

HENDRINA POWER STATION MONTHLY EMISSIONS REPORT
 Atmospheric Emission License 17/4/AEL/MP313/11/16


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1 RAW MATERIALS AND PRODUCTS

Raw Materials and Products	Raw Material Type	Units	Max. Permitted Consumption Rate	Consumption Rate Sep-2022
	Coal	Tons	820 000	122 680.0
	Fuel Oil	Tons	3 200	1256.11

Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Sep-2022
	Energy	GWh	1440	176.65
	Ash	Tons	290 000	32 854
	RE PM	kg/MWh	not specified	0.168

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristics	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.6 to < 1	0.93
Ash Content	%	31 to < 35	26.78

3 EMISSION LIMITS (mg/Nm³)

Associated Unit/Stack	PM	SO ₂	NO _x
North	75	3200	1200
South	75	3200	1200

4 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Sep-2022
Unit 1	Fabric Filter Plant (FFP)	Unit Off-line
Unit 2	Fabric Filter Plant (FFP)	100.000%
Unit 3	Fabric Filter Plant (FFP)	Unit Off-line
Unit 4	Fabric Filter Plant (FFP)	Unit Off-line
Unit 5	Fabric Filter Plant (FFP)	99.803%
Unit 6	Fabric Filter Plant (FFP)	99.963%
Unit 7	Fabric Filter Plant (FFP)	99.965%
Unit 8	Fabric Filter Plant (FFP)	Unit Off-line
Unit 9	Fabric Filter Plant (FFP)	Unit Off-line
Unit 10	Fabric Filter Plant (FFP)	100.000%

Note: Abatement plant does not have bypass mode operation, hence plant 100% Utilised.

5 MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO ₂	NO	O ₂
North	100.0	100.0	100.0	100.0
South	100.0	100.0	98.7	99.0

 Note: NO_x emissions is measured as NO in PPM. Final NO_x value is expressed as total NO₂

6 EMISSION PERFORMANCE

Table 6.1 Monthly tonnages for the month of September-2022

Associated Unit/Stack	PM (tons)	SOx (tons)	NOx (tons)
North	3.4	0.0	0.0
South	26.3	1,688.0	881.7
SUM	29.7	1,688.0	881.7

Table 6.2: Operating days in compliance to PM AEL Limit - September 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
North	2	1	0	0	1	63.5
South	23	3	0	0	3	37.9
SUM	25	4	0	0	4	

Comments: North Stack units were online for only 3 days and offline for 27 days.

There was a 24 hour exceedance of PM limit on North Stack and it falls under grace period.

South Stack was offline for 4 days. The remaining 26 days is the sum of 23 days normal and 3 days of Section 30 PM exceedance.

Table 6.3: Operating days in compliance to SO₂ AEL Limit - September 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO ₂ (mg/Nm ³)
North	0	0	0	0	0	
South	27	0	0	0	0	1 648.9
SUM	27	0	0	0	0	

North Stack Gaseous monitor reliability was too low and not detected gaseous emissions (SO₂) for the whole month.

South Stack gaseous monitor detected SO₂ for 27 days, and there was no detection for the other 3 days.

Table 6.4: Operating days in compliance to NO_x AEL Limit - September 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NO _x (mg/Nm ³)
North	0	0	0	0	0	
South	27	0	0	0	0	862.7
SUM	27	0	0	0	0	

North Stack Gaseous monitor reliability was too low and not detected gaseous emissions (NO_x) for the whole month.

South Stack gaseous monitor has detected NO_x for 27 days, and there was no detection for the remaining 3 days.

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

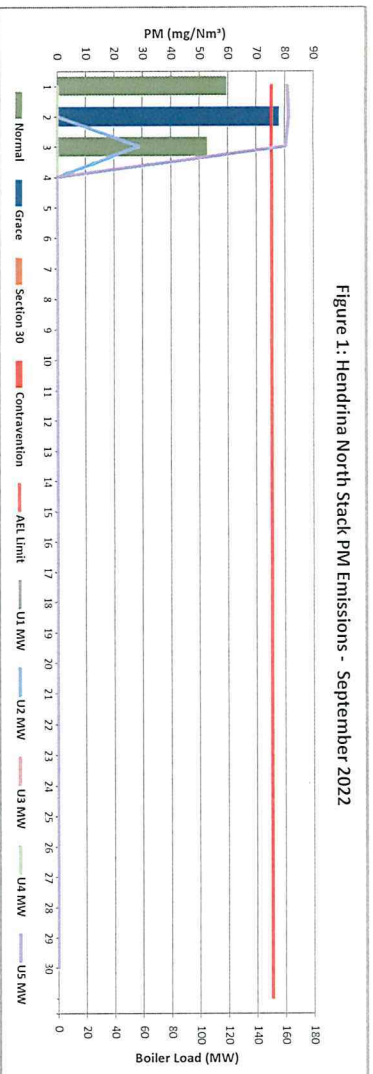


Figure 1: Hendrina North Stack PM Emissions - September 2022

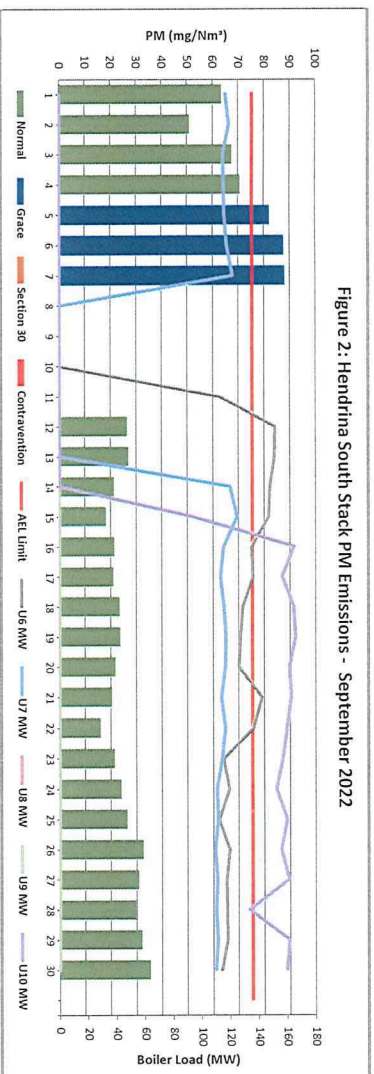


Figure 2: Hendrina South Stack PM Emissions - September 2022

Figure 3: Hendrina North Stack SO₂ Emissions - September 2022

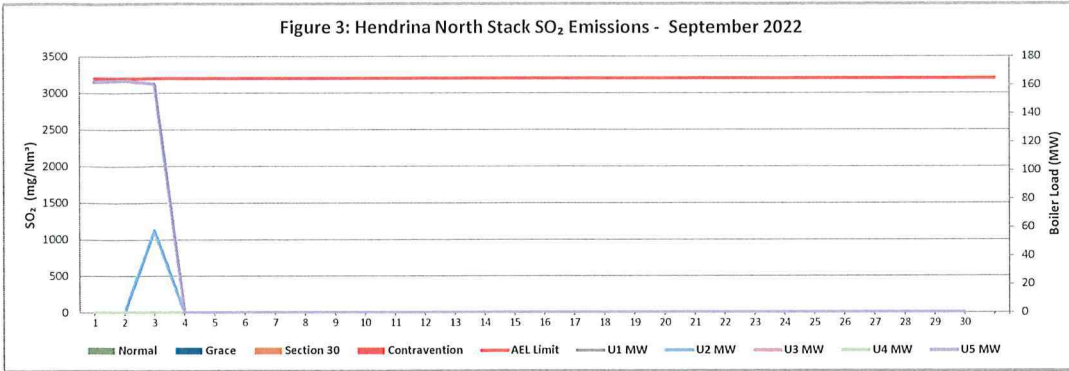


Figure 4: Hendrina South Stack SO₂ Emissions - September 2022

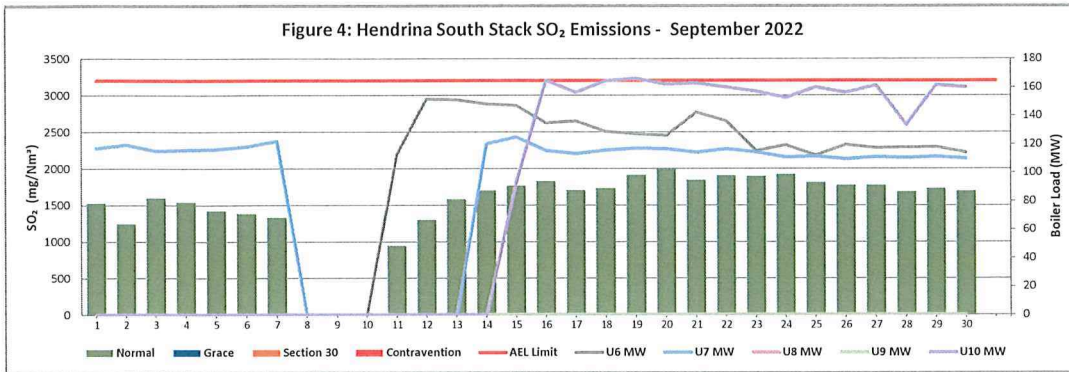


Figure 5: Hendrina North Stack NOx Emissions - September 2022

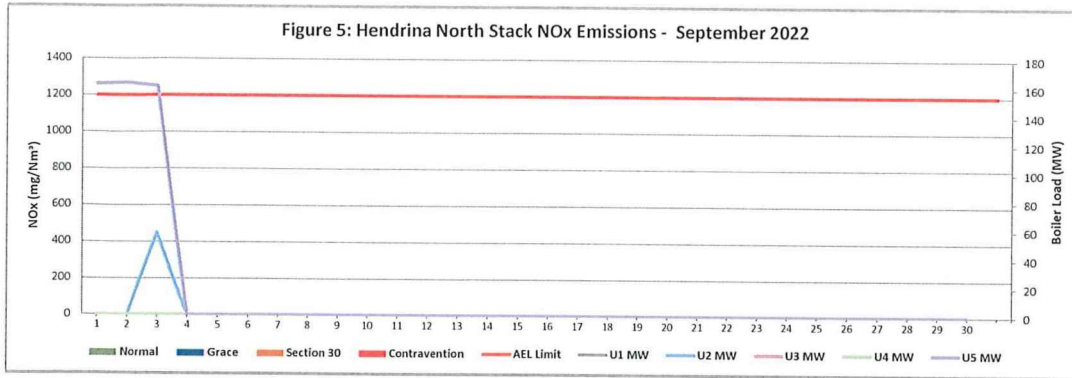
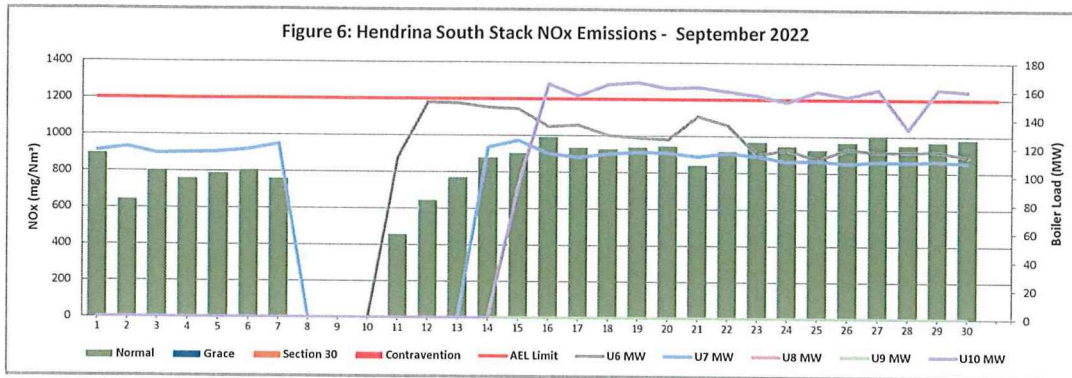


Figure 6: Hendrina South Stack NOx Emissions - September 2022



7 SHUT DOWN AND LIGHT UP INFORMATION

Table 7.1 PM Start-up information for the month of September-2022

North Stack	Event 1		Event 2	
Unit No.	Unit 5		Unit 5	
Breaker Open (BO)	<i>BO previously</i>	<i>BO previously</i>	<i>7:45 pm</i>	<i>2022/09/03</i>
Draught Group (DG) Shut Down (SD)	<i>n/a</i>	<i>n/a</i>	<i>3:05 am</i>	<i>2022/09/05</i>
BO to DG SD (duration)	<i>n/a</i>	DD:HH:MM	<i>01:07:20</i>	DD:HH:MM
Fires in time				
Synch. to Grid (or BC)				
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)				
Emissions below limit from BC (duration)		DD:HH:MM		DD:HH:MM

South Stack Unit No.	Event 1		Event 2	
	Unit 6		Unit 7	
Breaker Open (BO)			1:05 pm	2022/09/07
Draught Group (DG) Shut Down (SD)			7:15 pm	2022/09/07
BO to DG SD (duration)		DD:HH:MM	00:06:10	DD:HH:MM
Fires in time	1:10 pm	2022/09/11	2022/09/13	2022/09/13
Synch. to Grid (or BC)	6:10 pm	2022/09/11	1:30 am	2022/09/14
Fires in to BC (duration)	00:05:00	DD:HH:MM	00:05:00	DD:HH:MM
Emissions below limit from BC (end date)	not > limit	not > limit	not > limit	not > limit
Emissions below limit from BC (duration)	n/a	DD:HH:MM	n/a	DD:HH:MM

7.2: Point Source emissions released during start-up (fires-in) and Shut-down (SD) for the month of September-2022 in mg/Nm³

8 EMERGENCY GENERATION

There was no emergency generation reported.

9 COMPLAINTS REGISTER

Table 9 Complaints for the month of September 2022

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
Comment there were no air quality related complaints received for September 2022					

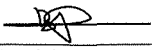
10 S30 INCIDENT OR LEGAL CONTRAVENTION REGISTER

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	Date S30 initial notification sent	Date S30 investigation report sent	Date DEA Acknowledgment	Date DEA Acceptable	Comments / Reference No
South Stack Unit 7	05/09/2022	07/09/2022	Technical Plant Issue & Unit Trip	Emptying dust hoppers, replacing Fabric Filter bags	08/09/2022	Draft to be sent on or before 4 November 2022	pending	pending	

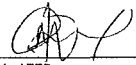
11 General

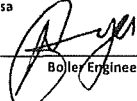
The Station exceeded PM emissions for North on grace period and exceeded also on South Stack for 3 days and section 30 was reported. The investigation report is yet to be finalised and it shall be communicated. The station shall first send the draft report on or before 04 November 2022.

 26/10/2022
 Compiled Environmental Officer Date

B Madipe
 02 NOVEMBER 2022
 Authorised by GM Date
 A Van Greuning

Compiled by Boiler Engineering Department
 For Nkangala District Municipality
 Copies Eskom Environmental Management
 Group Technology Engineering
 Hendrina Power Station

 26/10/2022
 Boiler/ FFP Date
 Marco Cossa

 28/10/2022
 Validated by Manager Boiler Engineering Date
 O Ngwenya

FFP SE/ Environmental Officer
 Air Quality Officer
 D Herbst
 B Mccourt
 R Rampiar
 E Patel
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 Operating Manager
 Maintenance Manager
 Unit Production Manager
 Boiler Engineering Manager
 System Engineer Boiler Engineering
 Environmental Officer
 C & I Engineering Manager
 Production Manager
 Environmental Manager
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