

Air Quality Officer  
DEDET  
Private bag X11215  
NELSPRUIT  
1200

Date:  
2023.09.20

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Dear Mr. Mahlangu

## ARNOT POWER STATION'S MONTHLY EMISSIONS REPORT FOR THE MONTH OF AUGUST 2023

This serves as the monthly report required in terms of Section 6 in Arnot Power Station's Atmospheric Emission License. The emissions are for August 2023, verified emissions of particulates; SO<sub>2</sub> and NO<sub>x</sub> (as NO<sub>2</sub>) are also included.

### Raw Materials and Products

Table1: Quantity of Raw Materials and Products used/produced for the Month of August 2023

Raw Materials and Products used	Raw Material Type	Unit	Maximum Permitted Consumption/ Rate (Quantity)	Consumption/ Rate in Month of August 2023
	Coal	Tons/month	1 050 330	463 851.2
	Fuel Oil	Tons/month	10 000	2977.71
Production Rates	Product/ By-Product Name	Unit	Maximum Production Capacity Permitted (Quantity)	Production Rate in Month of August 2023
	Energy	GWh	1 785 600	877 190
	Ash	Tons/month	421 000	105 341

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## Abatement Technology

Table 2.1 (a) Abatement Equipment Control Technology for month of August 2023

Associated Unit/Stack	Technology Type	Actual Efficiency (%) for the month of August 2023
North Stack	Fabric Filter Bags	99.7%
South Stack	Fabric Filter Bags	99.9%

Table 2.1 (b) Abatement Equipment Utilisation (%) for the month of August 2023

Associated Unit/Stack	Technology Type	Utilisation August 2023
North	<i>Fabric Filter Plant (FFP)</i>	100 %
South	<i>Fabric Filter Plant (FFP)</i>	100 %

Table 2.1 (c) Monitor Reliability (%)

Associated Unit/Stack	PM	SO <sub>2</sub>	NO
Stack 1	98.1	64.0	63.0
Stack 2	100	96.1	96.4

Note: **SO<sub>2</sub>** and **NO** below 80% due to power failure from the monitor system, an averaging was used during the period

## Energy Source Characteristics

Table 3: Energy Source Material Characteristics for the month of May 2023

Characteristic	Stipulated Range (Unit)	Monthly Average Content
Sulphur Content	0.5 to < 1 (%)	0.607
Ash Content	17 to < 40 (%)	22.71

Table 4 Operating days in compliance to PM AEL Limit –August 2023

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm <sup>3</sup> )
North	31	0	0	3	0	63.5
South	31	0	0	0	0	39.4
<b>SUM</b>	<b>62</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

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Table 5: Operating days in compliance to NOx AEL Limit – August 2023

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm <sup>3</sup> )
North	31	0	0	0	0	785.4
South	31	0	0	0	0	771.3
<b>SUM</b>	<b>62</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

Table 6: Operating days in compliance to Sox AEL Limit –August 2023

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SOx (mg/Nm <sup>3</sup> )
North	31	0	0	0	0	1262.5
South	31	0	0	0	0	1105.5
<b>SUM</b>	<b>62</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

## Emissions Reporting

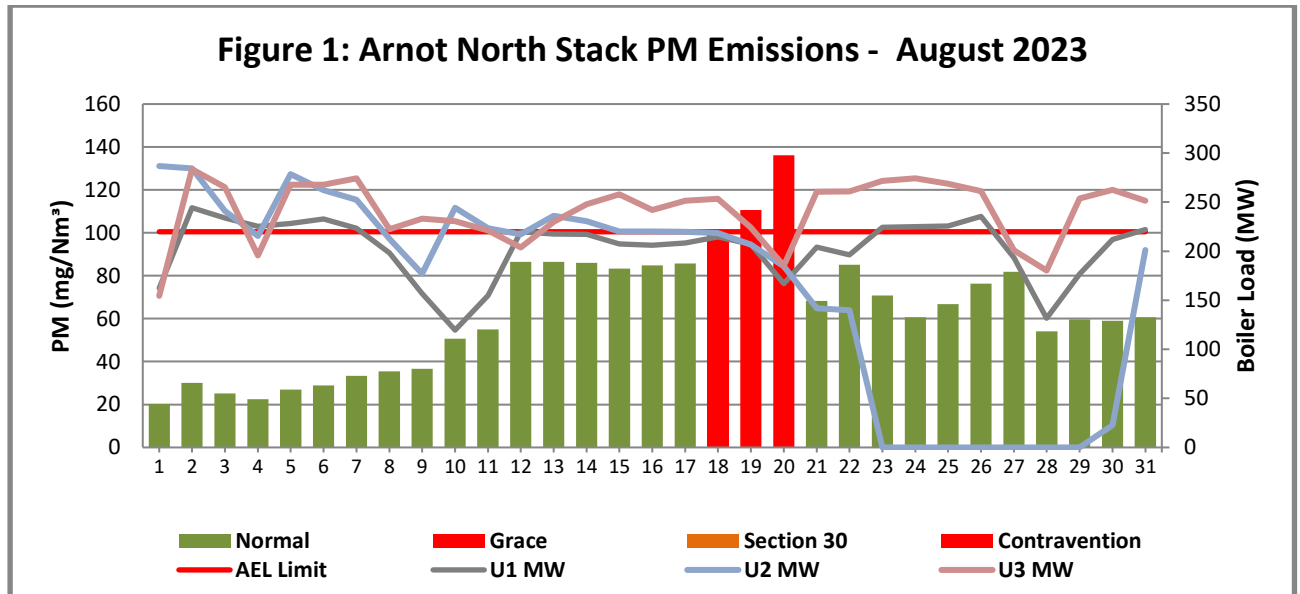
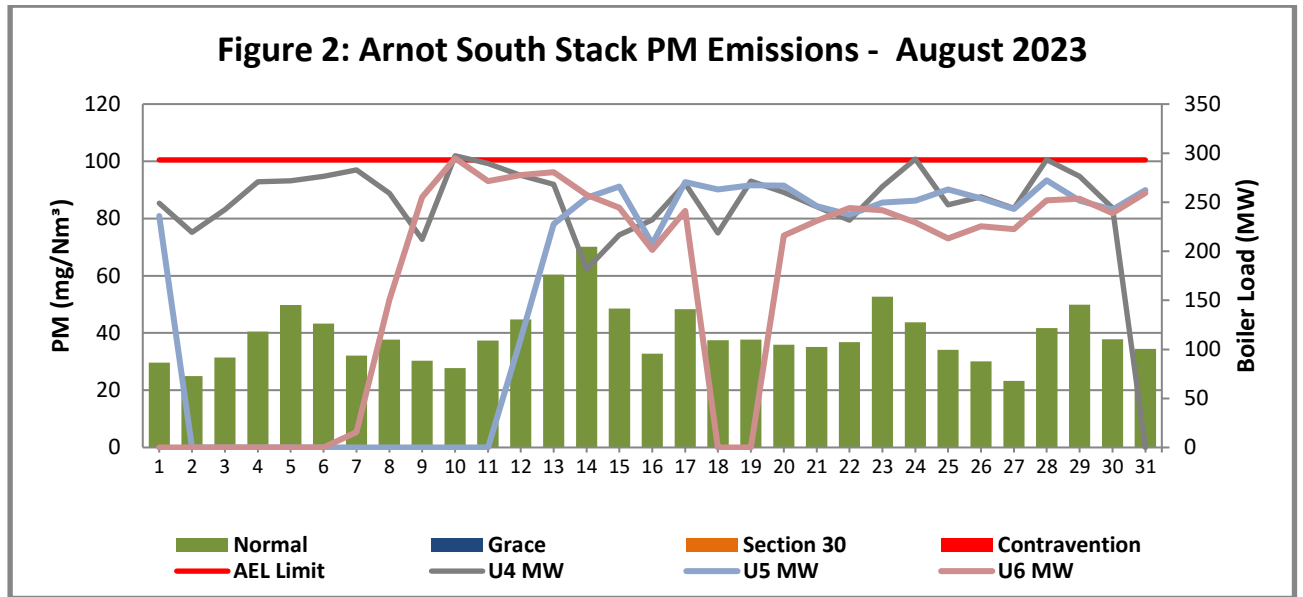
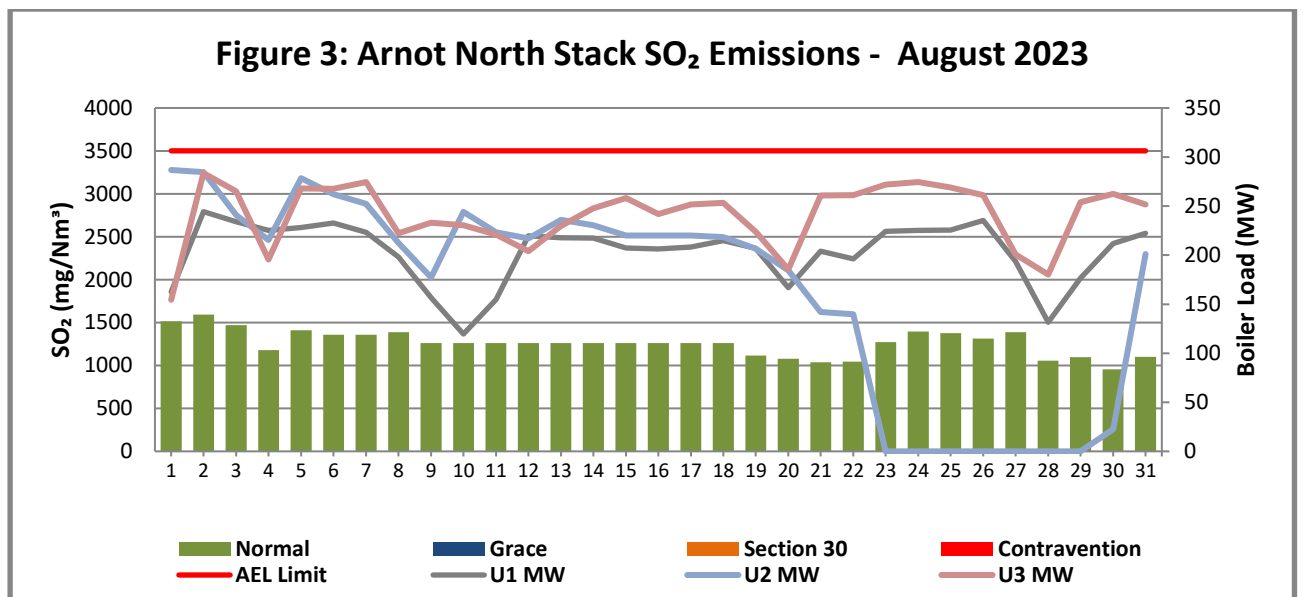


Figure 1: PM emissions (daily averages) for the month of August 2023 against the emission limit for the North Stack

**ARNOT POWER STATION'S MONTHLY EMISSIONS REPORT FOR THE MONTH OF AUGUST 2023**

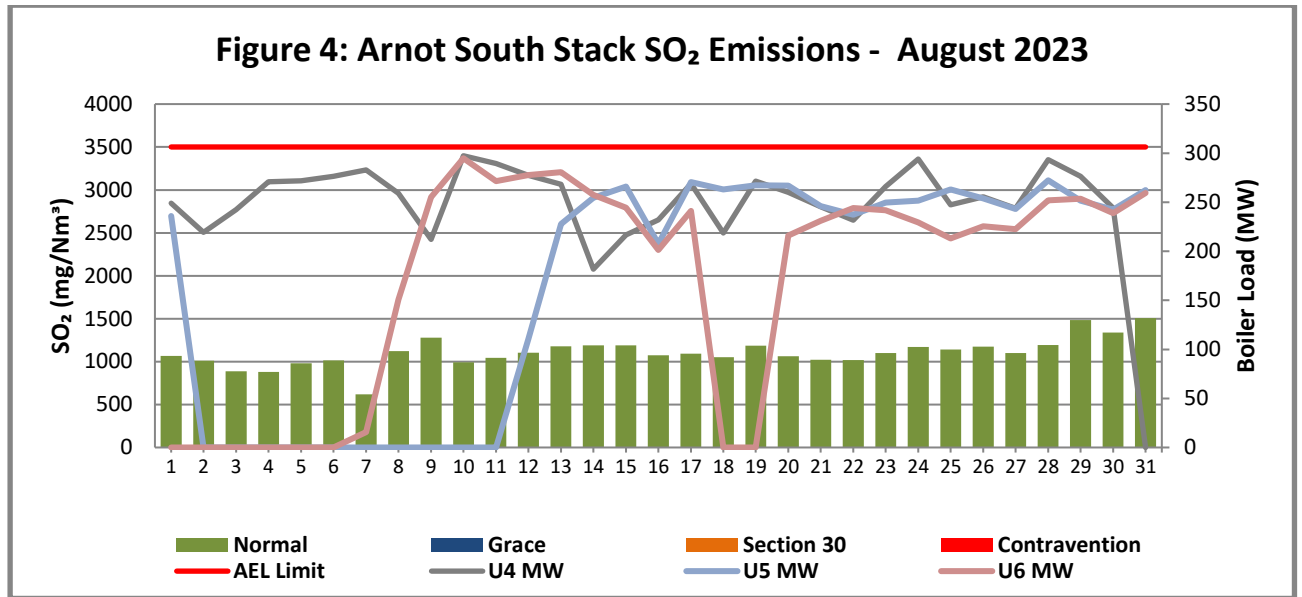


**Figure 2: PM emissions (daily averages) for the month of August 2023 against emission limit for the South Stack**

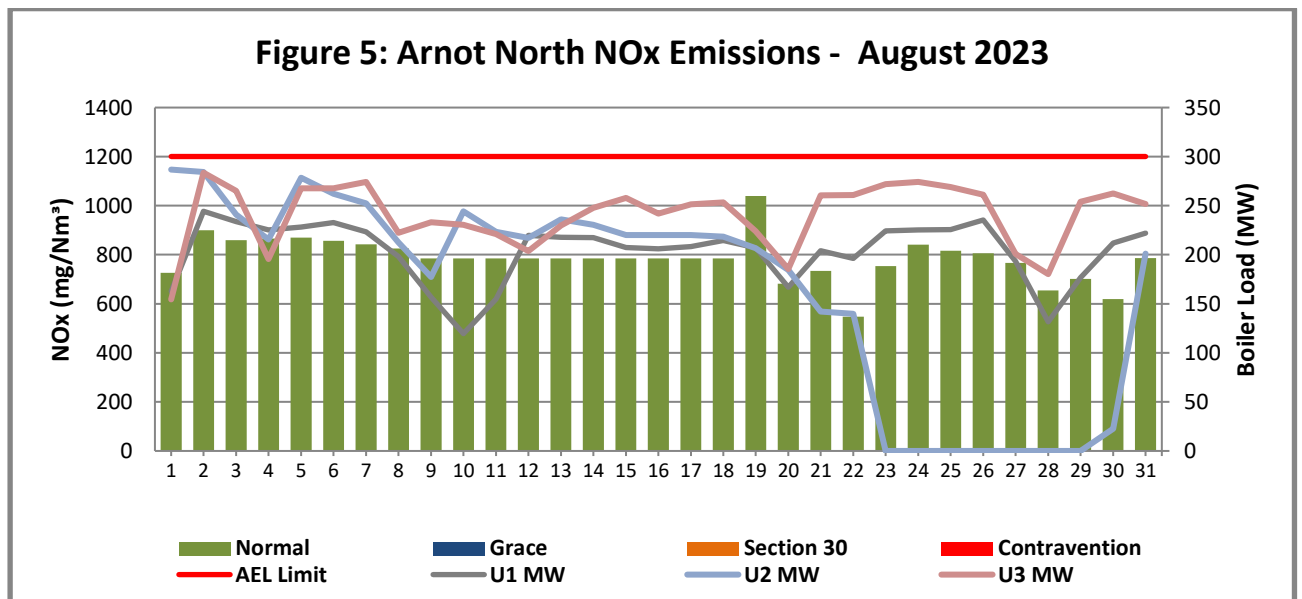


**Figure 3: SO<sub>2</sub> emissions (daily averages) for the month of August 2023 against emission limit for the North Stack**

**ARNOT POWER STATION'S MONTHLY EMISSIONS REPORT FOR THE MONTH OF AUGUST 2023**

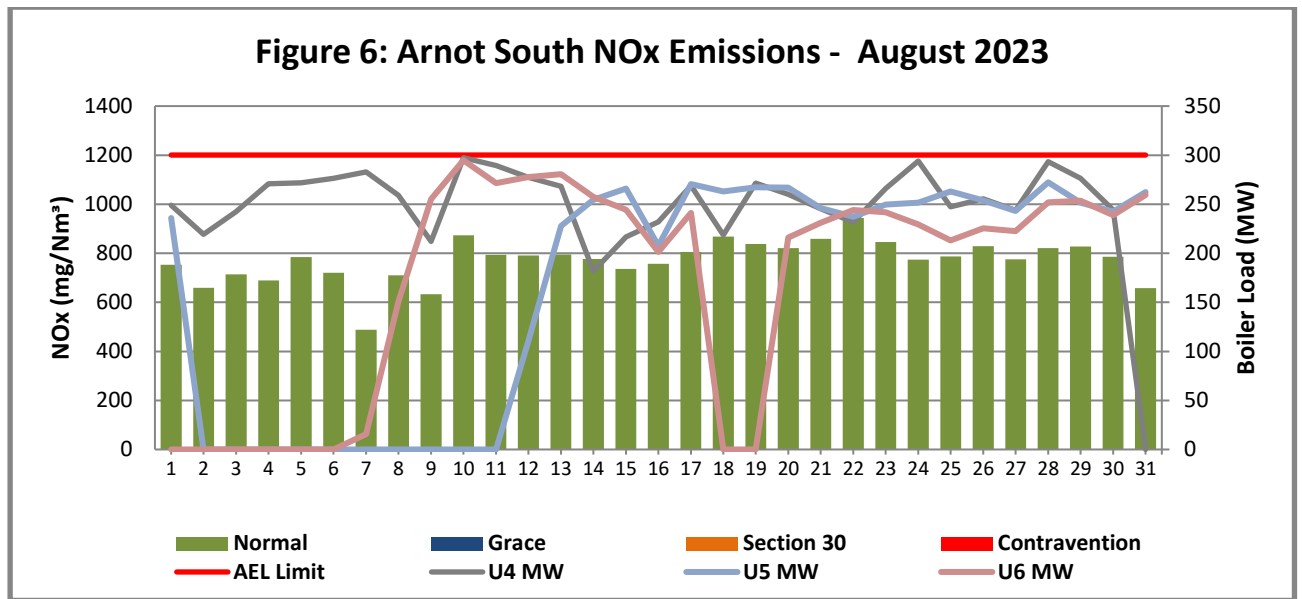


**Figure 4: SO<sub>2</sub> emissions (daily averages) for the month of August 2023 against emission limit for the South Stack**



**Figure 5: NO<sub>2</sub> emissions (daily averages) for the month of August 2023 against emission limit for the North Stack**

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**Figure 6: NO<sub>2</sub> emissions (daily averages) for the month of August 2023 against emission limit for the South Stack**

Table 4: Monthly tonnages for the month of August 2023

Unit	PM (tons)	SO <sub>2</sub> (tons)	NO <sub>2</sub> (tons)
<b>Total Tons (North &amp; South Stack)</b>	221.8	5133	3309

Table 5: Each unit and respective days operating under normal operation, days in grace period, and section 30 days respectively

Unit	Days operating under normal operation	Days operating in grace period	Days operating under S 30
1	31	0	0
2	31	0	0
3	31	0	0
4	31	0	0
5	31	0	0
6	31	0	0

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## Light up information

Continuous reporting is being done even during start-ups emissions were not affected.

## Complaints Register

Table 6. Complaints for the month of August 2023

No Noise, dust and offensive odors complaints registered in the month of August 2023.

Source Code/ Name	Root Cause Analysis	Calculation of Impacts/ emissions associated with the incident and dispersion modelling of pollutants, where applicable	Dispersion modeling of pollutants where applicable	Measures implemented to prevent reoccurrence	Date by which measure will be implemented
None	0	0	0	0	0

## General

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

### Note:

1. Parallel test have expired, Data will be back fitted and reported at the licensing office once the process is finalized.
2. Correlation Test was conducted on the 10<sup>th</sup> until the 15 of September 2023. Data will be back fitted and reported at the licensing office.
3. Arnot Power Station North Stack emissions exceeded the 48 hours allowable limit for Upset Conditions for three (3) consecutive days (18-20 August 2023) due to plant failures that were resolved, and emissions are back to below license limit.
4. **SO<sub>2</sub> and NO** below 80% due to power failure from the monitor system, an averaging was used during the period

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2023**

Hoping the above will meet your satisfaction.

Compiled by

Date: 20.09.2023



Lawrence Machebe

**ENVIRONMENTAL OFFICER: ARNOT**

Verified by

Date: 22.09.2023



Sandile Mbuyazi

**SYSTEM ENGINEER: ARNOT**

Supported by:

Date: 2023.09.20



Rofhiwa Tshikovha

**SENIOR ENVIRONMENTAL ADVISOR: ARNOT**

Yours sincerely



Marcus Nemadodzi

**GENERAL MANAGER: ARNOT POWER STATION**

Date: 2023-09-28