



Generation

Nkangala District Municipality  
P O Box 437  
Middleburg  
1050

Date: 2019/06/10

Attention:  
Ms M Nembilwi

AND

Directorate: Air Quality Management Services

The Director:

Mr Vumile Senene

Department of Environmental Affairs

Private Bag X447

PRETORIA

0001

Tel: (012) 310 3263

Fax: (012) 320 0488

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## MATLA POWER STATION

Atmospheric Emission License 17/4/AEL/MP312/11/14

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

24/06/2019  
DATE

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

2019-06-24  
DATE

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

24/06/2019  
DATE

MONTHLY EMISSIONS REPORT FOR MATLA POWER STATION  
 Atmospheric Emission License 17/4/AEL/MP312/11/14  
 REPORTING MONTH April-2019

1 PARTICULATE EMISSIONS

EMISSION LIMIT: North U5 & U6: 100 mg/Nm<sup>3</sup> South Stack: 200 mg/Nm<sup>3</sup>  
 North U4: 200 mg/Nm<sup>3</sup>

2 GASEOUS EMISSIONS

EMISSION LIMIT: North Stack: South Stack  
 NOx 1200 mg/Nm<sup>3</sup> 1200 mg/Nm<sup>3</sup>  
 SO<sub>2</sub> 3500 mg/Nm<sup>3</sup> 3500 mg/Nm<sup>3</sup>

1 RAW MATERIALS AND PRODUCTS

Raw Materials and Products used	Raw Material Type	Units	Maximum Permitted Consumption/ Rate (Quantity)	Consumption/ Rate April-2019
	Coal	Tons/month	1 475 000	898 883
	Fuel Oil	Tons/month	2 500	888883

Production Rates	Product/ By-Product Name	Unit	Maximum Production Capacity Permitted (Quantity)	Production Rate in Month of April-2019
	Energy	GWh	2484	1593
	Ash	Tons/month	471000	251777
	RE PM	kg/MWh	not specified	1.437

2 ABATEMET TECHNOLOGY

Associated Unit/Stack	Technology Type	Efficiency (%) for Apr-2019	Reliability (%) April-2019			
			PM	SO <sub>2</sub>	NO	CO <sub>2</sub>
South Stack	ESP	99.2%	64.2	15.3	92.5	
Unit 4	ESP	97.6%	62.8	99.9	99.9	
Unit 5	ESP	Unit off	Unit Off	Unit Off	Unit Off	
Unit 6	ESP	99.7%	97.1	99.4	99.4	

3 ENERGY SOURCE CHARACTERISTICS

Characteristic	Stipulated Range (Unit)	Monthly Average Content
CV Content	16-24 (MJ/kg)	
Sulphur Content	0.8-1.1 (%)	1.00
Ash Content	21-40 (%)	28.01

#### 4 EMISSION PERFORMANCE

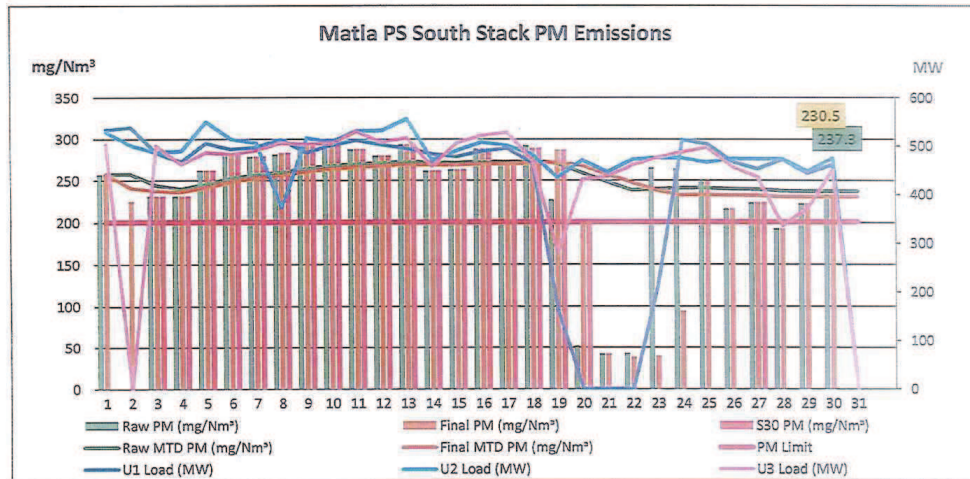


Figure 1. PM emissions (daily averages) for the month of April-2019 against emission limit for the South Stack

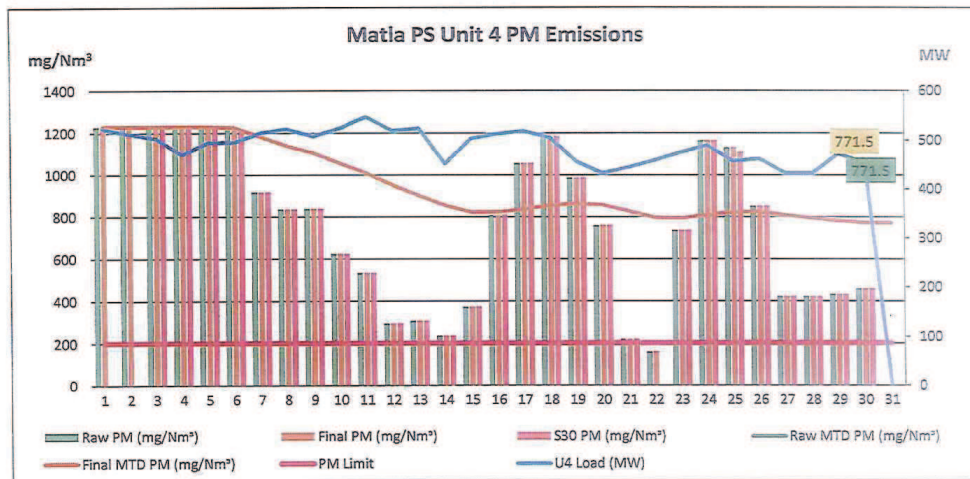


Figure 2. PM emissions (daily averages) for the month of April-2019 against emission limit for Unit 4

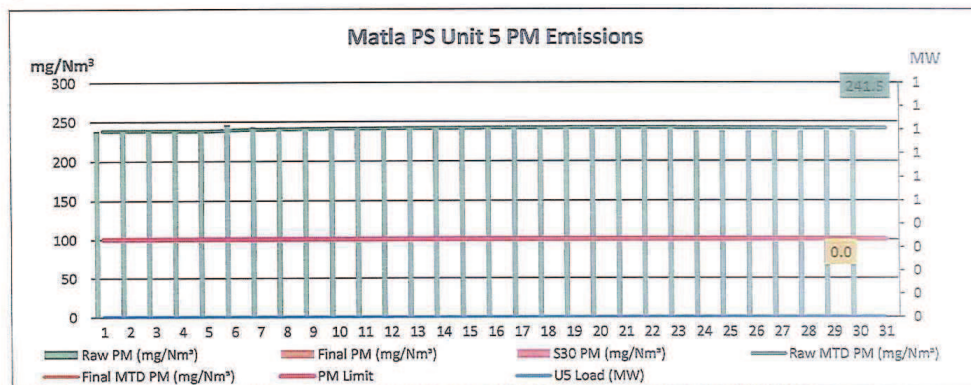


Figure 3. PM emissions (daily averages) for the month of April-2019 against emission limit for Unit 5

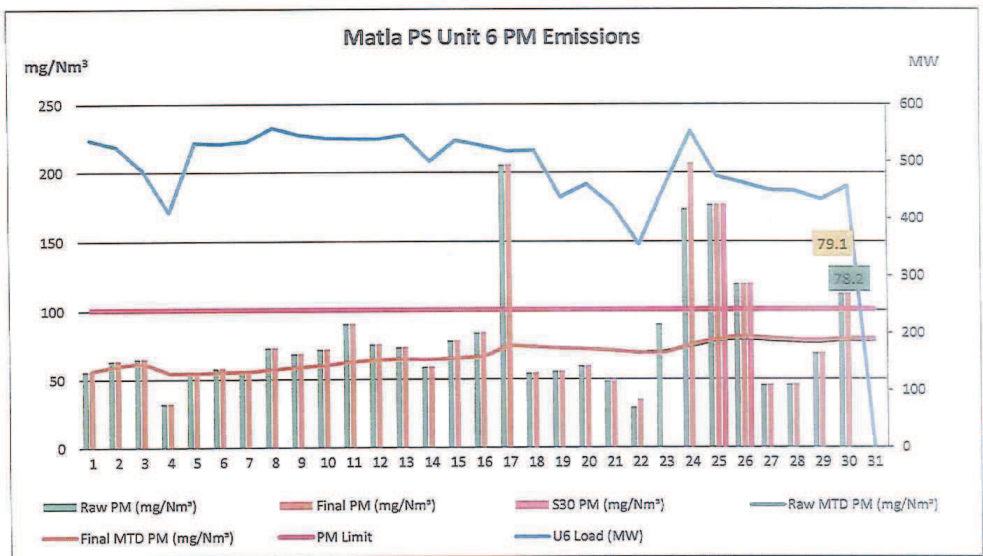


Figure 4. PM emissions (daily averages) for the month of April-2019 against emission limit for Unit 6



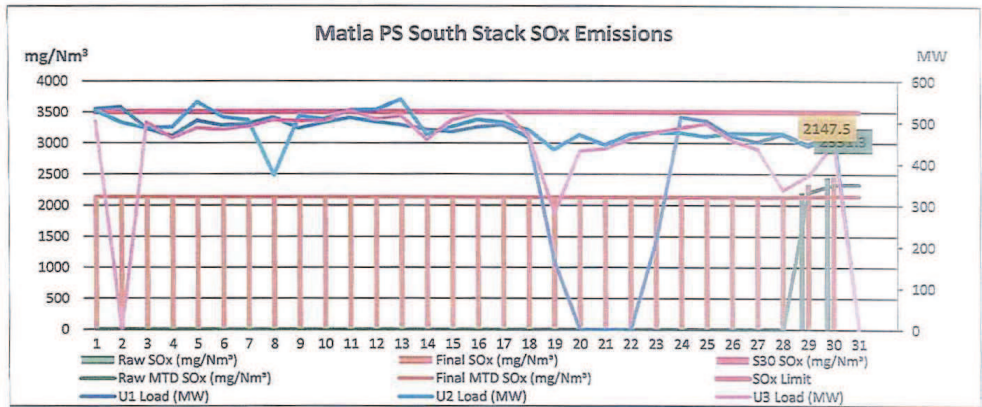


Figure 5. SO<sub>2</sub> emissions (daily averages) for the month of April-2019 against emission limit for the South Stack

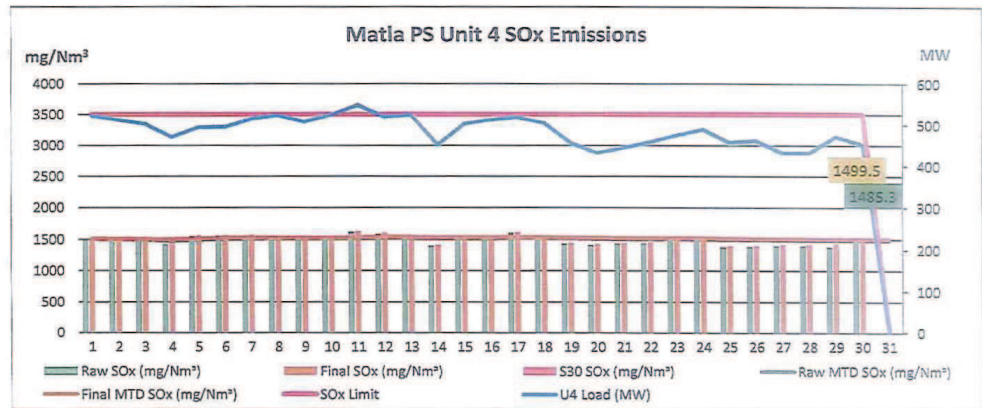


Figure 6. SO<sub>2</sub> emissions (daily averages) for the month of April-2019 against emission limit for Unit 4

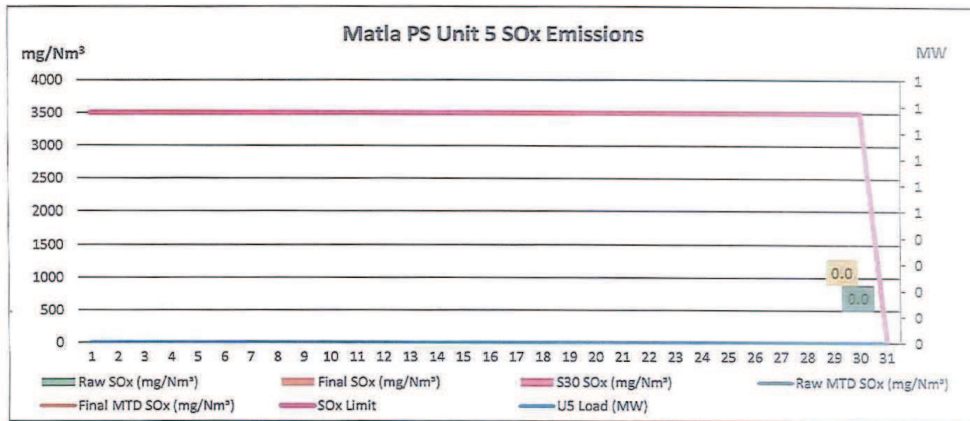


Figure 7. SO<sub>2</sub> emissions (daily averages) for the month of April-2019 against emission limit for Unit 5

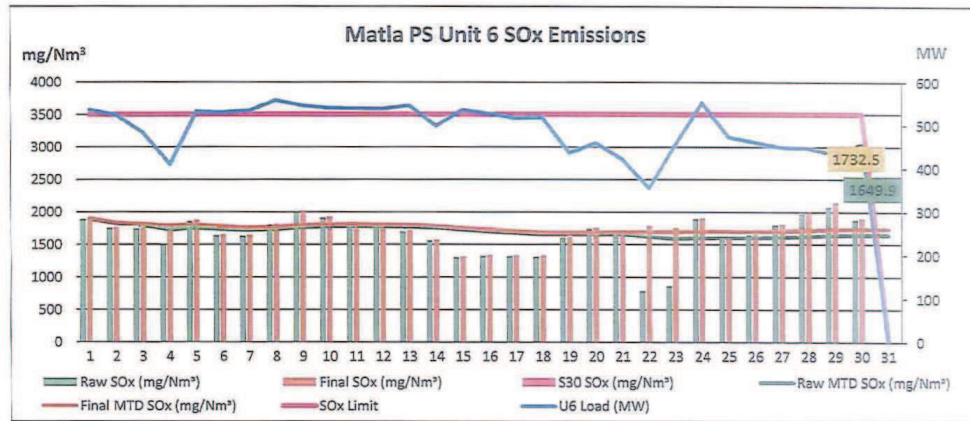


Figure 8. SO<sub>2</sub> emissions (daily averages) for the month of April-2019 against emission limit for Unit 6

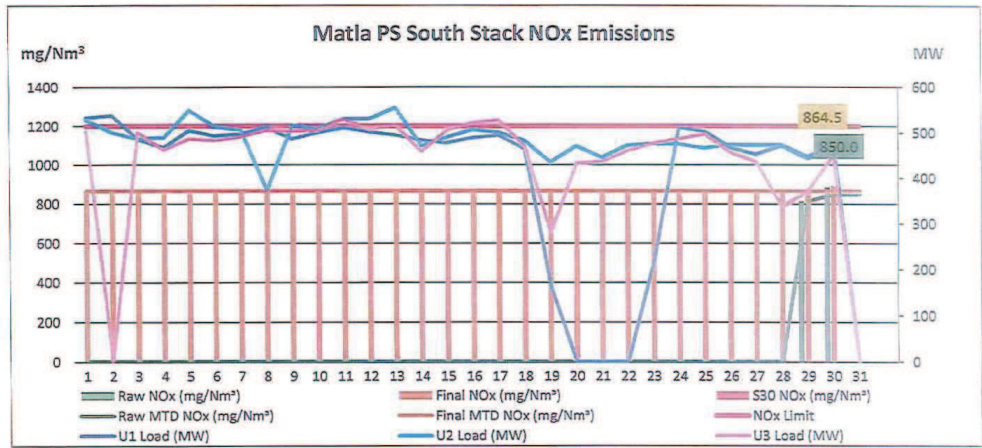


Figure 9. NOx emissions (daily averages) for the month of April-2019 against emission limit for the South Stack

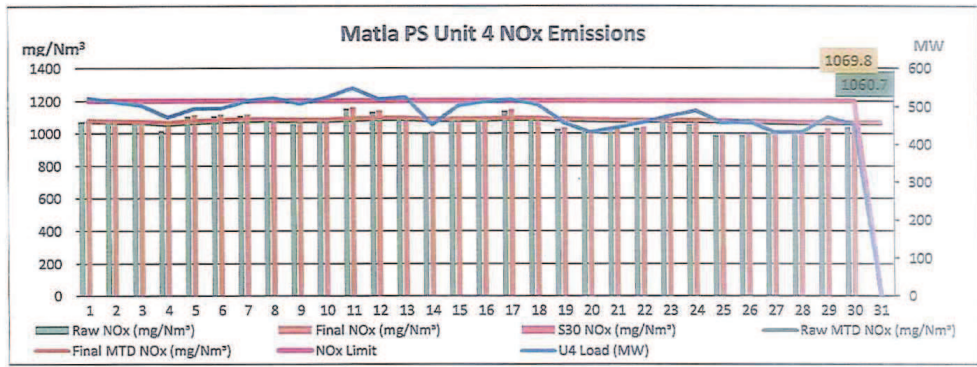


Figure 10. NOx emissions (daily averages) for the month of April-2019 against emission limit for Unit 4



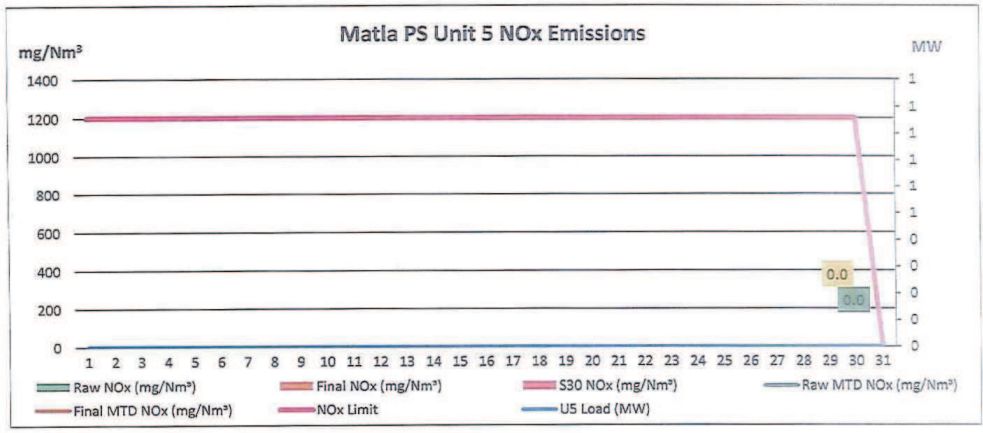


Figure 11. NOx emissions (daily averages) for the month of April-2019 against emission limit for Unit 5

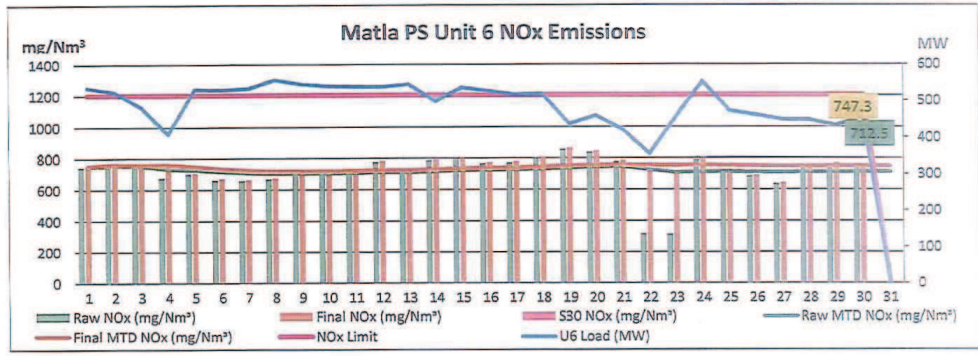


Figure 12. NOx emissions (daily averages) for the month of April-2019 against emission limit for Unit 6

Table 4: Monthly tonnages for the month of April-2019

Unit	PM (tons)	SO <sub>2</sub> (tons)	NO <sub>2</sub> (tons)	CO <sub>2</sub> (tons)
1	315.7	2 634.2	1 058.8	
2	359.5	3 362.9	1 353.8	
3	368.0	3 430.6	1 381.0	
4	1 113.2	2 157.2	1 539.2	
5	0.0	0.0	0.0	
6	132.6	2 941.2	1 275.9	
<b>SUM</b>	<b>2 289.0</b>	<b>14 526.1</b>	<b>6 608.7</b>	

Table 5: Each unit and respective days operating under normal operation, days in grace period, and section 30 days respectively

Unit	Operating Days (DD:HH:MM)			
	Normal operation	In grace period	Under S 30	Unit off load
1	26:06:50	06:00:00	20:18:00	04:09:50
2	29:15:15	00:00:00	00:00:00	00:08:45
3	29:11:15	00:00:00	00:00:00	00:12:45
4	08:10:00	02:00:00	19:14:00	00:00:00
5	00:00:00	00:00:00	00:00:00	30:00:00
6	25:10:35	02:00:00	04:10:15	01:03:10

5 LIGHT UP INFORMATION

Table 6. PM Start-up information for the month of April-2019

South Stack	Event 1		Event 2		Event 3		Event 4		Event 5	
Unit No.	Unit 1		Unit 2		Unit 3		no event		no event	
Fires in	08:10 PM	2019/04/22	11:40 PM	2019/04/07	05:56 PM	2019/04/18				
Synch. to Grid	06:40 PM	2019/04/23	08:10 AM	2019/04/08	04:20 PM	2019/04/19				
Emissions > limit from Synch. (Date and Time)	12:00 AM	2019/04/26	12:00 AM	2019/04/20	12:00 AM	2019/04/20				
Fires in to Synch.	00:22:30	Hrs (dd:hh:mm)	00:08:30	Hrs (dd:hh:mm)	00:22:24	Hrs (dd:hh:mm)			Hrs (dd:hh:mm)	
Emissions < limit from Synch. (Duration)	04:05:20	Hrs (dd:hh:mm)	11:15:50	Hrs (dd:hh:mm)	00:07:40	Hrs (dd:hh:mm)			Hrs (dd:hh:mm)	
South Stack ...cont.	Event 6		Event 7		Event 8		Event 9		Event 10	
Unit No.	no event		no event		no event		no event		no event	
Fires in										
Synch. to Grid										
Emissions > limit from Synch. (Date and Time)										
Fires in to Synch.		Hrs (dd:hh:mm)		Hrs (dd:hh:mm)		Hrs (dd:hh:mm)			Hrs (dd:hh:mm)	
Emissions < limit from Synch. (Duration)		Hrs (dd:hh:mm)		Hrs (dd:hh:mm)		Hrs (dd:hh:mm)			Hrs (dd:hh:mm)	

Event No.	Event 1	Event 2	Event 3	Event 4	Event 5
Unit No.4	no event	no event	no event	no event	no event
Fires in					
Synch. to Grid					
Emissions > limit from Synch. (Date and Time)					
Fires in to Synch.	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)
Emissions < limit from Synch. (Duration)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)

Event No.	Event 1	Event 2	Event 3	Event 4	Event 5
Unit No.5	no event	no event	no event	no event	no event
Fires in					
Synch. to Grid					
Emissions > limit from Synch. (Date and Time)					
Fires in to Synch.	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)
Emissions < limit from Synch. (Duration)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)

Event No.	Event 1	Event 2	Event 3	Event 4	Event 5
Unit No.6	no event	no event	no event	no event	no event
Fires in					01:45 PM
Synch. to Grid					12:00 AM
Emissions > limit from Synch. (Date and Time)					12:00 AM
Fires in to Synch.	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	
Emissions < limit from Synch. (Duration)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	not > limit

Table 7. Point Source emissions released during start-up (fires-in) for the month of April-2019 in mg/Nm<sup>3</sup>

South Stack Emission Average from Fires-in to Synchronisation (Date and Time)							
Unit	Fires-In		Synchronisation		PM	SO <sub>2</sub>	NO <sub>x</sub>
Unit 1	2019/04/22	2019/04/22	2019/04/23	06:40 PM	237.4	314.0	32.6
Unit 2	2019/04/07	11:40 PM	2019/04/08	08:10 AM	278.4	667.8	9.6
Unit 3	2019/04/18	05:56 PM	2019/04/19	04:20 PM	262.0	840.0	24.8
no event							
no event							
no event							
no event							
no event							
no event							
no event							

North Stack Emission Average from Fires-in to Synchronisation (Date and Time)							
Unit	Fires-In		Synchronisation		PM	SO <sub>2</sub>	NO <sub>x</sub>
no event							
no event							
no event							
no event							
no event							
no event							
no event							
no event							
no event							
no event							
no event							
no event							
no event							
no event							
Unit 6	2019/04/23	01:45 PM	2019/04/23	01:45 PM	260.7	735.6	189.1



Table 8. Point Source emissions released during Shut-down (SD) for the month of April-2019 in mg/Nm<sup>3</sup>

South Stack Emission Average Breaker Open (BO) to Draught Group Shut Down (SD) (Date & Time)							
Unit	Breaker Open		DG SD		PM	SO <sub>2</sub>	NO <sub>x</sub>
Unit	2019/04/19	12:25 AM	2019/04/19	06:40 PM	237.4	314.0	32.6
Unit	2019/04/07	11:30 PM	2019/04/07	11:31 PM	278.4	667.8	9.6
Unit	2019/04/18	05:55 PM	2019/04/18	05:56 PM	282.0	840.0	24.8
no event							
no event							
no event							
no event							
no event							
no event							
no event							

North Stack Emission Average Breaker Open (BO) to Draught Group Shut Down (SD) (Date & Time)							
Unit	Breaker Open		DG SD		PM	SO <sub>2</sub>	NO <sub>x</sub>
no event							
no event							
no event							
no event							
no event							
no event							
no event							
no event							
no event							
no event							
no event							
no event							
no event							
no event							
Unit	2019/04/22	10:40 AM	2019/04/22	10:40 AM	260.7	735.6	189.1



**6 EMERGENCY GENERATION**

Emergency Generation

Table 8. Emergency Generation per unit for the month of April-2019

	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						

**7 COMPLAINTS REGISTER**

Table 9. Complaints for the month of April-2019

Source Code/ Name	Root Cause Analysis	Calculation of impacts, emissions associated with	Dispersion modeling of pollutants where	measures implemented to prevent recurrence	Date by which 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)</i>	<i>(Insert mitigation measures taken)</i>	<i>(Insert implementation date)</i>


**8 General**

Gas emission values have errors which are being investigated. Once there investigation is concluded this report will be redone. Target date for completion of investigation is 28/06/2019. Should there be challenges this will be communicated as such. There are section 30's incurred and initial notification has been raised on the section 30's.

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Boiler Plant Engineering	Date	Environmental Practitioner	Date
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 General Manager	Date
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ESP & SO3 System Engineer

Compiled by: Boiler Engineering Department

Chief Air Pollution Control Officer

For: Department of Environmental Affairs and Tourism

Copies: Eskom Environmental Management

Group Technology Engineering

Matla Power Station:

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