Eskom

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Date:
27 May 2025

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Ref: *Matla Annual 2024/01*

Dear Mr. Isaac B. Sindane

**MATLA POWER STATION'S ANNUAL EMISSIONS REPORT FOR APRIL 2024 TO MARCH 2025**

This serves as Annual report required in terms of Section 7.6 in Matla Power Station's Atmospheric Emission License (Ref No: 17/4/AEL/MP312/11/14), as well as in terms of the reporting requirements listed in the Minimum Emission Standards (section 17 and 18). The emissions are for Eskom Matla Power Station April 2024 to March 2025. Verified emissions of particulate matter (PM), $SO_2$ and $NO_2$ as calculated, are also included.

**Name, description, and reference number of plant as specified in the AEL:** (Ref No: 17/4/AEL/MP312/11/14),

| | |
|---|---|
| Name of facility | Eskom Holdings SOC limited- Matla Power Station |
| Description of facility | Power Generation, Electricity generation, Matla Power station, Delmas Road, Kriel, Mpumalanga |
| Reference number of plant | 2002\015527\06 |

## 1. Raw Materials

### 1.1 Fuel Oil Burnt

Matla Power Station uses fuel oil during Unit light up, the maximum allowable tons of fuel oil to be used by Matla Power Station is 3 500 tons/month. The Station monitors the monthly usage and report to Nkangala District Municipality, figure 1 indicates that the Station complies with the requirements of the AEL limit of 3 500 tons per month.

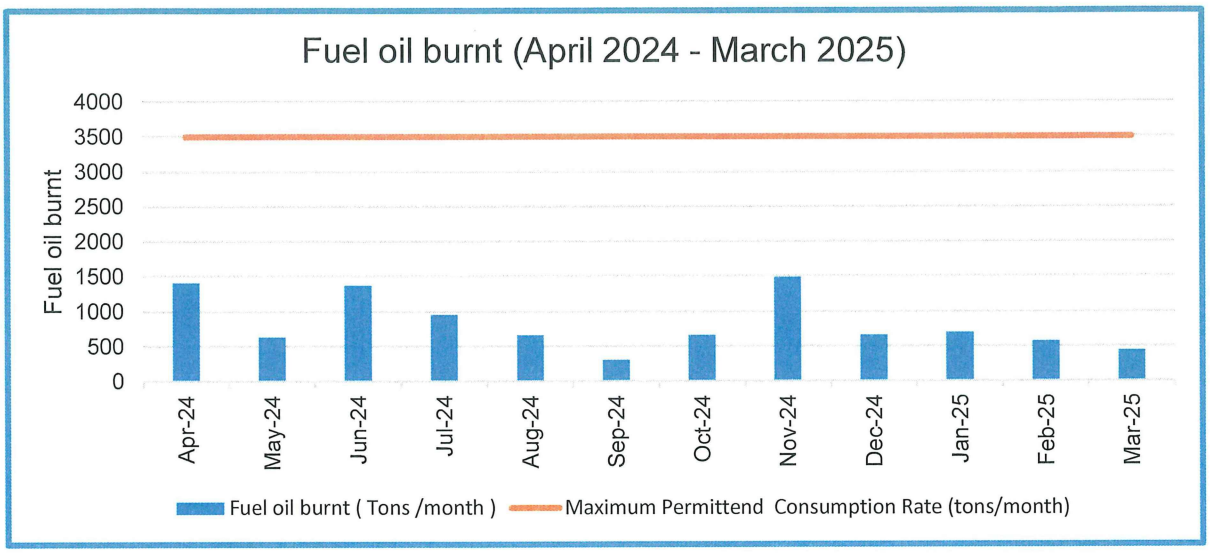


*Figure 1: Monthly Fuel Oil Burnt in Tonnages from Matla Power Station April 2024 – March 2025.*

### 1.2 Coal Burnt

Matla Power Station AEL prescribes the limits for raw materials consumption for coal. Matla Power Station coal consumption rate was well within the limit 1 475 000 tons/month as prescribed by the AEL for the reporting period of April 2024 – March 2025.

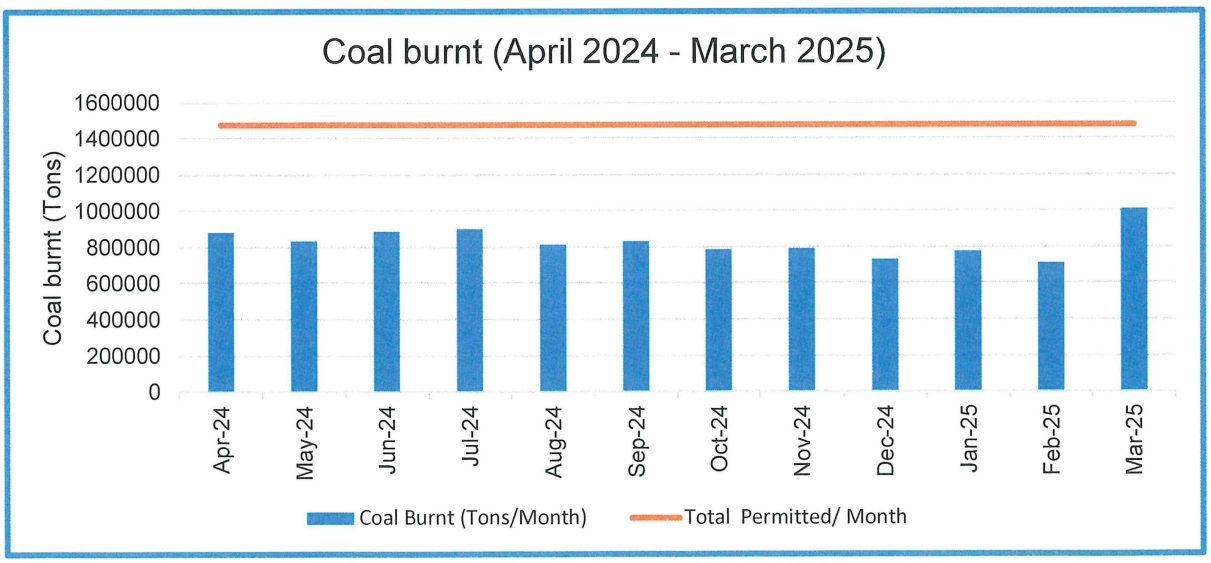


*Figure 2: Monthly Coal Burnt in Tonnages from Matla Power Station April 2024 – March 2025.*

## 2. Production rates

The maximum licensed production capacity is limited to 2 745GWh. The power station remained within prescribed limit for the period between April 2024 – March 2025. The station takes load losses to reduce Particulate Emissions when there is a need.

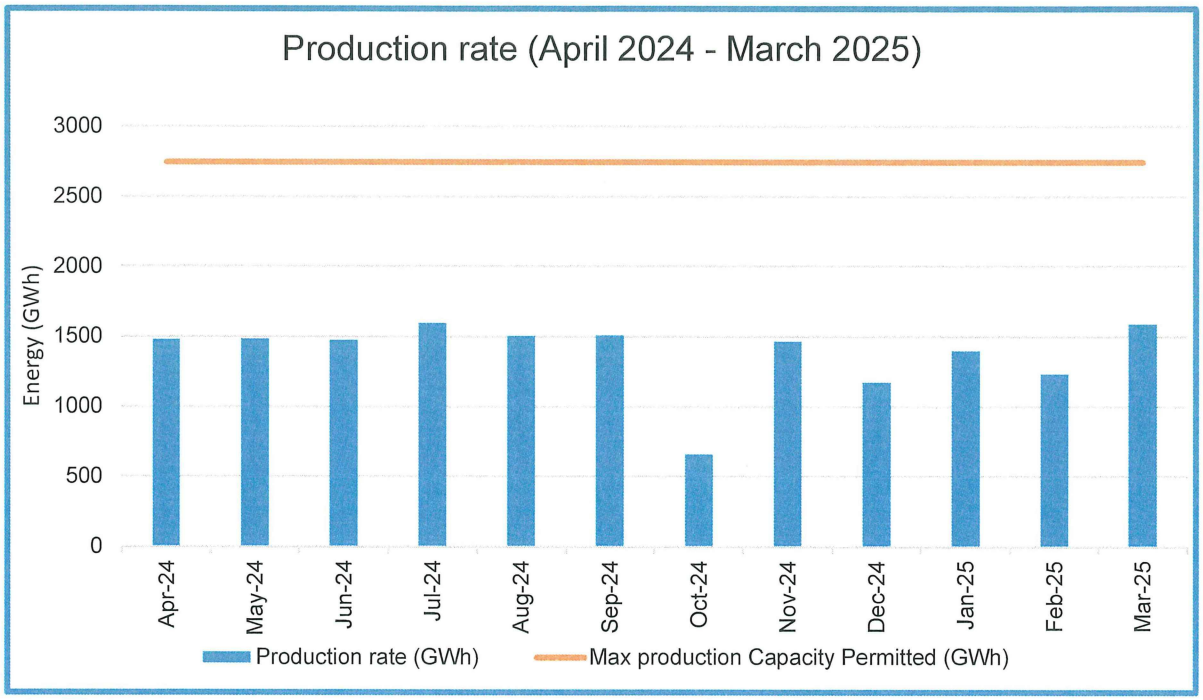


*Figure 3: Monthly Energy sent out in GWh from Matla Power Station April 2024 – Mar 2025*

## 3. Pollution Emission Trends

Continuous emission monitors are installed for all stacks/units.

**3.1 The emissions tonnages in the table below are that of the Annual** (April 2024 - March 2025).

Table 1. Total emissions at Matla Power Station – April 2024 - March 2025

| Power Station | Coal-fired emissions (tons/annual) |
|---|---|
| Eskom Matla Power Station | **PM:** 14554.63<br>**$SO_2$:** 144863.98<br>**$NO_2$:** 51666.61 |

Table 2: Pollutant Emission Tonnages for April 2024 – March 2025

| Month | PM (tons) | $SO_2$ (tons) | $NO_2$ (tons) |
|---|---|---|---|
| Apr-24 | 1450.14 | 14946.34 | 4929.05 |
| May-24 | 1139.02 | 14001.58 | 4715.93 |
| Jun-24 | 1819.86 | 13220.21 | 4679.25 |
| Jul-24 | 1636.12 | 13568.33 | 4988.18 |
| Aug-24 | 1137.74 | 12765.03 | 4828.91 |
| Sep-24 | 1788.83 | 16442.54 | 5806.87 |
| Oct-24 | 995.29 | 15994.90 | 5524.11 |
| Nov-24 | 1402.59 | 13203.77 | 4783.57 |
| Dec-24 | 1110.83 | 9156.94 | 3421.34 |

| | | | |
|---|---|---|---|
| Jan-25 | 1306.36 | 13388.36 | 4962.90 |
| Feb-25 | 895.79 | 12540.77 | 4645.45 |
| Mar-25 | 1322.21 | 10581.55 | 3310.11 |
| **Sum** | **14554.63** | **144863.98** | **51666.61** |

### 3.2 Particulate Matter (PM) and gaseous (NOx and SOx) emission concentration trends for the reporting Annual (April 2024 – March 2025).

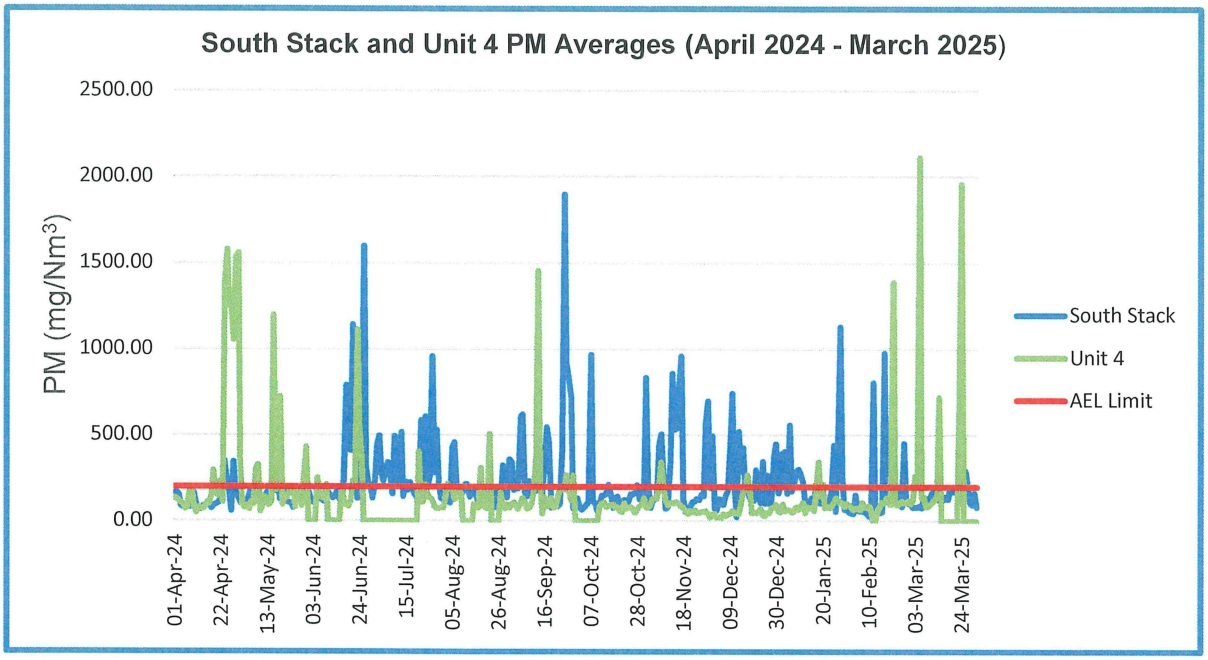


*Figure 4: South Stack and Unit 4 PM Averages* - April 2024 – March 2025.

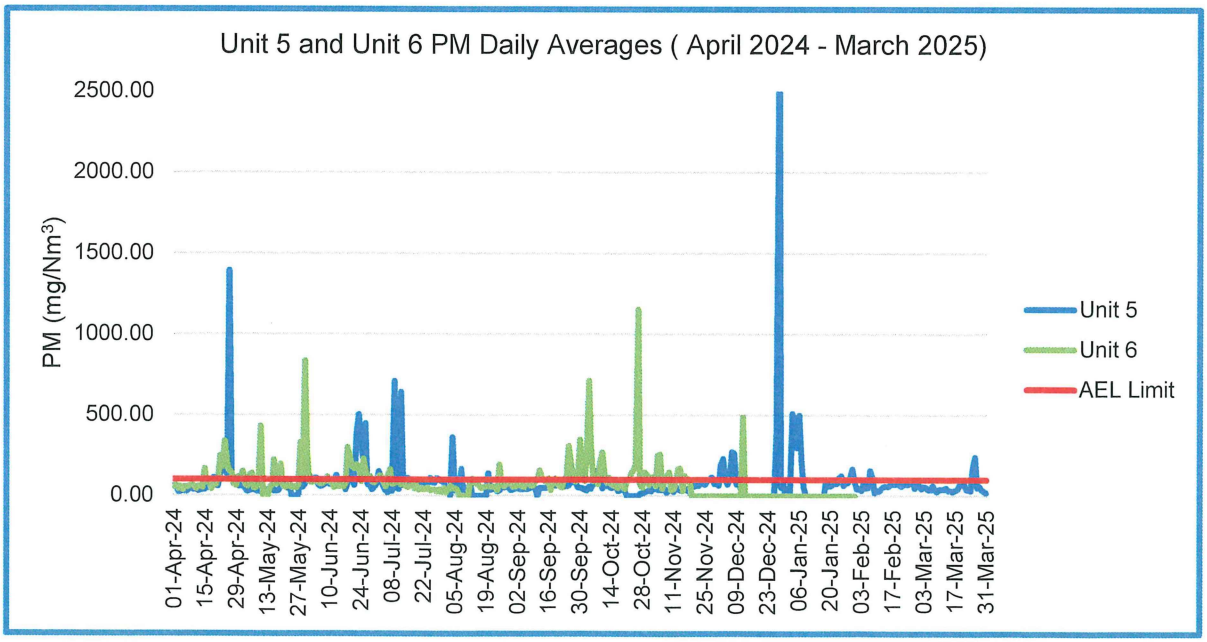


*Figure 5: Unit 5 and Unit 6 PM Averages - April 2024 – March 2025.*

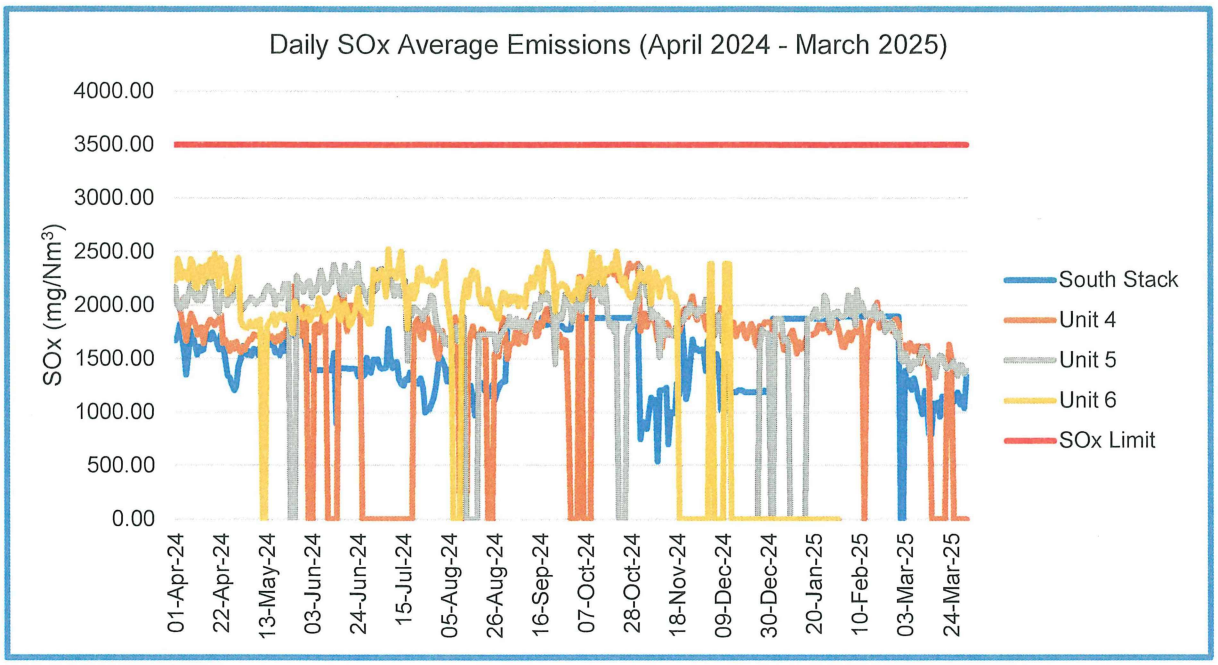


*Figure 6: Daily SOx Averages Emissions - April 2024 – March 2025.*

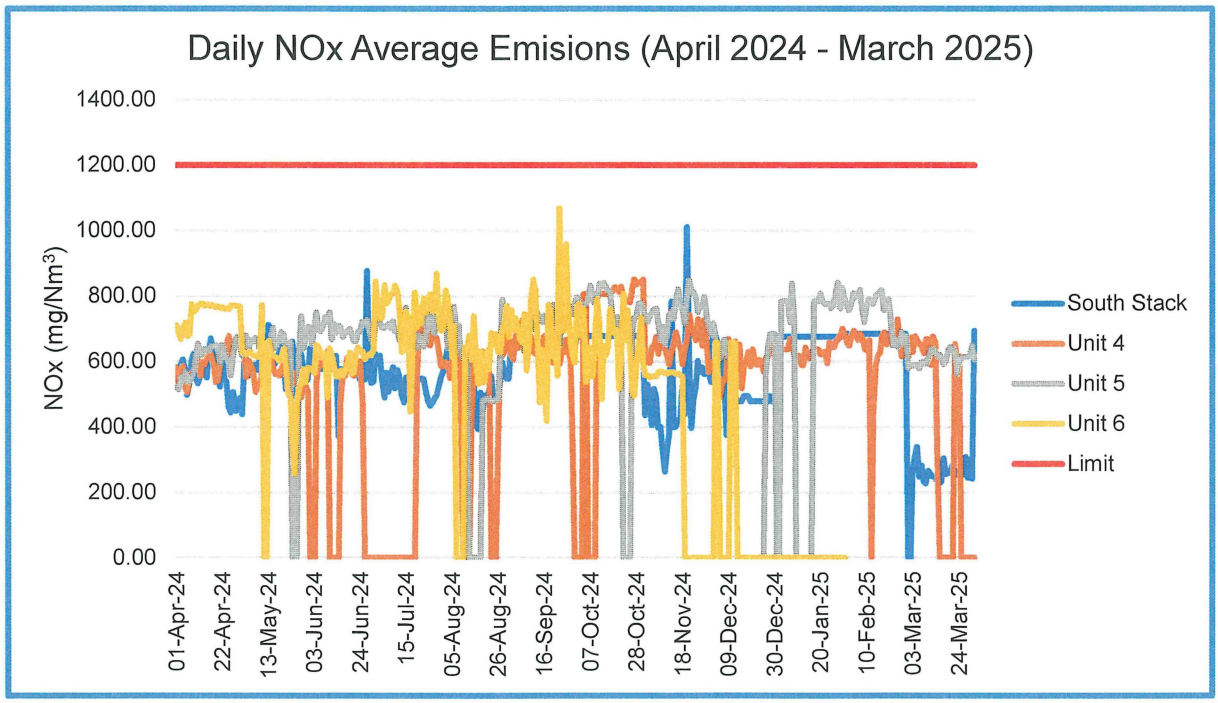


*Figure 7: Daily NOx Averages Emissions - April 2024 – March 2025.*

**4. An explanation of all instances where minimum emission standards were exceeded.**

Matla Power Station utilizes the Electrostatic Precipitators (ESP) to reduce particulate emissions from the stack. There were several exceedances of the particulate matter that were recorded throughout April 2024 - March 2025. The ESP plant experienced technical difficulties during this reporting period and exceeded the Particulate Matter limit on several occasions. For this reporting period 3 Section 30 incidences were recorded, in April 2024 for unit 4-6, due to Sluice Water Return Line Rapture and SO3 plant failure at unit 4 and in July 2024, the exceedances were due to Unit 1

post Outage defects. In October 2024 for unit 6, due to failed rapping system. In November 2024 the station reported a Section 30 incident for unit 6, which was due to the defective rapping system that caused precipitators to fail as well. There were Six Legal Contraventions reported during this reporting period, whereby in June 2024 all units exceeded due to the Slurry Plant breakdown and in September 2024 the exceedance was due to unit 6 Dust Handling Plant Poor Performance (High hopper Levels, Conveying line pressure low). In October, unit 5 experienced poor performance of the precipitators and in January 2025, South Stack incurred LC due to Unit 3 SO3 plant warm-up that took time to be in service where (sulphur flow could not be established because of blocked SO3 lance). Lastly unit 4 also incurred a Legal Contravention, due to the defective Dust Handling Plant (DHP).

For this reporting period of April 2024 – March 2025 **there were no exceedances for both NOx and SOx recorded.**

Figure 8 below illustrates the number of exceedances for the reporting period for both North and South Stacks, classified within either Grace, Section 30 and or Legal Contravention.

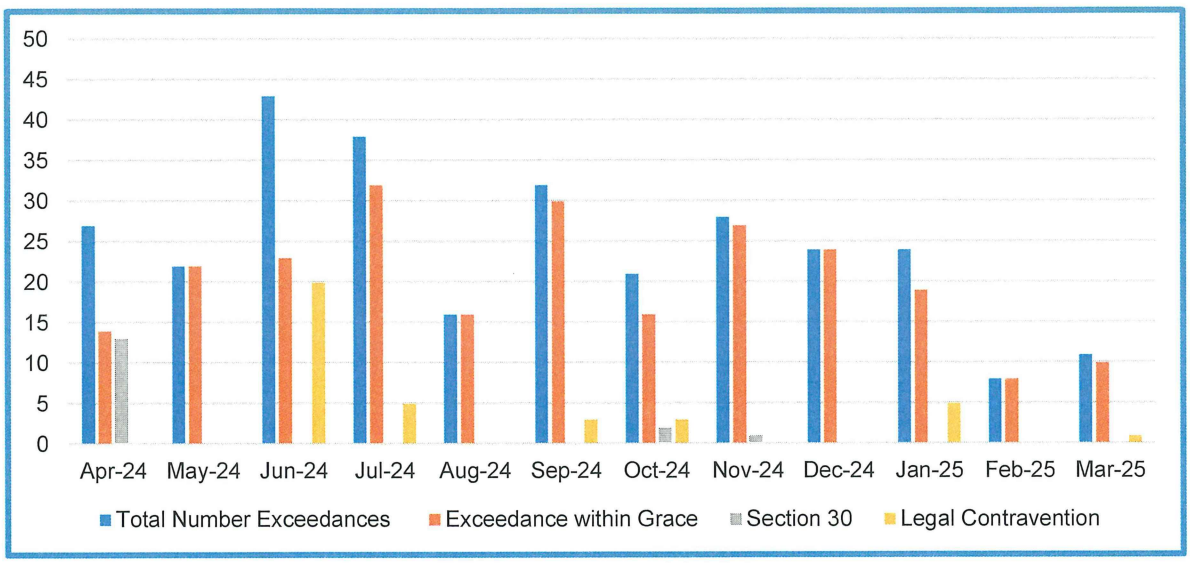


*Figure 8: Monthly Total Number of PM Exceedances.*

**4.1 The table below shows all Reasons for Exceedance that resulted in either Section 30 or Legal Contravention.**

Table 3: Reasons of Exceedance that resulted to either Section 30 or Legal Contravention.

| South Common Stack Particulate exceedances | | | |
|---|---|---|---|
| **Date** | **Daily Average Emission** | **Reason for Exceedance** | **Corrective Action** |
| 17/06/2024<br>18/06/2024<br>19/06/2024<br>20/06/2024<br>21/06/2024<br>22/06/2024<br>24/06/2024<br>25/06/2024<br>26/06/2024<br>27/06/2024<br>28/06/2024 | 235.1<br>790.7<br>652.2<br>410.3<br>1142.6<br>812.0<br>324.4<br>342.9<br>1597.0<br>313.8<br>224.8 | Unavailability of slurry plant trains due to plant break downs. | • Fixing of the Pinch Valve on Train C.<br>• Replace gear Box on Train B.<br>• Fix for the Pinch valve controls on C train.<br>• Clear the Ash hoppers (Continuous).<br>• Empty the Bulk silo using Truck.<br>• Load reduction.<br>• Slide gates adjustment. |

| | | | |
|---|---|---|---|
| 29/06/2024 | 203.2 | | |
| 03/07/2024<br>04/07/2024<br>05/07/2024<br>06/07/2024<br>07/07/2024<br>08/07/2024<br>11/07/2024<br>12/07/2024<br>13/07/2024 | 240.1<br>275.1<br>233.1<br>287.7<br>340.1<br>271.4<br>217.3<br>319.2<br>350.7 | unit 1 post outage Defects. The post outage defects resulted into Precip field Poor performance. | • A load loss was taken to keep the HFPS performance as high as possible. (Managing Load between Peaks and Off peak).<br>• Rapping of the fields.<br>• Rectify all identified defects during opportunity outage (opportunity outage has been requested so that the outstanding defect items can be rectified).<br>• Fully optimise the SO3 injection even on higher unit load. |
| 07/01/2025<br>08/01/2025<br>09/01/2025<br>10/01/2025<br>11/01/2025 | 210.7<br>289<br>300.8<br>269.3<br>228 | Unavailability of Sulphur plant<br>Damage to the burner injection lance during removal<br>The enhancement project is not implemented yet due to the unavailability of funding. | • Cleaning and stroke checking the Sulphur control valve<br>• Unblocking of the Sulphur flow meter by draining condensate from it<br>• PTW taken for unblocking the burner Sulphur injection lance<br>• Burner Sulphur injection lance removed and unblocked |

| **Unit 4 Particulate Exceedances** | | | |
|---|---|---|---|
| **Date** | **Daily Average Emission** | **Reason for Exceedance** | **Corrective Action** |
| 2024/04/22<br>2024/04/23<br>2024/04/24<br>2024/04/25<br>2024/04/26<br>2024/04/27<br>2024/04/28<br>2024/04/29<br>2024/04/30 | 233.9<br>111.8<br>1380.5<br>1577.8<br>1248.4<br>1252.7<br>1053.1<br>1535.8<br>1559.1 | Failure of SWR line<br>SO3 plant Failure. | • Blank SWR lines from the mine side to prevent AWR and Unit 7 from flowing to SWR dam and reclaim water from Unit 7 and AWR to assist with conveying of Ash.<br>• Construction of SWR pipe (re-routing)<br>• Utilize trucks to assist with emptying the hoppers.<br>• Clean SO3 catalyst.<br>• Change SO3 flow meter.<br>• Replace SO3 blow off valve. |
| 21/06/2024<br>22/06/2024<br>23/06/2024<br>24/06/2024<br>25/06/2024 | 234.3<br>225.0<br>1112.6<br>547.8<br>353.9 | Unavailability slurry plant trains due to plant break downs. | • Fixing of the Pinch Valve on Train C.<br>• Replace gear Box on Train B.<br>• Fix for the Pinch valve controls on C train.<br>• Clear the Ash hoppers (Continuous).<br>• Empty the Bulk silo using Truck.<br>• Load reduction.<br>• Slide gates adjustment. |
| 03/03/2025<br>04/03/2025<br>05/03/2025 | 262.1<br>236.8<br>427.7 | Pressure transmitter NRV damaged<br>Instrument air moisture | • LH 2 inspection and cleaning of orifices, bends and NRV'S<br>• Replacement of L11 dome seal and main bend gasket.<br>• L8 the festo was stuck due to water ingress and L7 was replaced<br>• Conveying line pressure transmitter NRV was replaced |

| Unit 5 Particulate Exceedances | | | |
|---|---|---|---|
| Date | Daily Average Emission | Reason for Exceedance | Corrective Action |
| 2024/04/22<br>2024/04/23<br>2024/04/24<br>2024/04/25<br>2024/04/26<br>2024/04/27 | 158.7<br>199.1<br>200.2<br>148.5<br>1390.5<br>137.1 | Failure of SWR line. | • Blank SWR lines from the mine side to prevent AWR and Unit 7 from flowing to SWR dam and reclaim water from Unit 7 and AWR to assist with conveying of Ash.<br>• Construction of SWR pipe (re-routing).<br>• Utilize trucks to assist with emptying the hoppers. |
| 22/06/2024<br>23/06/204<br>24/06/2024<br>25/06/2024<br>26/06/2024 | 380.0<br>501.7<br>335.6<br>239.0<br>456.1 | Unavailability slurry plant trains due to plant break downs. | • Fixing of the Pinch Valve on Train C.<br>• Replace gear Box on Train B.<br>• Fix for the Pinch valve controls on C train.<br>• Clear the Ash hoppers (Continuous).<br>• Empty the Bulk silo using Truck.<br>• Load reduction.<br>• Slide gates adjustment. |
| 09/10/2024 | 137.8 | Poorly performing precip fields | • Load loss taken to recover hopper levels<br>• Clear hopper levels and reinstate precip LH3 and 4<br>• Reinstate tripped precipitators |
| 02/01/2025<br>03/01/2025<br>04/01/2025<br>05/01/2025<br>06/01/2025<br>07/01/2025 | 843.6<br>521.3<br>446.3<br>298.5<br>500.8<br>219.6 | $SO_3$ operated beyond design life | • Warm-up $SO_3$ plant<br>• Drain steam condensate on SO3 skid via drain valves<br>• Conducted fault finding to establish Sulphur flow<br>• Replace $SO_3$ control valve |

| Unit 6 Particulate Exceedances | | | |
|---|---|---|---|
| **Date** | **Daily Average Emission** | **Reason for Exceedance** | **Corrective Action** |
| 2024/04/22<br>2024/04/23<br>2024/04/24<br>2024/04/25<br>2024/04/26<br>2024/04/27 | 182.9<br>132.8<br>245.5<br>139.2<br>116.8<br>105.7 | Failure of SWR line. | • Blank SWR lines from the mine side to prevent AWR and Unit 7 from flowing to SWR dam and reclaim water from Unit 7 and AWR to assist with conveying of Ash.<br>• Construction of SWR pipe (re-routing).<br>• Utilize trucks to assist with emptying the hoppers. |
| 18/06/2024<br>19/06/2024<br>20/06/2024<br>21/06/2024<br>22/06/2024<br>23/06/2024 | 217.8<br>172.7<br>135.9<br>123.6<br>142.1<br>123.5 | Unavailability slurry plant trains due to plant break downs. | • Fixing of the Pinch Valve on Train C.<br>• Replace gear Box on Train B.<br>• Fix for the Pinch valve controls on C train.<br>• Clear the Ash hoppers (Continuous).<br>• Empty the Bulk silo using Truck.<br>• Load reduction.<br>• Slide gates adjustment. |
| 23/09/2024<br>24/09/2024<br>25/09/2024<br>26/09/2024<br>27/09/2024 | 107.5<br>107.5<br>310.8<br>209.0<br>106.2 | Inlet dome seal failure<br>Poor performance and tripping precips fields<br>Blockages in conveying lines<br>Unavailability of LH field 4. | • Repairing of the precips and rapping system at unit 6.<br>• Replace first two rows NRVs at unit 6 dust handling plant.<br>• Ensure that OEM seals are always available. |
| 03/10/2024<br>04/10/2024<br>05/10/2024<br>09/10/2024 | 217<br>849.2<br>371.9<br>208.1 | Unavailability of the flue gas conditioning plant<br>Leak in control air supply line | • The plant warm-up process was started but the blower motor switched off four times during warm-up. Each time it was reset. |

| | | | |
|---|---|---|---|
| 10/10/2024<br>11/10/2024<br>23/10/2024<br>24/10/2024<br>25/10/2024<br>26/10/2024 | 269.3<br>121.6<br>137.9<br>164.6<br>191.2<br>1154.6 | Insufficient condensate drainage layout<br>Repairs to leaking burner<br>DE rapping gear support system design not robust enough<br>Plant warm-up program integration<br>Poor ESP performance<br>High hooper levels<br>Conveying line blockages | • Replace LH 6 Precipitator transformer and LH8 dead short<br>• Clear hopper levels on 2nd row<br>• Rectified rapping defects |
| 18/11/2024 | 103.7 | Unit Shutdown | • Unit shutdown on force cooling |

**Note:** Figures showing compliance with the daily average emission limits of the respective pollutants have been submitted on the monthly emission reports sent to the Nkangala Air quality Officer.

## 5. Emission monitoring information

### 5.1 Monitor Reliability obtained for the CEMS for April 2024 – March 2025.

Table 4. PM monitor reliability for April 2024 – March 2025

| Month | South Stack | Unit 4 | Unit 5 | Unit 6 |
|---|---|---|---|---|
| April-24 | 99.0 | 94.2 | 98.6 | 100.0 |
| May-24 | 99.5 | 97.1 | 100.0 | 99.0 |
| June-24 | 87.6 | 98.3 | 95.6 | 100.0 |
| July-24 | 93.5 | 99.6 | 89.9 | 100.0 |
| Aug-24 | 98.4 | 99.0 | 82.6 | 99.7 |
| Sep-24 | 90.5 | 88.8 | 90.2 | 85.4 |
| Oct-24 | 97 | 100 | 99.7 | 74.4 |
| Nov-24 | 79.4 | 98.8 | 99.6 | 100 |
| Dec-24 | 87.9 | 100 | 93.9 | 100 |
| Jan-25 | 90.5 | 100 | 100 | - |
| Feb-25 | 92.6 | 98.6 | 71.5 | - |
| Mar-25 | 89 | 99.2 | 85.1 | - |

Table 5. SOx and NOx monitor reliability for April 2024 – March 2025

| Month | South Stack | | Unit 4 | | Unit 5 | | Unit 6 | |
|---|---|---|---|---|---|---|---|---|
| | SOx | NOx | SOx | NOx | SOx | NOx | SOx | NOx |
| Apr-24 | - | - | 100.0 | 100.0 | 100.0 | 100.0 | - | - |
| May-24 | 85.2 | 84.3 | 98.4 | 98.4 | 100 | 100 | 99.6 | 99.6 |
| Jun-24 | 44.1 | 44.1 | 99.5 | 99.7 | 100.0 | 100.0 | 100.0 | 100.0 |
| July-24 | 99.2 | - | - | - | - | - | - | - |
| Aug-24 | - | - | - | - | - | - | - | - |
| Sep-24 | - | - | - | - | - | - | - | - |
| Oct-24 | - | - | 99.1 | 99.1 | 100 | 100 | 100 | 100 |
| Nov-24 | - | - | - | - | - | - | - | - |
| Dec-24 | - | - | - | - | - | - | - | - |
| Jan-25 | - | - | - | - | - | - | - | - |
| Feb-25 | - | - | - | - | - | - | - | - |
| Mar-25 | - | - | - | - | - | - | - | - |

**Note:** Parallel tests averages were used for the purpose of accurate reporting of the gases. The station is in the process of sourcing some components for the gas monitors such Lenses,

Zirconium cells for O2 and Heater gaskets to improve the Monitor reliability and CO2+O2 relationship hence the Monitor reliability is not reported on the table above.

### 5.2 Validity of Correlation and Parallel Tests:

Overview of Validity of CEMS Correlation and Parallel Tests for PM, $SO_2$ and NOx (Parallel and Correlation test reports attached):

Table 6. Overview of Correlation and Parallel Tests validity

| Associated Unit/Stack | Correlation Test (PM) | Parallel Test ($NO_2$, $CO_2$, $O_2$, $SO_2$) |
|---|---|---|
| **South Stack** | Valid until 27 February 2027 | Valid until 30 October 2025 |
| **Unit 4** | Valid until 30 May 2025 | Valid until 30 April 2027 |
| **Unit 5** | Valid Until 25 August 2026 | Valid until 30 April 2027 |
| **Unit 6** | Valid until 02 August 2026 | Valid until 30 June 2025 |

## 6. Compliance Audit Report(s):

There was one internal compliance audit done in June 2023, conducted at Matla Power Station during the 2023/24 financial year, no compliance audit conducted for this reporting period, however the station conducts monthly AEL self-assessments. The AEL compliance Audit is attached.
$CO_2$ review audit was done in November 2024 and AEL compliance audit (Deloitte) was done in February 2025. The audit reports will be attached.

## 7. Major upgrades projects:

Table 7. Matla Major Upgrade Projects.

| Project | Status |
|---|---|
| Retrofitting the existing conventional rectifier/transformers with High Frequency Power Suppliers (HFP's) which is expected to reduce the particulate emissions by approximately 20-30%. | Unit 1: Complete<br>Unit 2: Complete<br>Unit 3: Complete<br>Unit 4: Complete<br>Unit 5:2025/01/02<br>Unit 6: complete |
| Multi Ash flow project implementation project. | Unit 1& Unit 3: Complete<br>Unit 2:2025/06/30<br>Unit 4: 2026/03/30<br>Unit 5 :2025/10/31<br>Unit 6 :2026/06/17 |
| ESP upgrade. | Unit 1-Unit 6: Complete |
| Optimize $SO_3$ injection (Unit 1 – Unit 6) | Unit 1: 30/06/2025<br>Unit 2: 30/06/2025<br>Unit 3: 30/06/2025<br>Unit 4: In progress<br>Unit 5: 28/11/2025<br>Unit 6: 28/11/2025 |

## 8. Fugitive dust Management

Fugitive dust management plan for Matla Power Station has been developed and monitoring is conducted monthly. For the reporting Period April 2024 to March 2025, one monitoring source (EM-AD-W) indicated an exceedance above the industrial guideline once. All other areas were within the specification, fugitive dust around Matla power station is managed according to the fugitive dust plan. Fugitive dust monitoring plan was sent to Nkangala District Emission Officer 24 July 2023.

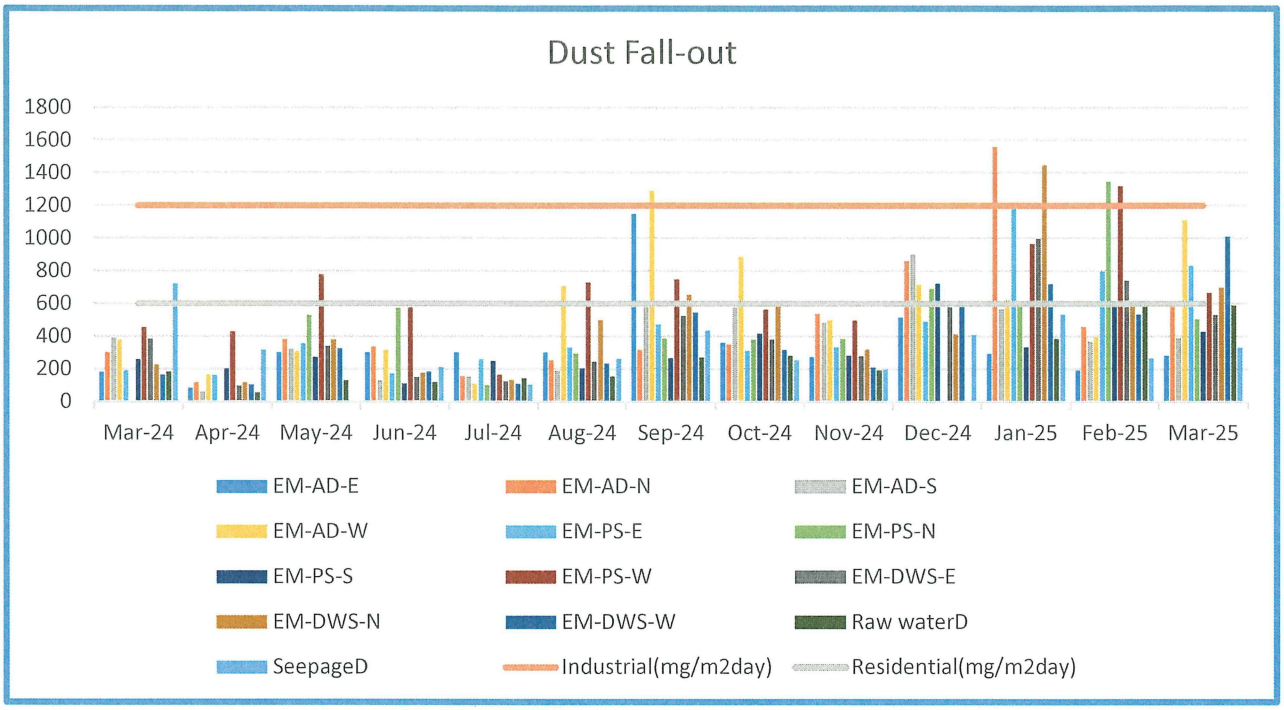


*Figure 9: Dust Fallout Monitoring (April 2024-March 2025).*

## 9. Participation in priority areas programs

Matla is participating in the Highveld Priority Areas (HPA) Multi-stakeholder Reference Group (MSRG) meetings as and when arranged by the Nkangala District Emission Officer.

## 10. Air quality offset program

An Air Quality Offset Implementation Plan progress for the Nkangala District Municipality has been submitted on the 27th of March 2024.

## 11. General

**NAEIS reporting:**

Matla Power Station submitted its annual emission information on the NAEIS system manually. The rest of the information demonstrating compliance with the emission license conditions is supplied within the monthly emission reports sent to your office.

Hoping the above will meet your satisfaction.

Yours sincerely

.....

Bob Phahle

**ACTING GENERAL MANAGER: MATLA POWER STATION**