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Attention:

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AND

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DUVHA POWER STATION

Atmospheric Emission License 17/4/AEL/MP312/11/07



GENERAL MANAGER

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2024/08/14

DATE



APRIL 2024

DUVHA POWER STATION MONTHLY EMISSIONS REPORT

Atmospheric Emission License 17/4/AEL/MP312/11/07



1 RAW MATERIALS AND PRODUCTS

Raw Materials and Products	Raw Material Type	Units	Maximum Permitted Consumption Rate	Consumption Rate Apr-2024
	Coal	Tons	1 400 000	429 261.730
	Fuel Oil	Tons	5 000	2580.72
Production Rates	Product / By-Product Name	Units	Maximum Production Capacity Permitted	Indicative Production Rate Apr-2024
	Energy	GWh	2 592.000	784.610
	Ash	Tons	not specified	112 767.1

Note: Maximum energy rate is as per the maximum capacity stated in the AEL: [3 600 MW] x 24 hrs x days in Month/1000 to convert to GWh

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.6 TO >1.2	0.71
Ash Content	%	27 TO 30	26.27

3 EMISSION LIMITS (mg/Nm³)

Associated Unit/Stack	PM	SO ₂	NOx
Unit 1	100	3500	1100
Unit 2	100	3500	1100
Unit 4	100	3500	1100
Unit 5	100	3500	1100
Unit 6	100	3500	1100

4 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Apr-2024	Technology Type	SO ₃ Utilization Apr-2024
Unit 1	FFP	99.9%	SO ₃	n/a
Unit 2	FFP	100.0%	SO ₃	n/a
Unit 4	ESP + SO ₃	99.5%	SO ₃	97.7%
Unit 5	ESP + SO ₃	Off	SO ₃	Off
Unit 6	ESP + SO ₃	Off	SO ₃	Off
Note: ESP plant does not have bypass mode operation, hence plant 100% Utilised.				

5 MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO ₂	NO	O ₂
Unit 1	99.7	91.7	92.8	96.4
Unit 2	80.1	93.1	93.5	93.5
Unit 4	99.9	99.7	99.9	100.0
Unit 5	Off	Off	Off	Off
Unit 6	Off	Off	Off	Off

Note: NO_x emissions is measured as NO in PPM. Final NO_x value is expressed as total NO₂

6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of April 2024

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO _x (tons)
Unit 1	47.1	3 510	1 445
Unit 2	16.0	2 236	1 145
Unit 4	121.5	2 449	931
Unit 5	Off	Off	Off
Unit 6	Off	Off	Off
SUM	184.59	8 195	3 520

Table 6.2: Operating days in compliance to PM AEL Limit - April 2024

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm³)
Unit 1	26	0	0	0	0	29.9
Unit 2	30	0	0	0	0	10.1
Unit 4	25	3	0	0	3	97.3
Unit 5	0	Off	Off	Off	Off	Off
Unit 6	Off	Off	Off	Off	Off	Off
SUM	81	3	0	0	3	

Table 6.3: Operating days in compliance to SO₂ AEL Limit - April 2024

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO ₂ (mg/Nm³)
Unit 1	27	0	0	0	0	1 843.1
Unit 2	30	0	0	0	0	1 360.8
Unit 4	29	0	0	0	0	1 660.0
Unit 5	Off	Off	Off	Off	Off	Off
Unit 6	Off	Off	Off	Off	Off	Off
SUM	86	0	0	0	0	

Table 6.4: Operating days in compliance to NO_x AEL Limit - April 2024

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NO _x (mg/Nm ³)
Unit 1	27	0	0	0	0	757.7
Unit 2	30	0	0	0	0	698.8
Unit 4	29	0	0	0	0	631.9
Unit 5	Off	Off	Off	Off	Off	Off
Unit 6	Off	Off	Off	Off	Off	Off
SUM	86	0	0	0	0	

Note: NO_x emissions is measured as NO in PPM. Final NO_x value is expressed as total NO₂

Table 6.5: 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: Duvha Unit 1 PM Emissions - April 2024

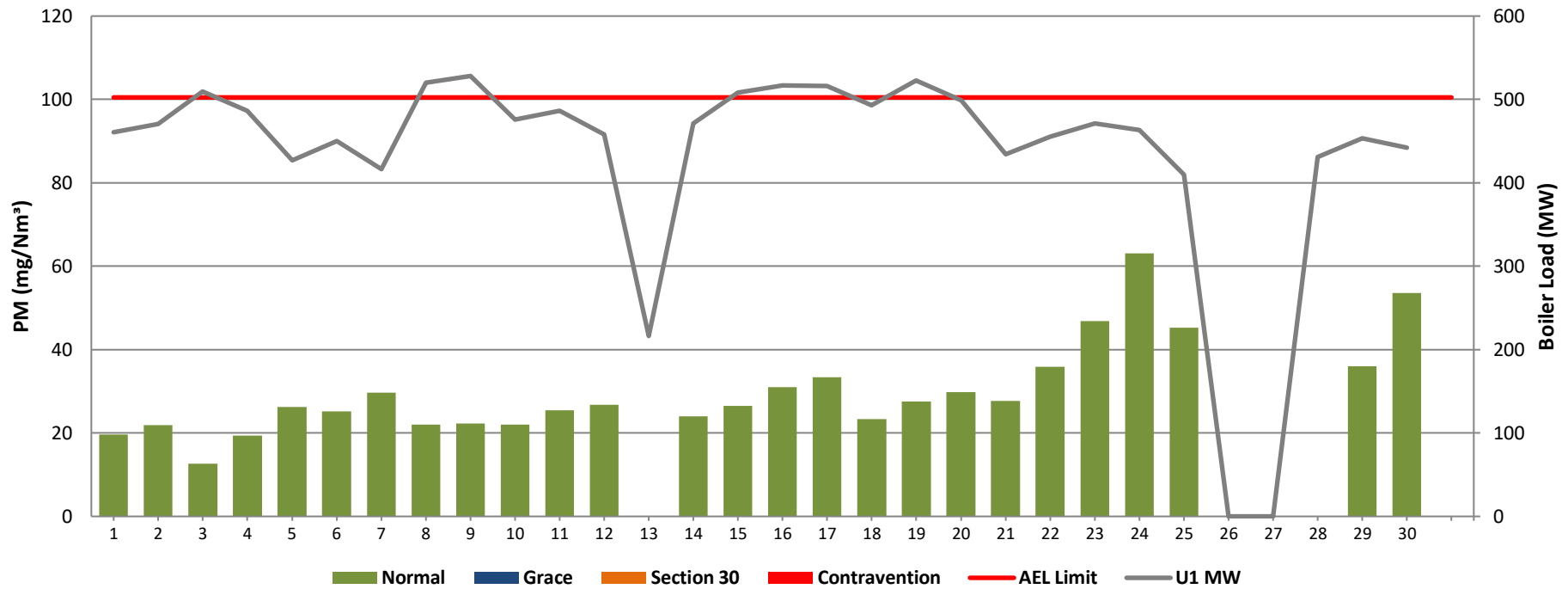


Figure 2: Duvha Unit 2 PM Emissions - April 2024

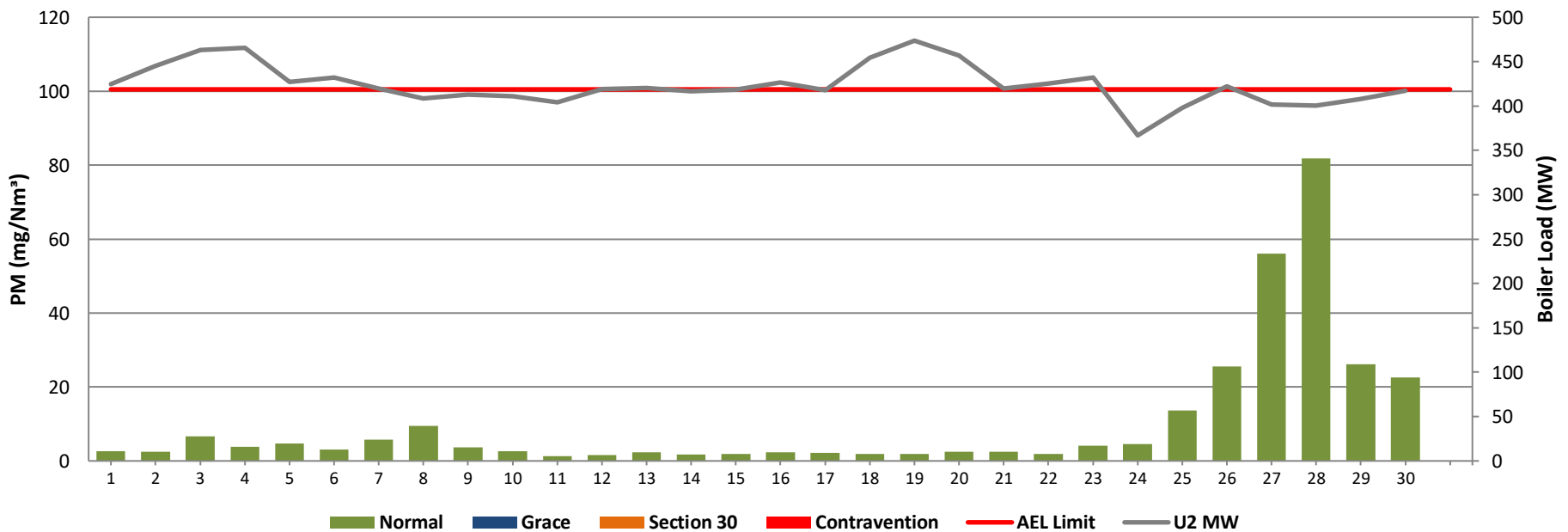


Figure 3: Duvha Unit 4 PM Emissions - April 2024

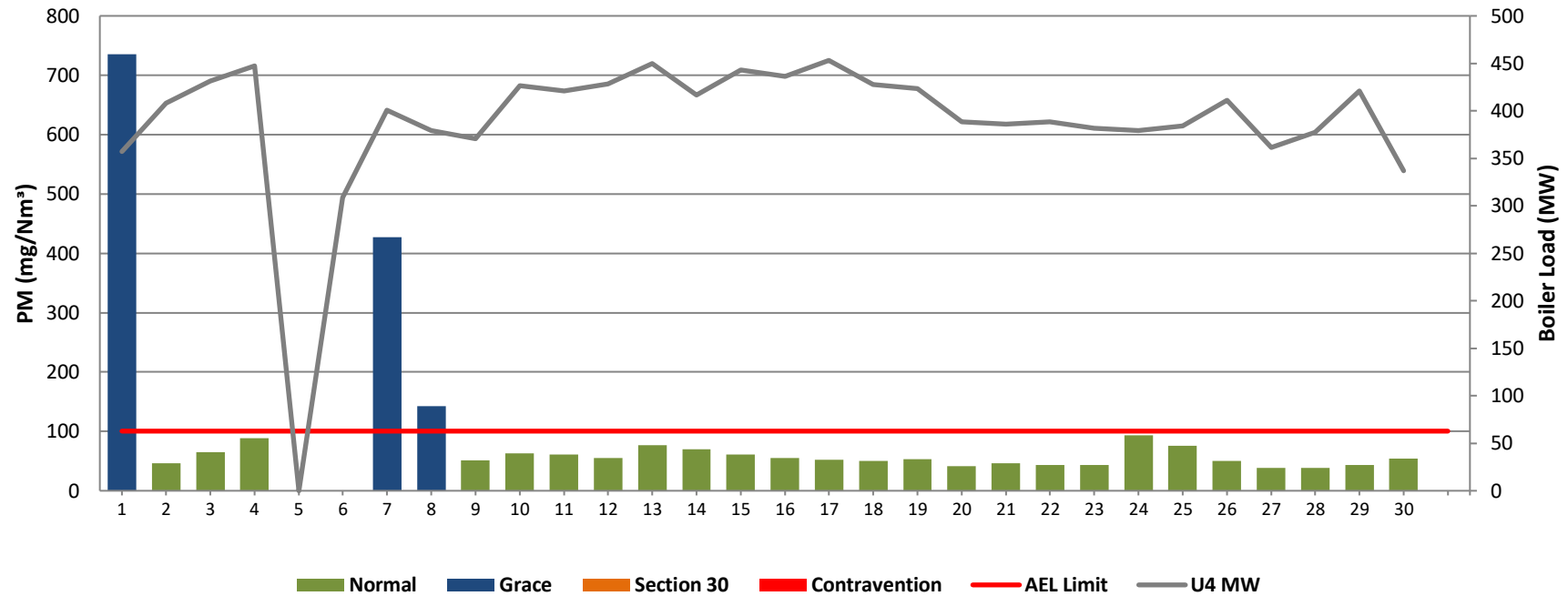


Figure 4: Duvha Unit 1 SO₂ Emissions - April 2024

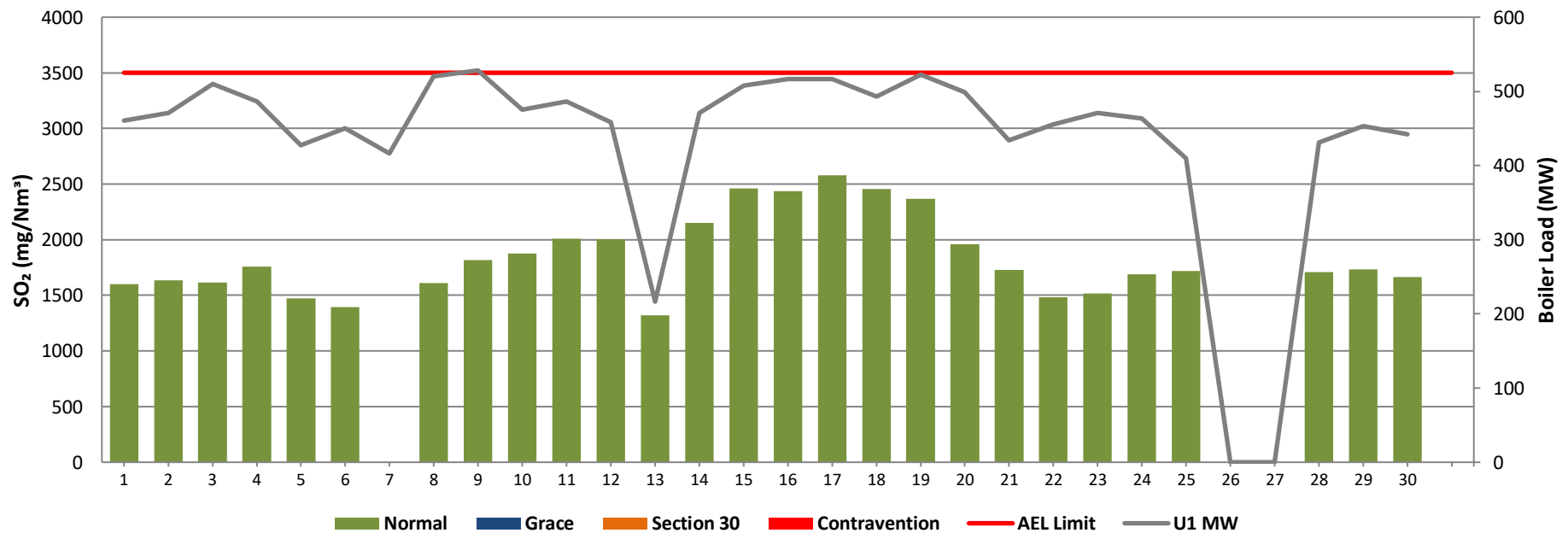


Figure 5: Duvha Unit 2 SO₂ Emissions - April 2024

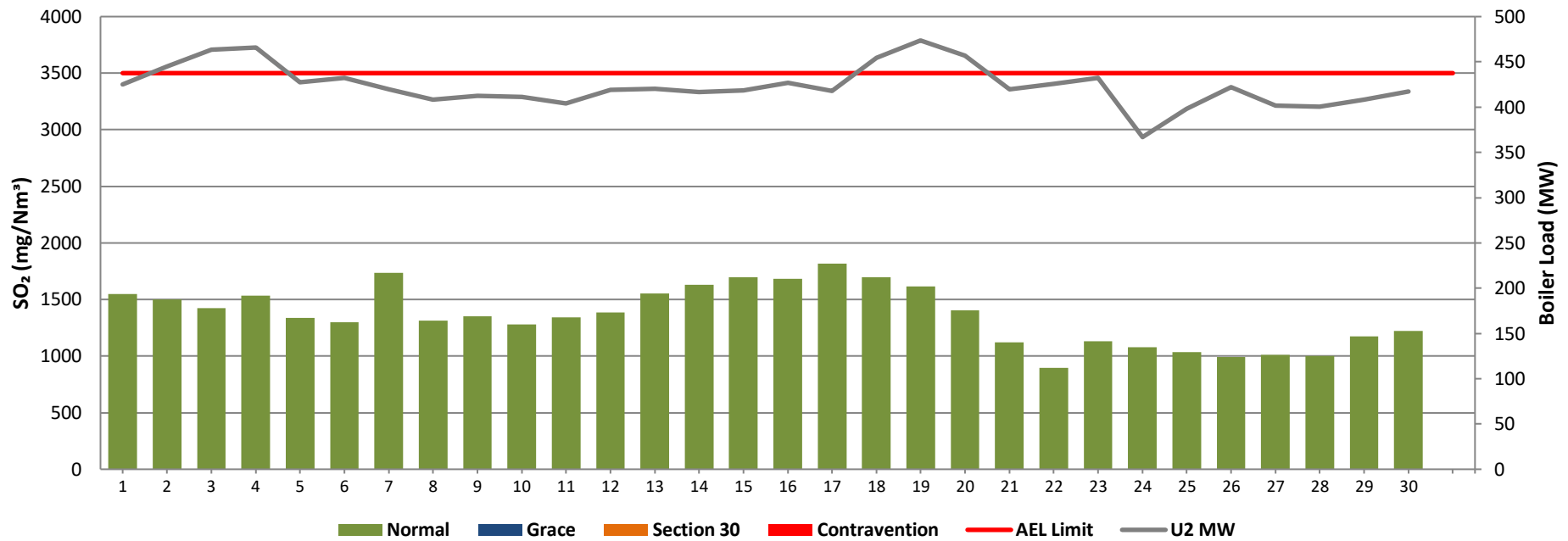


Figure 6: Duvha Unit 4 SO₂ Emissions - April 2024

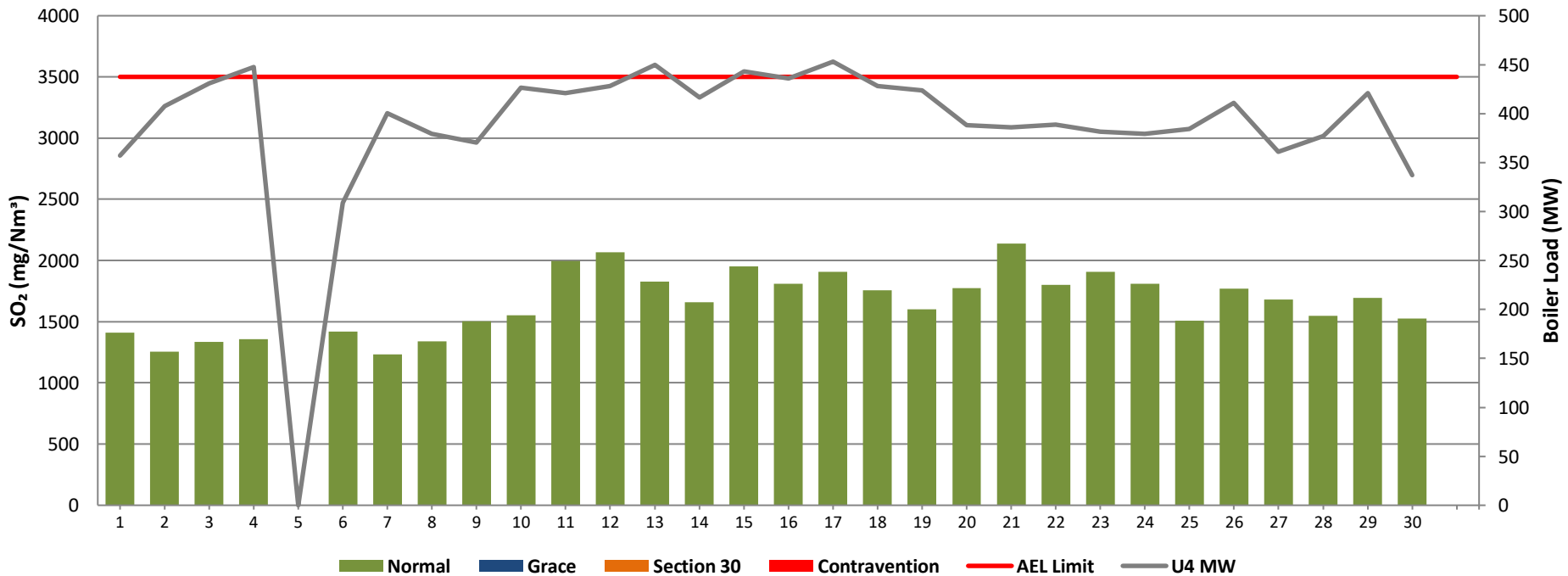


Figure 7: Duvha Unit 1 NOx Emissions - April 2024

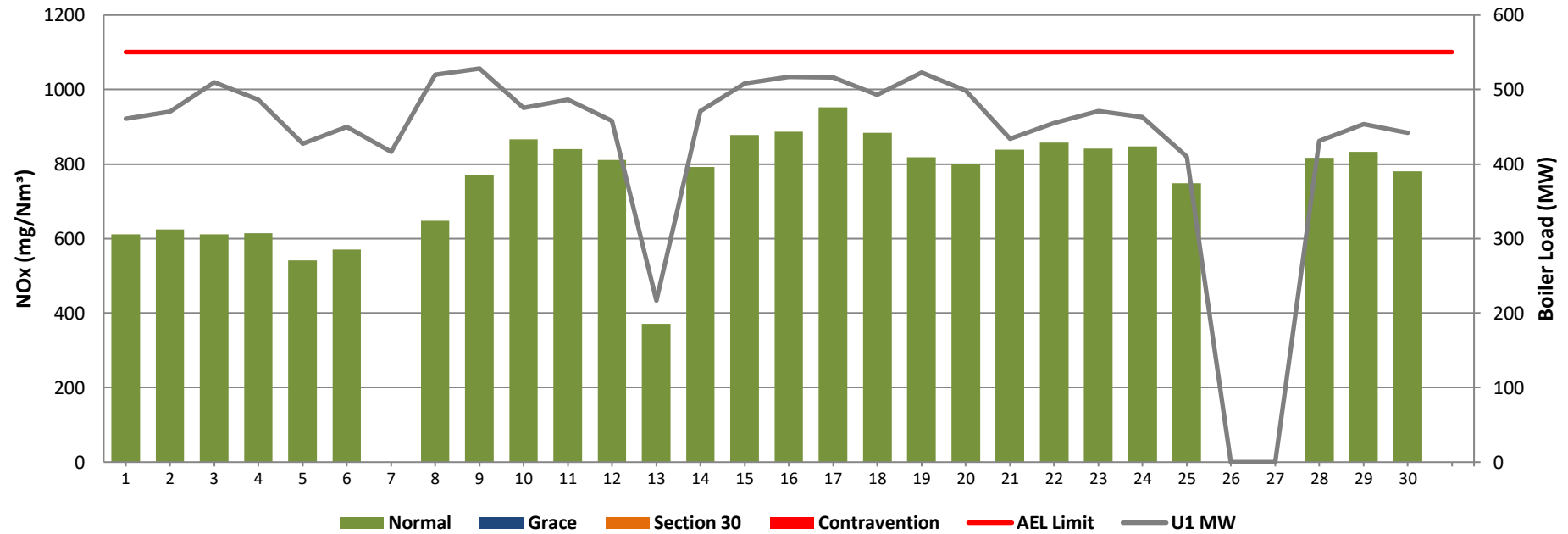


Figure 8: Duvha Unit 2 NOx Emissions - April 2024

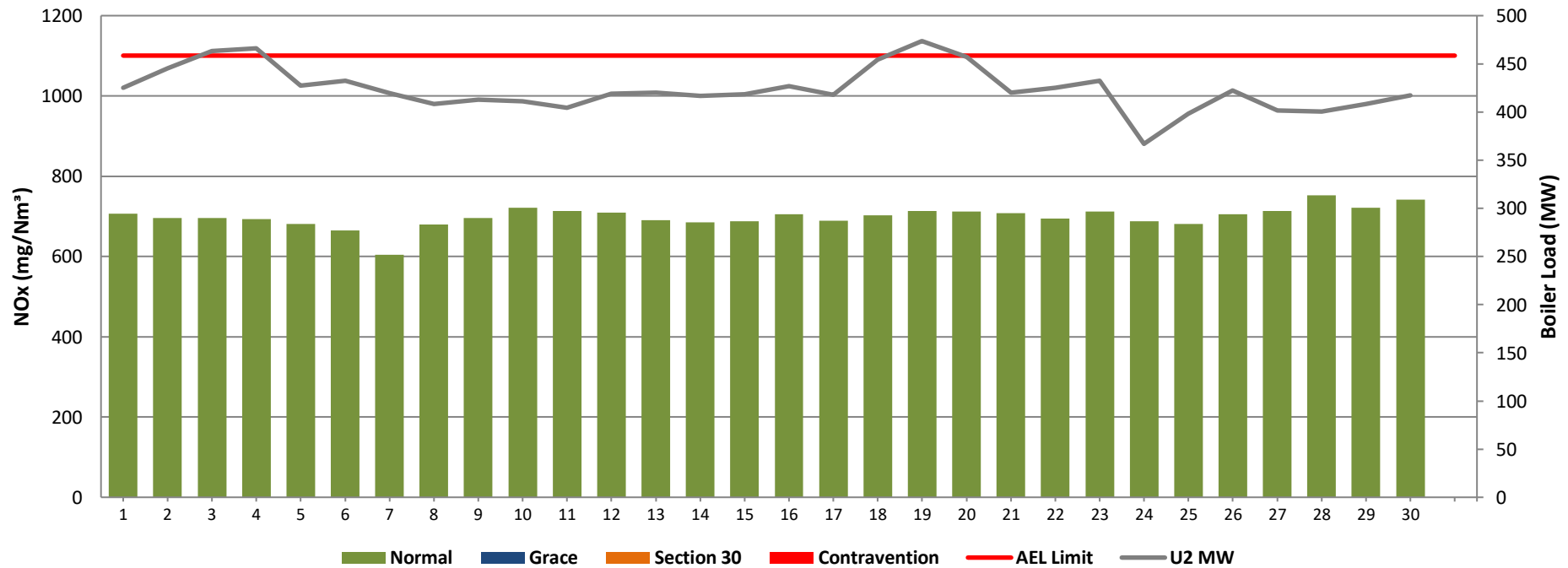
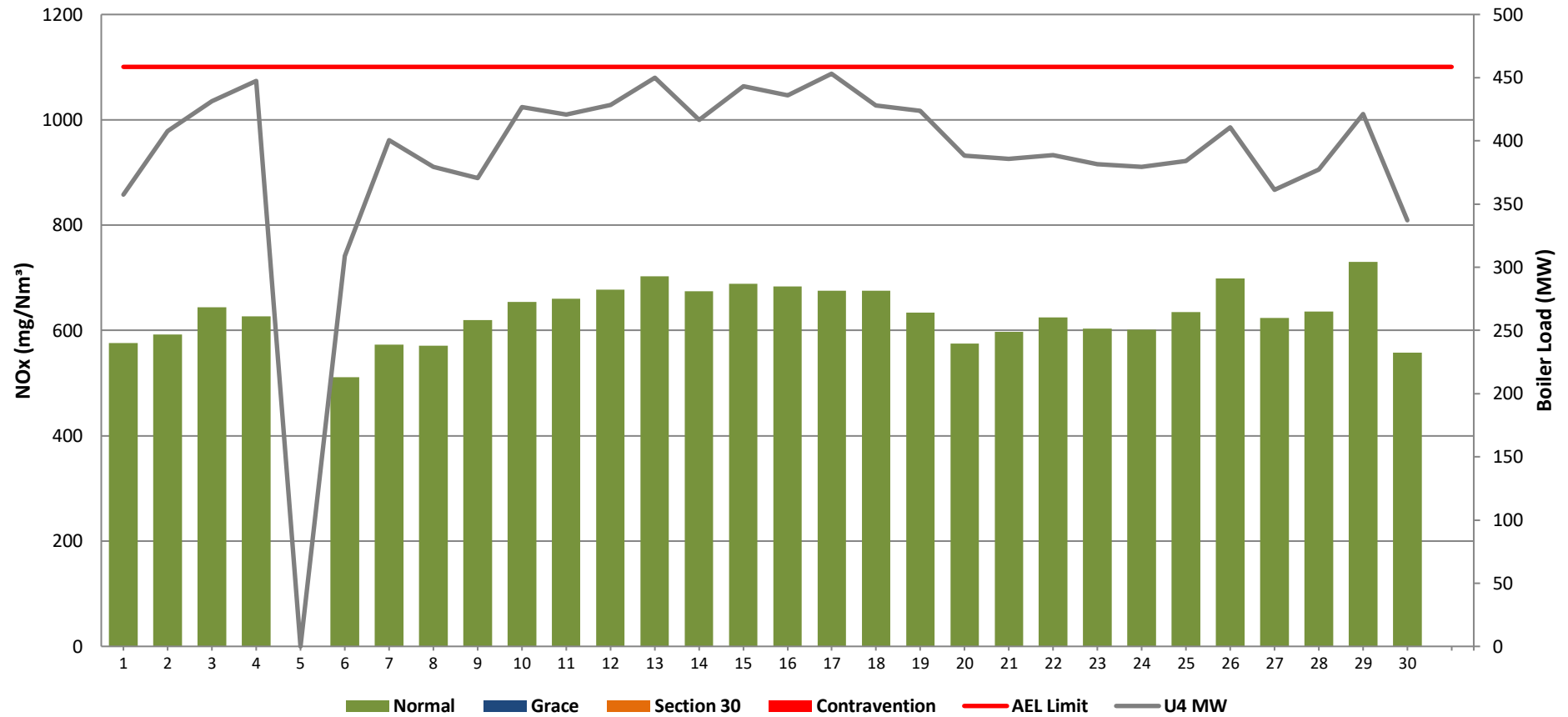


Figure 9: Duvha Unit 4 NOx Emissions - April 2024



7 SHUT DOWN AND LIGHT UP INFORMATION

Tables 7.1: Shut-down and light-up information for the month of April 2024

Unit No.1	Event 1		Event 2		Event 3		Event 4	
Breaker Open (BO)	7:10 am	2024/04/07	7:35 pm	2024/04/12	7:55 pm	2024/04/25	BO previously	BO previously
Draught Group (DG) Shut Down (SD)	DG did not trip or SD	DG did not trip or SD	10:00 pm	2024/04/12	8:50 pm	2024/04/25	n/a	n/a
BO to DG SD (duration)	n/a	DD:HH:MM	00:02:25	DD:HH:MM	00:00:55	DD:HH:MM	n/a	DD:HH:MM
Fires in time			4:15 am	#####	12:00 am	2024/04/26	5:35 pm	2024/04/29
Synch. to Grid (or BC)	11:55 am	2024/04/07	9:15 pm	#####	12:50 am	2024/04/28	#####	2024/04/29
Fires in to BC (duration)		DD:HH:MM	00:17:00	DD:HH:MM	02:00:50	DD:HH:MM	00:04:50	DD:HH:MM
Emissions below limit from BC (end date)			not > limit	not > limit	not > limit	not > limit	not > limit	not > limit
Emissions below limit from BC (duration)		DD:HH:MM	n/a	DD:HH:MM	n/a	DD:HH:MM	n/a	DD:HH:MM

Unit No.4	Event 1		Event 2	
Breaker Open (BO)	12:10 pm	2024/04/04	1:55 am	2024/04/30
Draught Group (DG) Shut Down (SD)	8:10 pm	2024/04/04	DG did not trip or SD	DG did not trip or SD
BO to DG SD (duration)	00:08:00	DD:HH:MM	n/a	DD:HH:MM
Fires in time	9:40 pm	2024/04/05		
Synch. to Grid (or BC)				
Fires in to BC (duration)	00:16:35	DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)	not > limit	not > limit		
Emissions below limit from BC (duration)		DD:HH:MM		DD:HH:MM

8 COMPLAINTS

There were no complaints for this month

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

9 GENERAL

Exceedances:

Unit 4

01/04/2024

DHP shutdown due to VSD VENT FAN V-belts torn, changing over to filter exhaust fan.

07/04/2024 and 08/04/2024

Cold unit light up.

Lastly the averages for Oxygen (O₂) and Carbon Dioxide (CO₂) data from the QAL2 tests reports were used for reporting gaseous emissions for units 2, 4, 5 and 6 due to poor performance of the O₂ and CO₂ gaseous monitors. These poor performances of the monitors are due to faulty O₂ analysers. The station is in the process to replace all the faulty analysers by 31 March 2024.

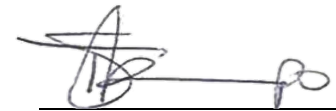
The rest of the information demonstrating compliance with the emission license conditions is supplied in the annual emission report which will be sent to your office.

10 S30 Incidents Register

No section 30 incidents recorded for the month of April.


Boiler Plant Engineering Manager

24/06/2024
Date


Environmental Manager

202408/14
Date


Engineering Manager

01/07/2024
Date

Compiled by:

Environmental Officer

For:

Nkangala District Municipality

Air Quality Officer

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Generation Compliance Management
Generation Asset Management

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Operating Manager
Maintenance Manager
Production Manager
Boiler Engineering Manager
System Engineer
Environmental Manager