



**Generation**

Nkangala District Municipality  
P O Box 437  
Middelburg  
1050

**Attention:**

Mr V Mahlangu

AND

Directorate: Air Quality Management Services  
The Chief Director:  
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**Date: 2025/10/21**

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**Total number of pages: 14**

**Total number of Annexes: 0**

**DUVHA POWER STATION**

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

GENERAL MANAGER

2025/10/31  
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 | Max Permitted Consumption Rate    | Consumption Rate Sept-2025           |
|----------------------------|---------------------------|-------|-----------------------------------|--------------------------------------|
|                            | Coal                      | Tons  | 2 260 000                         | 539 486.68                           |
|                            | Fuel Oil                  | Tons  | 5 000                             | 2339.18                              |
|                            |                           |       |                                   |                                      |
| Production Rates           | Product / By-Product Name | Units | Max Production Capacity Permitted | Indicative Production Rate Sept-2025 |
|                            | Energy                    | GWh   | 2 592.000                         | 1 024 840.97                         |
|                            | Ash                       | Tons  | not specified                     | 128 613.62                           |

Note: Max energy rate = AEL capacity [3,600 MW] × 24 hrs × days in month ÷ 1,000 (to convert to GWh).

## 2 ENERGY SOURCE CHARACTERISTICS

| Coal Characteristic | Units | Stipulated Range | Monthly Average Content |
|---------------------|-------|------------------|-------------------------|
| CV Content          | MJ/kg | 18-24            | 22.72                   |
| Sulphur Content     | %     | 0.6 TO >1.2      | 0.74                    |
| Ash Content         | %     | 27 TO 30         | 24.30                   |

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

| Associated Unit/Stack | Daily Limit |                 |                 |
|-----------------------|-------------|-----------------|-----------------|
|                       | PM          | SO <sub>2</sub> | NO <sub>x</sub> |
| Unit 1                | 50          | 2600            | 1100            |
| Unit 2                | 50          | 2600            | 1100            |
| Unit 3                | 50          | 2600            | 1100            |
| Unit 4                | 100         | 2600            | 1100            |
| Unit 5                | 50          | 2600            | 1100            |
| Unit 6                | 100         | 2600            | 1100            |

## 4 ABATEMENT TECHNOLOGY (%)

| Associated Unit/Stack | Technology Type       | ESP Efficiency | Technology Type | SO <sub>3</sub> Plant Utilization |
|-----------------------|-----------------------|----------------|-----------------|-----------------------------------|
| Unit 1                | ESP + SO <sub>3</sub> | 99.817%        | SO <sub>3</sub> | n/a                               |
| Unit 2                | ESP + SO <sub>3</sub> | 99.931%        | SO <sub>3</sub> | n/a                               |
| Unit 3                | ESP + SO <sub>3</sub> | Off-line       | SO <sub>3</sub> | n/a                               |
| Unit 4                | ESP + SO <sub>3</sub> | 99.829%        | SO <sub>3</sub> | 100.0%                            |
| Unit 5                | ESP + SO <sub>3</sub> | 99.870%        | SO <sub>3</sub> | 96.3%                             |
| Unit 6                | ESP + SO <sub>3</sub> | 99.854%        | SO <sub>3</sub> | 98.9%                             |

Note: The ESP plant does not have a bypass mode; therefore, it operates at 100% utilization.

## 5 DATA RELIABILITY (%)

| Associated Unit/Stack | PM    | SO <sub>2</sub> | NO    | O <sub>2</sub> |
|-----------------------|-------|-----------------|-------|----------------|
| Unit 1                | 100 0 | 78 0            | 84.5  | 84 6           |
| Unit 2                | 100 0 | 78 0            | 78 0  | 78 2           |
| Unit 3                | Off   | Off             | Off   | Off            |
| Unit 4                | 100 0 | 100 0           | 100 0 | 100 0          |
| Unit 5                | 100 0 | 99 7            | 99 7  | 100 0          |
| Unit 6                | 100 0 | 99 7            | 99.7  | 100 0          |

Note NO<sub>x</sub> emissions are measured as NO in PPM. The final NO<sub>x</sub> value is expressed as total NO<sub>2</sub> equivalent

## 6 EMISSION PERFORMANCE

Table 6 1 Monthly tonnages for September 2025

| Associated Unit/Stack | PM (tons)     | SO <sub>2</sub> (tons) | NO <sub>x</sub> (tons) |
|-----------------------|---------------|------------------------|------------------------|
| Unit 1                | 46 5          | 2 008                  | 985                    |
| Unit 2                | 14 3          | 1 411                  | 742                    |
| Unit 3                | Off           | Off                    | Off                    |
| Unit 4                | 13 8          | 722                    | 304                    |
| Unit 5                | 32 5          | 1 408                  | 618                    |
| Unit 6                | 34 4          | 2 268                  | 1 032                  |
| <b>SUM</b>            | <b>141 57</b> | <b>7 816</b>           | <b>3 681</b>           |

Table 6 2 PM AEL Daily - September 2025

| Associated Unit/Stack | Normal     | Grace    | Section 30 | NC       | Total Exceedance | Mnth Avg (mg/Nm <sup>3</sup> ) |
|-----------------------|------------|----------|------------|----------|------------------|--------------------------------|
| Unit 1                | 29         | 0        | 0          | 0        | 0                | 28 1                           |
| Unit 2                | 20         | 0        | 0          | 0        | 0                | 14 4                           |
| Unit 3                | Off        | Off      | Off        | Off      | Off              | Off                            |
| Unit 4                | 11         | 0        | 0          | 0        | 0                | 30 0                           |
| Unit 5                | 26         | 0        | 0          | 0        | 0                | 27 0                           |
| Unit 6                | 30         | 0        | 0          | 0        | 0                | 22 5                           |
| <b>SUM</b>            | <b>116</b> | <b>0</b> | <b>0</b>   | <b>0</b> | <b>0</b>         |                                |

Table 6.3: SO<sub>2</sub> AEL Daily - September 2025

| Associated Unit/Stack | Normal     | Grace    | Section 30 | NC       | Total Exceedance | Mnth Avg (mg/Nm <sup>3</sup> ) |
|-----------------------|------------|----------|------------|----------|------------------|--------------------------------|
| Unit 1                | 29         | 0        | 0          | 0        | 0                | 1 223.4                        |
| Unit 2                | 21         | 0        | 0          | 0        | 0                | 1 313.6                        |
| Unit 3                | Off        | Off      | Off        | Off      | Off              | Off                            |
| Unit 4                | 11         | 0        | 0          | 0        | 0                | 1 374.8                        |
| Unit 5                | 28         | 0        | 0          | 0        | 0                | 1 188.4                        |
| Unit 6                | 30         | 0        | 0          | 0        | 0                | 1 455.7                        |
| <b>SUM</b>            | <b>119</b> | <b>0</b> | <b>0</b>   | <b>0</b> | <b>0</b>         |                                |

Table 6.4: NO<sub>x</sub> AEL Daily - September 2025

| Associated Unit/Stack | Normal     | Grace    | Section 30 | NC       | Total Exceedance | Mnth Avg (mg/Nm <sup>3</sup> ) |
|-----------------------|------------|----------|------------|----------|------------------|--------------------------------|
| Unit 1                | 29         | 0        | 0          | 0        | 0                | 598.2                          |
| Unit 2                | 21         | 0        | 0          | 0        | 0                | 687.3                          |
| Unit 3                | Off        | Off      | Off        | Off      | Off              | Off                            |
| Unit 4                | 11         | 0        | 0          | 0        | 0                | 575.8                          |
| Unit 5                | 28         | 0        | 0          | 0        | 0                | 516.6                          |
| Unit 6                | 30         | 0        | 0          | 0        | 0                | 662.0                          |
| <b>SUM</b>            | <b>119</b> | <b>0</b> | <b>0</b>   | <b>0</b> | <b>0</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 1: Duvha Unit 1 PM Emissions - September 2025

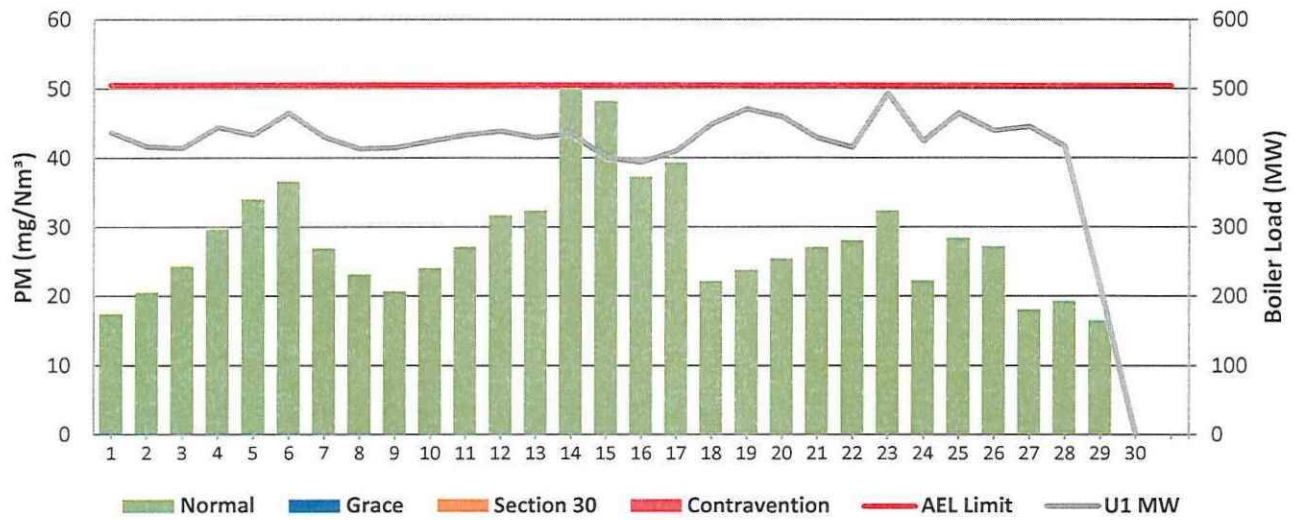


Figure 2: Duvha Unit 2 PM Emissions - September 2025

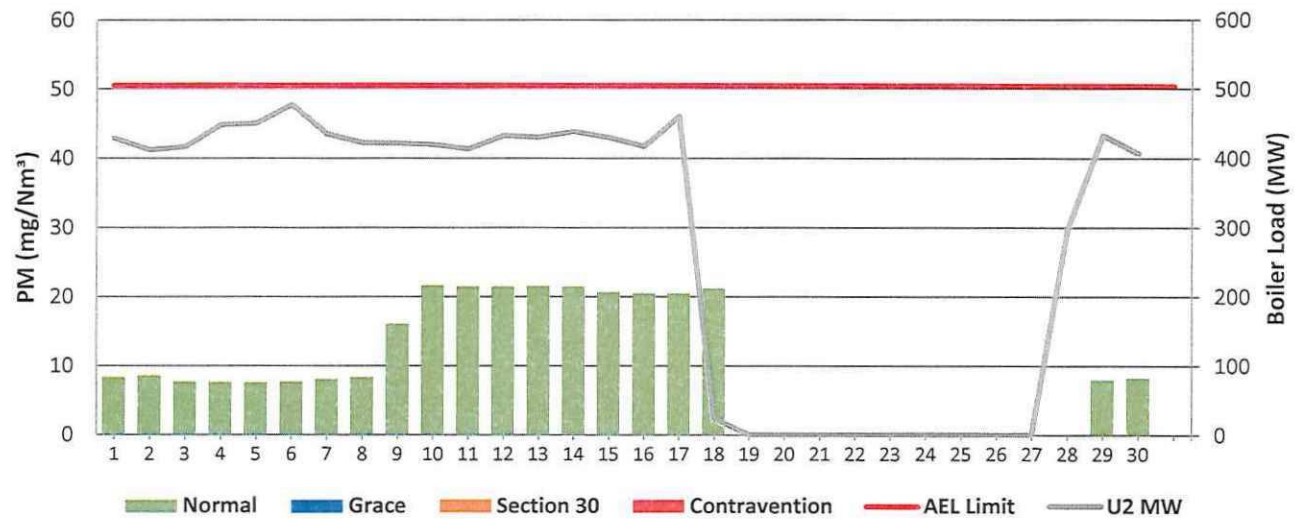


Figure 3: Duvha Unit 4 PM Emissions - September 2025

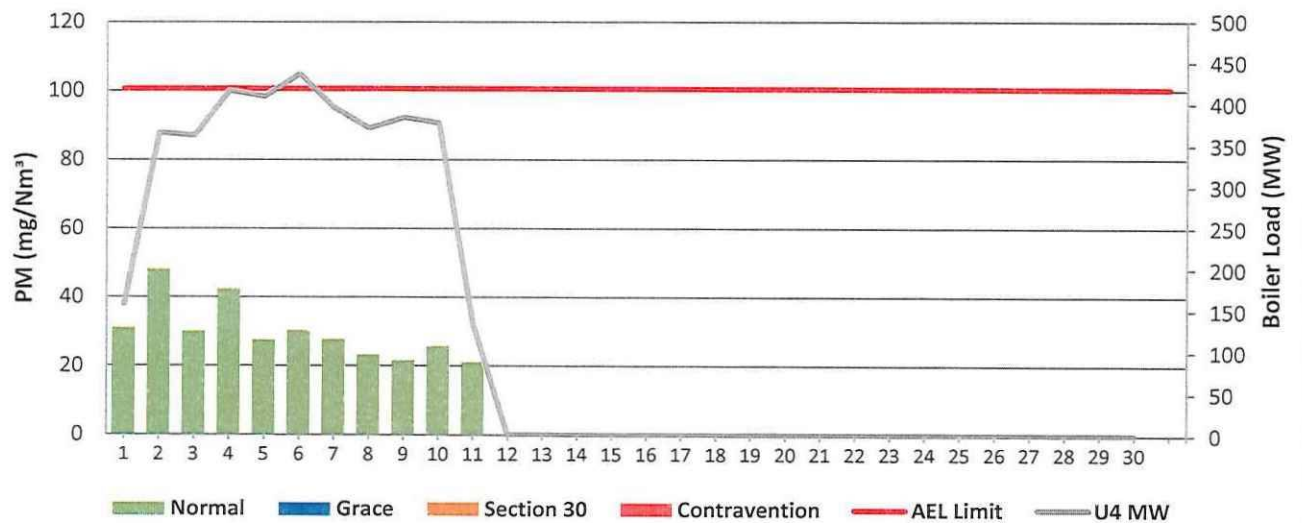


Figure 4: Duvha Unit 5 PM Emissions - September 2025

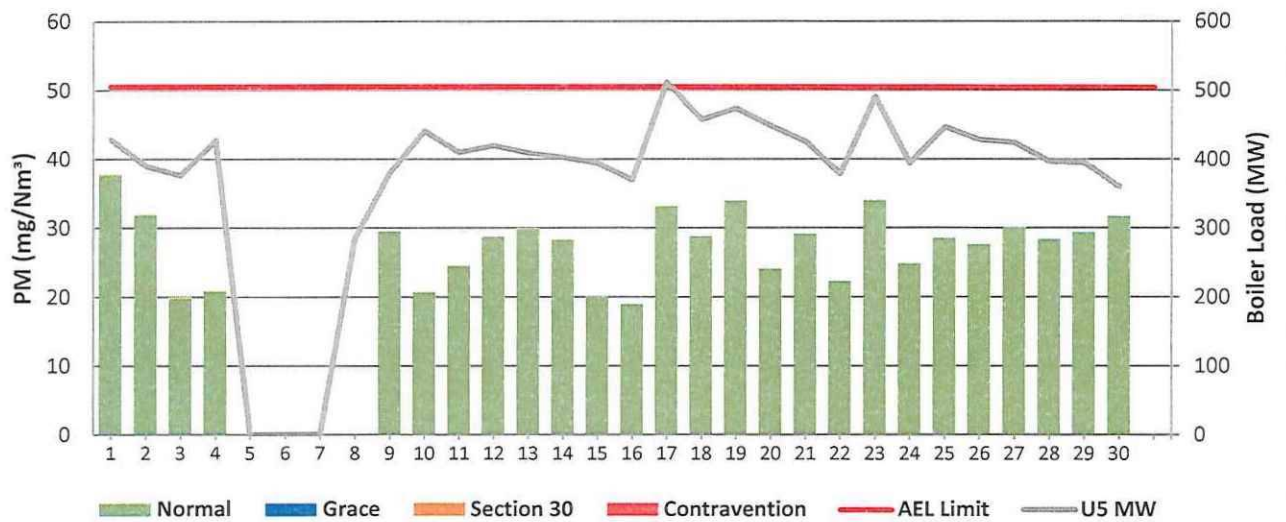


Figure 5: Duvha Unit 6 PM Emissions - September 2025

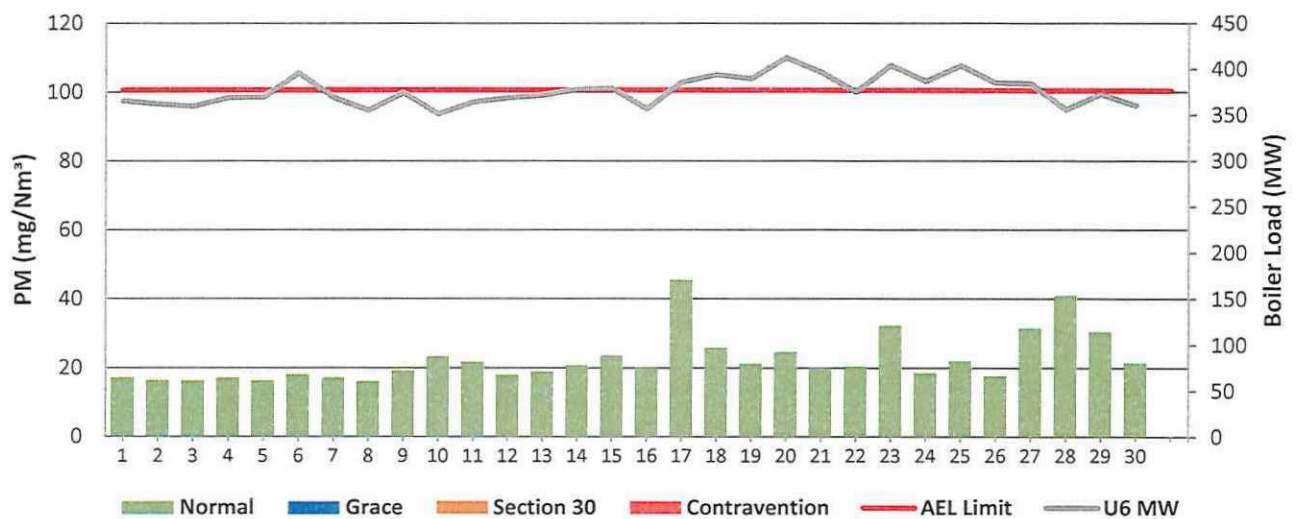


Figure 6: Duvha Unit 1 SO<sub>2</sub> Emissions - September 2025

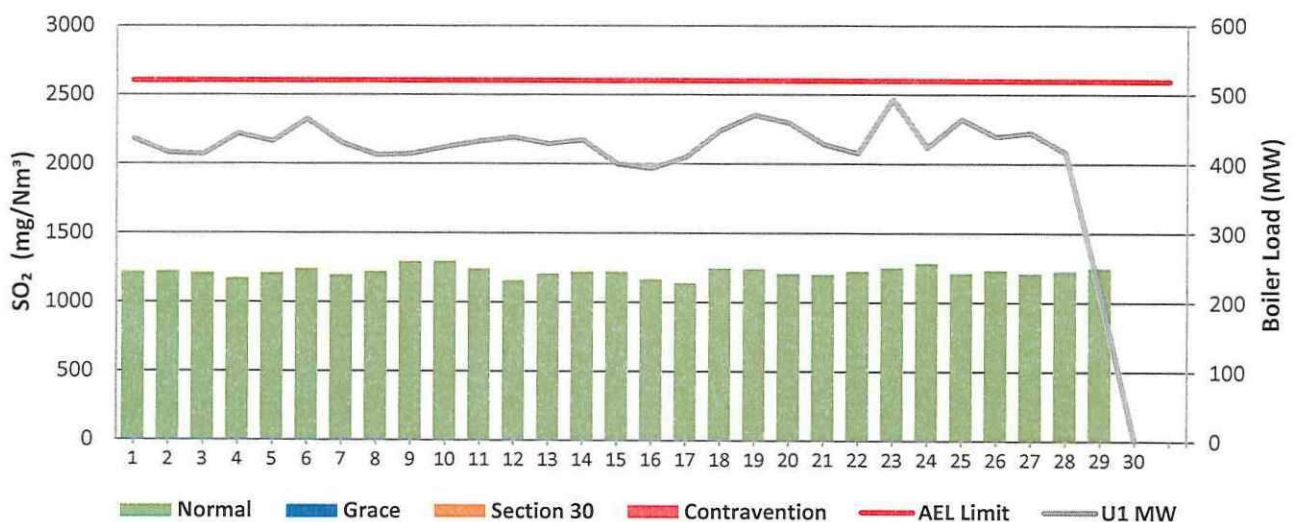


Figure 7: Duvha Unit 2 SO<sub>2</sub> Emissions - September 2025

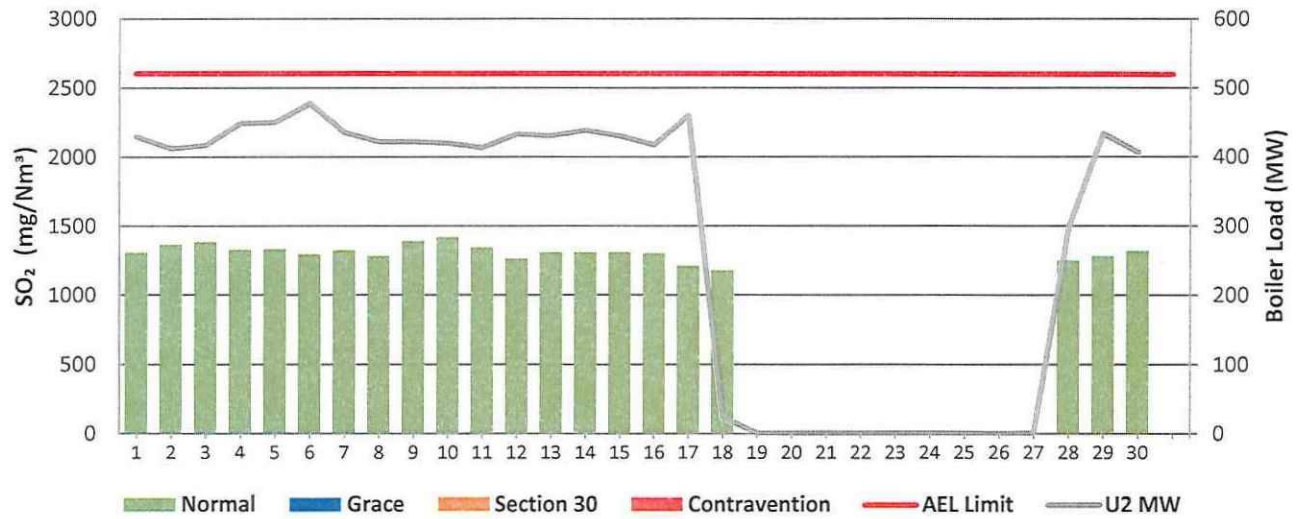


Figure 8: Duvha Unit 4 SO<sub>2</sub> Emissions - September 2025

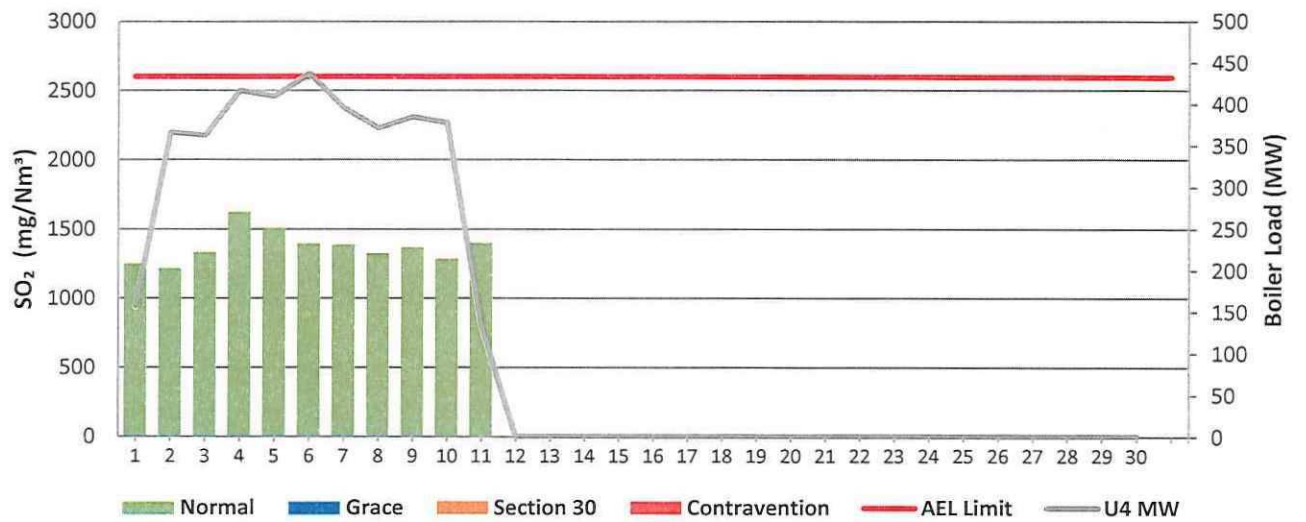


Figure 9: Duvha Unit 5 SO<sub>2</sub> Emissions - September 2025

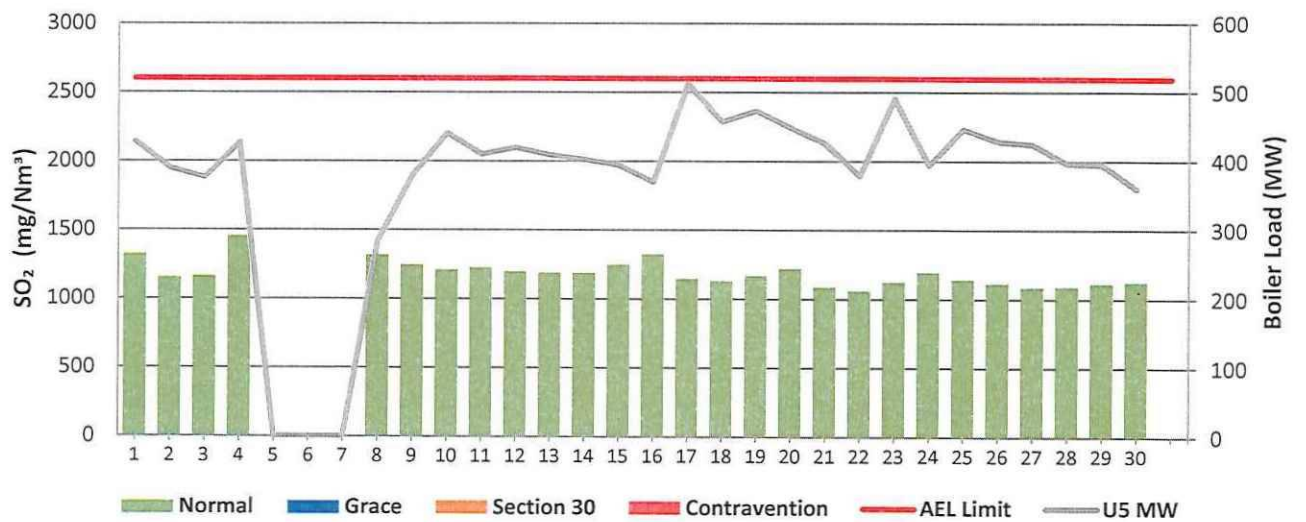


Figure 10: Duvha Unit 6 SO<sub>2</sub> Emissions - September 2025

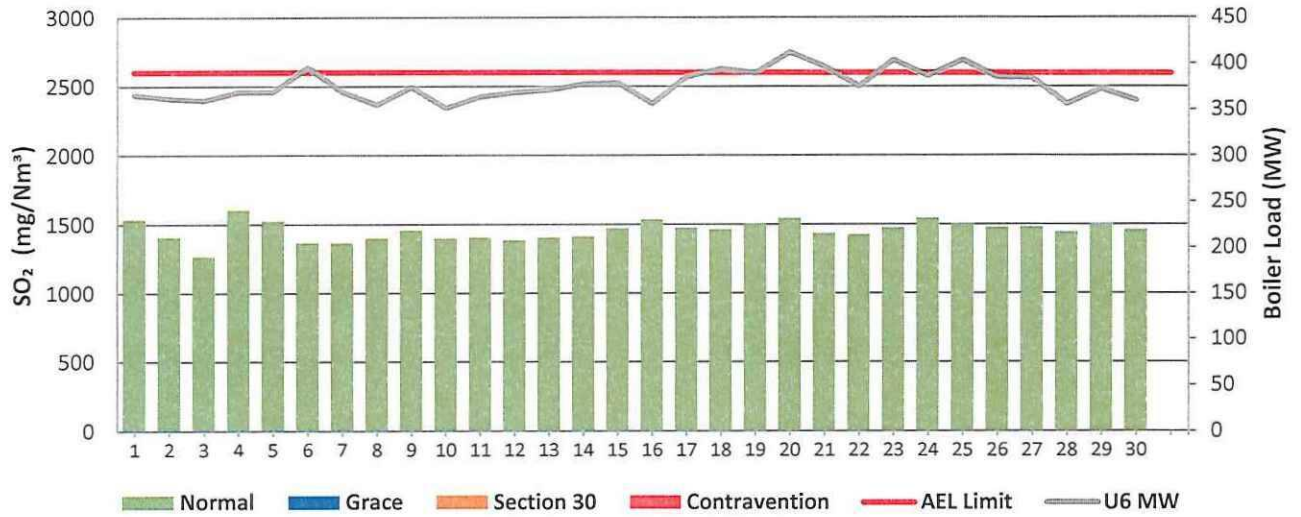


Figure 11: Duvha Unit 1 NO<sub>x</sub> Emissions - September 2025

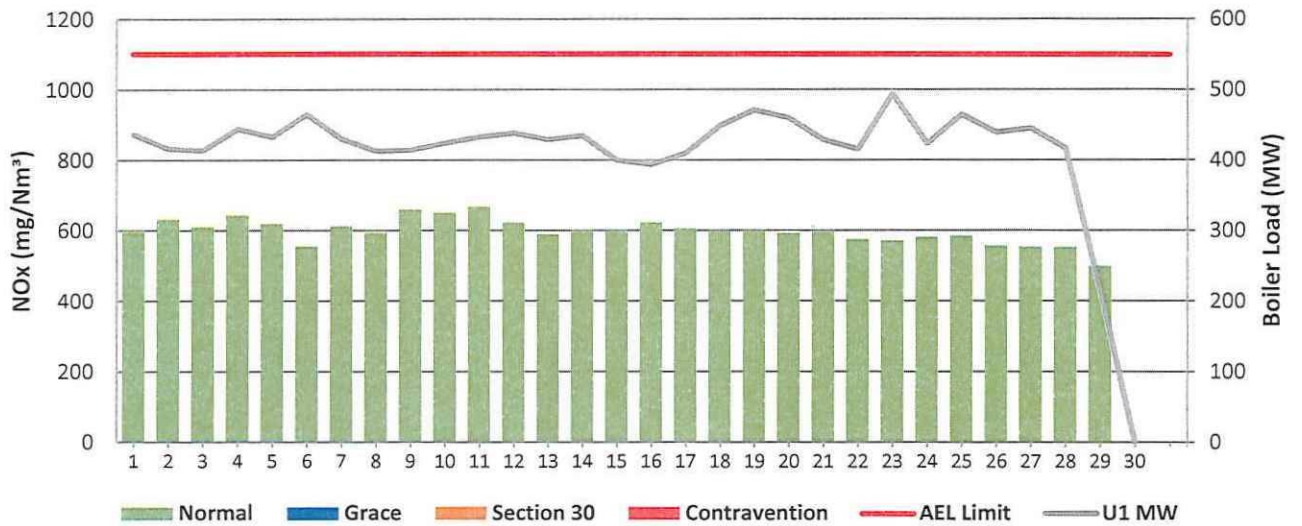


Figure 12: Duvha Unit 2 NO<sub>x</sub> Emissions - September 2025

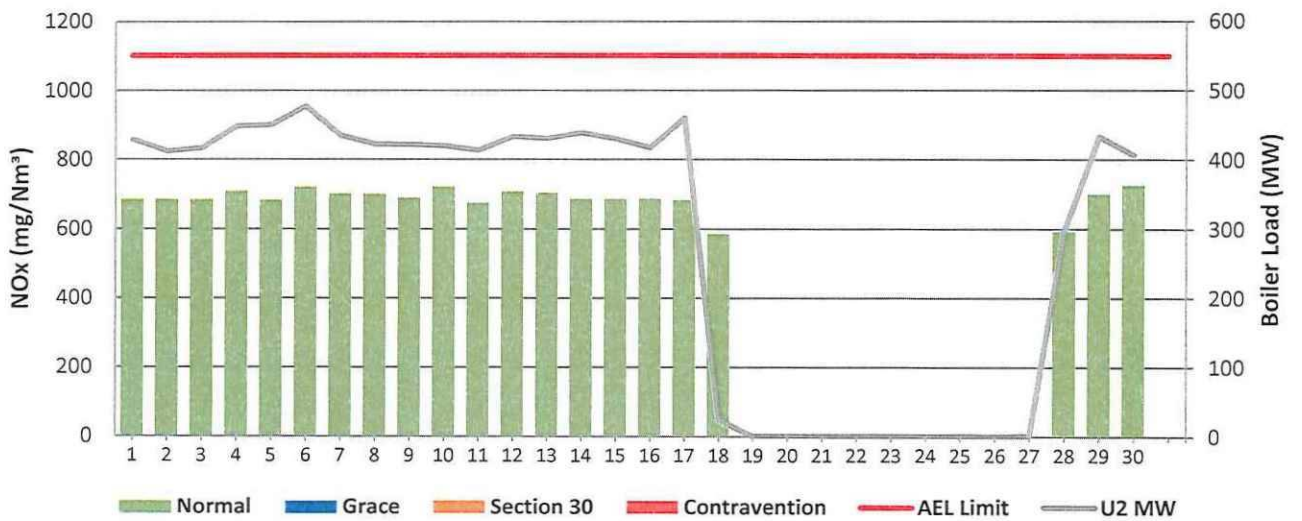


Figure 13: Duvha Unit 4 NO<sub>x</sub> Emissions - September 2025

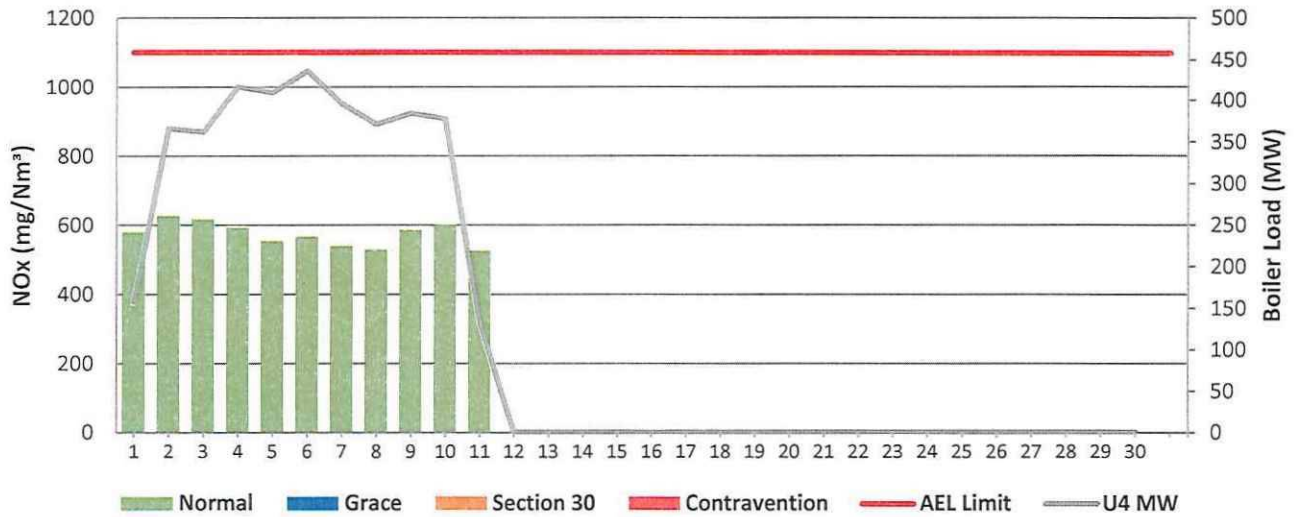


Figure 14: Duvha Unit 5 NO<sub>x</sub> Emissions - September 2025

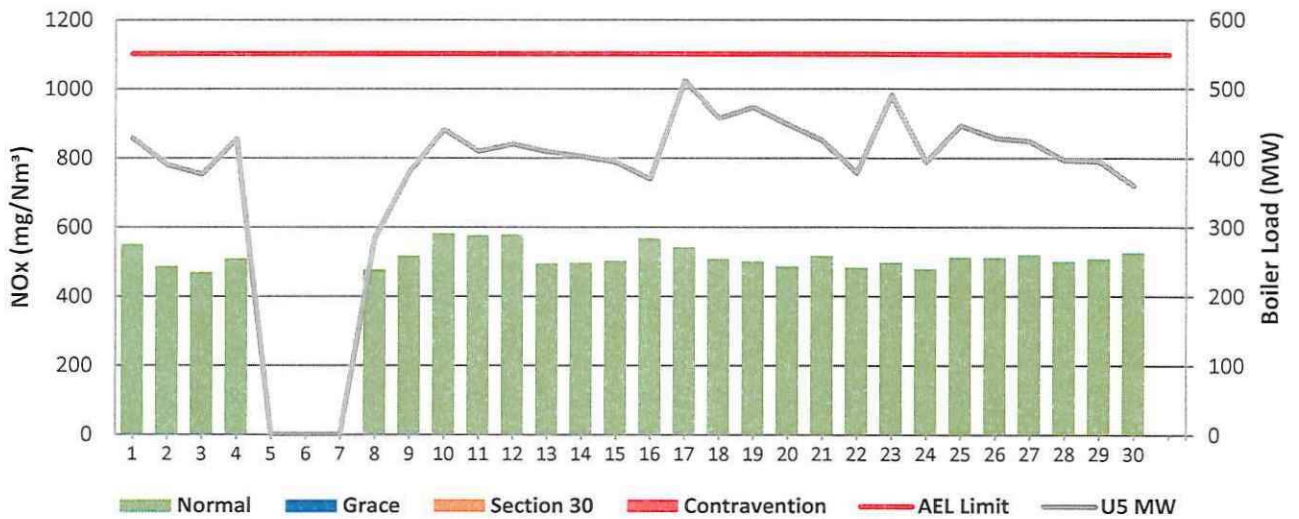
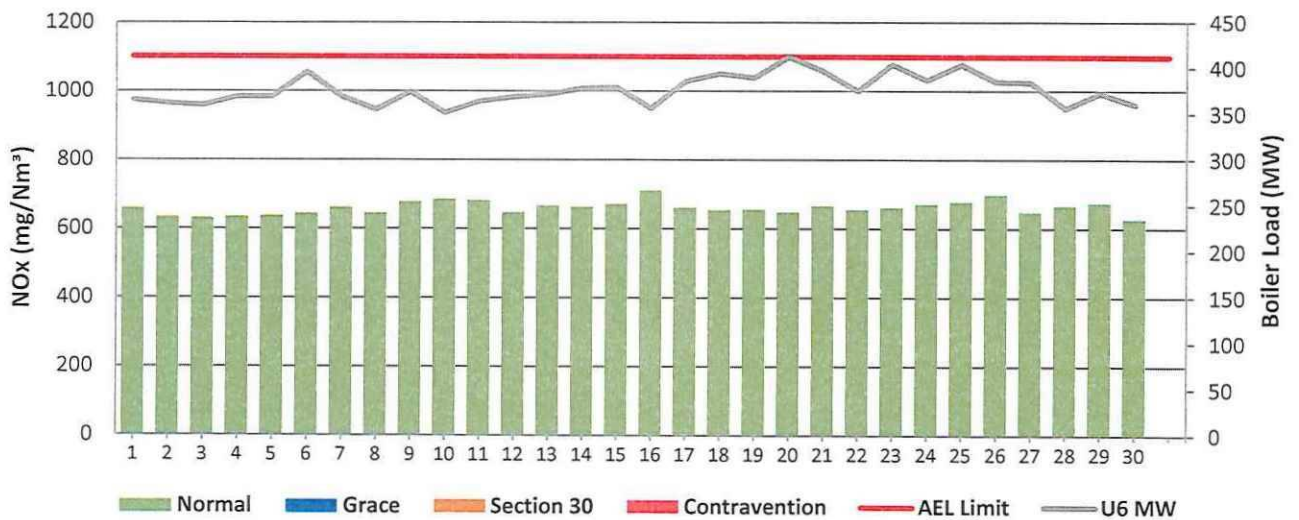


Figure 15: Duvha Unit 6 NO<sub>x</sub> Emissions - September 2025



## 7 Shut-down and light-up information for SEPTEMBER 2025

|        | Event Description                        | Event 1               |                       |
|--------|------------------------------------------|-----------------------|-----------------------|
| Unit 1 | Breaker Open (BO)                        | 12:25 pm              | 2025/09/29            |
|        | Draught Group (DG) Shut Down (SD)        | DG did not trip or SD | DG did not trip or SD |
|        | BO to DG SD (duration)                   | n/a                   | DD:HH:MM              |
|        | Fires in time                            |                       |                       |
|        | Synch. to Grid (or BC)                   |                       |                       |
|        | Fires in to BC (duration)                |                       | DD:HH:MM              |
|        | Emissions below limit from BC (end date) |                       |                       |
|        | Emissions below limit from BC (duration) |                       | DD:HH:MM              |

|        | Event Description                        | Event 1  |            |
|--------|------------------------------------------|----------|------------|
| Unit 2 | Breaker Open (BO)                        | 1:45 am  | 2025/09/18 |
|        | Draught Group (DG) Shut Down (SD)        | 10:05 pm | 2025/09/18 |
|        | BO to DG SD (duration)                   | 00:20:20 | DD:HH:MM   |
|        | Fires in time                            | 12:30 pm | 2025/09/27 |
|        | Synch. to Grid (or BC)                   | 3:55 am  | 2025/09/28 |
|        | Fires in to BC (duration)                | 00:15:25 | DD:HH:MM   |
|        | Emissions below limit from BC (end date) | 12:25 pm | 2025/09/29 |
|        | Emissions below limit from BC (duration) | 01:08:30 | DD:HH:MM   |

|        | Event Description                        | Event 1               |                       |
|--------|------------------------------------------|-----------------------|-----------------------|
| Unit 4 | Breaker Open (BO)                        | 6:15 am               | 2025/09/01            |
|        | Draught Group (DG) Shut Down (SD)        | DG did not trip or SD | DG did not trip or SD |
|        | BO to DG SD (duration)                   | n/a                   | DD:HH:MM              |
|        | Fires in time                            |                       |                       |
|        | Synch. to Grid (or BC)                   |                       |                       |
|        | Fires in to BC (duration)                |                       | DD:HH:MM              |
|        | Emissions below limit from BC (end date) |                       |                       |
|        | Emissions below limit from BC (duration) |                       | DD:HH:MM              |

|        | Event Description                        | Event 1  |            |
|--------|------------------------------------------|----------|------------|
| Unit 5 | Breaker Open (BO)                        | 12:05 am | 2025/09/05 |
|        | Draught Group (DG) Shut Down (SD)        | 12:30 pm | 2025/09/05 |
|        | BO to DG SD (duration)                   | 00:12:25 | DD:HH:MM   |
|        | Fires in time                            | 8:50 pm  | 2025/09/07 |
|        | Synch. to Grid (or BC)                   | 4:50 am  | 2025/09/08 |
|        | Fires in to BC (duration)                | 00:08:00 | DD:HH:MM   |
|        | Emissions below limit from BC (end date) | 12:00 am | 2025/09/09 |
|        | Emissions below limit from BC (duration) | 00:19:10 | DD:HH:MM   |

|        | Event Description                        | Event 1               |                       |
|--------|------------------------------------------|-----------------------|-----------------------|
| Unit 6 | Breaker Open (BO)                        | 9:30 am               | 2025/09/10            |
|        | Draught Group (DG) Shut Down (SD)        | DG did not trip or SD | DG did not trip or SD |
|        | BO to DG SD (duration)                   | n/a                   | DD:HH:MM              |
|        | Fires in time                            |                       |                       |
|        | Synch. to Grid (or BC)                   |                       |                       |
|        | Fires in to BC (duration)                |                       | DD:HH:MM              |
|        | Emissions below limit from BC (end date) |                       |                       |
|        | Emissions below limit from BC (duration) |                       | 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

The SO<sub>x</sub>, NO<sub>x</sub> and O<sub>2</sub> monitor reliability was below 80% for Unit 1 and Unit 2 because there were challenges in monitoring the gases from the stack analysers to the Distributed Control System (DCS) on the 1<sup>st</sup> and 2<sup>nd</sup> of September 2025 and again on the 13<sup>th</sup> to the 16<sup>th</sup> of September 2025. This was due to a power surge by faulty wiring that was improperly installed. This damaged the Input/Output Unit board that tripped both the gas analysers at the stacks and led to no gas data being transferred from the two analysers to the Analyser control unit (ACU) for monitoring.

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

There were no section 30's.



Boiler Plant Engineering  
Manager

28/10/2025

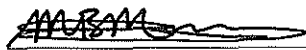
Date



Environmental Manager

2025/10/29

Date



Engineering Manager

2025-10-28

Date

Compiled by      Environmental Officer

For                Nkangala District Municipality

Air Quality Officer

Copies            Generation Environmental  
Management

D Herbst  
B Mccourt

Generation Compliance  
Management  
Generation Asset Management

R Rampiar  
E Patel

Duvha Power Station

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