



**Generation**

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1050

**Attention:**

Mr V Mahlangu

AND

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The Chief Director:  
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**DUVHA POWER STATION**

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

\_\_\_\_\_  
**GENERAL MANAGER**

2020-05-18

\_\_\_\_\_  
**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 Feb-2020
	Coal	Tons/month	1 400 000	527 856
	Fuel Oil	Tons/month	5 000	4131
Production Rates	Product / By-Product Name	Units	Maximum Production Capacity Permitted	Production Rate Feb-2020
	Energy	GWh	3600	832.45
	Ash	Tons	not specified	142 046.1
	RE Ash	kg/MWh	not specified	0.646

**2 ENERGY SOURCE CHARACTERISTICS**

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.6 to 1.2	0.820
Ash Content	%	27 to 30	26.910

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

Associated Unit/Stack	PM	SO <sub>x</sub>	NO <sub>x</sub>
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	Efficiency Feb-2020
Unit 2	<i>Fabric Filter Plant (FFP)</i>	99.79%
Unit 4	<i>Electro Static Precipiator (ESP)</i>	99.13%
Unit 5	<i>Electro Static Precipiator (ESP)</i>	99.72%
Unit 6	<i>Electro Static Precipiator (ESP)</i>	99.49%

### 5 MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO <sub>2</sub>	NO
Unit 2	100.0	74.3	74.4
Unit 4	66.0	99.1	99.7
Unit 5	99.9	99.4	99.4
Unit 6	91.7	99.3	99.8

### 6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of February 2020

Associated Unit/Stack	PM (tons)	SO <sub>2</sub> (tons)	NO <sub>x</sub> (tons)
Unit 2	97.8	3 307	1 545
Unit 4	241.8	2 599	1 340
Unit 5	39.5	2 410	788
Unit 6	198.8	3 100	1 556
<b>SUM</b>	577.9	11 417	5 230

Table 6.2: Operating days in compliance to PM AEL Limit - February 2020

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm <sup>3</sup> )
Unit 2	29	0	0	0	0	48.3
Unit 4	7	8	1	3	12	216.9
Unit 5	13	2	0	0	2	51.0
Unit 6	19	4	0	3	7	119.7
<b>SUM</b>	<b>68</b>	<b>14</b>	<b>1</b>	<b>6</b>	<b>21</b>	

Table 6.3: Operating days in compliance to SOx AEL Limit - February 2020

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SOx (mg/Nm <sup>3</sup> )
Unit 2	29	0	0	0	0	1 636.6
Unit 4	22	0	0	0	0	1 801.8
Unit 5	18	0	0	0	0	2 501.5
Unit 6	27	0	0	0	0	1 746.0
<b>SUM</b>	<b>98</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

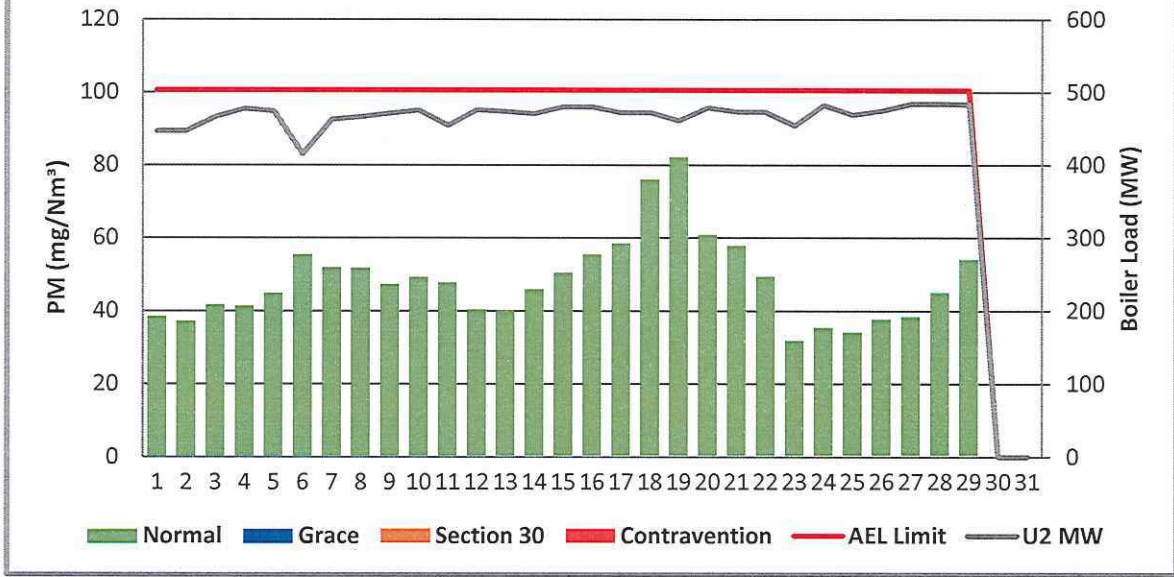
Table 6.4: Operating days in compliance to NOx AEL Limit - February 2020

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm <sup>3</sup> )
Unit 2	29	0	0	0	0	764.1
Unit 4	22	0	0	0	0	929.6
Unit 5	18	0	0	0	0	813.7
Unit 6	26	1	0	0	1	869.3
<b>SUM</b>	<b>97</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	

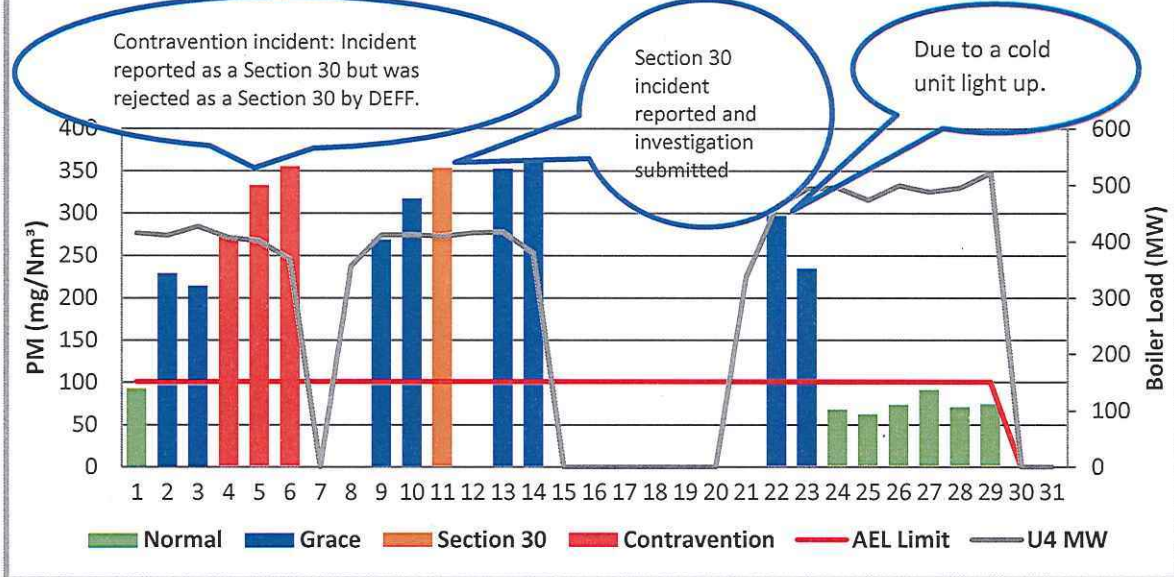
Table 6.5: Legend Description

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

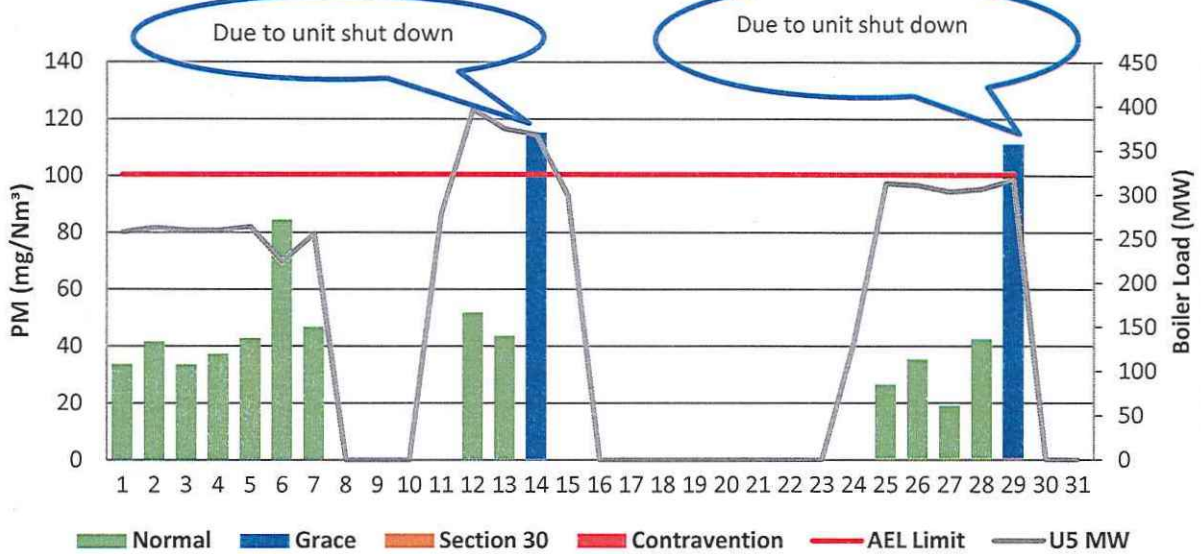
**Figure 2: Duvha Unit 2 PM Emissions - February 2020**



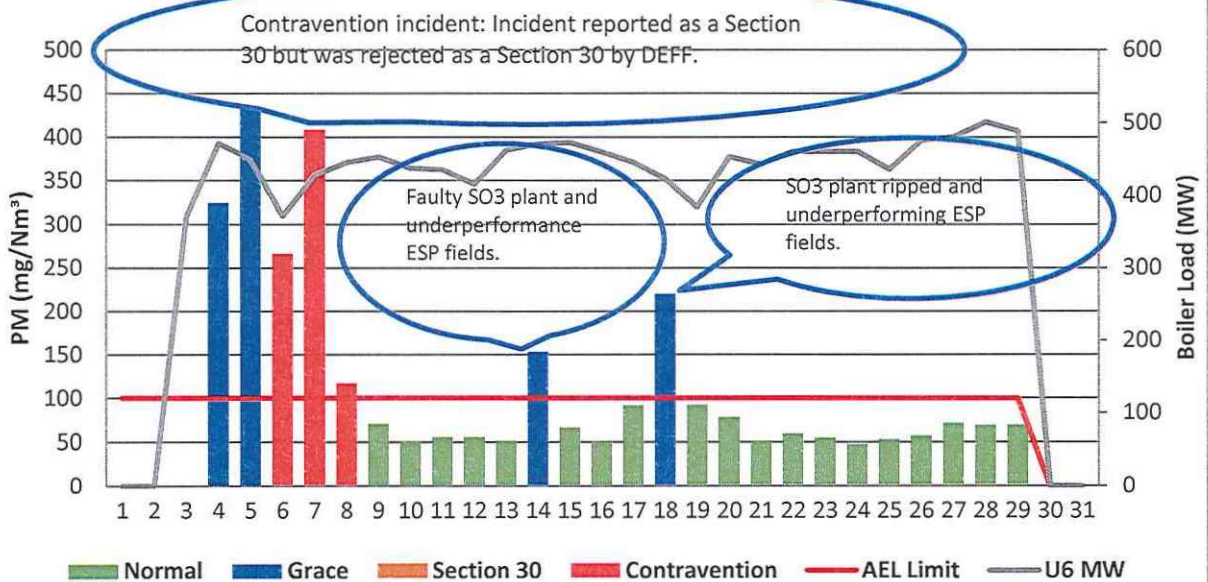
**Figure 4: Duvha Unit 4 PM Emissions - February 2020**



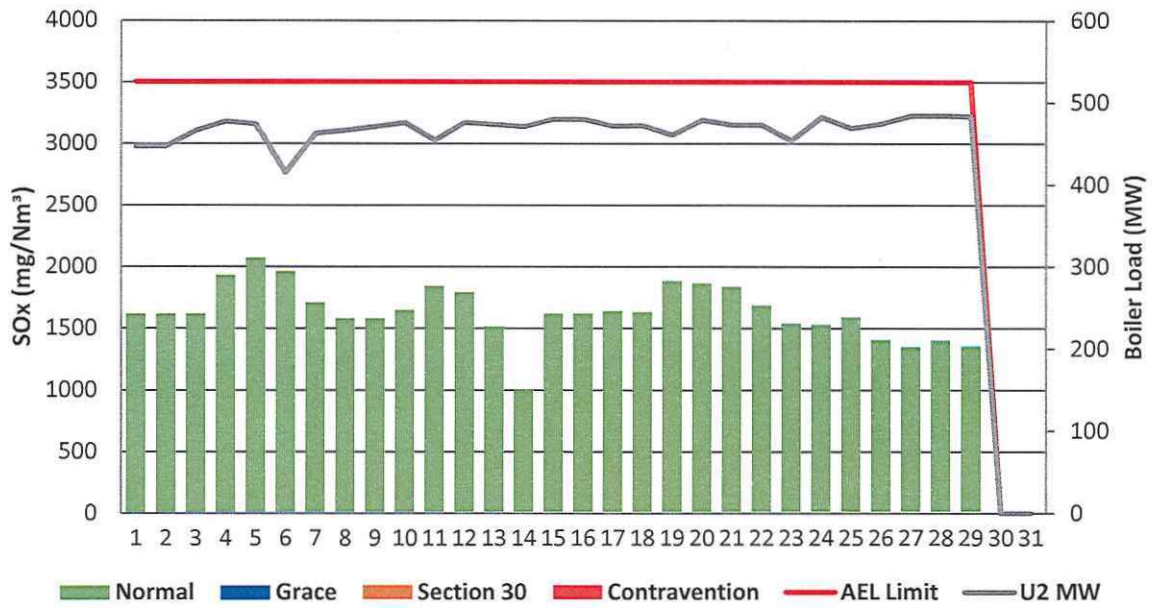
**Figure 5: Duvha Unit 5 PM Emissions - February 2020**



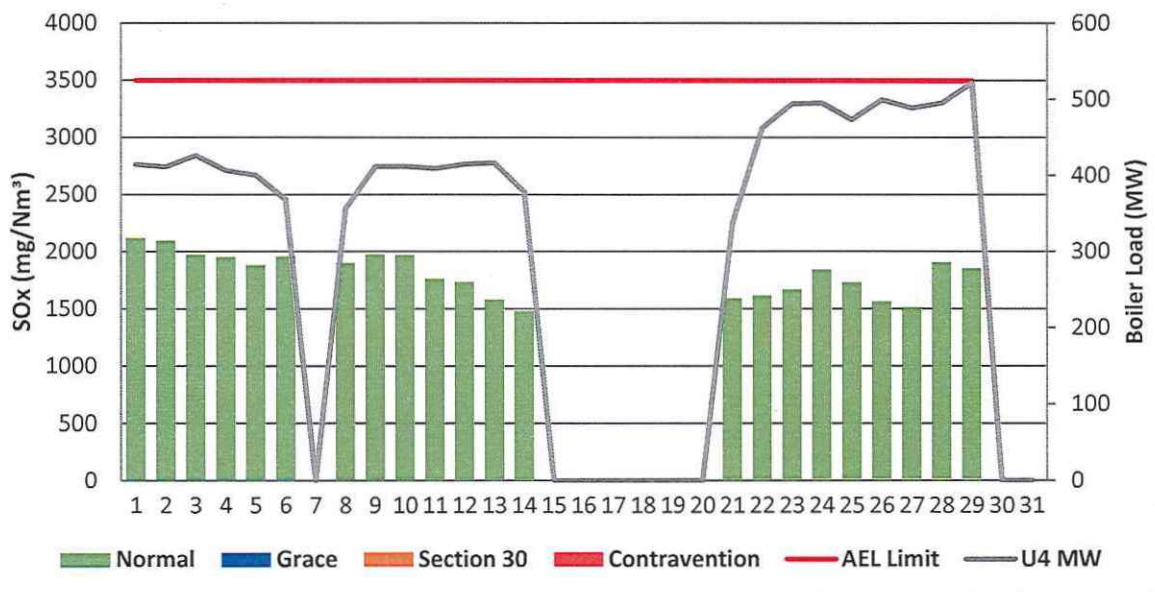
**Figure 6: Duvha Unit 6 PM Emissions - February 2020**



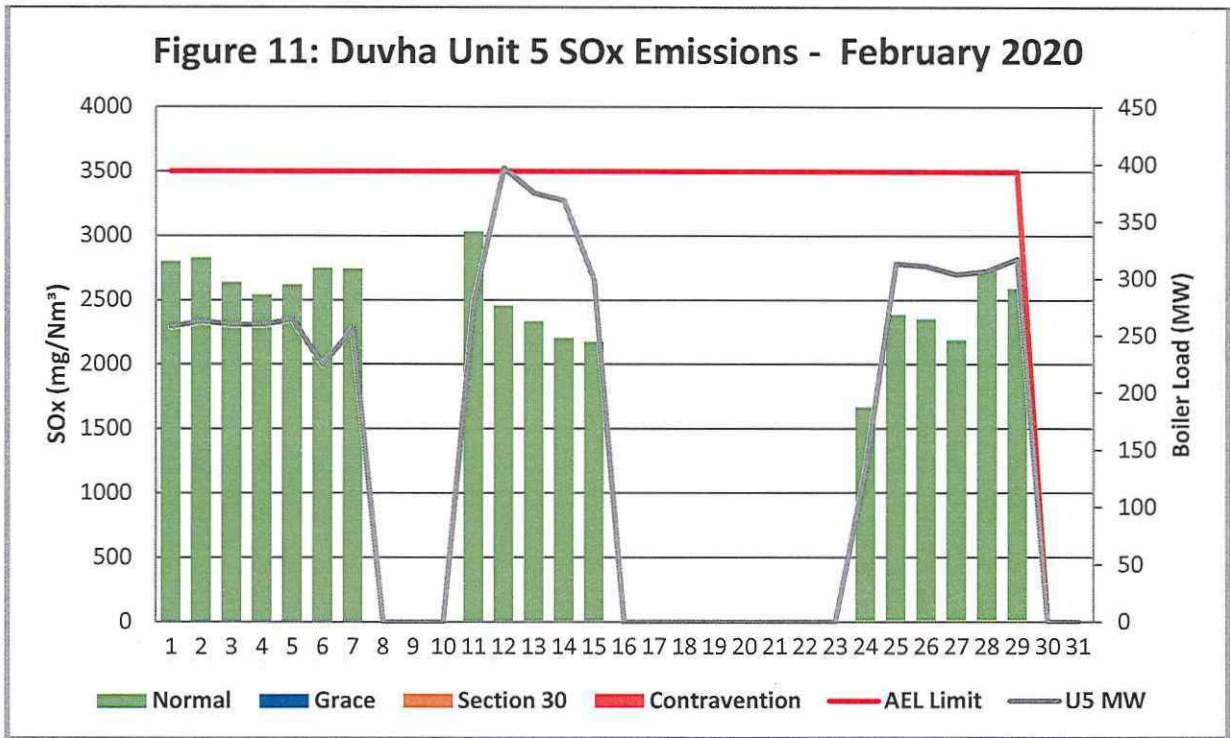
**Figure 8: Duvha Unit 2 SOx Emissions - February 2020**



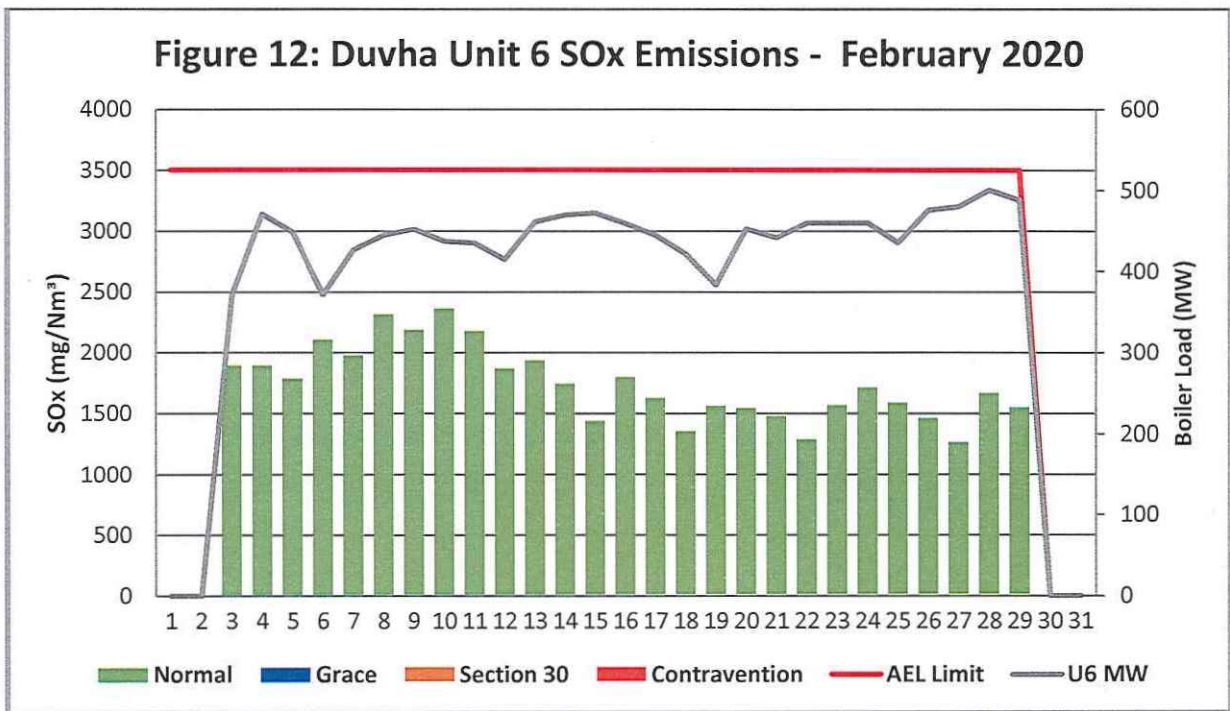
**Figure 10: Duvha Unit 4 SOx Emissions - February 2020**



**Figure 11: Duvha Unit 5 SOx Emissions - February 2020**

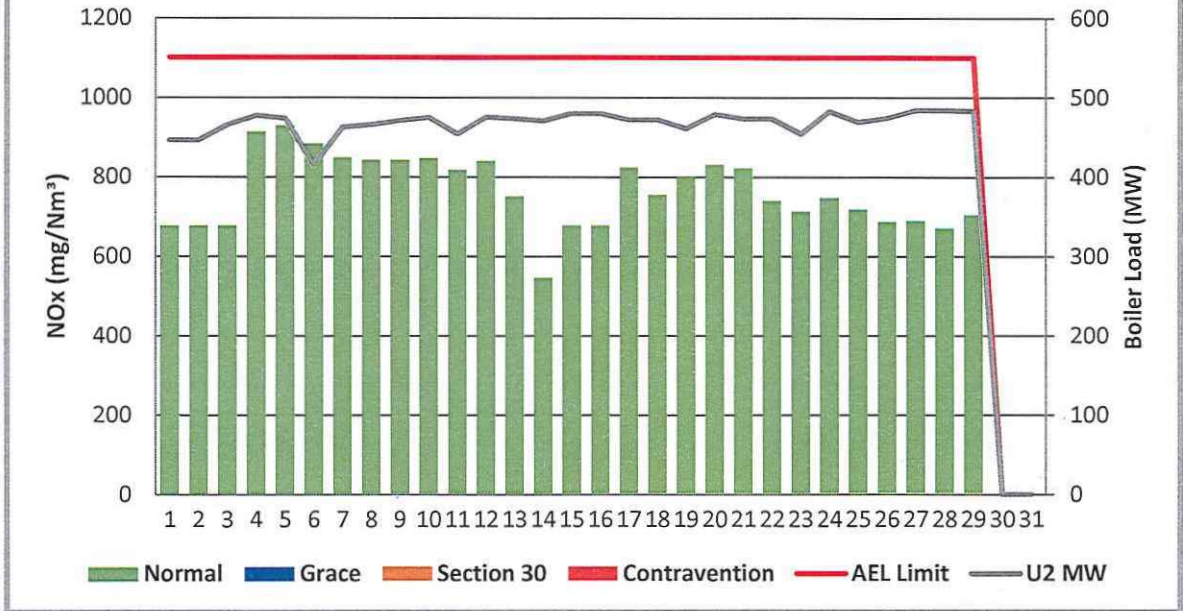


**Figure 12: Duvha Unit 6 SOx Emissions - February 2020**

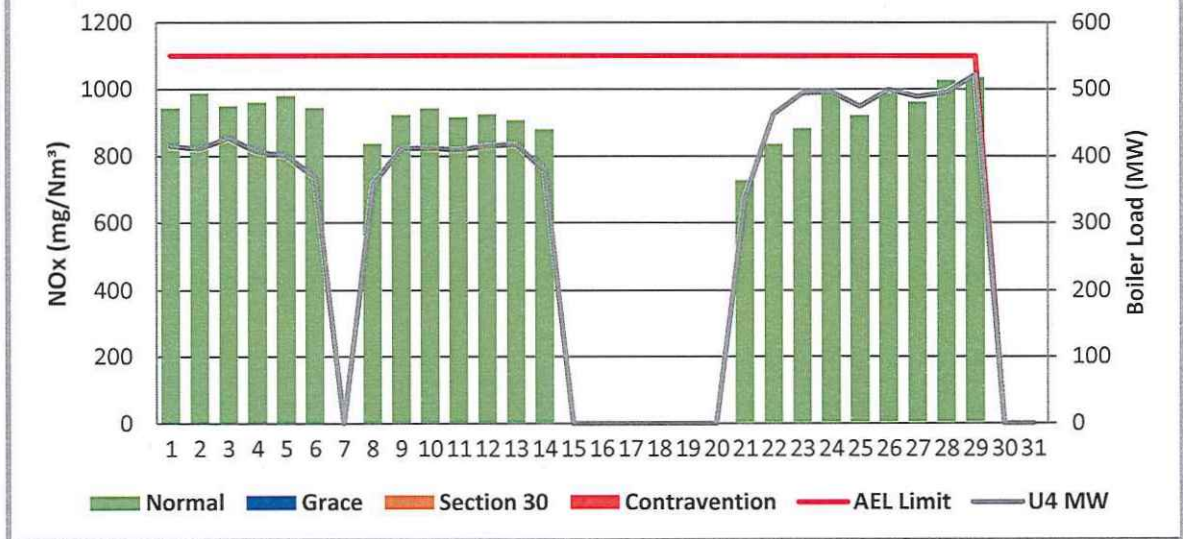




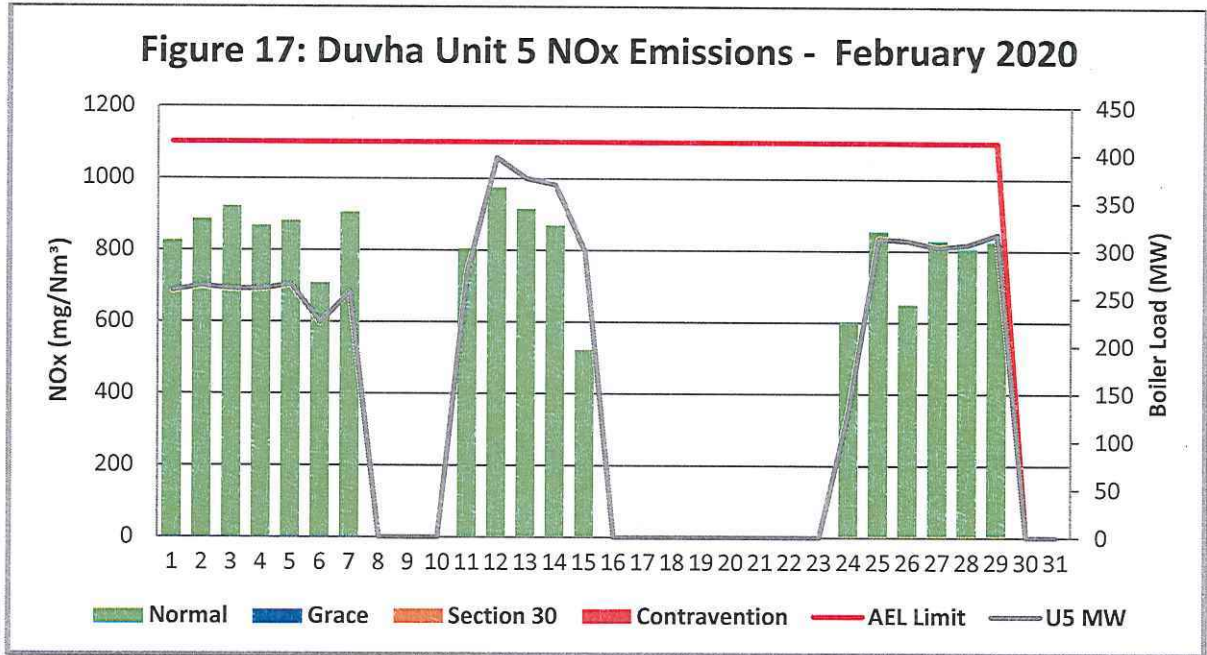
**Figure 14: Duvha Unit 2 NOx Emissions - February 2020**



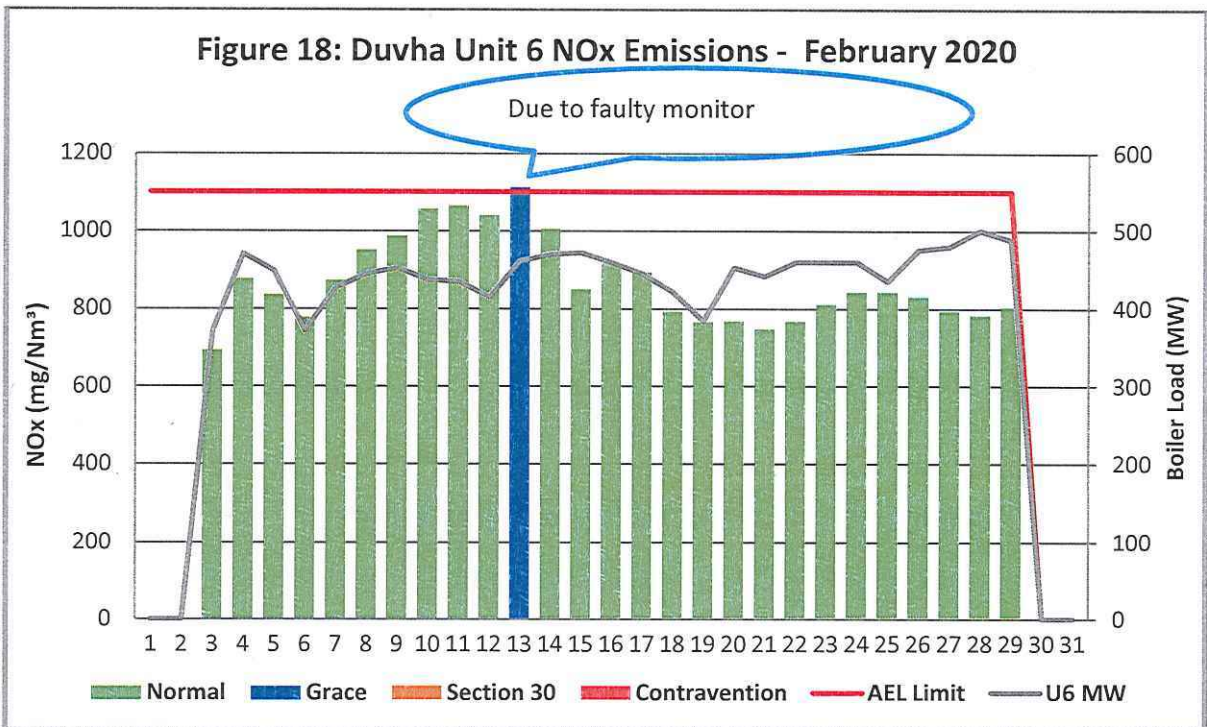
**Figure 16: Duvha Unit 4 NOx Emissions - February 2020**



**Figure 17: Duvha Unit 5 NOx Emissions - February 2020**



**Figure 18: Duvha Unit 6 NOx Emissions - February 2020**



## 7 SHUT DOWN AND LIGHT UP INFORMATION

Tables 7.1: Shut-down and light-up information for the month of February 2020

Unit No.4	<i>Event 1</i>		<i>Event 2</i>		<i>Event 3</i>	
Breaker Open (BO)	<i>10:50 AM</i>	<i>2020/02/06</i>	<i>5:10 PM</i>	<i>2020/02/11</i>	<i>3:45 AM</i>	<i>2020/02/14</i>
Draught Group (DG) Shut Down (SD)	<i>3:55 PM</i>	<i>2020/02/07</i>	<i>5:50 PM</i>	<i>2020/02/11</i>	<i>11:30 PM</i>	<i>2020/02/19</i>
BO to DG SD (duration)	<i>01:05:05</i>	DD:HH:MM	<i>00:00:40</i>	DD:HH:MM	<i>05:19:45</i>	DD:HH:MM
Fires in time	<i>11:35 PM</i>	<i>2020/02/07</i>	<i>7:10 PM</i>	<i>2020/02/11</i>	<i>3:35 AM</i>	<i>2020/02/20</i>
Synch. to Grid (or BC)	<i>2:50 AM</i>	<i>2020/02/08</i>	<i>2:20 AM</i>	<i>2020/02/12</i>	<i>5:55 AM</i>	<i>2020/02/21</i>
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)	<i>12:00 AM</i>	<i>2020/02/15</i>	<i>12:00 AM</i>	<i>2020/02/15</i>	<i>12:00 AM</i>	<i>2020/02/24</i>
Emissions below limit from BC (duration)	<i>06:21:10</i>	DD:HH:MM	<i>02:21:40</i>	DD:HH:MM	<i>02:18:05</i>	DD:HH:MM

Unit No.5	<i>Event 1</i>		<i>Event 2</i>		<i>Event 3</i>	
Breaker Open (BO)	<i>9:05 PM</i>	<i>2020/02/07</i>	<i>5:05 PM</i>	<i>2020/02/14</i>	<i>2:10 PM</i>	<i>2020/02/26</i>
Draught Group (DG) Shut Down (SD)	<i>6:40 PM</i>	<i>2020/02/10</i>	<i>9:25 AM</i>	<i>2020/02/23</i>	<i>DG did not trip or SD</i>	<i>DG did not trip or SD</i>
BO to DG SD (duration)	<i>02:21:35</i>	DD:HH:MM	<i>08:16:20</i>	DD:HH:MM	<i>n/a</i>	DD:HH:MM
Fires in time	<i>8:15 PM</i>	<i>2020/02/10</i>	<i>3:10 PM</i>	<i>2020/02/24</i>		
Synch. to Grid (or BC)	<i>1:35 AM</i>	<i>2020/02/11</i>	<i>8:10 PM</i>	<i>2020/02/24</i>		
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)	<i>12:00 AM</i>	<i>2020/02/12</i>	<i>8:00 AM</i>	<i>2020/02/25</i>		
Emissions below limit from BC (duration)	<i>00:22:25</i>	DD:HH:MM	<i>00:11:50</i>	DD:HH:MM		DD:HH:MM

Unit No.6	<i>Event 1</i>	
Breaker Open (BO)		
Draught Group (DG) Shut Down (SD)		
BO to DG SD (duration)		DD:HH:MM
Fires in time	<i>7:05 PM</i>	<i>2020/02/02</i>
Synch. to Grid (or BC)	<i>7:15 AM</i>	<i>2020/02/03</i>
Fires in to BC (duration)		DD:HH:MM
Emissions below limit from BC (end date)	<i>12:00 AM</i>	<i>2020/02/09</i>
Emissions below limit from BC (duration)	<i>05:16:45</i>	DD:HH:MM

### 8 General

The Unit 2 gaseous emissions monitor reliability was below the 80% threshold due to faulty oxygen monitor.  
The Unit 4 particulate matter emissions monitor reliability was below the 80% threshold due to the monitor freezing and dirty lenses.

Unit 1 and Unit 3 were offload during the month of February 2020.

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

### 9 & 10 Complains and Incidents Register Refer to addendum A

  
Boiler Plant Engineering  
Manager

13 May 2020

Date

  
Environmental  
Manager

13/05/2020

Date



Engineering Manager

2020-05-14

Date

Compiled by: Environmental Department

For: Department of Environmental Affairs and Tourism Chief Air Pollution Control Officer

Copies: Eskom Environmental Management D Herbst  
B  
Mccourt

Group Technology Engineering

R  
Rampiar  
E Patel

Duvha Power Station:

Engineering  
Manager  
Operating  
Manager  
Maintenance  
Manager  
Unit Production Manager  
Boiler Engineering  
Manager  
System Engineer  
Environmental  
Officer  
Performance and  
Test  
Production  
Manager

## ADDENDUM TO MONTHLY EMISSIONS REPORT

### 9 COMPLAINTS REGISTER

Table 9. Complaints for the month of February 2020

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 measure will be implemented
No complaints were received during the month of February 2020.					

### 10 S30 INCIDENT OR LEGAL CONTRAVENTION REGISTER

To be completed in the case of a S30 incident or a legal contravention:

Unit no	Incident Start Date	Incident End Date	Incident Cause	Remedial action	S30 initial notification sent	Date S30 investigation report sent	Date DEA Acknowledgment	Date DEA Acceptable	Comments / Reference No.
Unit 4	04/02/2020	06/02/2020	Delays in clearing the blockages due to multiple plant defects which worsened the precipitator fields damages.	Conduct an awareness on the importance of ensuring the jet pulsion valve is closed.	05/02/2020	26/03/2020	15/04/2020		14/7/6/2/4/2/1564. Incident was reported as a NEMA Section 30 but was rejected by DEFF.

