



Generation

Nkangala District Municipality
P O Box 437
Middleburg
1050

Attention:

Mr V Mahlangu

AND

Directorate: Air Quality Management
Services
The Chief Director:
Mr S S Maluleka
Department of Environmental Services
Private Bag X447
PRETORIA
0001
Tel: (012) 310 3263
Fax: (012) 320 0488

Date: 2021/06/28

Enquiries: Duvha Environmental Management

☎ +27 13 690 0445

📠 +27 66 212 2105

Enquiries: Ms Simthandile Nhlapo

☎ +27 13 690 0421

📠 +27 66 212 2105

Total number of pages: 14

Total number of annexes: 1

DUVHA POWER STATION

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

GENERAL MANAGER

2021/06/30

DATE

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 May-2021
	Coal	Tons	1 400 000	624 189.85
	Fuel Oil	Tons	5 000	3149.2
Production Rates	Product / By-Product Name	Units	Maximum Production Capacity Permitted	Production Rate May-2021
	Energy	GWh	3600	1 047.00
	Ash	Tons	not specified	165535.15

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.6 TO >1.2	0.94
Ash Content	%	27 TO 30	26.52

3 EMISSION LIMITS (mg/Nm³)

Associated Unit/Stack	PM	SO _x	NO _x
Unit 1	100	3500	1100
Unit 2	100	3500	1100
Unit 3	100	3500	1100
Unit 4	100	3500	1100
Unit 5	100	3500	1100
Unit 6	100	3500	1100

4 ABATEMET TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Minimum Control Efficiency	Efficiency May-2021	Minimum Utilization	Utilization May-2021
Unit 1	Fabric Filter Plant (FFP)	99%	99.79%	100%	100%
Unit 2	Fabric Filter Plant (FFP)	99%	99.81%	100%	100%
Unit 4	Electro Static Precipitator (ESP)	99.6%	99.77%	100%	100%
Unit 5	Electro Static Precipitator (ESP)	99.6%	Off load	100%	Off load
Unit 6	Electro Static Precipitator (ESP)	99.6%	99.79%	100%	100%
Unit 4	Chemithon (SO ₃)	99.6%	100%	96%	97.00%
Unit 5	Chemithon (SO ₃)	99.6%	Off load	96%	Off load
Unit 6	Chemithon (SO ₃)	99.6%	100%	96%	98.00%

5 MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO ₂	NO
Unit 1	97.2	99.3	100.0
Unit 2	99.7	90.9	90.9
Unit 4	100.0	98.2	99.6
Unit 6	100.0	79.8	79.8

6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of May 2021

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO _x (tons)
Unit 1	71.0	3 855	1 623
Unit 2	84.5	2 623	1 874
Unit 4	48.3	1 742	919
Unit 6	105.6	4 924	2 042
SUM	309.4	13 145	6 457

Table 6.2: Operating days in compliance to PM AEL Limit - May 2021

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
Unit 1	28	0	0	0	0	35.2
Unit 2	31	0	0	0	0	38.2
Unit 4	14	0	0	0	0	51.6
Unit 6	27	4	0	0	4	64.2
SUM	100	4	0	0	4	

Table 6.3: Operating days in compliance to SOx AEL Limit - May 2021

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SOx (mg/Nm ³)
Unit 1	29	0	0	0	0	1 820.6
Unit 2	31	0	0	0	0	1 185.6
Unit 4	15	0	0	0	0	1 759.1
Unit 6	31	0	0	0	0	2 402.8
SUM	106	0	0	0	0	

Table 6.4: Operating days in compliance to NOx AEL Limit - May 2021

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm ³)
Unit 1	29	0	0	0	0	762.2
Unit 2	31	0	0	0	0	846.2
Unit 4	15	0	0	0	0	925.8
Unit 6	31	0	0	0	0	996.4
SUM	106	0	0	0	0	

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 - May 2021

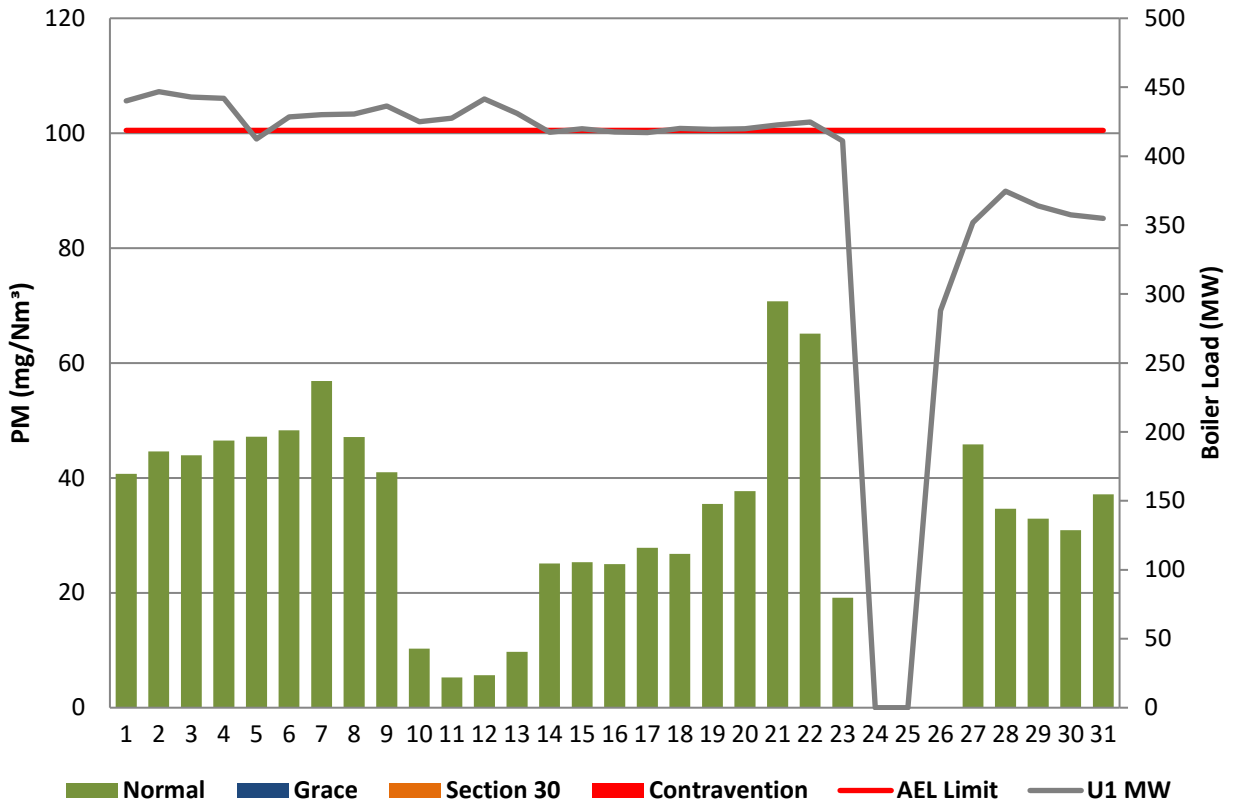


Figure 2: Duvha Unit 2 PM Emissions - May 2021

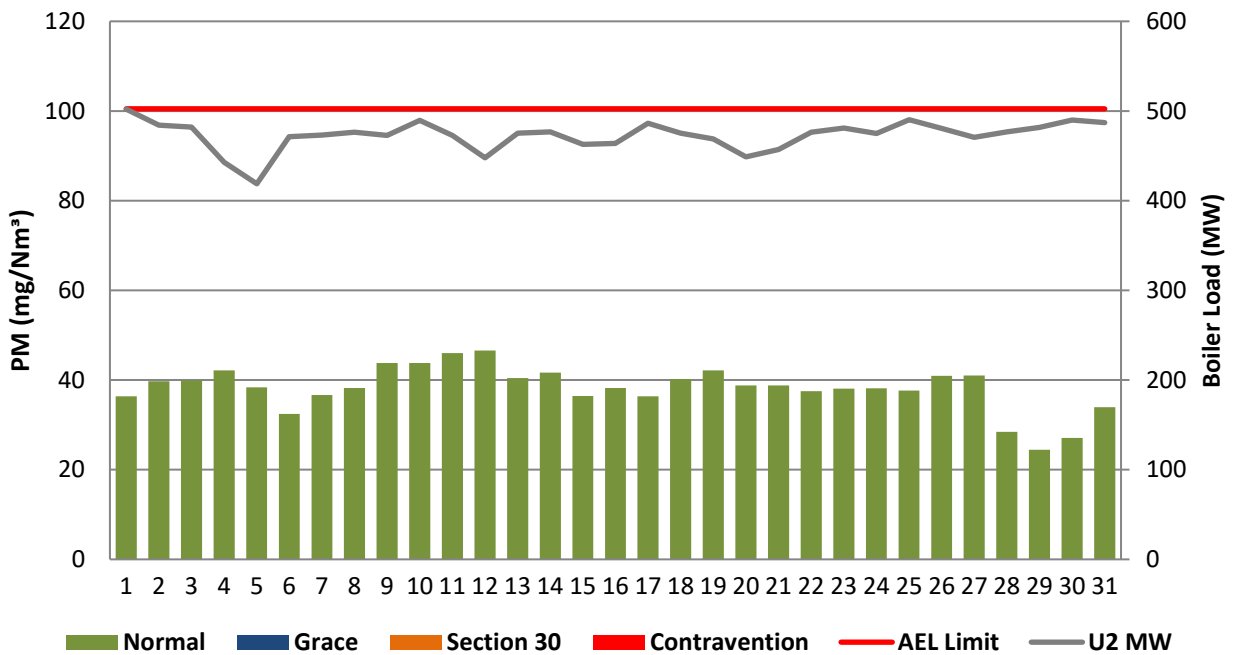


Figure 3: Duvha Unit 4 PM Emissions - May 2021

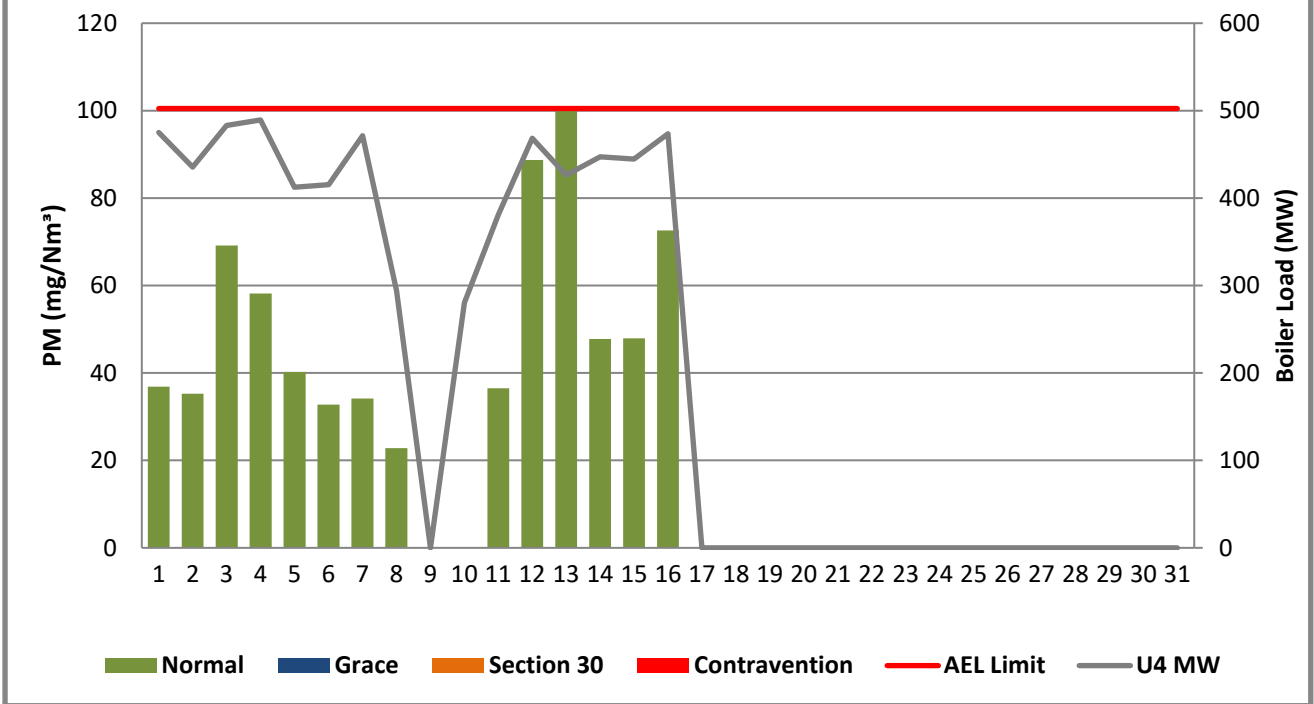


Figure 4: Duvha Unit 6 PM Emissions - May 2021

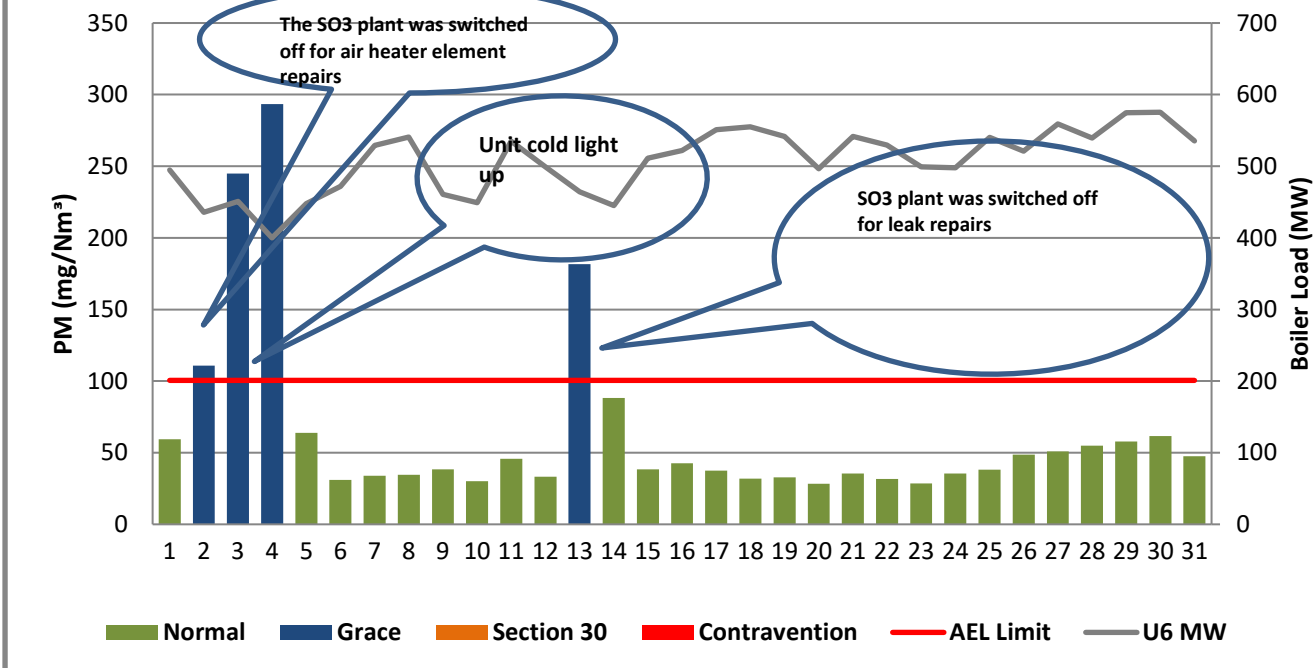


Figure 5: Duvha Unit 1 SOx Emissions - May 2021

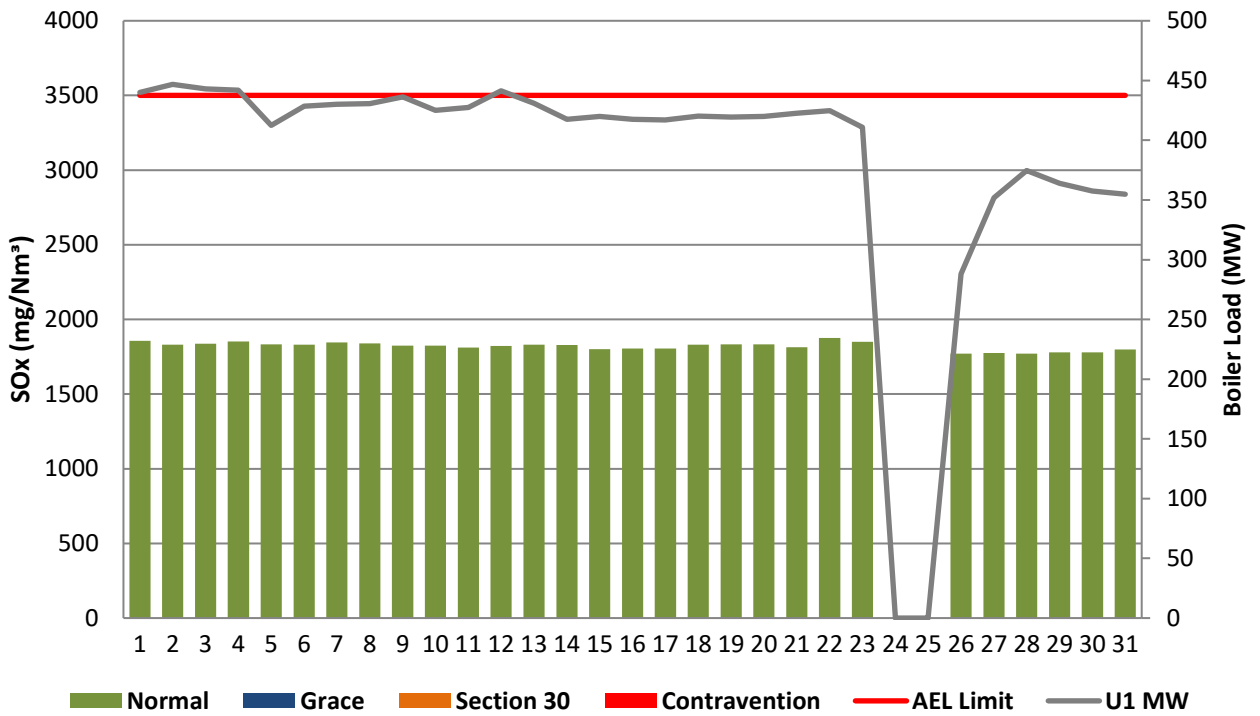


Figure 6: Duvha Unit 2 SOx Emissions - May 2021

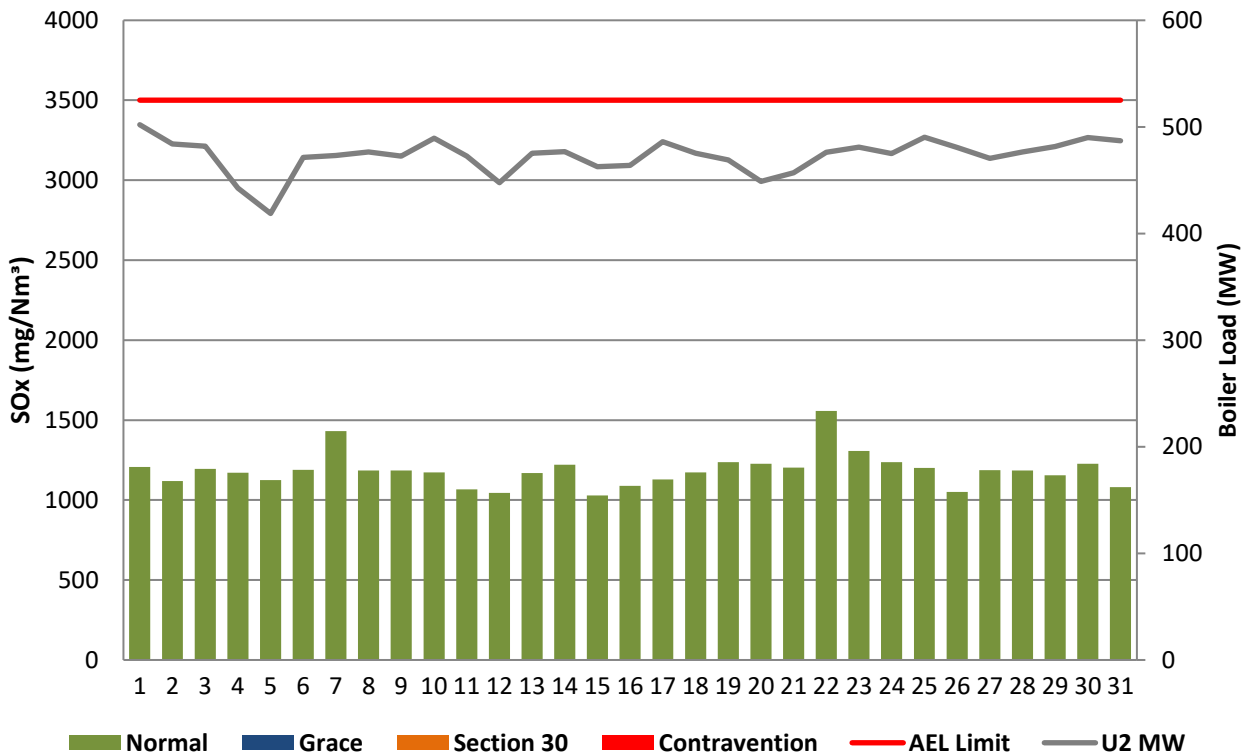


Figure 7: Duvha Unit 4 SOx Emissions - May 2021

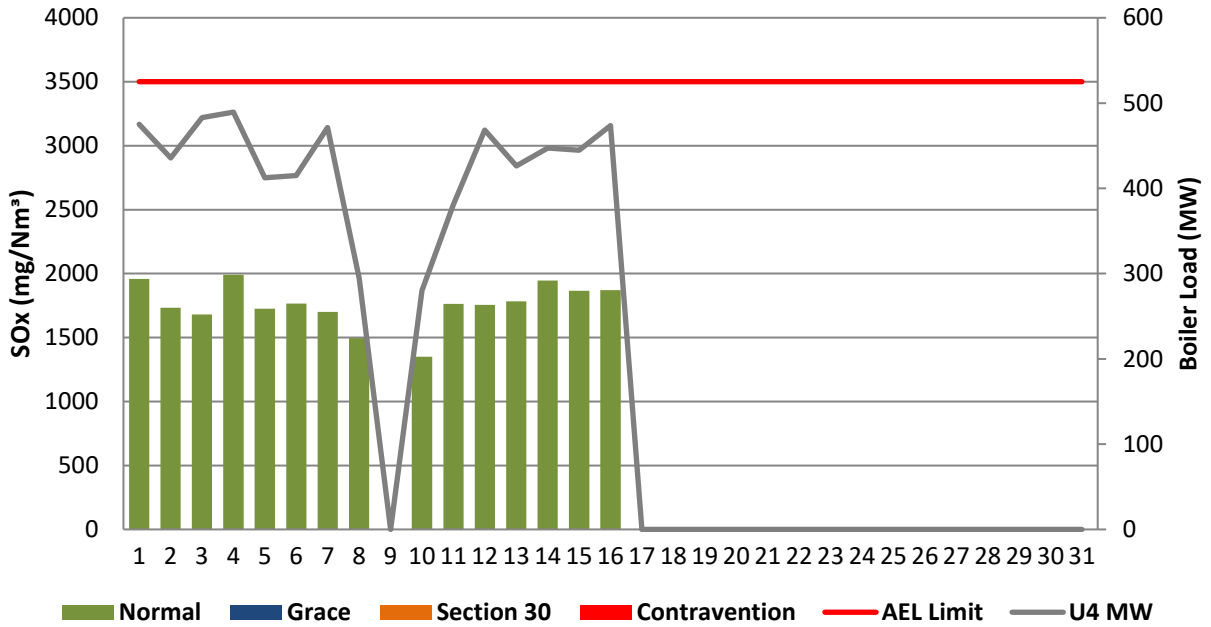


Figure 8: Duvha Unit 6 SOx Emissions - May 2021

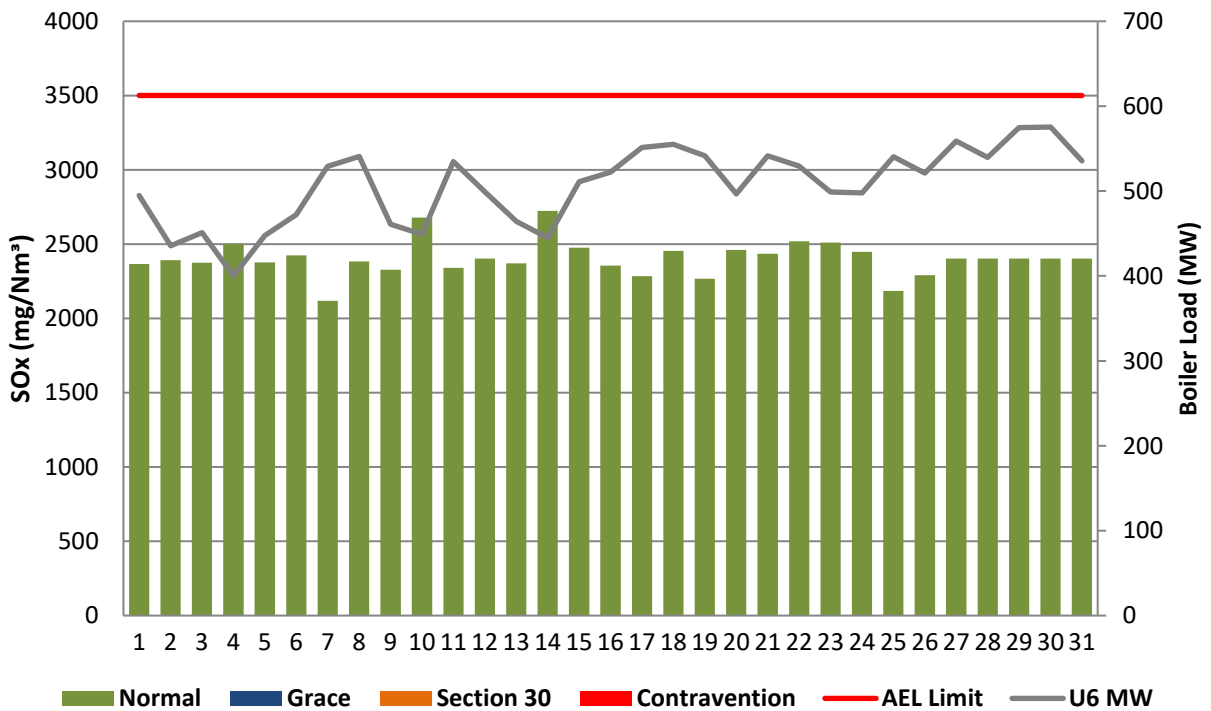


Figure 9: Duvha Unit 1 NOx Emissions - May 2021

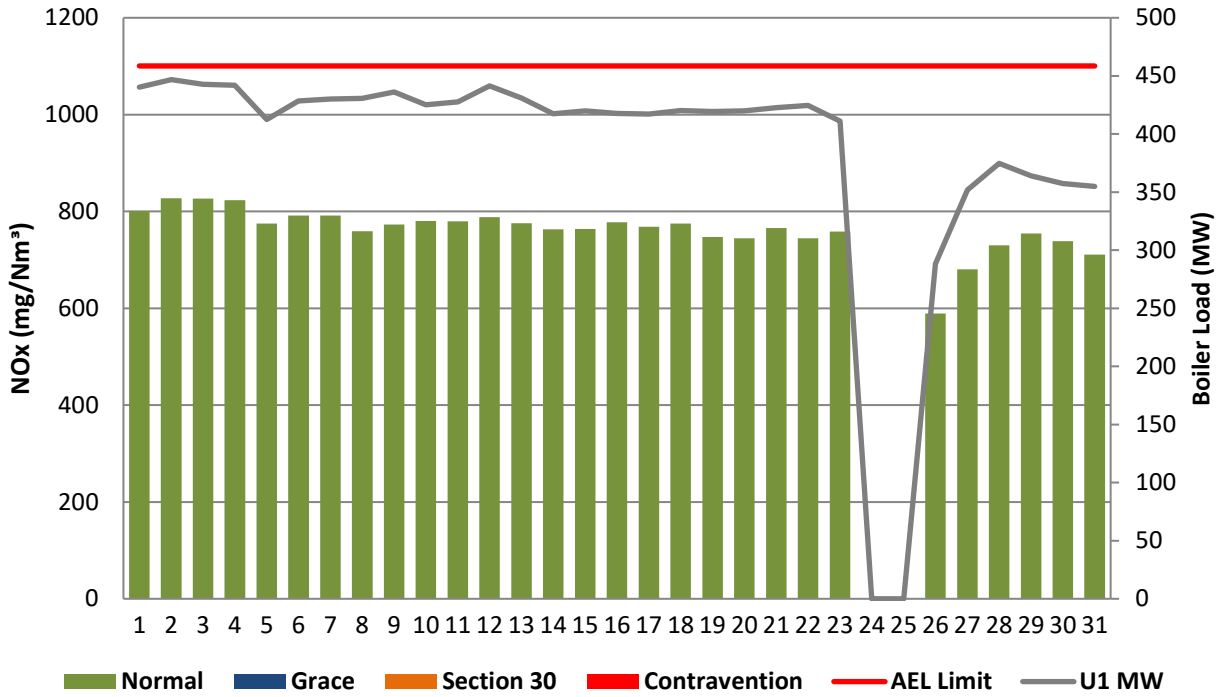


Figure 10: Duvha Unit 2 NOx Emissions - May 2021

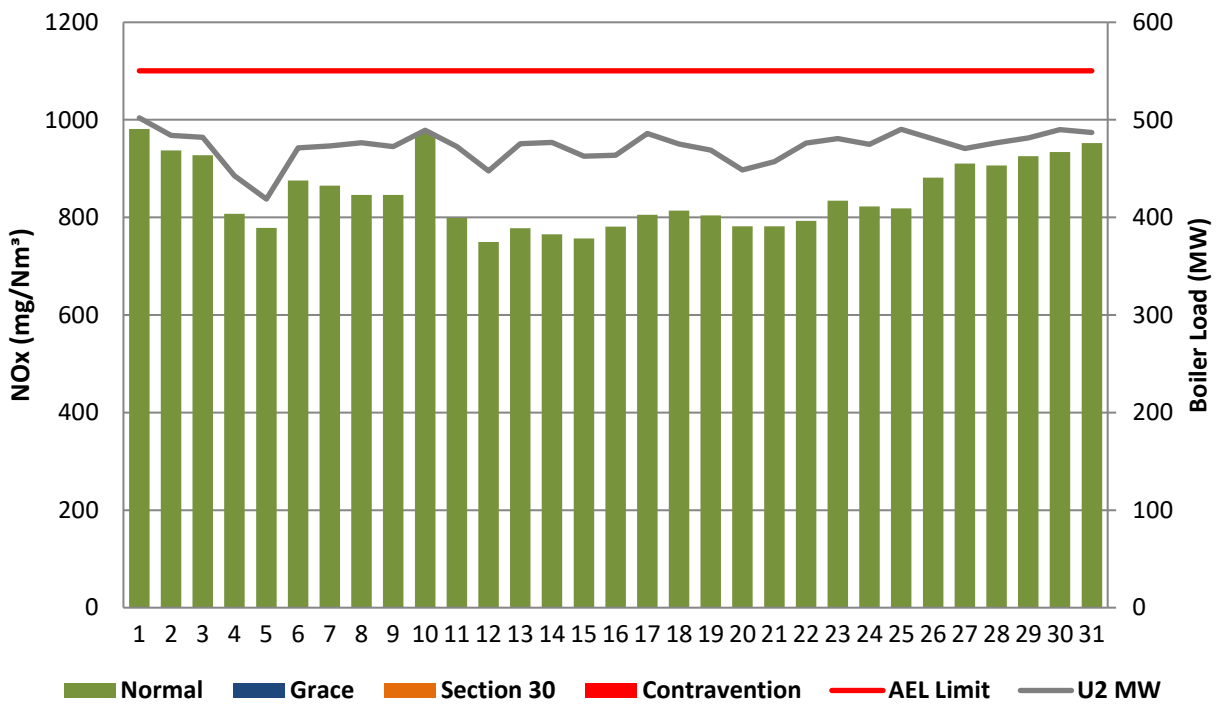


Figure 11: Duvha Unit 4 NOx Emissions - May 2021

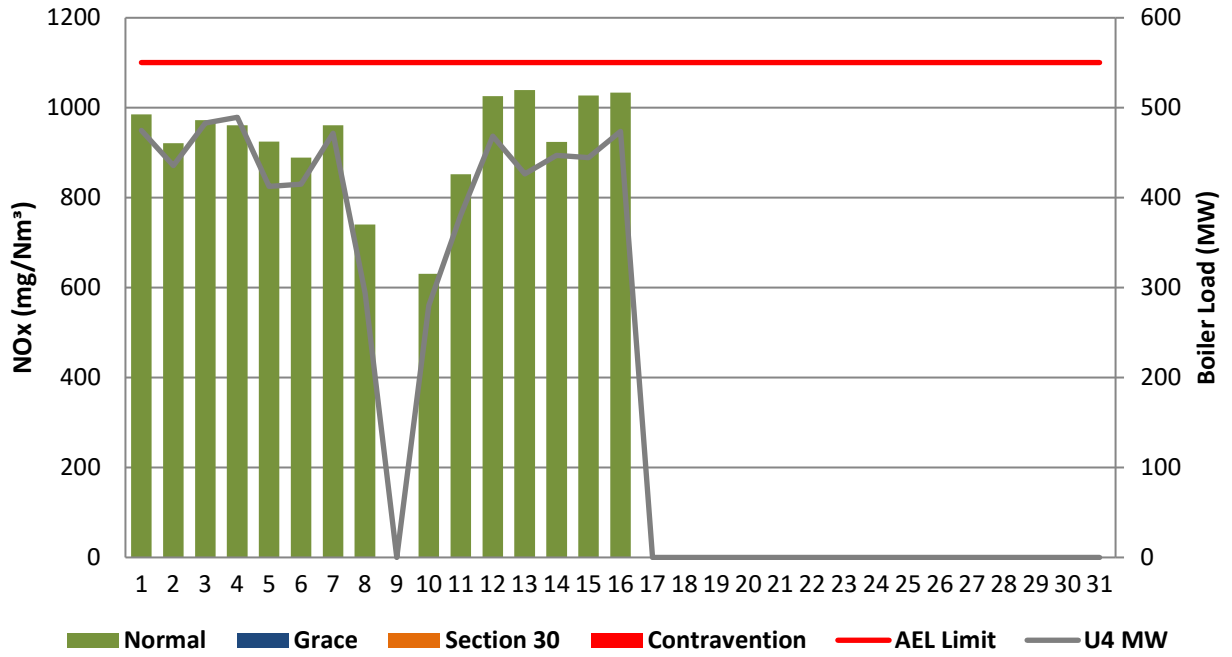
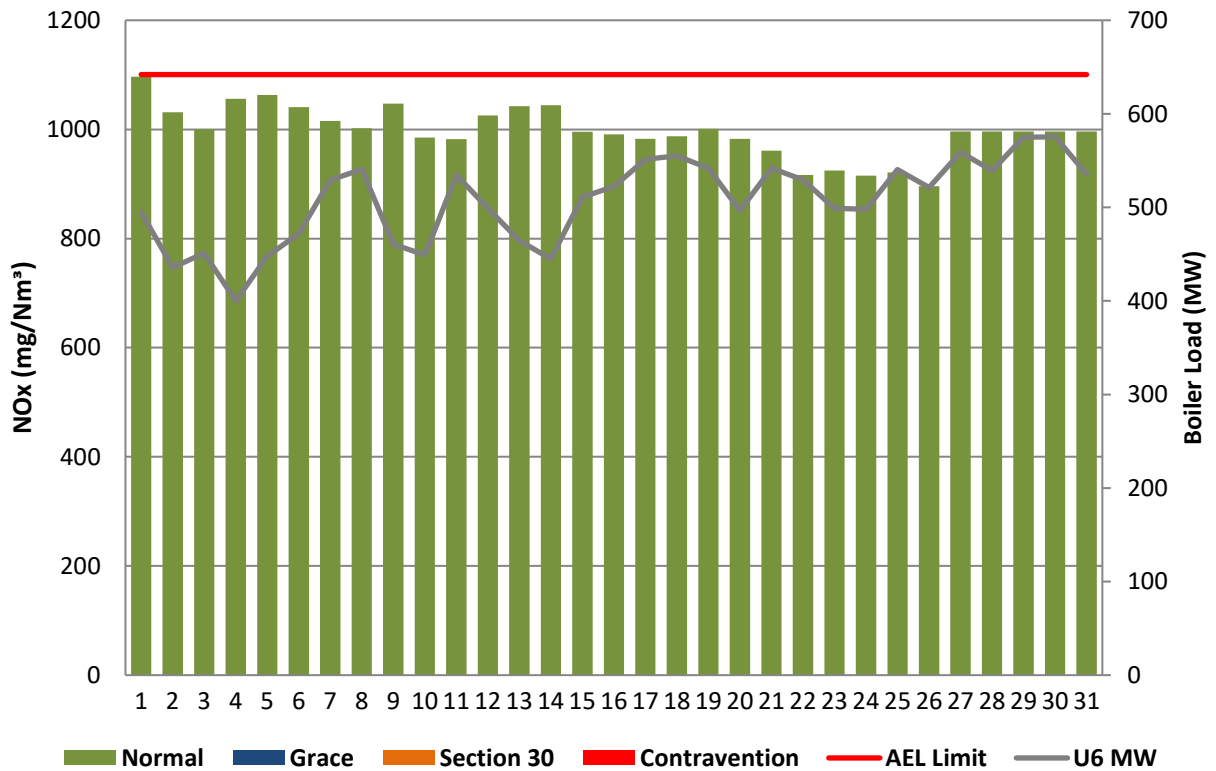


Figure 12: Duvha Unit 6 NOx Emissions - May 2021



7 SHUT DOWN AND LIGHT UP INFORMATION

Tables 7.1: Shut-down and light-up information for the month of May 2021

Unit No.1	<i>Event 1</i>	
Breaker Open (BO)	<i>11:55 pm</i>	<i>2021/05/23</i>
Draught Group (DG) Shut Down (SD)	<i>7:55 pm</i>	<i>2021/05/25</i>
BO to DG SD (duration)	<i>01:20:00</i>	DD:HH:MM
Fires in time	<i>10:20 am</i>	<i>2021/05/26</i>
Synch. to Grid (or BC)	<i>2021/05/27</i>	<i>5:10 pm</i>
Fires in to BC (duration)	<i>00:06:50</i>	DD:HH:MM
Emissions below limit from BC (end date)	<i>not > limit</i>	<i>not > limit</i>
Emissions below limit from BC (duration)	<i>n/a</i>	DD:HH:MM

Unit No.4	<i>Event 1</i>		<i>Event 2</i>	
Breaker Open (BO)	<i>11:40 pm</i>	<i>2021/05/08</i>	<i>3:15 pm</i>	<i>2021/05/16</i>
Draught Group (DG) Shut Down (SD)	<i>5:25 am</i>	<i>2021/05/09</i>	<i>DG did not trip or SD</i>	<i>DG did not trip or SD</i>
BO to DG SD (duration)	<i>00:05:45</i>	DD:HH:MM	<i>n/a</i>	DD:HH:MM
Fires in time	<i>7:25 pm</i>	<i>2021/05/09</i>		
Synch. to Grid (or BC)	<i>12:30 am</i>	<i>2021/05/10</i>		
Fires in to BC (duration)	<i>00:05:05</i>	DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)	<i>not > limit</i>	<i>not > limit</i>		
Emissions below limit from BC (duration)	<i>n/a</i>	DD:HH:MM		DD:HH:MM

Unit No.6	<i>Event 1</i>		<i>Event 2</i>	
Breaker Open (BO)	<i>BO previously</i>	<i>BO previously</i>	<i>1:50 am</i>	<i>2021/05/03</i>
Draught Group (DG) Shut Down (SD)	<i>n/a</i>	<i>n/a</i>	<i>3:05 am</i>	<i>2021/05/03</i>
BO to DG SD (duration)	<i>n/a</i>	DD:HH:MM	<i>00:01:15</i>	DD:HH:MM
Fires in time	<i>10:25 pm</i>	<i>2021/04/29</i>	<i>8:55 am</i>	<i>2021/05/03</i>
Synch. to Grid (or BC)	<i>3:45 am</i>	<i>2021/04/30</i>	<i>11:35 am</i>	<i>2021/05/03</i>
Fires in to BC (duration)	<i>00:05:20</i>	DD:HH:MM	<i>00:02:40</i>	DD:HH:MM

Emissions below limit from BC (end date)	8:00 am	2021/05/01	12:00 am	2021/05/05
Emissions below limit from BC (duration)	01:04:15	DD:HH:MM	01:12:25	DD:HH:MM

8 General

Units 3 and 5 were offload during the month of May 2021.

Units 1, 2 and 4 oxygen monitors were faulty and giving faulty readings for the month of May 2021. The average Oxygen Standard Reference Method values from QAL 2 reports were used to generate averages for this period.

The NOx and SOx monitors' data reliability for unit 6 was less than the 80% threshold for the month of May 2021 due to a faulty analyser control unit (ACU MK5 Assy and keyboard). Additionally, there was a communication fault between the analyser control unit (ACU) and the distributed control system (DCS) and the visual automation (VA). It causes the gas analyser signals not to be transmitted from the monitors to the DCS and VA.

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.

9 Complaints and 10 Incidents Register

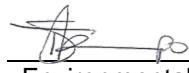
Refer to addendum A



 Boiler Plant Engineering
 Manager

28 June 2021


Date



 Environmental
 Manager

2021/06/29

Date



 Engineering Manager

30 June 2021

Date

Compiled by: Environmental Officer

For: Nkangala District
 Municipality

Air Quality Officer

Copies: Eskom Environmental Management

D Herbst
 B Mccourt

Group Technology Engineering

R
 Rampiar

Duvha Power Station:

E Patel

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

