



Generation

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

**Attention:**

Mr D Hlanyane

AND

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**GROOTVLEI POWER STATION**

Atmospheric Emission License GPS/0015/2015/F02

pp Maleka Mathebula 

**BOILER ENGINEERING MANAGER**

11/01/2023

**DATE**



**ENGINEERING MANAGER**

11/01/2023

**DATE**



**ENVIRONMENTAL MANAGER**

11/01/2023

**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 Dec-2022
	Coal	Tons	650 000	124 151.5
	Fuel Oil	Tons	20 000	6398.34
Production Rates	Product / By-Product Name	Units	Maximum Production Capacity Permitted	Production Rate Dec-2022
	Energy	GWh	833.28	208.48
	Ash	Tons	300 000	33 235
	RE PM	kg/MWh	not specified	0.14

## 2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
CV Content	MJ/kg	18-24	20.12
Sulphur Content	%	0.6 to < 1.2	0.83
Ash Content	%	27 to < 32	26.77

## 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)	99.916%
Unit 2	Fabric Filter Plant (FFP)	99.878%
Unit 3	Fabric Filter Plant (FFP)	99.916%
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	99.7	97.5	93.6
South				

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

## 6 EMISSION PERFORMANCE

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

Associated Unit/Stack	PM (tons)	SO <sub>2</sub> (tons)	NO <sub>x</sub> (tons)
Unit 1	9.37	602.7	196.2
Unit 2	15.53	785.3	274.8
Unit 3	5.13	455.8	142.9
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>30.03</b>	<b>1 843.8</b>	<b>613.9</b>

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

Associated Unit/Stack	Normal	Grace	Section 30	Total Exceedance	Average PM (mg/Nm <sup>3</sup> )
North	30	1	0	1	32.0
South	0	0	0	0	
<b>SUM</b>	<b>30</b>	<b>1</b>	<b>0</b>	<b>1</b>	

 Table 6.3: Operating days in compliance to SO<sub>2</sub> AEL Limit - December 2022





Associated Unit/Stack	Normal	Grace	Section 30	Total Exceedance	Average SO <sub>2</sub> (mg/Nm <sup>3</sup> )
North	31	0	0	0	1 819.6
South	0	0	0	0	
<b>SUM</b>	<b>31</b>	<b>0</b>	<b>0</b>	<b>0</b>	

 Table 6.4: Operating days in compliance to NO<sub>x</sub> AEL Limit - December 2022

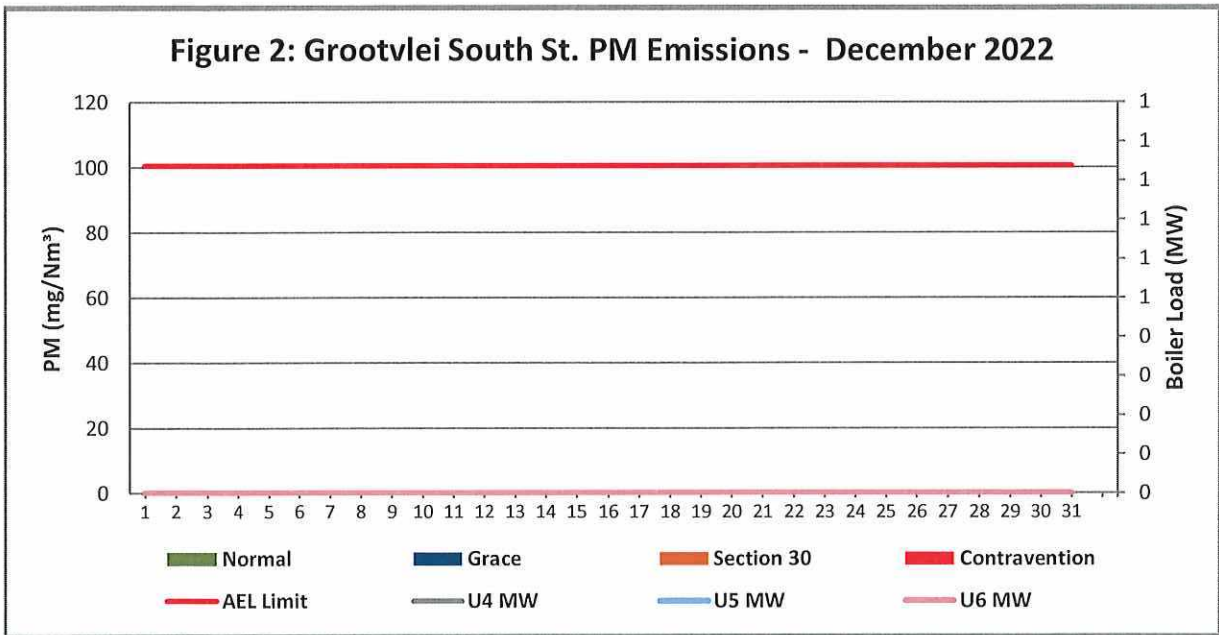
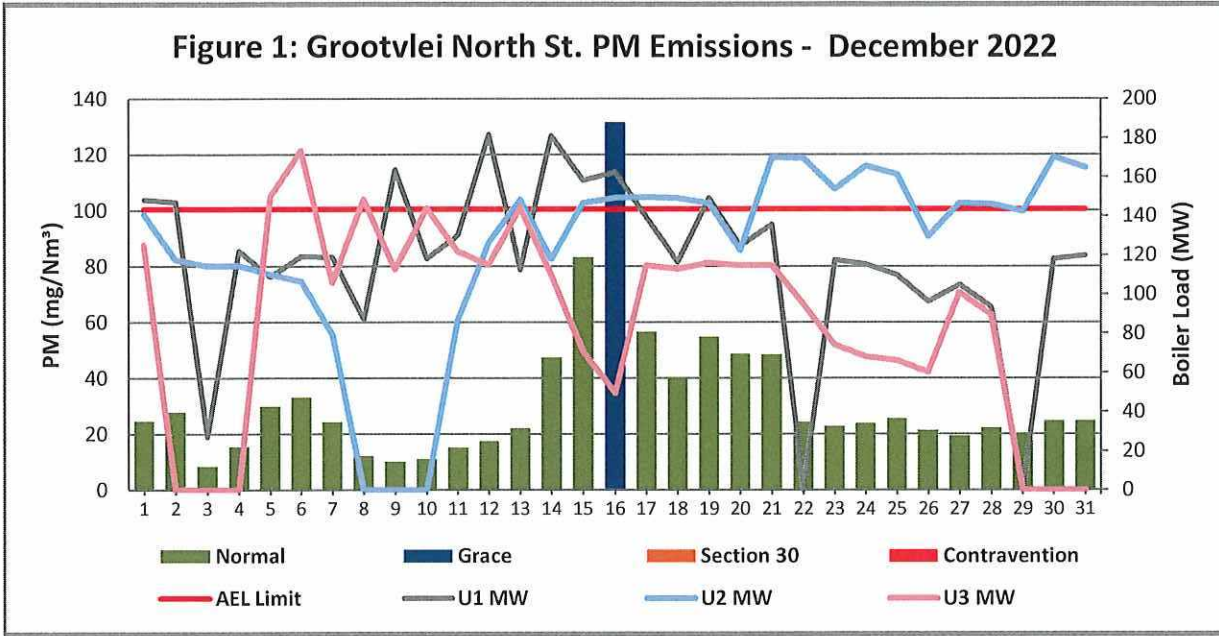
Associated Unit/Stack	Normal	Grace	Section 30	Total Exceedance	Average NO <sub>x</sub> (mg/Nm <sup>3</sup> )
North	31	0	0	0	601.6
South	0	0	0	0	
<b>SUM</b>	<b>31</b>	<b>0</b>	<b>0</b>	<b>0</b>	

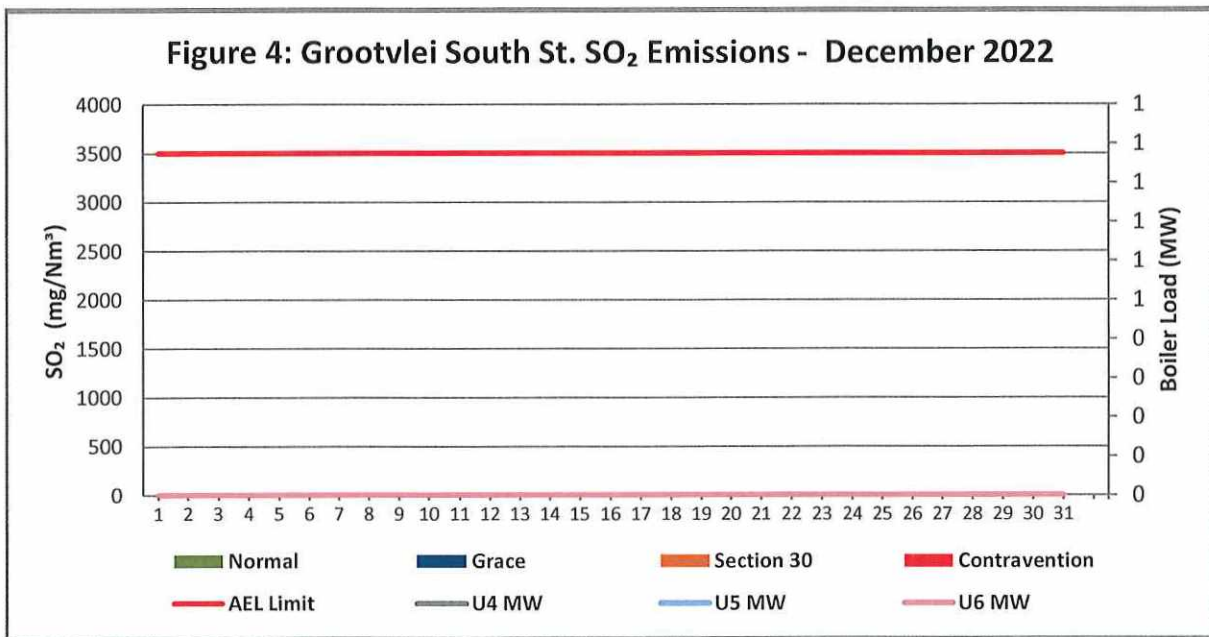
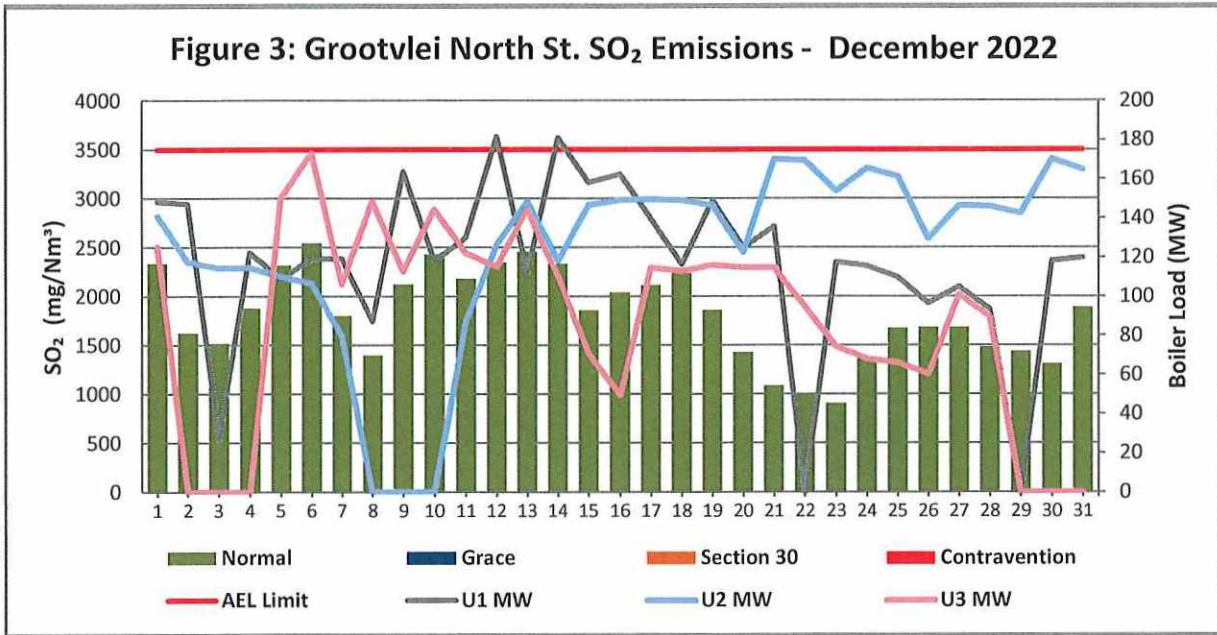
Note: NO<sub>x</sub> emissions is measured as NO in PPM. Final NO<sub>x</sub> value is expressed as total NO<sub>2</sub>

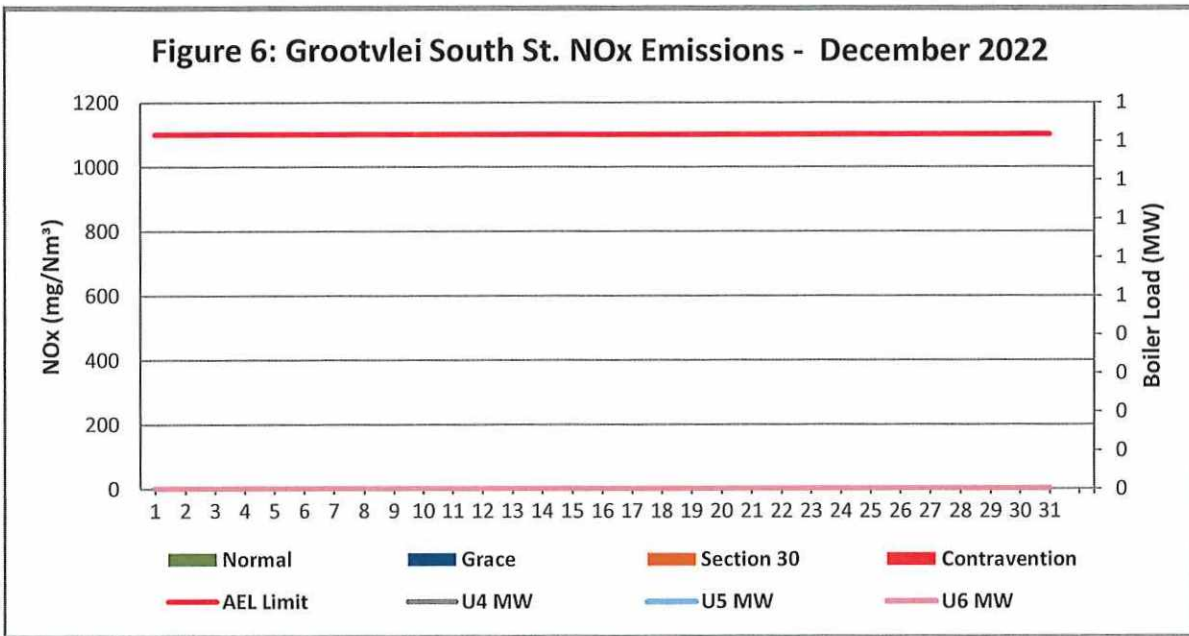
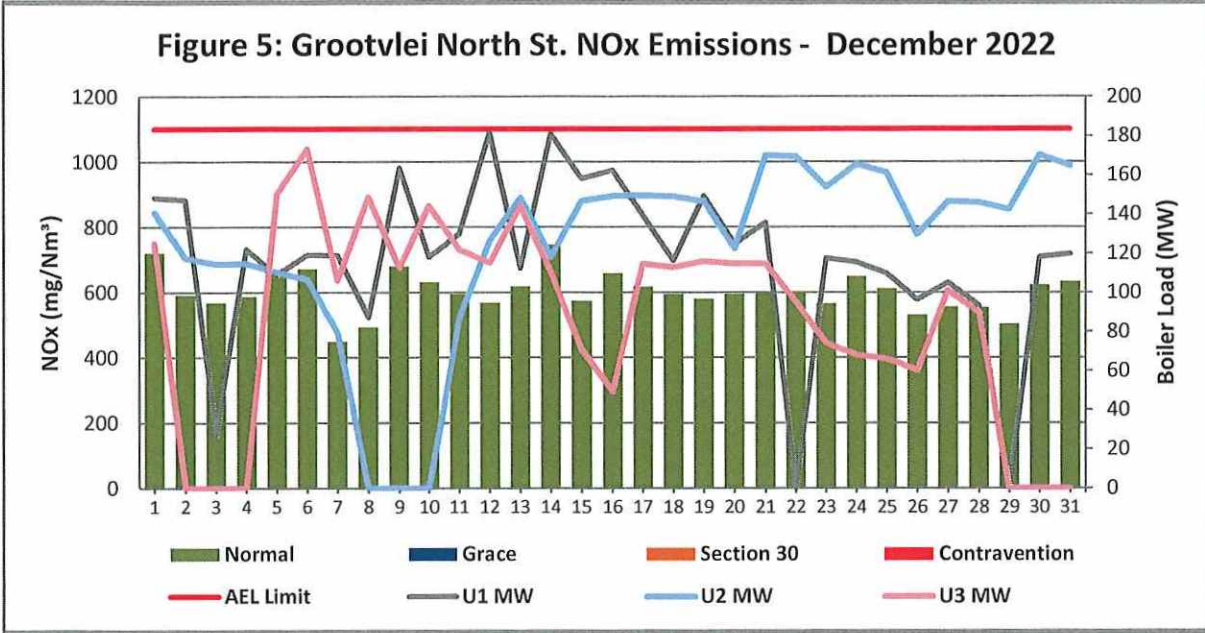
Table 6.5: Legend Description

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		











## 7 SHUT DOWN AND LIGHT UP INFORMATION

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

North Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 1		Unit 1		Unit 1		Unit 1	
Breaker Open (BO)	12:05 am	2022/12/03	9:05 am	2022/12/07	6:00 pm	2022/12/10	4:40 pm	2022/12/21
Draught Group (DG) Shut Down (SD)	8:15 am	2022/12/03	9:35 am	2022/12/07	6:10 am	2022/12/12	4:55 am	2022/12/22
BO to DG SD (duration)	00:08:10	DD:HH:MM	00:00:30	DD:HH:MM	01:12:10	DD:HH:MM	00:12:15	DD:HH:MM
Fires in time	3:25 am	2022/12/04	9:30 am	2022/12/08	8:35 am	2022/12/13	9:20 pm	2022/12/22
Synch. to Grid (or BC)	7:10 am	2022/12/05	5:20 pm	2022/12/08	4:30 pm	2022/12/13	3:35 am	2022/12/23
Fires in to BC (duration)	01:03:45	DD:HH:MM	00:07:50	DD:HH:MM	00:07:55	DD:HH:MM	00:06:15	DD:HH:MM
Emissions below limit from BC (end date)	not > limit	not > limit	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	n/a	DD:HH:MM

North Stack ...Cont.	Event 5		Event 6		Event 7		Event 8	
Unit No.	Unit 1		Unit 2		Unit 3		Unit 3	
Breaker Open (BO)	5:55 pm	2022/12/28	11:50 pm	2022/12/07	9:40 pm	2022/12/01	4:55 pm	2022/12/15
Draught Group (DG) Shut Down (SD)	6:15 pm	2022/12/28	2:20 pm	2022/12/08	10:30 pm	2022/12/01	6:55 pm	2022/12/15
BO to DG SD (duration)	00:00:20	DD:HH:MM	00:14:30	DD:HH:MM	00:00:50	DD:HH:MM	00:02:00	DD:HH:MM
Fires in time	6:20 pm	2022/12/29	11:15 pm	2022/12/10	11:00 am	2022/12/07	10:30 am	2022/12/16
Synch. to Grid (or BC)	8:50 am	2022/12/30	11:05 am	2022/12/11	7:50 pm	2022/12/07	8:15 pm	2022/12/16
Fires in to BC (duration)	00:14:30	DD:HH:MM	00:11:50	DD:HH:MM	00:08:50	DD:HH:MM	00:09:45	DD:HH:MM
Emissions below limit from BC (end date)	not > limit	not > limit	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	n/a	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: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 ...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: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 December-2022 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 December-2022

	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 December-2022

Source Code / 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. Due to leaking bags on Unit 1, 2 and 3 on 16th of December 2022, the PM emission were above license limit however the units were systemically strategically shutdown to replace the leaking bags. On the 17th the PM emissions had drastically decreased after the replacement of the leaking bags on Unit 3.

Matiso TM 2023/01/11  
 Environmental Department Date

AA 2023/01/11  
 Boiler Engineering Date

[Signature] 12/01/2023  
 General Manager Date

Compiled by: Boiler Engineering Department

FFP System Engineer

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

Copies: Eskom Environmental Management

D Herbst  
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Group Technology Engineering

R Rampiar  
 E. Patel

Grootvlie Power Station:

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