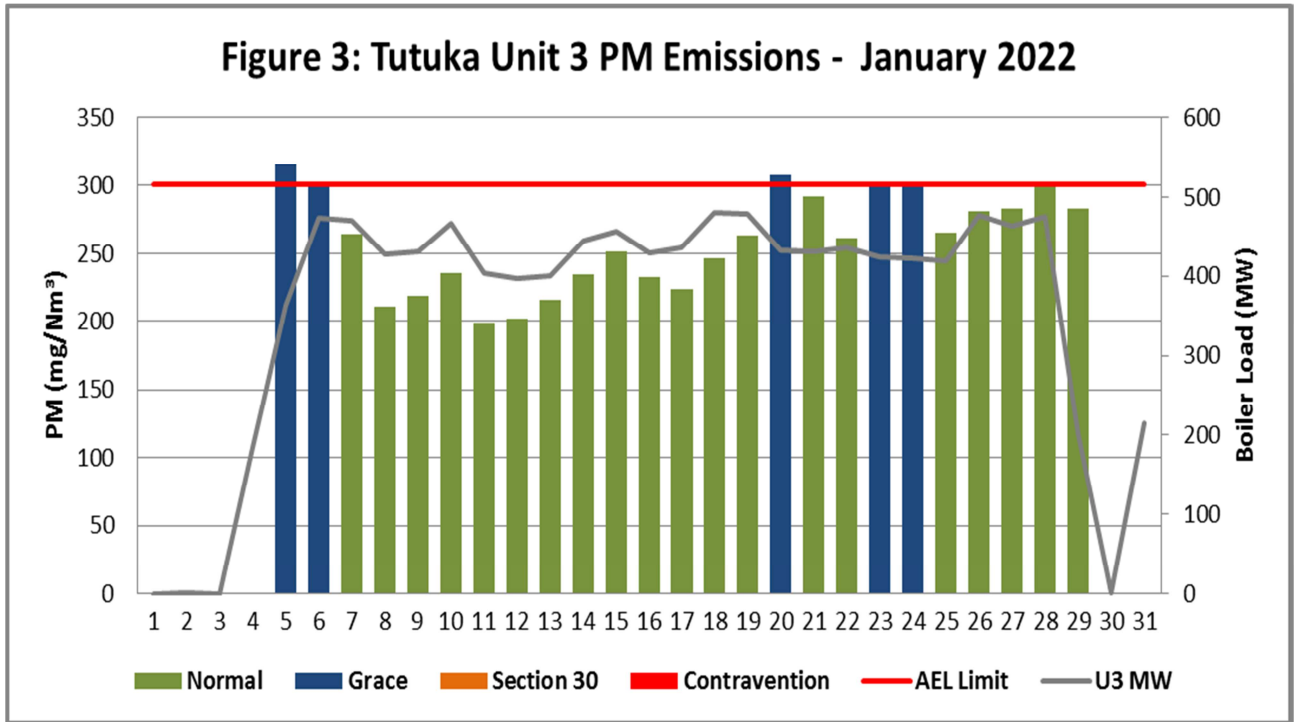


Figure 3: Unit 3 Daily Average PM emissions for the month January 2022 (against the emission limit and load Generated)

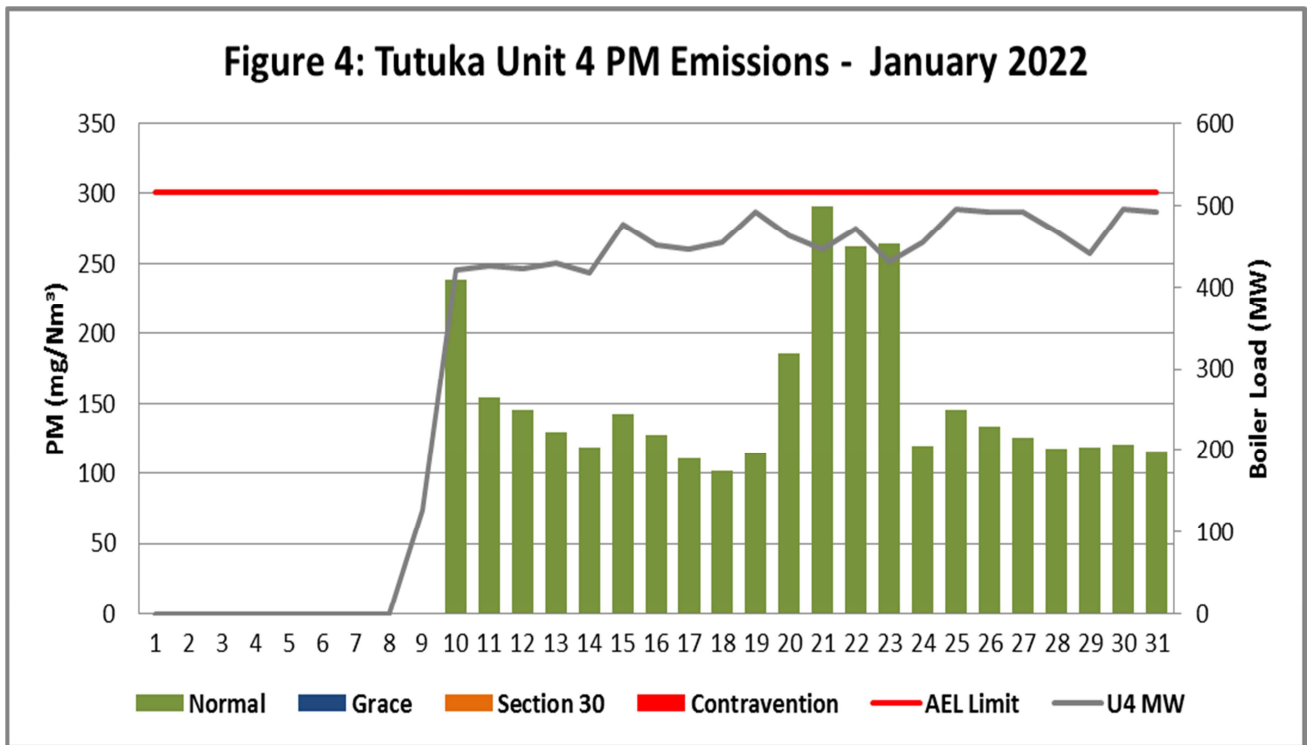


Figure 4: Unit 4 Daily Average PM emissions for the month January 2022 (against the emission limit and load Generated)

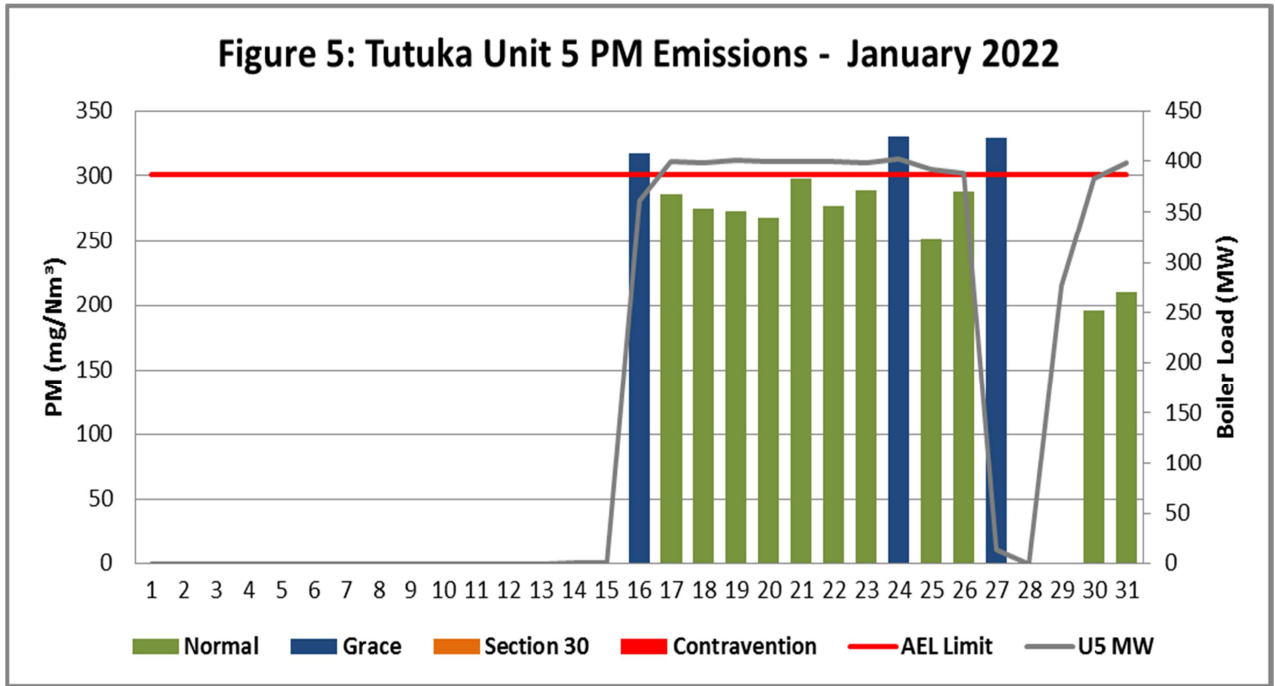


Figure 6: Unit 6 Daily Average PM emissions for the month January 2022 (against the emission limit and load Generated)

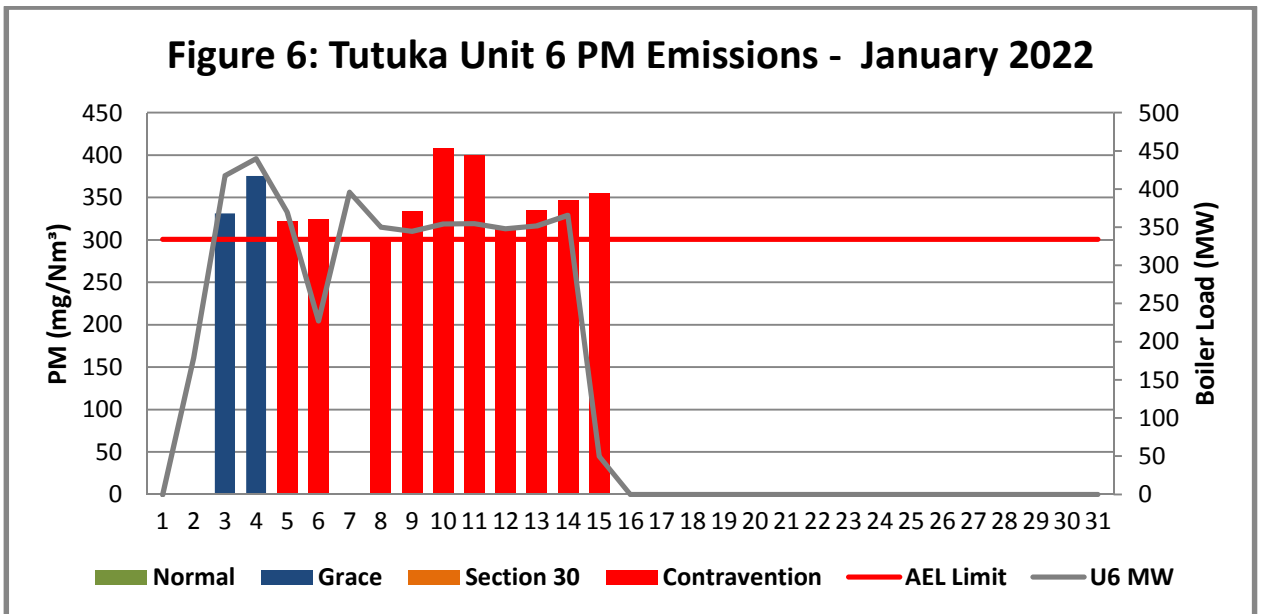


Figure 6: Unit 6 Daily Average PM emissions for the month January 2022 (against the emission limit and load Generated)

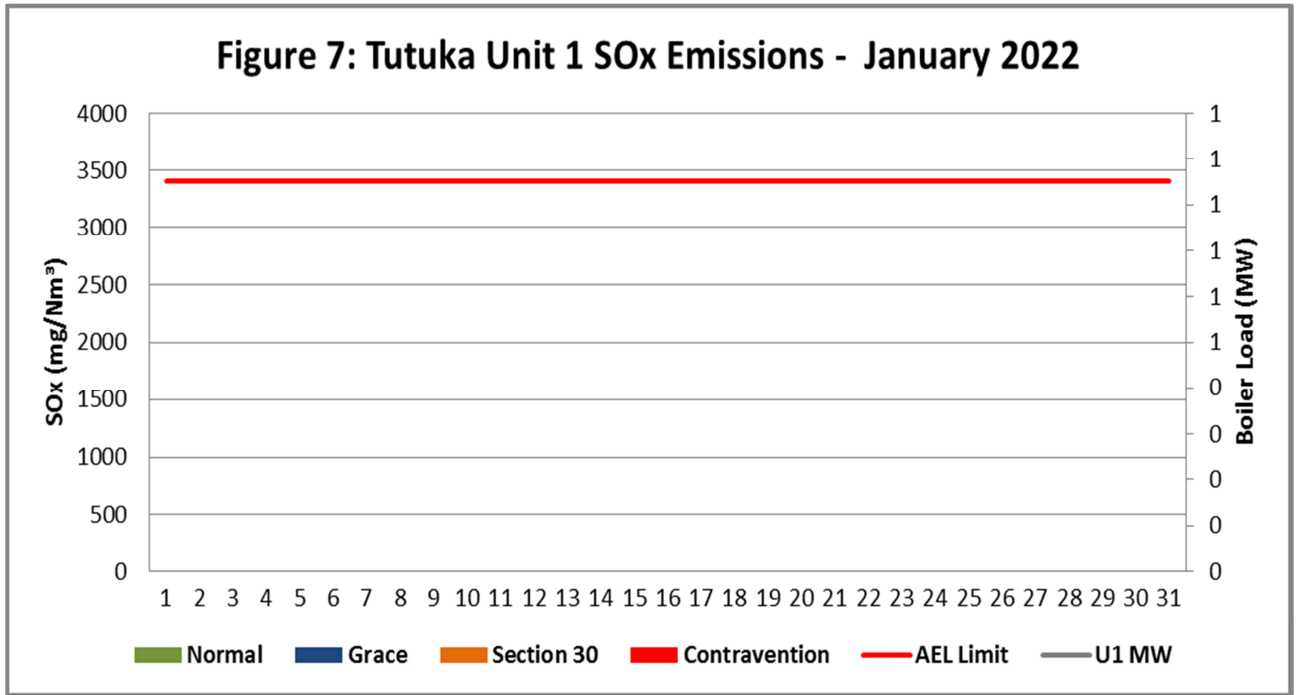


Figure 7: Unit 1 Daily Average SOx emissions for the month January 2022 (against the emission limit and load Generated)

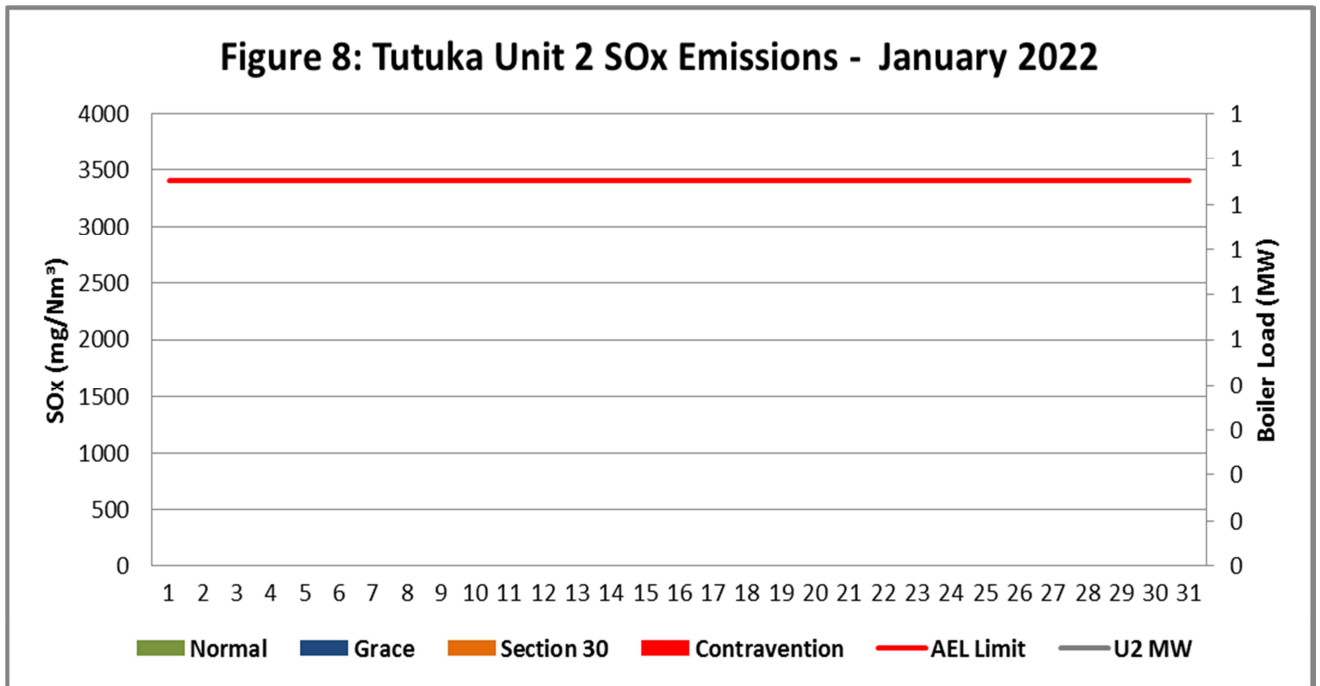


Figure 8: Unit 2 Daily Average SOx emissions for the month January 2022 (against the emission limit and load Generated)

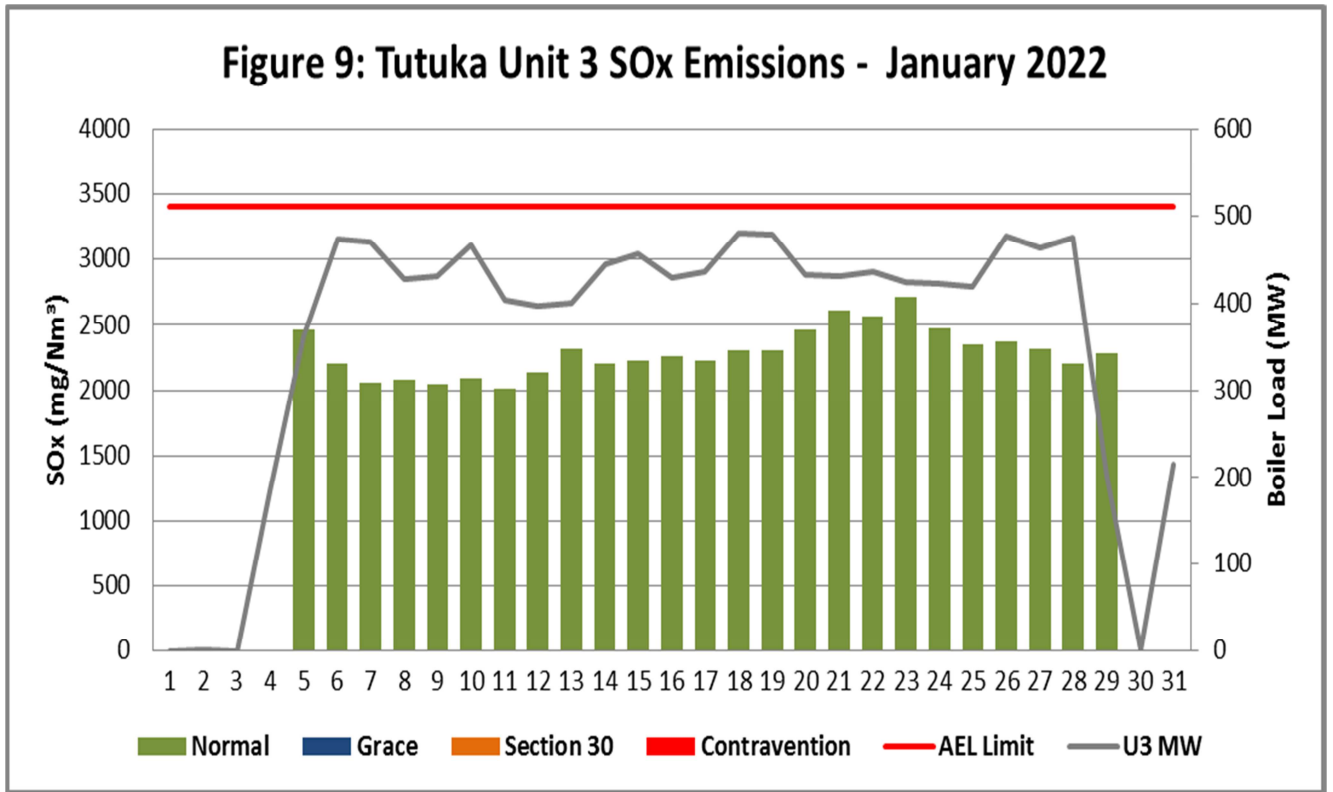


Figure 9: Unit 3 Daily Average SOx emissions for the month January 2022 (against the emission limit and load Generated)

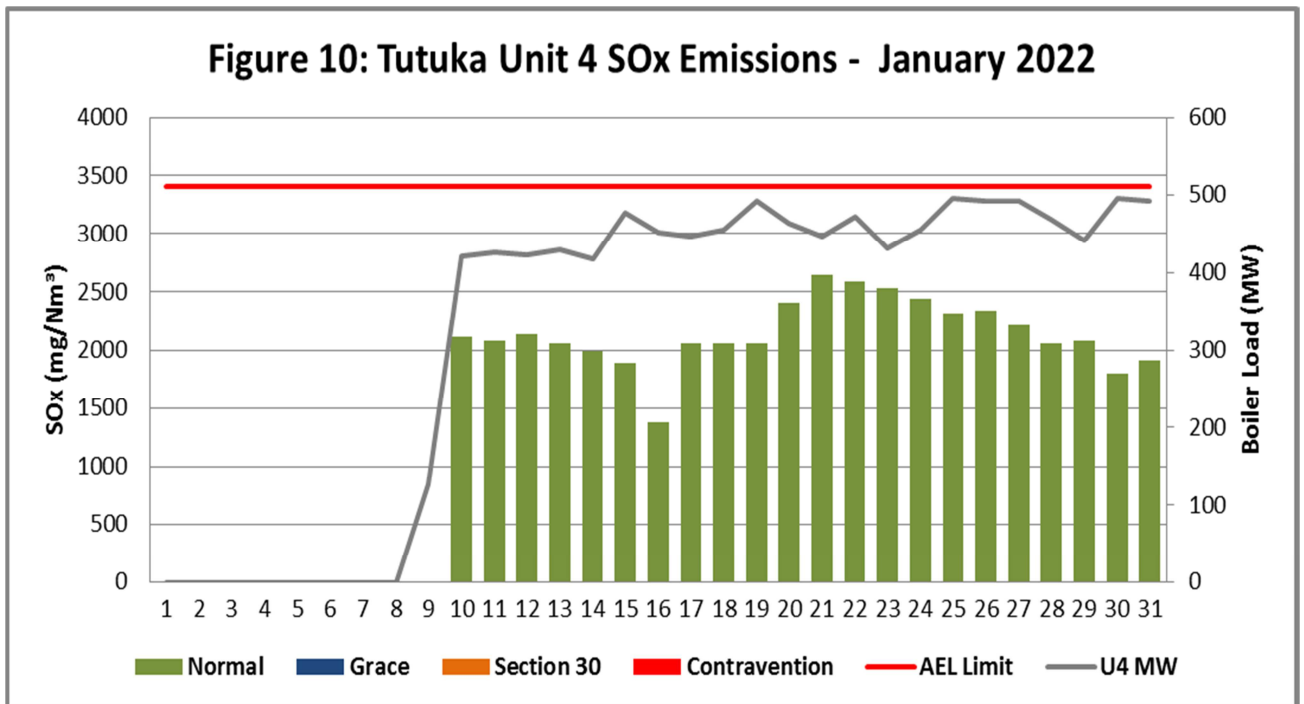


Figure 10: Unit 4 Daily Average SOx emissions for the month January 2022 (against the emission limit and load Generated)

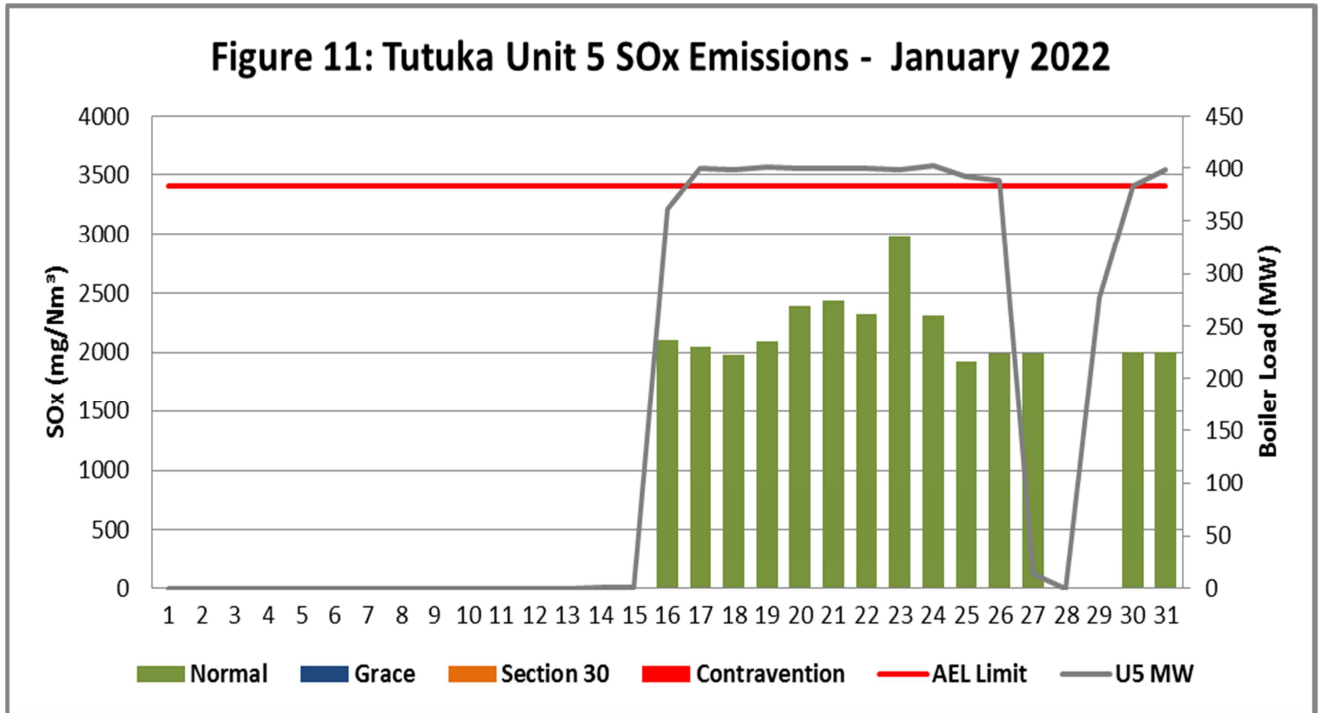


Figure 11: Unit 5 Daily Average SOx emissions for the month January 2022 (against the emission limit and load Generated)

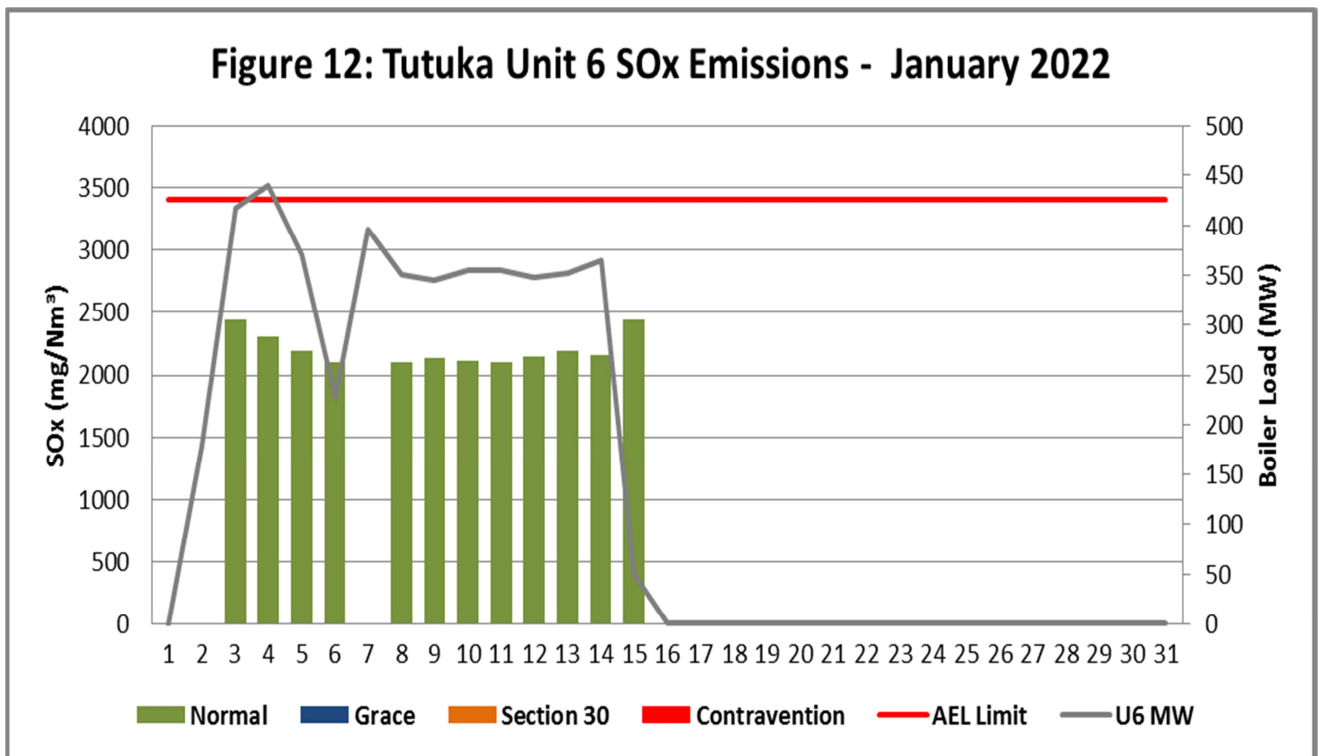


Figure 12: Unit 6 Daily Average SOx emissions for the month January 2022 (against the emission limit and load Generated)

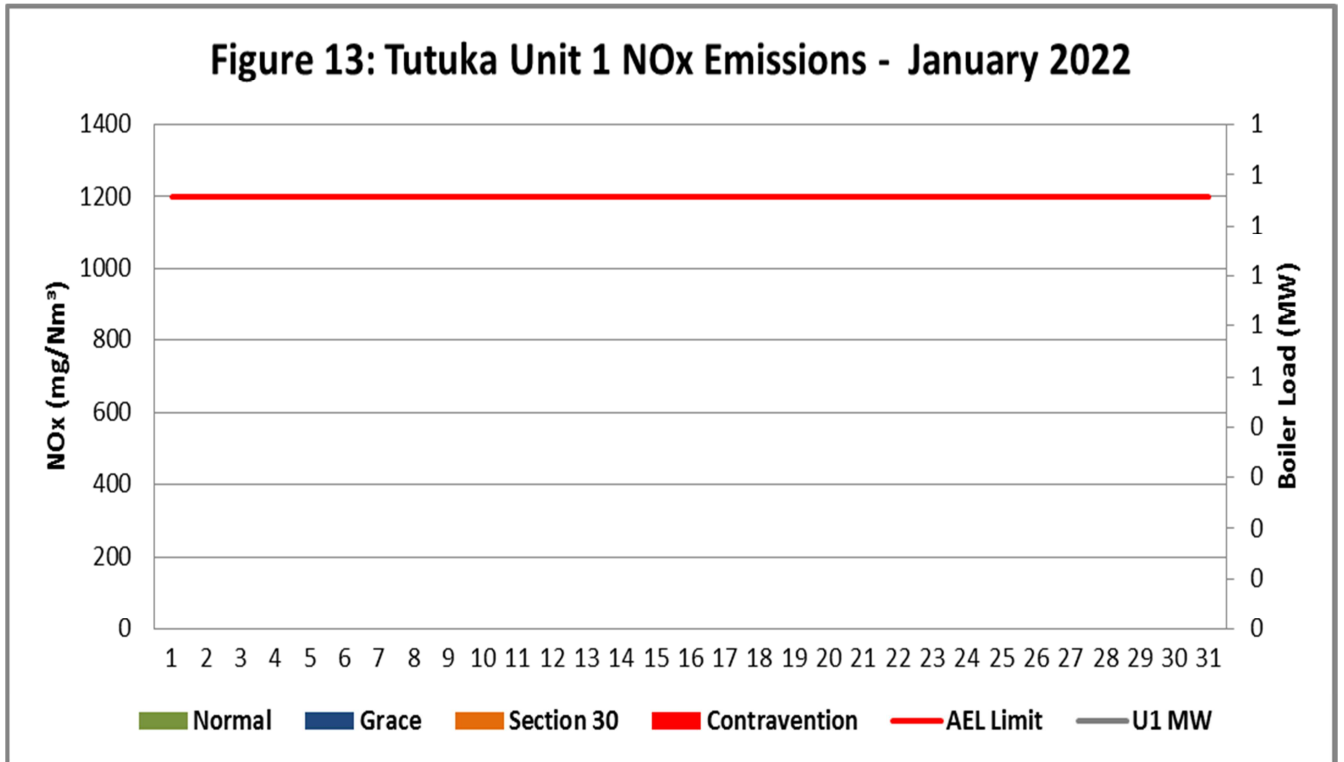


Figure 13: Unit 1 Daily Average NOx emissions for the month January 2022 (against the emission limit and load Generated)

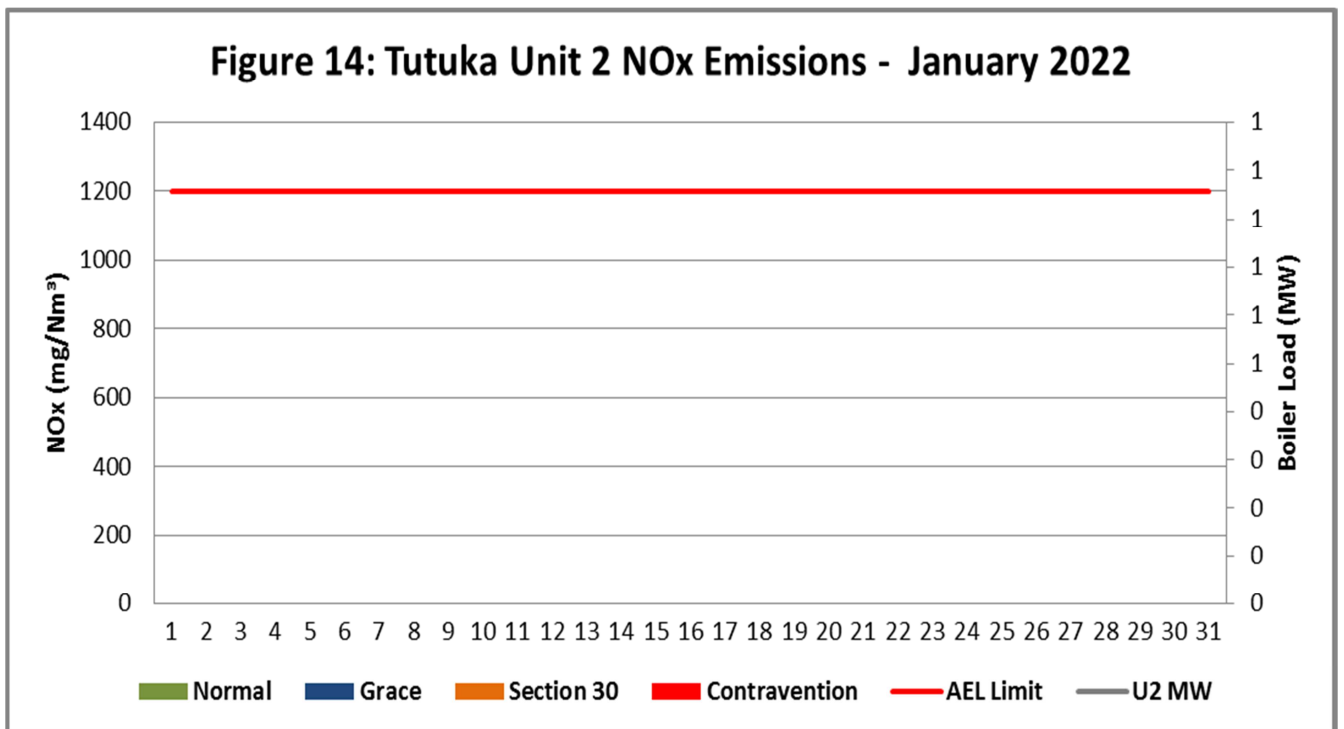


Figure 14: Unit 2 Daily Average NOx emissions for the month January 2022 (against the emission limit and load Generated)

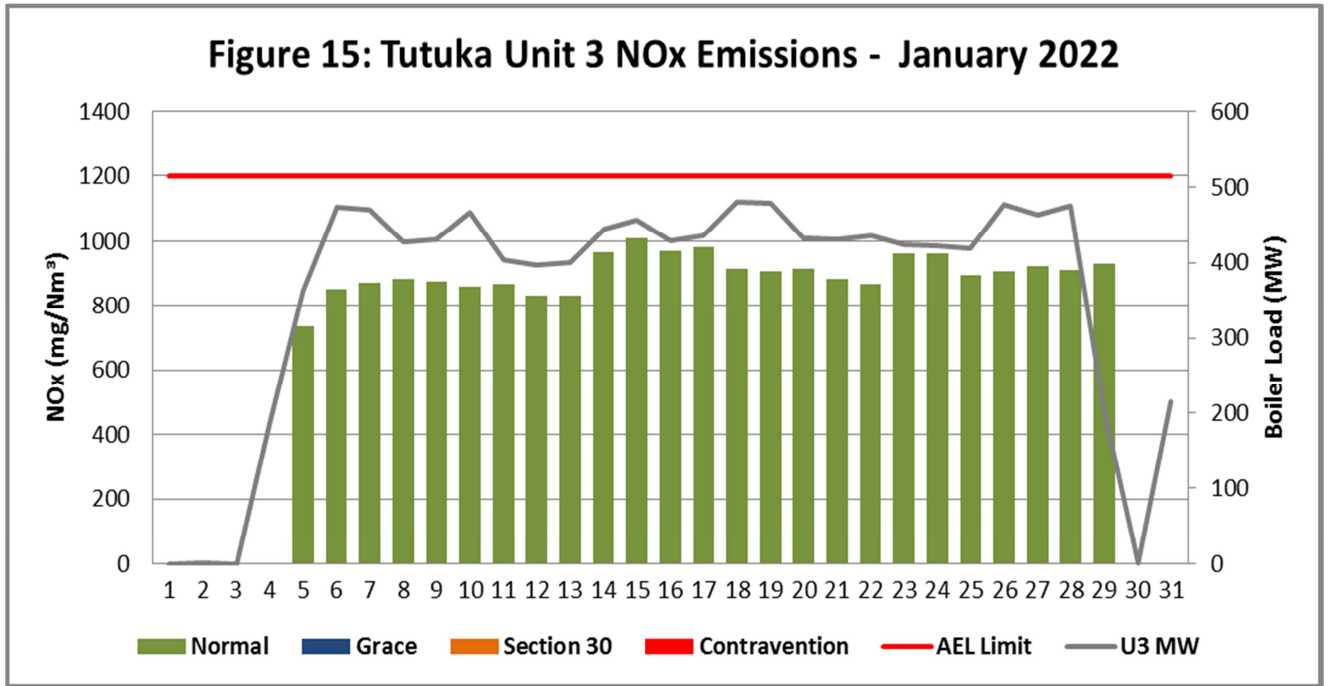


Figure 15: Unit 3 Daily Average NOx emissions for the month January 2022 (against the emission limit and load Generated)

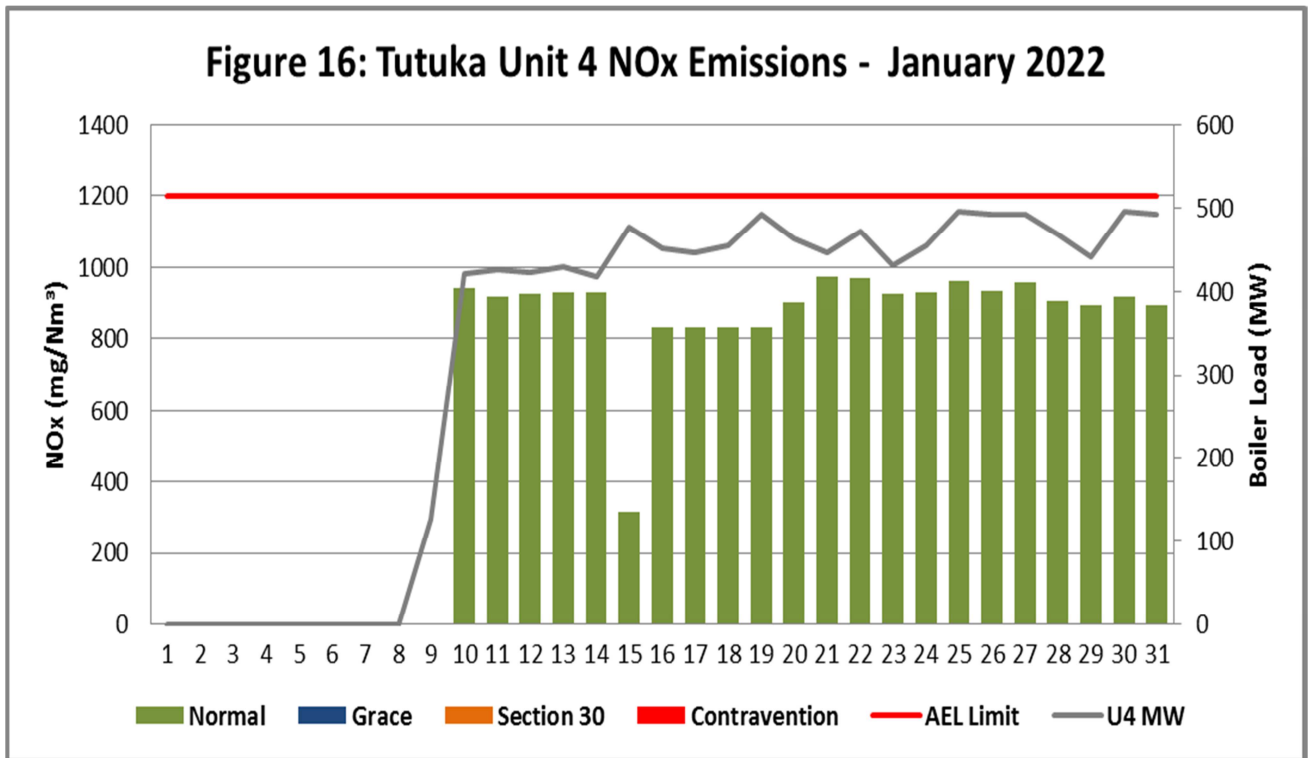


Figure 16: Unit 4 Daily Average NOx emissions for the month January 2022 (against the emission limit and load Generated)

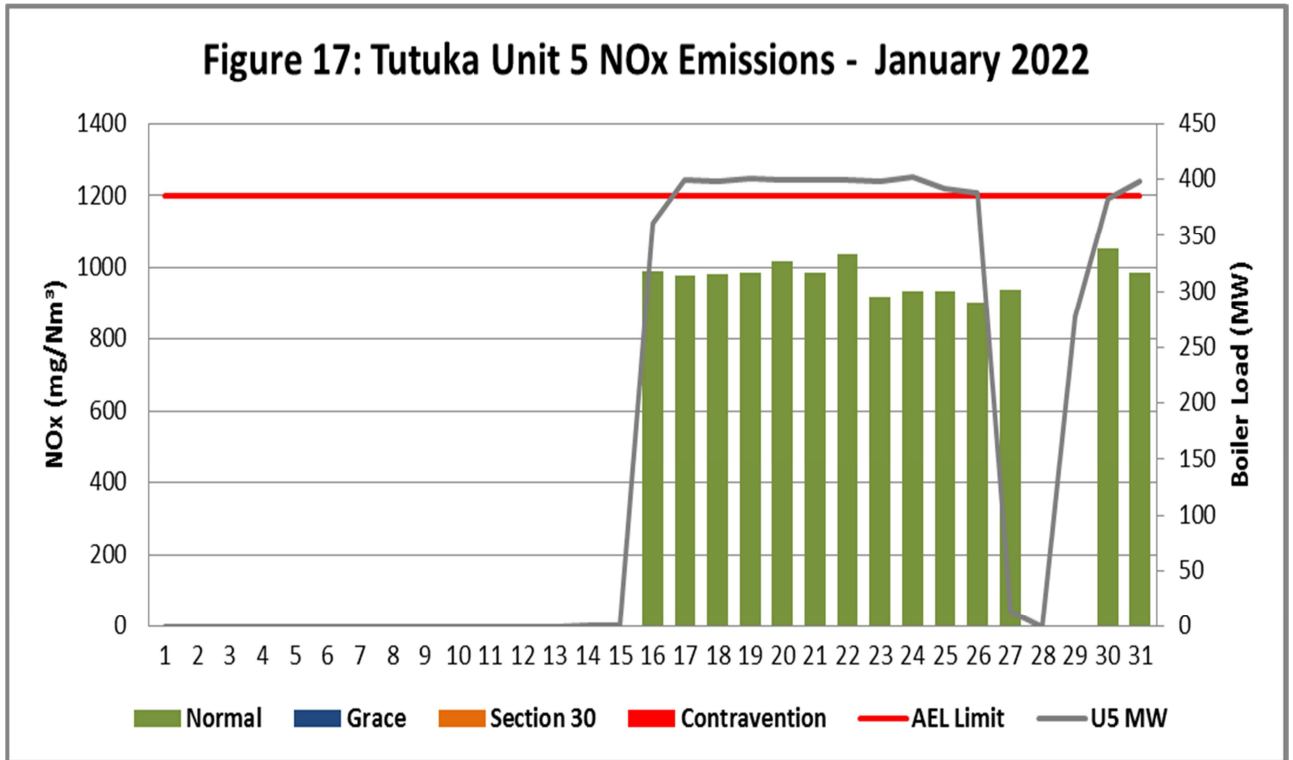


Figure 17: Unit 5 Daily Average NOx emissions for the month January 2022 (against the emission limit and load Generated)

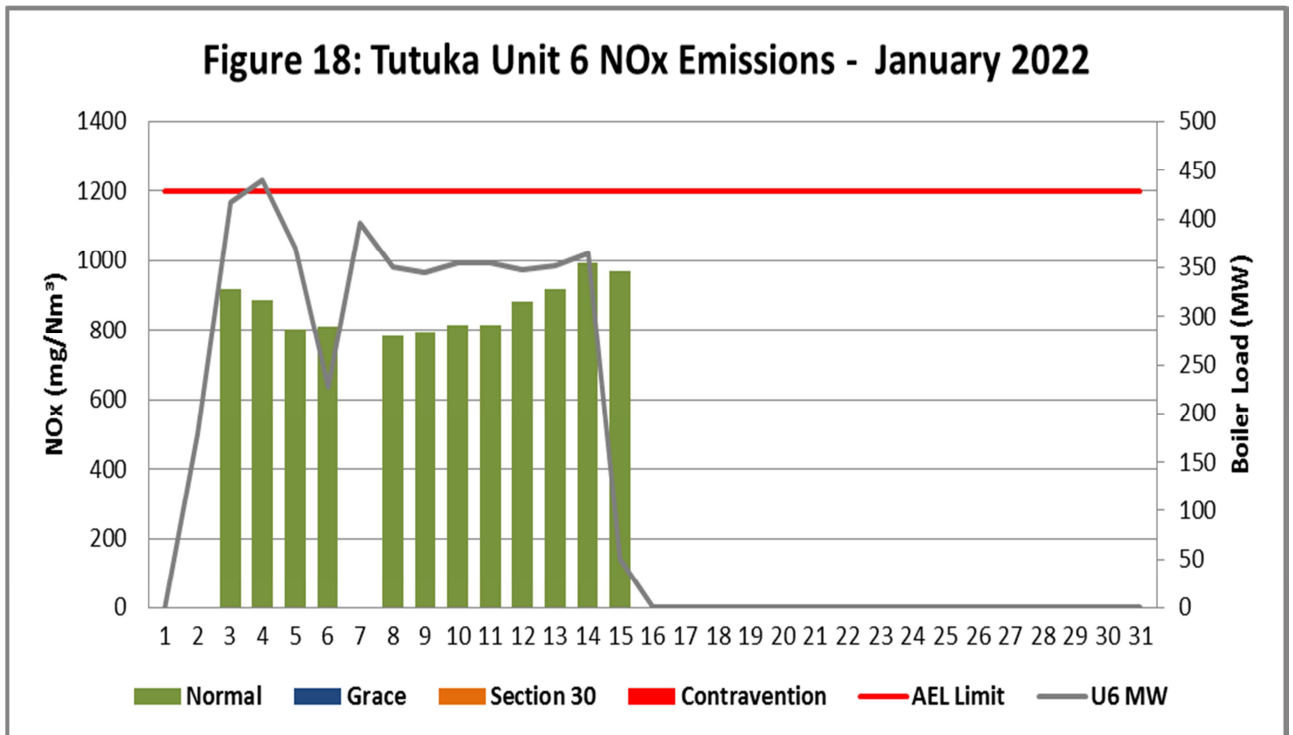


Figure 18: Unit 6 Daily Average NOx emissions for the month January 2022 (against the emission limit and load Generated)

Table 4: Monthly tonnages for the month January 2022

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO _x (tons)
Unit 1	0.0	0	0
Unit 2	0.0	0	0
Unit 3	405.2	3 580	1 413
Unit 4	165.6	2 351	976
Unit 5	170.8	1 368	602
Unit 6	152.6	958	378
SUM	894.1	8 258	3 369

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 - January 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
Unit 1	0	0	0	0	0	
Unit 2	0	0	0	0	0	
Unit 3	20	5	0	0	5	259.7
Unit 4	22	0	0	0	0	153.8
Unit 5	11	3	0	0	3	277.8
Unit 6	0	2	0	10	12	345.7
SUM	53	10	0	10	20	

Table 5.2: Operating days in compliance to SO_x AEL Limit –January 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO _x (mg/Nm ³)
Unit 1	0	0	0	0	0	
Unit 2	0	0	0	0	0	
Unit 3	25	0	0	0	0	2 291.4
Unit 4	22	0	0	0	0	2 142.7
Unit 5	14	0	0	0	0	2 184.1
Unit 6	12	0	0	0	0	2 204.1
SUM	73	0	0	0	0	

Table 5.3: Operating days in compliance to NO_x AEL Limit – January 2022

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	0	0	0	0	0	
Unit 3	25	0	0	0	0	900.0
Unit 4	22	0	0	0	0	884.4
Unit 5	14	0	0	0	0	974.1
Unit 6	12	0	0	0	0	866.0
SUM	73	0	0	0	0	

Light up information

Table 6: PM Start-up information for the month of fabricate January 2022

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

Complaints Register

Table 7: Complaints for the month of January 2022.

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 January 2022.					

General

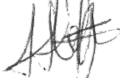
Particulate matter (PM10) emissions on unit 04 were within the limits. Unit 03 and 05 had exceedances which were within the grace period during the month of January 2022; Unit 01 and 02 were off during the whole month of January 2022. Unit 6 experienced an upset condition which persisted for more than 48 hours, resulting into a contravention of the emissions limit. This was due to a faulty monitor issue. The gaseous (NOx & SOx) emissions on unit 03, 04, 05, and 06 were within the daily limit during the month of January 2022; refer to graphs above.


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: 11-03-2022

Verified by 
Mike Molepo
SENIOR CHEMIST CHEMISTRY: TUTUKA POWER STATION
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Approved by: 
Sello Mametja
GENERAL MANAGER: TUTUKA POWER STATION
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Date: 2022/03/11