

**HENDRINA POWER STATION MONTHLY EMISSIONS REPORT**

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


**1 RAW MATERIALS AND PRODUCTS**

Raw Materials and Products	Raw Material Type	Units	Max. Permitted Consumption Rate	Consumption Rate Feb-2020
	Coal	Tons	820 000	179 076.0
	Fuel Oil	Tons	3 200	631.88

Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Feb-2020
	Energy	GWh	1392	276.03
	Ash	Tons	290 000	48 476
	RE PM	kg/MWh	not specified	0.079

**2 ENERGY SOURCE CHARACTERISTICS**

Coal Characteristics	Units	Stipulated Range	Monthly Average Content
CV Content	MJ/kg	16-24	
Sulphur Content	%	0.6 to < 1	1.38
Ash Content	%	31 to < 35	27.07

**3 EMISSION LIMITS (mg/Nm<sup>3</sup>)**

Associated Unit/Stack	PM	SO <sub>x</sub>	NO <sub>x</sub>
North	75	3200	1200
South	75	3200	1200

**4 ABATEMENT TECHNOLOGY (%)**

Associated Unit/Stack	Technology Type	Efficiency Feb-2020
Unit 1	Fabric Filter Plant (FFP)	Unit Off-line
Unit 2	Fabric Filter Plant (FFP)	99.935%
Unit 3	Fabric Filter Plant (FFP)	Unit Off-line
Unit 4	Fabric Filter Plant (FFP)	99.953%
Unit 5	Fabric Filter Plant (FFP)	99.955%
Unit 6	Fabric Filter Plant (FFP)	Unit Off-line
Unit 7	Fabric Filter Plant (FFP)	96.070%
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 <sub>2</sub>	NO	CO <sub>2</sub>	O <sub>2</sub>
North	100.0	99.3	100.0		97.7
South	28.0	25.9	26.4		25.6

#### 6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of February-2020

Associated Unit/Stack	PM (tons)	SO <sub>2</sub> (tons)	NO <sub>2</sub> (tons)	CO <sub>2</sub> (tons)
North	20.6	2 775.4	1 145.3	
South	1.2	301.8	109.9	
SUM	21.8	3 077.1	1 255.1	

Table 6.2: Operating days in compliance to PM AEL Limit - February 2020

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm <sup>3</sup> )
North	30	0	0	0	0	12.7
South	7	0	0	0	0	7.2
SUM	37	0	0	0	0	

Table 6.3: Operating days in compliance to SOx AEL Limit - February 2020

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SOx (mg/Nm <sup>3</sup> )
North	31	0	0	0	0	1 744.2
South	12	0	0	0	0	1 480.2
SUM	43	0	0	0	0	

Table 6.4: Operating days in compliance to NOx AEL Limit - February 2020

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm <sup>3</sup> )
North	31	0	0	0	0	714.8
South	13	0	0	0	0	531.7
SUM	44	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

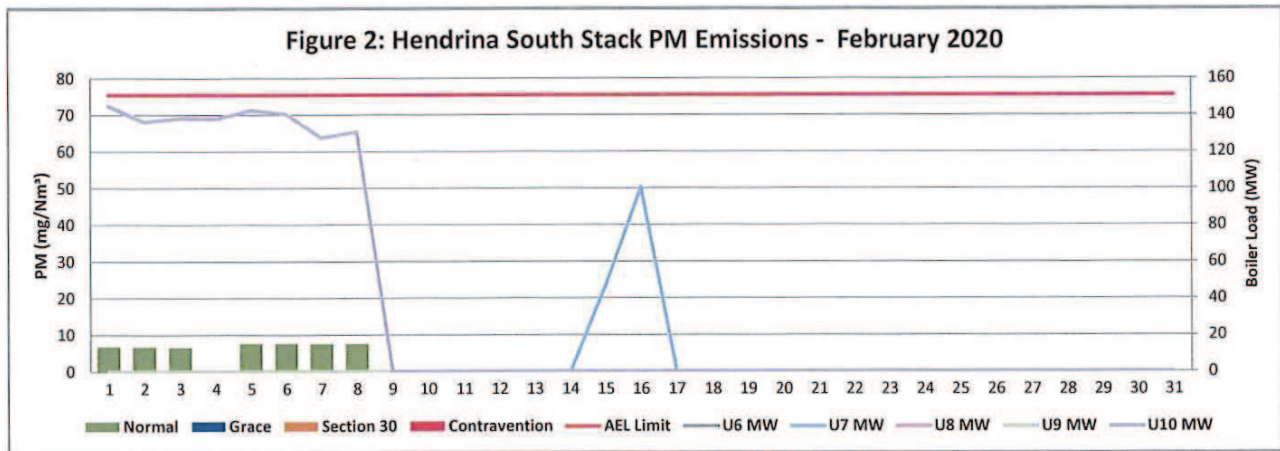
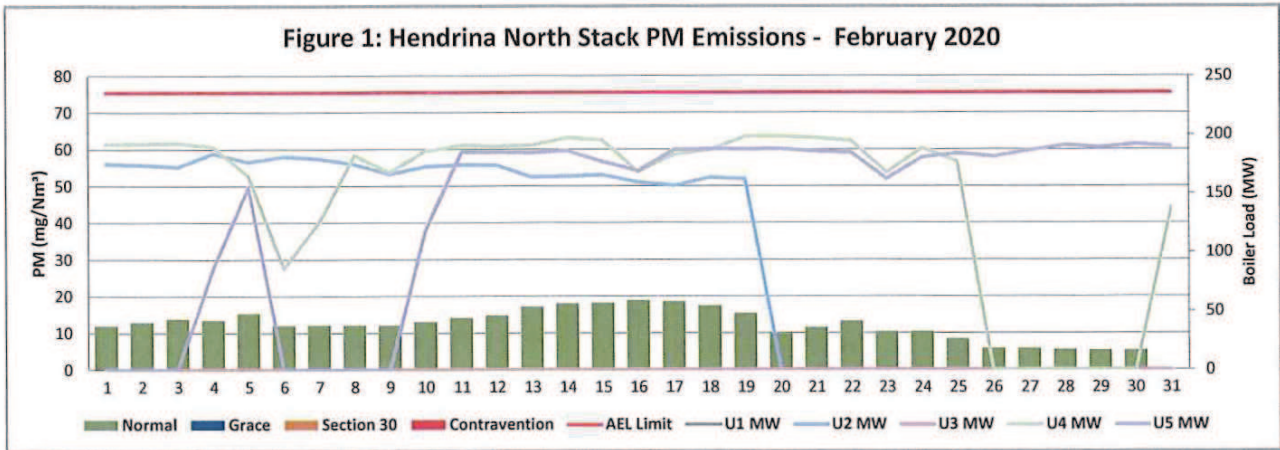


Figure 3: Hendrina North Stack SOx Emissions - February 2020

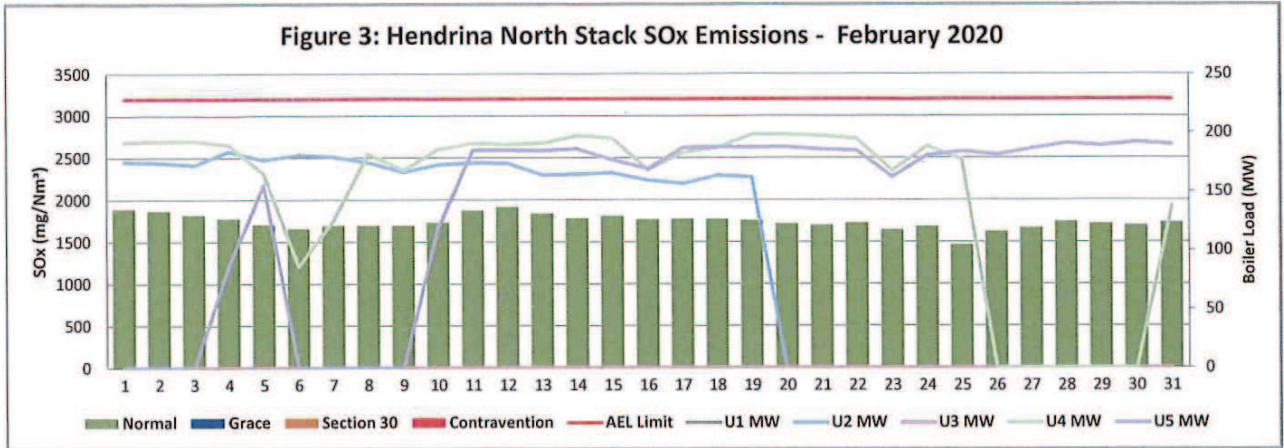


Figure 4: Hendrina South Stack SOx Emissions - February 2020

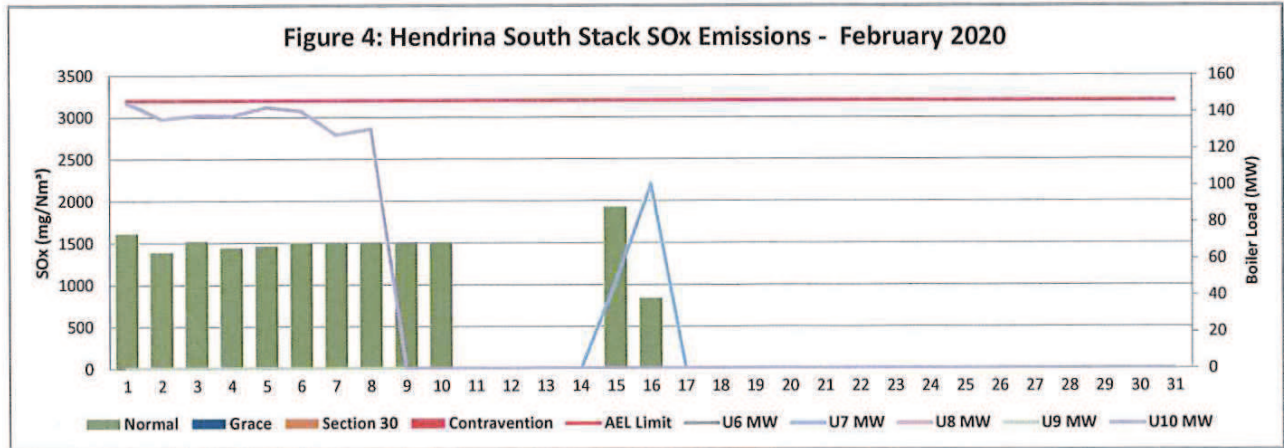


Figure 5: Hendrina North Stack NOx Emissions - February 2020

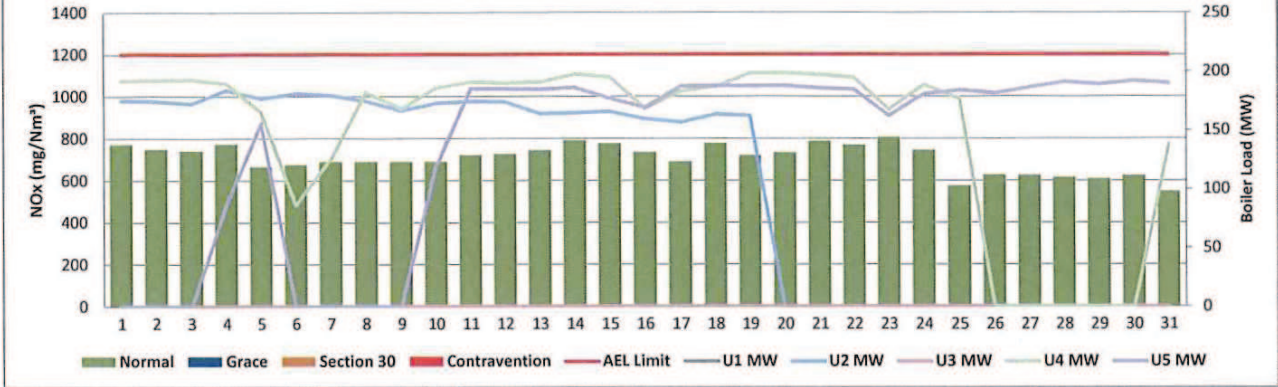
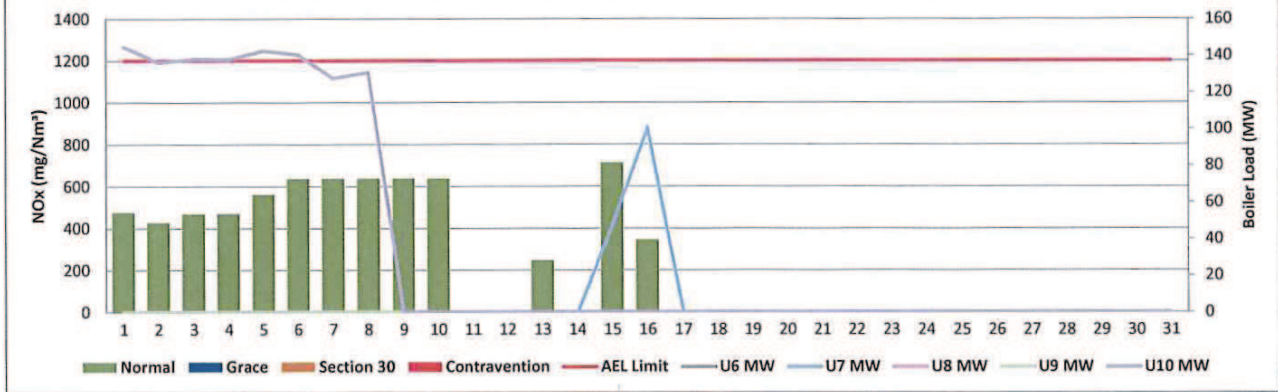


Figure 6: Hendrina South Stack NOx Emissions - February 2020



7 SHUT DOWN AND LIGHT UP INFORMATION

Table 7.1 PM Start-up information for the month of February-2020

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>no event</i>		<i>Unit</i>		<i>no event</i>	
Breaker Open (BO)	<i>06:15 PM</i>	<i>2020/02/19</i>	<i>11:15 AM</i>	<i>2020/02/25</i>	<i>BO previously</i>	<i>BO previously</i>		
Draught Group (DG) Shut Down (SD)	<i>05:25 PM</i>	<i>2020/02/20</i>	<i>01:25 AM</i>	<i>2020/02/26</i>	<i>n/a</i>	<i>n/a</i>		
BO to DG SD (duration)	<i>00:23:10</i>	DD:HH:MM	<i>00:14:10</i>	DD:HH:MM	<i>n/a</i>	DD:HH:MM		DD:HH:MM
Fires in time					<i>10:02:50</i>	<i>2020/02/10</i>		
Synch. to Grid (or BC)					<i>02:50 PM</i>	<i>2020/02/10</i>		
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM	<i>00:12:00</i>	DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)					<i>not &gt; limit</i>	<i>not &gt; limit</i>		
Emissions below limit from BC (duration)		DD:HH:MM		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	Event 1		Event 2		Event 3		Event 4	
Unit No.	no event		no event		no event		no event	
Breaker Open (BO)		#REF!						
Draught Group (DG) Shut Down (SD)		#REF!						
BO to DG SD (duration)	n/a	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	Event 1		Event 2		Event 3		Event 4	
Unit No.	no event		no event		no event		no event	
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 February-2020 in mg/Nm<sup>3</sup>

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

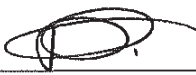





Remember to add attachments here, see ReportAddendum Tab

Reserved for Addendum XXXX

11 General

Unit 6 to 10 was off-load for period. 11 to 28 Febraury Although the boiler was on load again for 15 to 16 Febraury Zero emissions recorded during when all units were off on the South Stack

  
 \_\_\_\_\_ 26/03/2020  
 Compiled: Environmental Officer Date  
 B. Madiope  
  
 \_\_\_\_\_ 26/03/2020  
 Authorised by: GM Date  
 M. Lesolang

  
 \_\_\_\_\_ 26/03/2020  
 Boiler/ FFP M. COZZA Date  
 J. Ramaboea  
  
 \_\_\_\_\_ 26/03/20  
 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 Qaulity Officer  
 D Herbst  
 B Mccourt  
 R Rampiar  
 E Patel  
 Engineering Manager  
 Operatng Manager  
 Maintenance Manager  
 Unit Production Manager  
 Boiler Engineering Manager  
 System Engineer Boiler Engineering  
 Environmental Officer  
 C & I Engineering Manager  
 Production Manager  
 Environmental Manager  
 PSM