

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 Mar-2022
	Coal	Tons	820 000	209 835.0
Fuel Oil	Tons	3 200	1139.89	

Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Mar-2022
	Energy	GWh	1488	330.43
Ash	Tons	290 000	60 915	
RE PM	kg/MWh	not specified	0.106	

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristics	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.6 to < 1	1.09
Ash Content	%	31 to < 35	29.03

3 EMISSION LIMITS (mg/Nm³)

Associated Unit/Stack	PM	SOx	NOx
North	75	3200	1200
South	75	3200	1200

4 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Mar-2022
Unit 1	Fabric Filter Plant (FFP)	Unit Off-line
Unit 2	Fabric Filter Plant (FFP)	99.984%
Unit 3	Fabric Filter Plant (FFP)	Unit Off-line
Unit 4	Fabric Filter Plant (FFP)	Unit Off-line
Unit 5	Fabric Filter Plant (FFP)	99.987%
Unit 6	Fabric Filter Plant (FFP)	99.994%
Unit 7	Fabric Filter Plant (FFP)	99.990%
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	CO ₂
North	99.6	98.3	98.1	98.8	96.6
South	90.5	100.0	100.0	99.7	100.0

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

6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of March-2022

Associated Unit/Stack	PM (tons)	SOx (tons)	NOx (tons)	CO ₂ (tons)
North	2.7	1 306.4	439.0	143 760.3
South	32.3	2 181.2	1 071.2	300 237.2
SUM	35.0	3 487.6	1 510.2	443 997.4

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
North	22	0	0	0	0	4.5
South	31	0	0	0	0	27.8
SUM	53	0	0	0	0	

Comments

Normal days for PM determined according to section 7.3.5 of AEL (PM not reportable when units are off or during start-ups/shutdowns)

North Stack non-normal days: 9, whereby 6 days units offload and 3 days is regarded as start-up and shutdown operation.

South Stack Boiler Units were running normal for the whole month

South Stack PM monitor failed on the 28th of March and was returned to service on the 5th of April.

The Station used averaged data to compensate for lost data on the South Stack PM monitor between 28 and 31 March.

Table 6.3: Operating days in compliance to SOx AEL Limit - March 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SOx (mg/Nm ³)
North	23	0	0	0	0	1 965.5
South	31	0	0	0	0	1 714.8
SUM	54	0	0	0	0	

Comments Normal days determined by when gaseous continued to be detected by monitor.

North Stack, gaseous emissions were not detected for a period of 8 days

Table 6.4: Operating days in compliance to NOx AEL Limit - March 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm ³)
North	23	0	0	0	0	663.3
South	31	0	0	0	0	838.6
SUM	54	0	0	0	0	

Comments Normal days determined by when gaseous continued to be detected by monitor.

North Stack, gaseous emissions were not detected for a period of 8 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 - March 2022

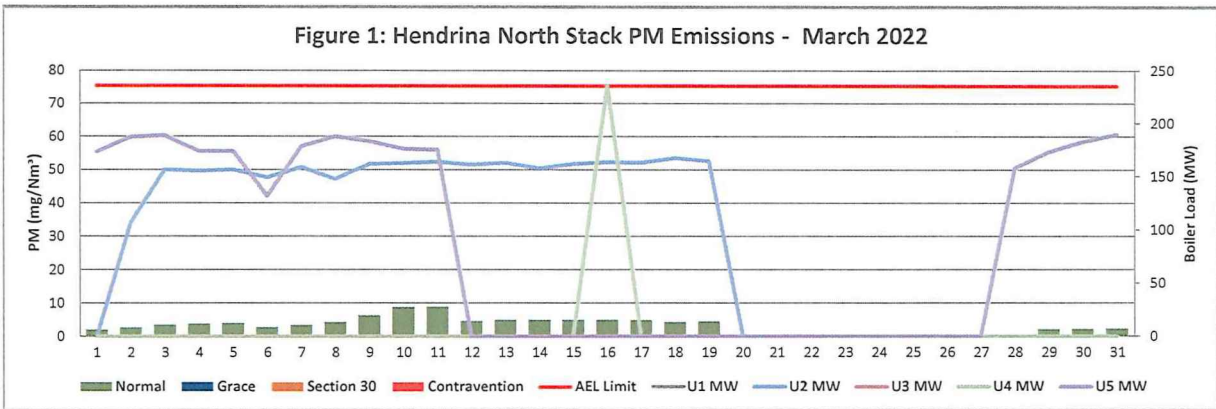


Figure 2: Hendrina South Stack PM Emissions - March 2022

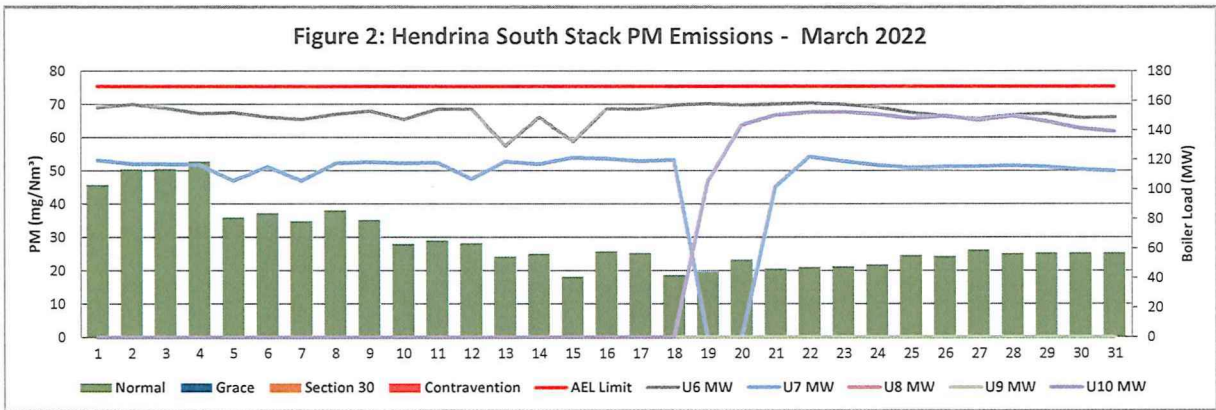


Figure 3: Hendrina North Stack SOx Emissions - March 2022

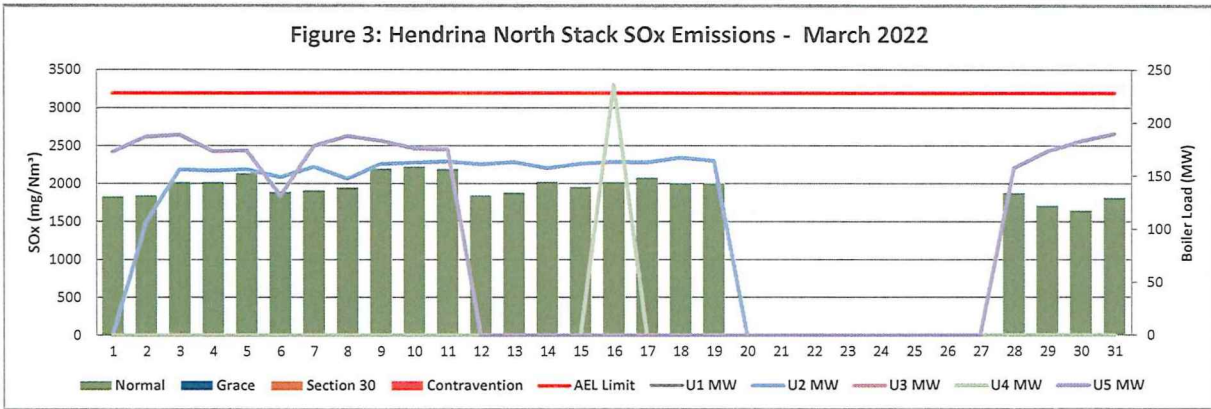


Figure 4: Hendrina South Stack SOx Emissions - March 2022

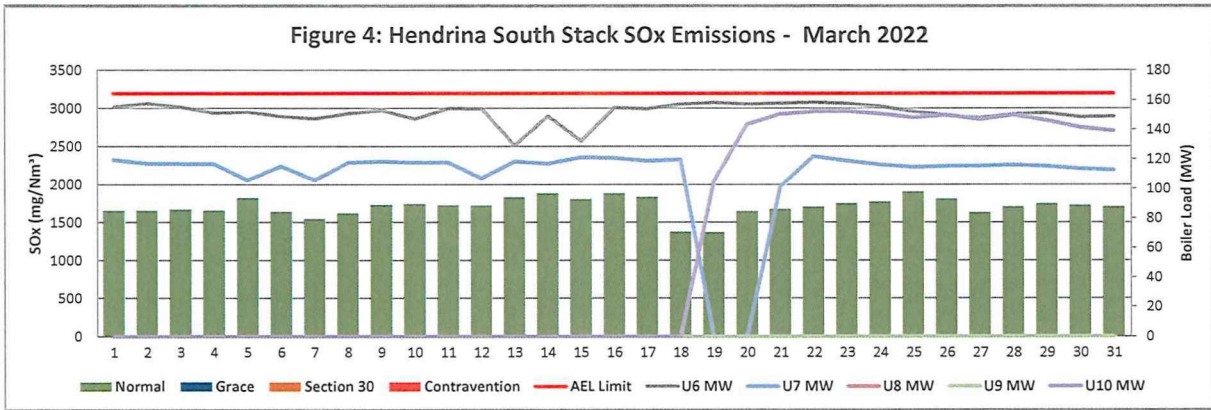


Figure 5: Hendrina North Stack NOx Emissions - March 2022

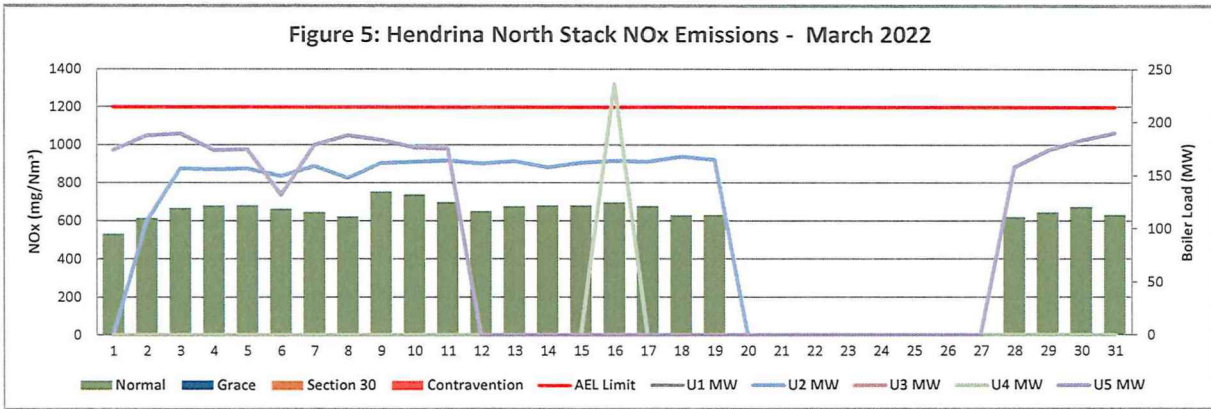
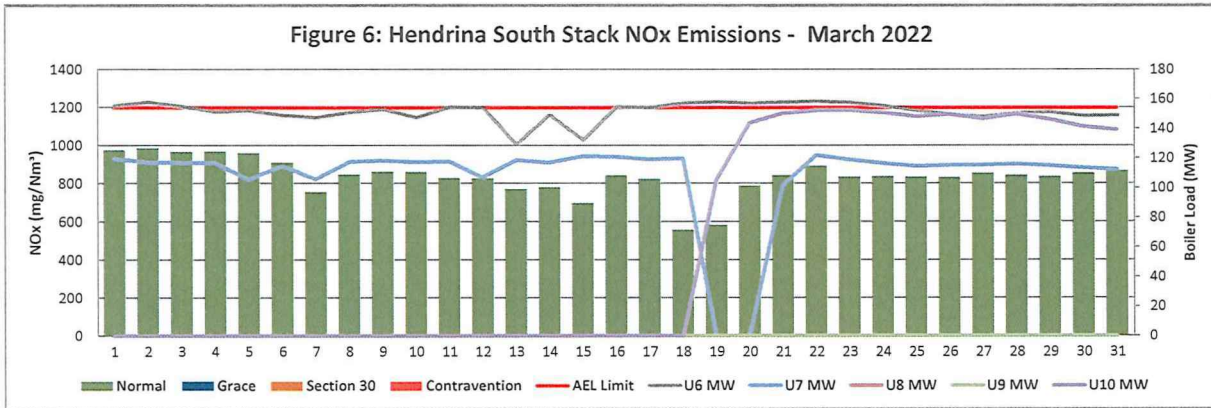


Figure 6: Hendrina South Stack NOx Emissions - March 2022



7 SHUT DOWN AND LIGHT UP INFORMATION

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

North Stack	<i>Event 1</i>		<i>Event 2</i>		<i>Event 3</i>	
Unit No.	<i>Unit</i>		<i>Unit 5</i>		<i>Unit 5</i>	
Breaker Open (BO)	BO previously	BO previously	4.45 am	2022/03/06	9.45 pm	2022/03/11
Draught Group (DG) Shut Down (SD)	n/a	n/a	5.05 am	2022/03/06	7.15 am	2022/03/12
BO to DG SD (duration)	n/a	DD:HH:MM	00:00:20	DD:HH:MM	00:09:30	DD:HH:MM
Fires in time	5.30 am	2022/03/02	2022/03/07	2022/03/07	28.00.40	2022/03/28
Synch. to Grid (or BC)	5.30 pm	2022/03/02	9.50 am	2022/03/07	11.40 am	2022/03/28
Fires in to BC (duration)	00:12:00	DD:HH:MM	00:12:00	DD:HH:MM	00:11:00	DD:HH:MM
Emissions below limit from BC (end date)	not > limit	not > limit	not > limit	not > limit	not > limit	not > limit
Emissions below limit from BC (duration)	n/a	DD:HH:MM	n/a	DD:HH:MM	n/a	DD:HH:MM

South Stack	<i>Event 1</i>		<i>Event 2</i>	
Unit No.	<i>Unit 7</i>		<i>Unit 10</i>	
Breaker Open (BO)	1:45 am	2022/03/18	BO previously	BO previously
Draught Group (DG) Shut Down (SD)	2:15 am	2022/03/18	n/a	n/a
BO to DG SD (duration)	00:00:30	DD:HH:MM	n/a	DD:HH:MM
Fires in time	8:50 am	2022/03/21	2022/03/19	2022/03/19
Synch. to Grid (or BC)	2:50 pm	2022/03/21	3:50 pm	2022/03/19
Fires in to BC (duration)	00:06:00	DD:HH:MM	00:06:00	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 March-2022 in mg/Nm³

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8 EMERGENCY GENERATION

There was no emergency generation

9 COMPLAINTS REGISTER

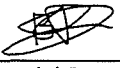
No complaints received

10 S30 INCIDENT OR LEGAL CONTRAVENTION REGISTER

The Station did not experienced NEMA section 30 or Emission Legal Contravention for the month of March 2022

11 General

Notification on the failure of South Stack PM monitor was sent to the municipality

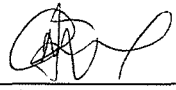
 26/04/2022

 Compiled Environmental Officer Date
 B Madiope

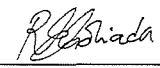
 09/04/2022

 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

 26/04/2022

 Boiler/ FFP Date
 Marco Cossa

 09/05/2022

 Validated by Manager Boiler or Environmental Date
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 Air Quality Officer
 D Herbst
 B Mccourt
 R Rampiar
 E Patel
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 Maintenance Manager
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 Boiler Engineering Manager
 System Engineer Boiler Engineering
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