



Generation

Gert Sibande District Municipality  
Corner of Joubert & Oosthuise Streets  
Ermelo  
2350

**Attention:**  
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AND

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## GROOTVLEI POWER STATION

Atmospheric Emission License GPS/0015/2015/F02

  
\_\_\_\_\_  
BOILER ENGINEERING MANAGER

2023/08/08  
\_\_\_\_\_  
DATE

  
\_\_\_\_\_  
ENGINEERING MANAGER

2023/08/08  
\_\_\_\_\_  
DATE

  
\_\_\_\_\_  
ENVIRONMENTAL MANAGER

2023/08/08  
\_\_\_\_\_  
DATE

**GROOTVLEI POWER STATION MONTHLY EMISSIONS REPORT**

Atmospheric Emission License GPS/0015/2015/F02


**1 RAW MATERIALS AND PRODUCTS**

Raw Materials and Products	Raw Material Type	Units	Maximum Permitted Consumption Rate	Consumption Rate Jul-2023
	Coal	Tons	650 000	75 839.5
	Fuel Oil	Tons	20 000	1438.4
Production Rates	Product / By-Product Name	Units	Maximum Production Capacity Permitted	Indicative Production Rate Jul-2023
	Energy	GWh	833.28	113.97
	Ash	Tons	175 000	20 105
	RE PM	kg/MWh	not specified	0.03

Note: Maximum energy rate is as per the maximum capacity stated in the AEL: [1 120 MW] x 24 hrs x days in Month/1000 to convert to GWh

## 2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
CV Content	MJ/kg	18-24	20.01
Sulphur Content	%	0.6 to < 1.2	0.67
Ash Content	%	27 to < 32	26.51

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

Associated Unit/Stack	PM	SO <sub>2</sub>	NO
North	100	3500	1100
South	50	3500	1100

## 4 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency
Unit 1	Fabric Filter Plant (FFP)	Unit Off-line
Unit 2	Fabric Filter Plant (FFP)	100.000%
Unit 3	Fabric Filter Plant (FFP)	100.000%
Unit 4	Fabric Filter Plant (FFP)	Unit Off-line
Unit 5	Fabric Filter Plant (FFP)	Unit Off-line
Unit 6	Fabric Filter Plant (FFP)	Unit Off-line

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	O <sub>2</sub>
North	100.0	85.2	81.3	69.4
South				

Note: NO<sub>x</sub> emissions is measured as NO in PPM. Final NO<sub>x</sub> value is expressed as total NO<sub>2</sub>

**6 EMISSION PERFORMANCE**

Table 6.1: Monthly tonnages for the month of July-2023

Associated Unit/Stack	PM (tons)	SO <sub>2</sub> (tons)	NO <sub>x</sub> (tons)
Unit 1	0.00	0.0	0.0
Unit 2	1.49	209.7	103.5
Unit 3	2.19	1 321.1	1 038.2
Unit 4	0.00	0.0	0.0
Unit 5	0.00	0.0	0.0
Unit 6	0.00	0.0	0.0
<b>SUM</b>	<b>3.68</b>	<b>1 530.8</b>	<b>1 141.6</b>

Table 6.2: Operating days in compliance to PM AEL Limit - July 2023

Associated Unit/Stack	Normal	Grace	Section 30	Total Exceedance	Average PM (mg/Nm <sup>3</sup> )
North	28	0	0	0	8.3
South	0	0	0	0	
<b>SUM</b>	<b>28</b>	<b>0</b>	<b>0</b>	<b>0</b>	

Table 6.3: Operating days in compliance to SO<sub>2</sub> AEL Limit - July 2023

Associated Unit/Stack	Normal	Grace	Section 30	Total Exceedance	Average SO <sub>2</sub> (mg/Nm <sup>3</sup> )
North	24	0	0	0	2 903.2
South	0	0	0	0	
<b>SUM</b>	<b>24</b>	<b>0</b>	<b>0</b>	<b>0</b>	

Table 6.4: Operating days in compliance to NO<sub>x</sub> AEL Limit - July 2023

Associated Unit/Stack	Normal	Grace	Section 30	Total Exceedance	Average NO <sub>x</sub> (mg/Nm <sup>3</sup> )
North	23	0	0	0	2 160.5
South	0	0	0	0	
<b>SUM</b>	<b>23</b>	<b>0</b>	<b>0</b>	<b>0</b>	

Note: NO<sub>x</sub> emissions is measured as NO in PPM. Final NO<sub>x</sub> value is expressed as total NO<sub>2</sub>

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		

Figure 1: Grootvlei North St. PM Emissions - July 2023

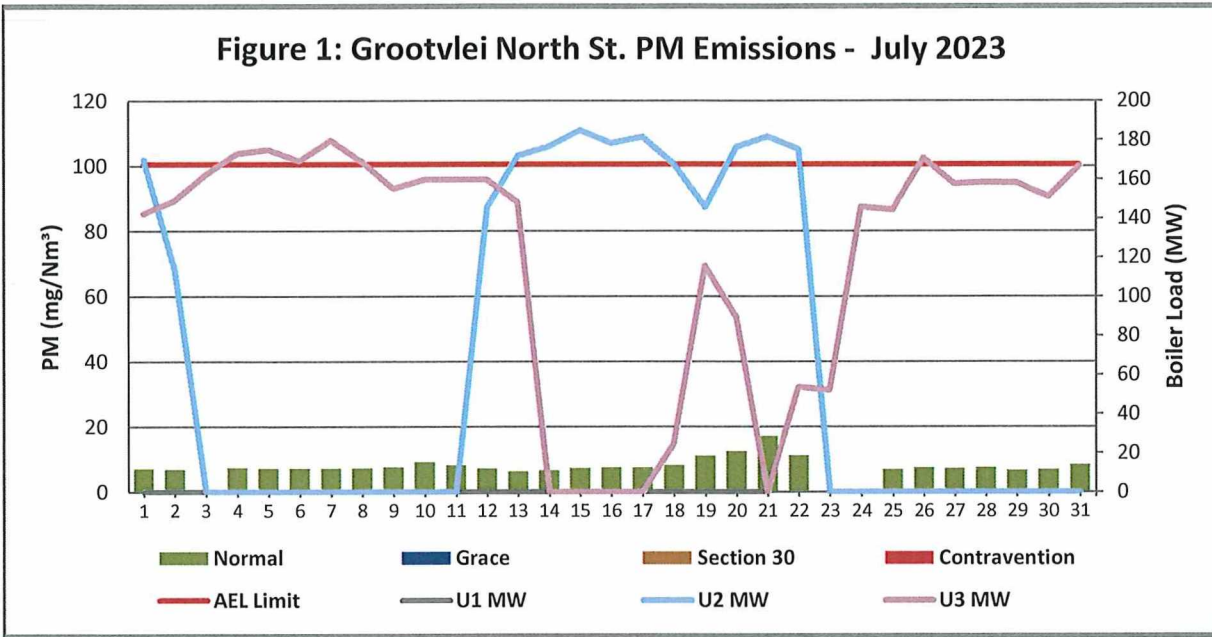


Figure 2: Grootvlei South St. PM Emissions - July 2023

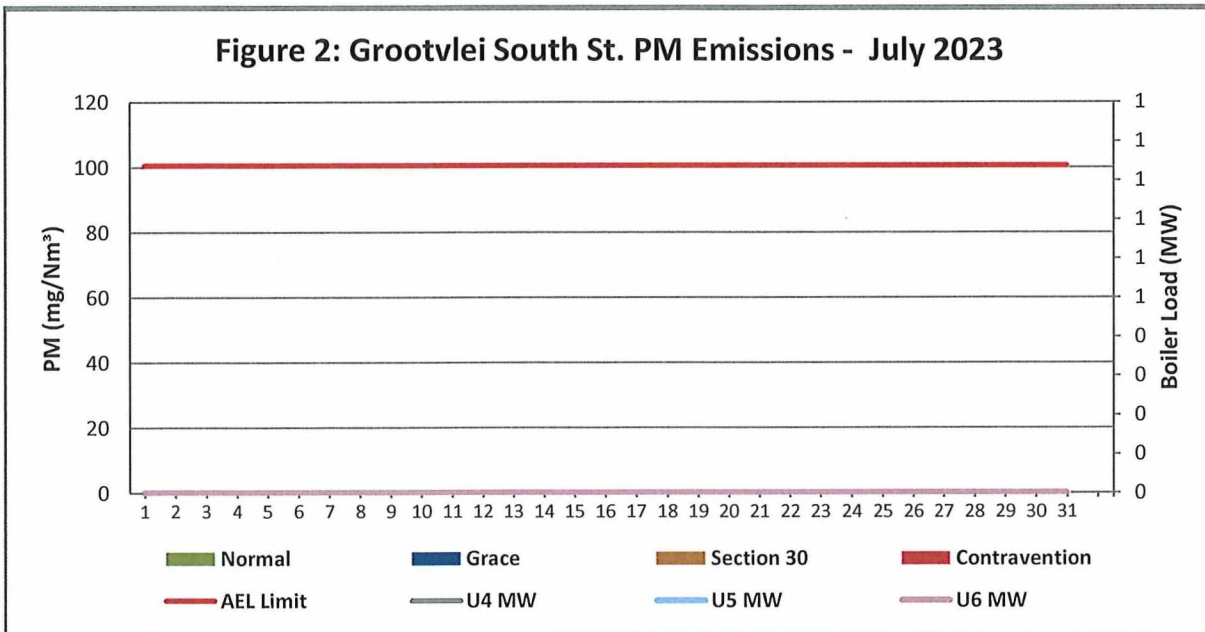


Figure 3: Grootvlei North St. SO<sub>2</sub> Emissions - July 2023

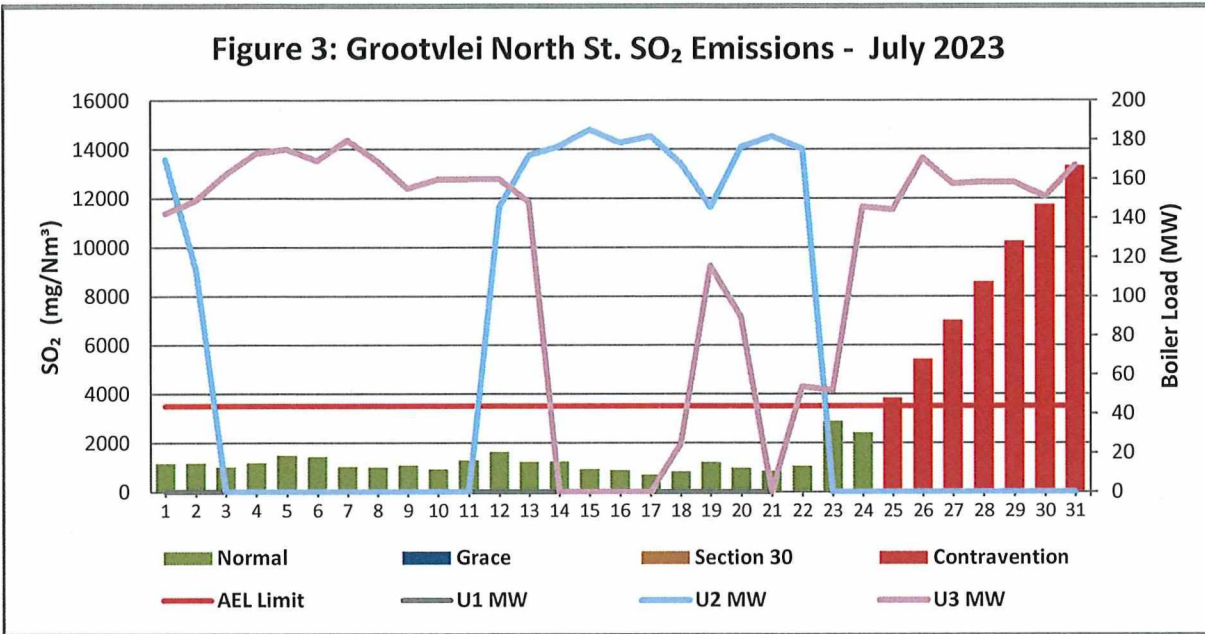


Figure 4: Grootvlei South St. SO<sub>2</sub> Emissions - July 2023

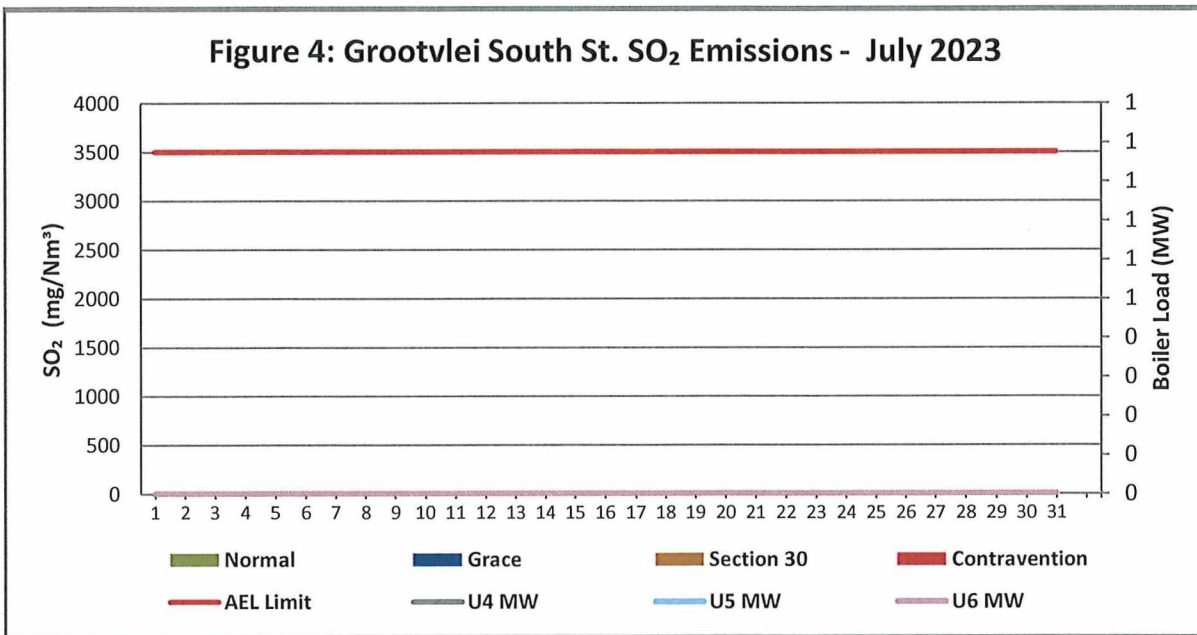


Figure 5: Grootvlei North St. NOx Emissions - July 2023

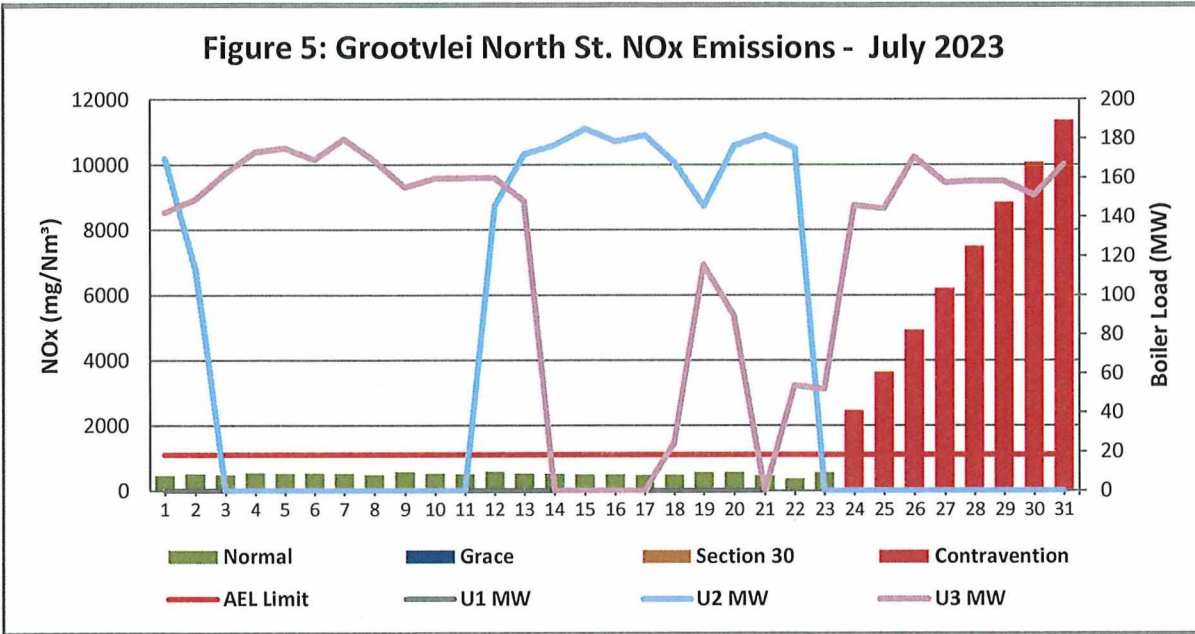
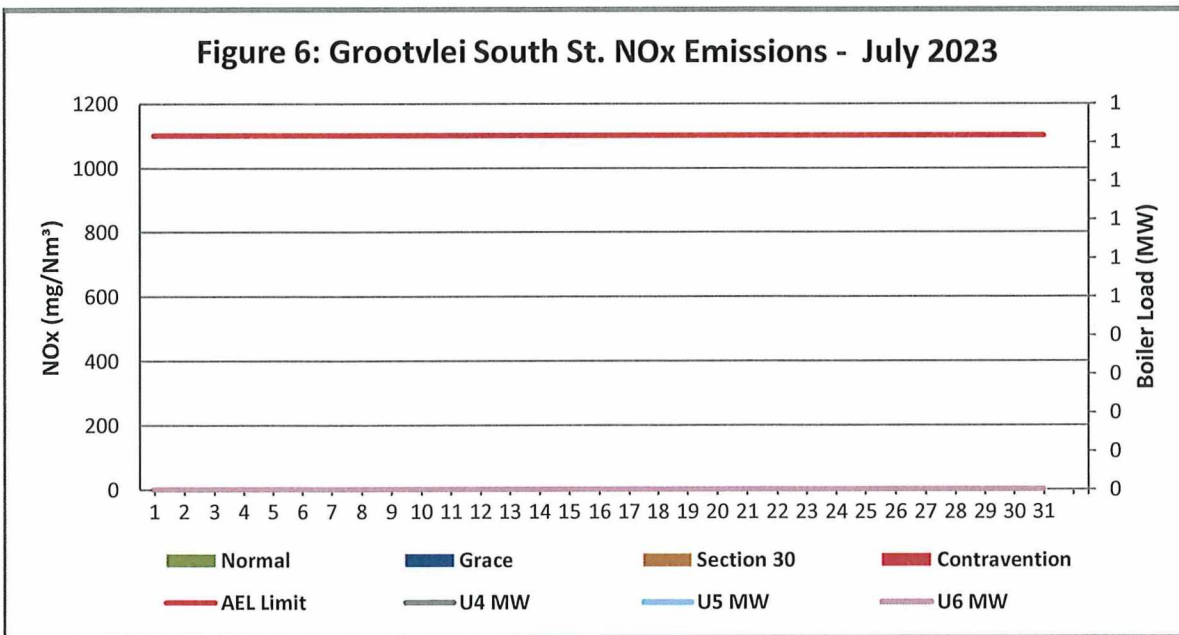


Figure 6: Grootvlei South St. NOx Emissions - July 2023



**7 SHUT DOWN AND LIGHT UP INFORMATION**

Table 7.1. PM Start-up information for the month of July-2023

North Stack	<i>Event 1</i>		<i>Event 2</i>		<i>Event 3</i>		<i>Event 4</i>	
Unit No.	<i>Unit 2</i>		<i>Unit 2</i>		<i>Unit 2</i>		<i>Unit 3</i>	
Breaker Open (BO)	<i>3:00 am</i>	<i>2023/07/01</i>	<i>5:20 pm</i>	<i>2023/07/18</i>	<i>8:20 am</i>	<i>2023/07/22</i>	<i>11:40 am</i>	<i>2023/07/02</i>
Draught Group (DG) Shut Down (SD)	<i>2:45 pm</i>	<i>2023/07/01</i>	<i>5:20 pm</i>	<i>2023/07/18</i>	<i>8:35 am</i>	<i>2023/07/22</i>	<i>8:05 pm</i>	<i>2023/07/02</i>
BO to DG SD (duration)	<i>00:11:45</i>	DD:HH:MM		DD:HH:MM	<i>00:00:15</i>	DD:HH:MM	<i>00:08:25</i>	DD:HH:MM
Fires in time	<i>7:10 pm</i>	<i>2023/07/10</i>	<i>5:50 pm</i>	<i>2023/07/18</i>			<i>2:50 am</i>	<i>2023/07/03</i>
Synch. to Grid (or BC)	<i>4:05 am</i>	<i>2023/07/12</i>	<i>2:50 am</i>	<i>2023/07/19</i>			<i>10:10 am</i>	<i>2023/07/03</i>
Fires in to BC (duration)	<i>01:08:55</i>	DD:HH:MM	<i>00:09:00</i>	DD:HH:MM		DD:HH:MM	<i>00:07:20</i>	DD:HH:MM
Emissions below limit from BC (end date)	<i>not &gt; limit</i>	<i>not &gt; limit</i>	<i>not &gt; limit</i>	<i>not &gt; limit</i>			<i>not &gt; limit</i>	<i>not &gt; limit</i>
Emissions below limit from BC (duration)	<i>n/a</i>	DD:HH:MM	<i>n/a</i>	DD:HH:MM		DD:HH:MM	<i>n/a</i>	DD:HH:MM

North Stack ...Cont.	<i>Event 5</i>		<i>Event 6</i>		<i>Event 7</i>		<i>Event 8</i>	
Unit No.	<i>Unit 3</i>		<i>Unit 3</i>		<i>no event</i>		<i>no event</i>	
Breaker Open (BO)	<i>1:05 am</i>	<i>2023/07/13</i>	<i>10:10 pm</i>	<i>2023/07/20</i>				
Draught Group (DG) Shut Down (SD)	<i>8:35 am</i>	<i>2023/07/13</i>	<i>10:35 pm</i>	<i>2023/07/20</i>				
BO to DG SD (duration)	<i>00:07:30</i>	DD:HH:MM	<i>00:00:25</i>	DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time	<i>2:55 am</i>	<i>2023/07/18</i>	<i>7:40 pm</i>	<i>2023/07/23</i>				
Synch. to Grid (or BC)	<i>11:20 pm</i>	<i>2023/07/18</i>	<i>4:55 am</i>	<i>2023/07/24</i>				
Fires in to BC (duration)	<i>00:20:25</i>	DD:HH:MM	<i>00:09:15</i>	DD:HH:MM		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)	<i>not &gt; limit</i>	<i>not &gt; limit</i>	<i>not &gt; limit</i>	<i>not &gt; limit</i>				
Emissions below limit from BC (duration)	<i>n/a</i>	DD:HH:MM	<i>n/a</i>	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)								
Draught Group (DG) Shut Down (SD)								
BO to DG SD (duration)		DD:HH:M M		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time								
Synch. to Grid (or BC)								
Fires in to BC (duration)		DD:HH:M M		DD:HH:MM		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)								
Emissions below limit from BC (duration)		DD:HH:M M		DD:HH:MM		DD:HH:MM		DD:HH:MM

South Stack ...Cont.	<i>Event 5</i>		<i>Event 6</i>		<i>Event 7</i>		<i>Event 8</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:M M		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time								
Synch. to Grid (or BC)								
Fires in to BC (duration)		DD:HH:M M		DD:HH:MM		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)								
Emissions below limit from BC (duration)		DD:HH:M M		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 July-2023 in mg/Nm<sup>3</sup>

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



### ADDENDUM TO MONTHLY EMISSIONS REPORT

#### 8 EMERGENCY GENERATION

Emergency Generation *[This is only required for stations that are requested to report on this information]*

Table 8. Emergency Generation per unit for the month of July-2023

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Emergency Generation hours declared by national Control						
Emergency Hours declared including hours after stand down						
Hours over the Limit during Emergency Generation						

#### 9 COMPLAINTS REGISTER

Table 9. Complaints for the month of July-2023

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
<i>(Insert name of affected person/source)</i>	<i>(Insert root cause for incident)</i>	<i>(Insert emissions associated with incident)</i>	<i>(Insert dispersion model information where applicable)</i>	<i>(Insert mitigation measures taken)</i>	<i>(Insert date of implementation of mitigation method)</i>

#### 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.

**11 General**

South Stack off. The parallel test are currently overdue however a PR 1075407246 is in place to conduct the testwork. The values of the gaseous NOx and SOx are unreliable from the 22nd of July 2023 due to a fire incident in Unit 2 that affected the gaseous monitor on the North Stack. The gaseous monitor has been reading Nan from 22nd July til to date as per our formal communication (Ref: GVL/0534) hence explaining the low readings in reliability. A PR 1075415443 is in place for the repair of the gaseous monitor.

  
 08/08/2023  
 Environmental Department Date

  
 08/08/2023  
 Boiler Engineering Date

  
 11/08/2023  
 General Manager Date

Compiled by: Boiler Engineering Department

FFP System Engineer

For: Department of Environmental Affairs and Touri: Chief Air Pollution Control Officer

Copies: Eskom Environmental Management

D Herbst  
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Group Technology Engineering

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Grootvlie Power Station:

Engineering Manager  
 Operating Manager  
 Maintenance Manager  
 Unit Production Manager  
 Boiler Engineering Manager  
 System Engineer  
 Environmental Officer  
 Performance and Test  
 Production Manager