

HENDRINA POWER STATION MONTHLY EMISSIONS REPORT

Atmospheric Emission License 17/4/AEL/MP313/11/16



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health

Department of Health
REPUBLIC OF SOUTH AFRICA



1 RAW MATERIALS AND PRODUCTS

Raw Materials and Products	Raw Material Type	Units	Max. Permitted Consumption Rate	Consumption Rate May-2021
	Coal	Tons	820 000	381 860.0
Fuel Oil	Tons	3 200	496.1	

Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate May-2021
	Energy	GWh	1488	576.81
Ash	Tons	290 000	88 821	
RE PM	kg/MWh	not specified	0.187	

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristics	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.6 to < 1	1.04
Ash Content	%	31 to < 35	23.26

3 EMISSION LIMITS (mg/Nm³)

Associated Unit/Stack	PM	SOx	NOx
North	50	3200	1200
South	50	3200	1200

4 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency May-2021
Unit 1	Fabric Filter Plant (FFP)	Unit Off-line
Unit 2	Fabric Filter Plant (FFP)	99.940%
Unit 3	Fabric Filter Plant (FFP)	Unit Off-line
Unit 4	Fabric Filter Plant (FFP)	99.942%
Unit 5	Fabric Filter Plant (FFP)	99.965%
Unit 6	Fabric Filter Plant (FFP)	99.972%
Unit 7	Fabric Filter Plant (FFP)	99.968%
Unit 8	Fabric Filter Plant (FFP)	Unit Off-line
Unit 9	Fabric Filter Plant (FFP)	Unit Off-line

Unit 10	<i>Fabric Filter Plant (FFP)</i>	<i>100.000%</i>
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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	<i>100.0</i>	<i>79.2</i>	<i>100.0</i>	<i>98.1</i>	<i>98.5</i>
South	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>

6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of May-2021

Associated Unit/Stack	PM (tons)	SO _x (tons)	NO _x (tons)	CO ₂ (tons)
North	18.7	1 176.9	659.9	181 148.6
South	89.3	4 656.1	2 260.0	382 472.7
SUM	108.0	5 833.0	2 919.9	563 621.3

Table 6.2: Operating days in compliance to PM AEL Limit - May 2021

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
North	31	0	0	0	0	15.9
South	31	0	0	0	0	34.8
SUM	62	0	0	0	0	

Table 6.3: Operating days in compliance to SOx AEL Limit - May 2021

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SOx (mg/Nm ³)
North	31	0	0	0	0	1 014.5
South	31	0	0	0	0	1 752.3
SUM	62	0	0	0	0	

Table 6.4: Operating days in compliance to NOx AEL Limit - May 2021

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm ³)
North	31	0	0	0	0	568.4
South	31	0	0	0	0	850.3
SUM	62	0	0	0	0	

Table 6.5: Legend Description


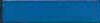


Condition	Colour	Description
Normal		Emissions below Emission Limit Value (ELV)
Grace		Emissions above the ELV during grace period
Section 30		Emissions above ELV during a NEMA S30 incident
Contravention		Emissions above ELV but outside grace or S30 incident conditions

Figure 1: Hendrina North Stack PM Emissions - May 2021

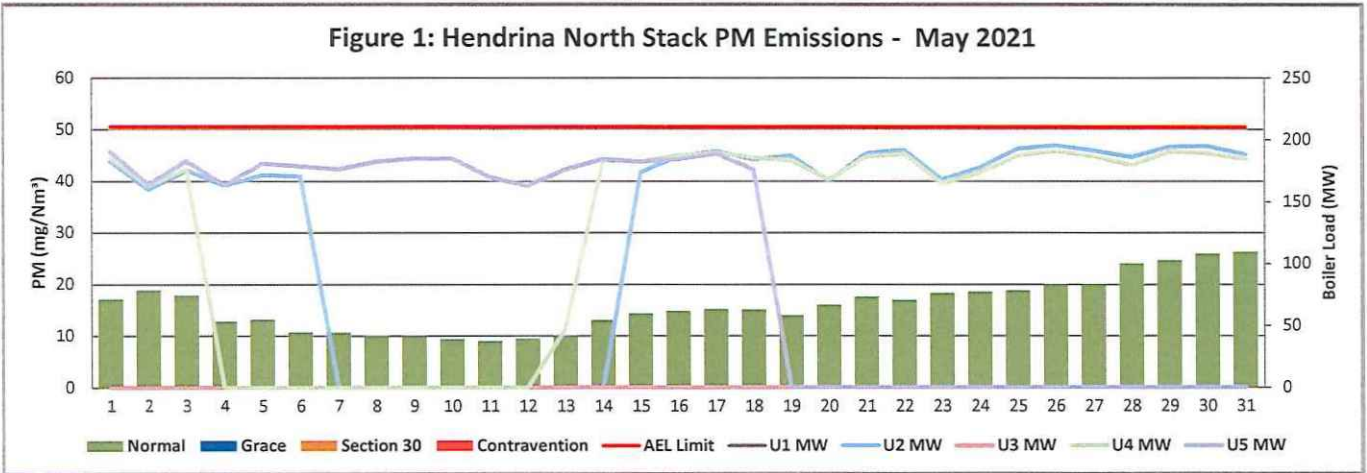


Figure 2: Hendrina South Stack PM Emissions - May 2021

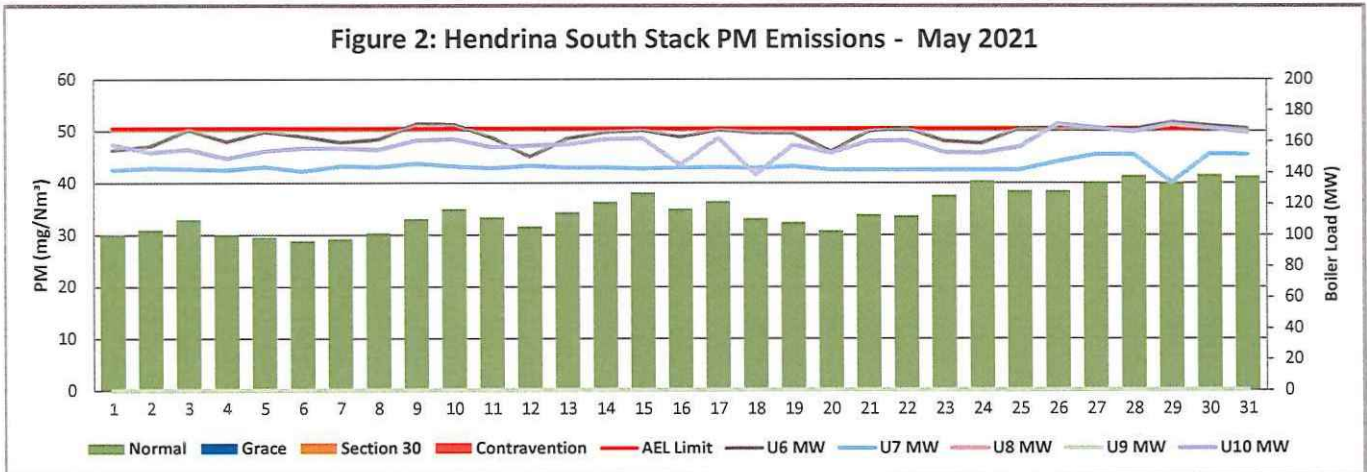


Figure 3: Hendrina North Stack SOx Emissions - May 2021

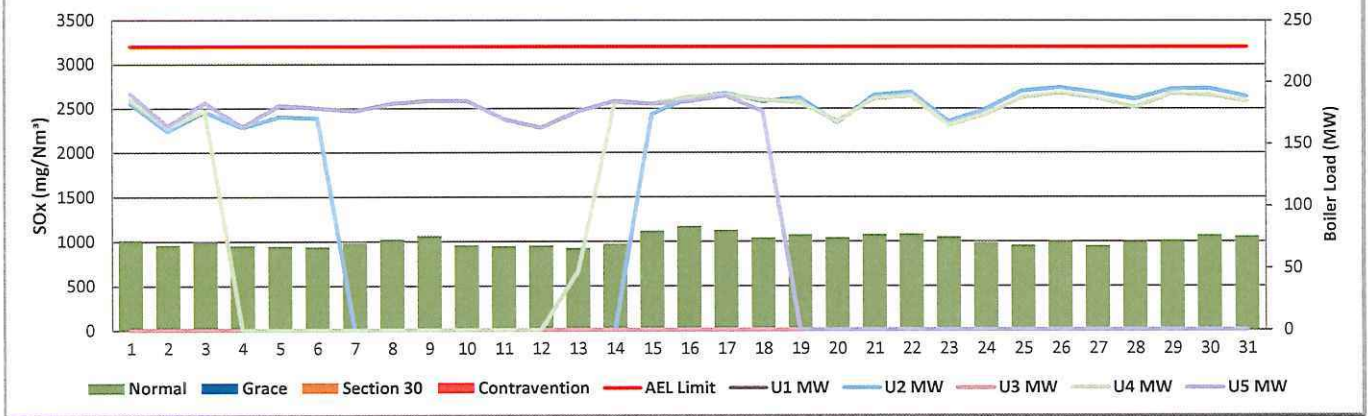


Figure 4: Hendrina South Stack SOx Emissions - May 2021

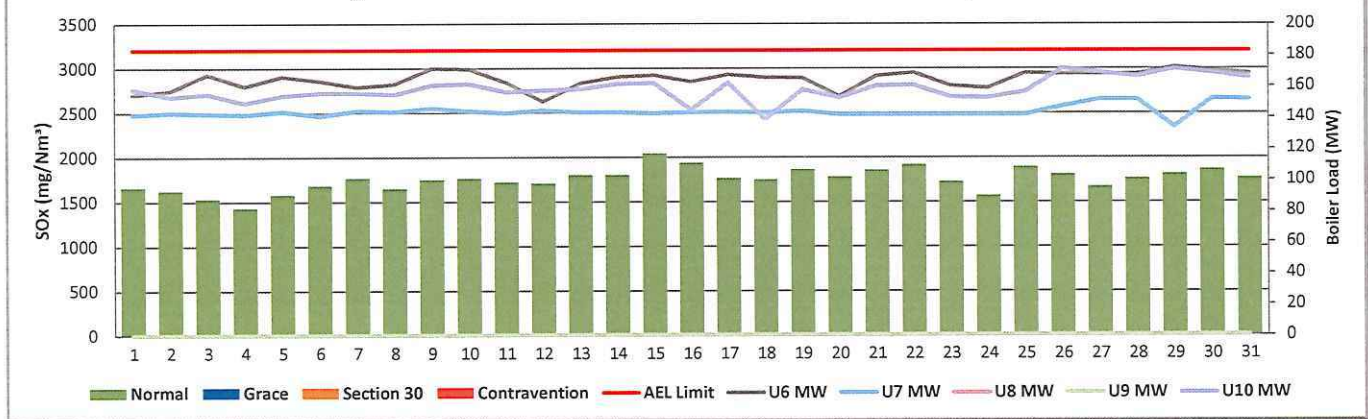


Figure 5: Hendrina North Stack NOx Emissions - May 2021

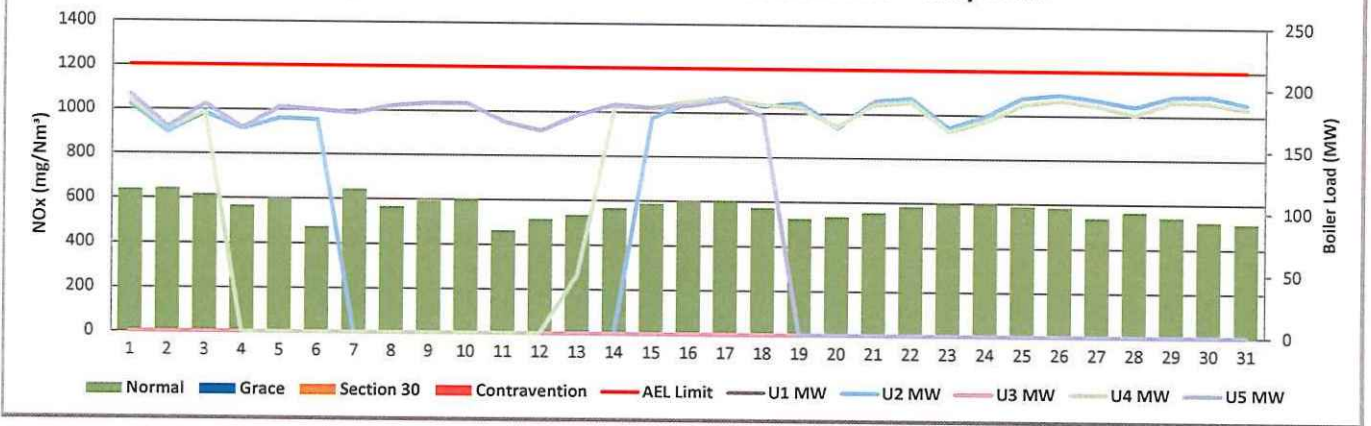
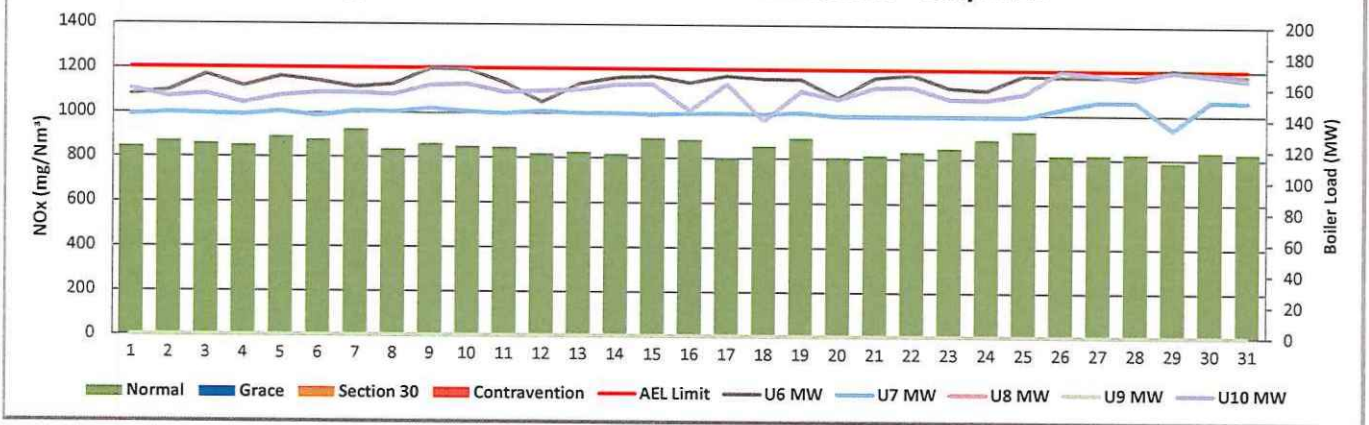


Figure 6: Hendrina South Stack NOx Emissions - May 2021



7 SHUT DOWN AND LIGHT UP INFORMATION

Table 7.1 PM Start-up information for the month of May-2021

North Stack	<i>Event 1</i>		<i>Event 2</i>		<i>Event 3</i>		<i>Event 4</i>	
Unit No.	<i>no event</i>		<i>Unit 2</i>		<i>Unit 4</i>		<i>no event</i>	
Breaker Open (BO)	<i>BO previously</i>	<i>BO previously</i>	<i>12:45 PM</i>	<i>2021/05/06</i>	<i>07:45 PM</i>	<i>2021/05/03</i>	<i>06:25 PM</i>	<i>2021/05/18</i>
Draught Group (DG) Shut Down (SD)	<i>n/a</i>	<i>n/a</i>	<i>10:15 PM</i>	<i>2021/05/06</i>	<i>05:15 AM</i>	<i>2021/05/04</i>	<i>06:25 PM</i>	<i>2021/05/18</i>
BO to DG SD (duration)	<i>n/a</i>	DD:HH:MM	<i>00:09:30</i>	DD:HH:MM	<i>00:09:30</i>	DD:HH:MM		DD:HH:MM
Fires in time			<i>2021/05/14</i>	<i>2021/05/14</i>	<i>13:10:10</i>	<i>2021/05/13</i>		
Synch. to Grid (or BC)			<i>01:10 AM</i>	<i>2021/05/15</i>	<i>10:10 PM</i>	<i>2021/05/13</i>		
Fires in to BC (duration)		DD:HH:MM	<i>00:12:00</i>	DD:HH:MM	<i>00:12:00</i>	DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)			<i>not > limit</i>	<i>not > limit</i>	<i>not > limit</i>	<i>not > limit</i>		
Emissions below limit from BC (duration)		DD:HH:MM	<i>n/a</i>	DD:HH:MM	<i>n/a</i>	DD:HH:MM		DD:HH:MM

North Stack ...Continued	<i>Event 1</i>		<i>Event 2</i>		<i>Event 3</i>		<i>Event 4</i>	
Unit No.	<i>no event</i>		<i>no event</i>		<i>no event</i>		<i>no event</i>	
Breaker Open (BO)								
Draught Group (DG) Shut Down (SD)								
BO to DG SD (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time								
Synch. to Grid (or BC)								
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM		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		DD:HH:MM		DD:HH:MM

South Stack	<i>Event 1</i>		<i>Event 2</i>		<i>Event 3</i>		<i>Event 4</i>	
Unit No.	<i>no event</i>		<i>no event</i>		<i>no event</i>		<i>no event</i>	
Breaker Open (BO)		<i>#REF!</i>						
Draught Group (DG) Shut Down (SD)		<i>#REF!</i>						
BO to DG SD (duration)	<i>n/a</i>	DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time								
Synch. to Grid (or BC)								
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM		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		DD:HH:MM		DD:HH:MM

South Stack ...Continued	<i>Event 1</i>		<i>Event 2</i>		<i>Event 3</i>		<i>Event 4</i>	
Unit No.	<i>no event</i>		<i>no event</i>		<i>no event</i>		<i>no event</i>	
Breaker Open (BO)								
Draught Group (DG) Shut Down (SD)								
BO to DG SD (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time								
Synch. to Grid (or BC)								
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM		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		DD:HH:MM		DD:HH:MM

7.2: Point Source emissions released during start-up (fires-in) and Shut-down (SD) for the month of May-2021 in mg/Nm³

[Include reference to once off test showing typical emissions rates during fires in and SD]

Remember to add attachments here; see ReportAddendum Tab

Reserved for Addendum XXXX

8 EMERGENCY GENERATION

None

9 COMPLAINTS REGISTER


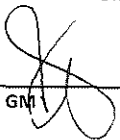
There were no complaints received

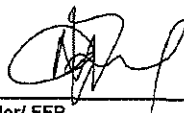

10 S30 INCIDENT OR LEGAL CONTRAVENTION REGISTER

None

11 General

The Station has conducted external compliance audit on emissions in June 2021, and the final report will be communicated once it has been received


 24/06/2021
 Compiled Environmental Officer Date
 B. Madiope

 25/06/2021
 Authorised by: GM Date
 L. Ndube


 24/06/2021
 Boiler/ FFP Date
 Marco Cossa

 25/06/2021
 Validated by Manager: Boiler or Environmenta Date
 R. Nelwamondo J. Ramagoma

Compiled by Boiler Engineering Department
 For Nkangala District Municipality
 Copies Eskom Environmental Management

 Group Technology Engineering

 Hendrina Power Station

FFP SE/ Environmental Officer
 Air Quality Officer

 D Herbst
 B Mccourt

 R Rampiar
 E Patel

 Engineering Manager
 Operating Manager
 Maintenance Manager
 Unit Production Manager
 Boiler Engineering Manager
 System Engineer Boiler Engineering
 Environmental Officer
 C & I Engineering Manager
 Production Manager
 Environmental Manager
 PSM