Eskom

Generation

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13

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MATLA POWER STATION

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

BOILER ENGINEERING MANAGER	28/11/2022 **DATE**
ENVIRONMENTAL MANAGER	28/11/2022 **DATE**
ENGINEERING MANAGER	29.11.2022 **DATE**

Eskom

OCTOBER 2022

MATLA POWER STATION MONTHLY EMISSIONS REPORT

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

1 RAW MATERIALS AND PRODUCTS

Raw Materials and Products	Raw Material Type	Units	Max Permitted Consumption Rate	Consumption Rate Oct-2022
	Coal	Tons	*1 475 000*	*877 438*
	Fuel Oil	Tons	*3 500*	*757*
Production Rates	Product / By-Product Name	Units	Max Production Capacity Permitted	Production Rate Oct-2022
	Energy	GWh	*2 745*	*1 481*
	Ash	Tons	*471 000*	*271 304*
	RE PM	kg/MWh	*not specified*	*0.499*

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	*0.8-1.1*	*1.00*
Ash Content	%	*21-40*	*30.92*

3 EMISSION LIMITS (mg/Nm³)

Associated Unit/Stack	PM	SO_2	NO
South	*200*	*3500*	*1200*
Unit 4	*200*	*3500*	*1200*
Unit 5	*100*	*3500*	*1200*
Unit 6	*100*	*3500*	*1200*

Note: NOx emissions is measured as NO in PPM. Final NOx value is expressed as total NO_2

4 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Oct-2022
South	*Electro Static Precipators (ESP)*	*99.686%*
Unit 4	*Electro Static Precipators (ESP)*	
Unit 5	*Electro Static Precipators (ESP)*	*99.690%*
Unit 6	*Electro Static Precipators (ESP)*	*99.747%*

Note: Abatement plant does not have bypass mode operation, hence plant 100% Utilised.

5 DATA RELIABILITY (%)

Associated Unit/Stack	PM	SO_2	NO	O_2
South	*100.0*	*100.0*	*100.0*	*100.0*
Unit 4				
Unit 5	*99.3*	*92.9*	*92.9*	*92.9*
Unit 6	*92.9*	*86.3*	*100.0*	*100.0*

6 EMISSION PERFORMANCE

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

Associated Unit/Stack	PM	SOx	NOx
Unit 1	135.8	3 260.1	781.8
Unit 2	145.7	3 351.7	803.7
Unit 3	190.9	4 324.9	1 037.1
Unit 4	0.0	0.0	0.0
Unit 5	158.1	3 539.7	1 448.9
Unit 6	108.0	2 121.2	1 099.7
SUM	738.5	16 597.7	5 171.2

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm³)
South	28	3	0	0	3	107.2
Unit 4	0	0	0	0	0	
Unit 5	20	11	0	0	11	104.3
Unit 6	23	6	2	0	8	101.2
SUM	**71**	**20**	**2**	**0**	**22**	

Table 6.3: Operating days in compliance to SO_2 AEL Limit - October 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO_2 (mg/Nm³)
South	31	0	0	0	0	2 428.3
Unit 4	0	0	0	0	0	
Unit 5	31	0	0	0	0	2 405.5
Unit 6	31	0	0	0	0	1 769.5
SUM	**93**	**0**	**0**	**0**	**0**	

Table 6.4: Operating days in compliance to NOx AEL Limit - October 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm³)
South	31	0	0	0	0	582.3
Unit 4	0	0	0	0	0	
Unit 5	31	0	0	0	0	981.8
Unit 6	31	0	0	0	0	917.4
SUM	**93**	**0**	**0**	**0**	**0**	

Note: NOx emissions is measured as NO in PPM. Final NOx value is expressed as total NO_2

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: Matla South Stack PM Emissions - October 2022

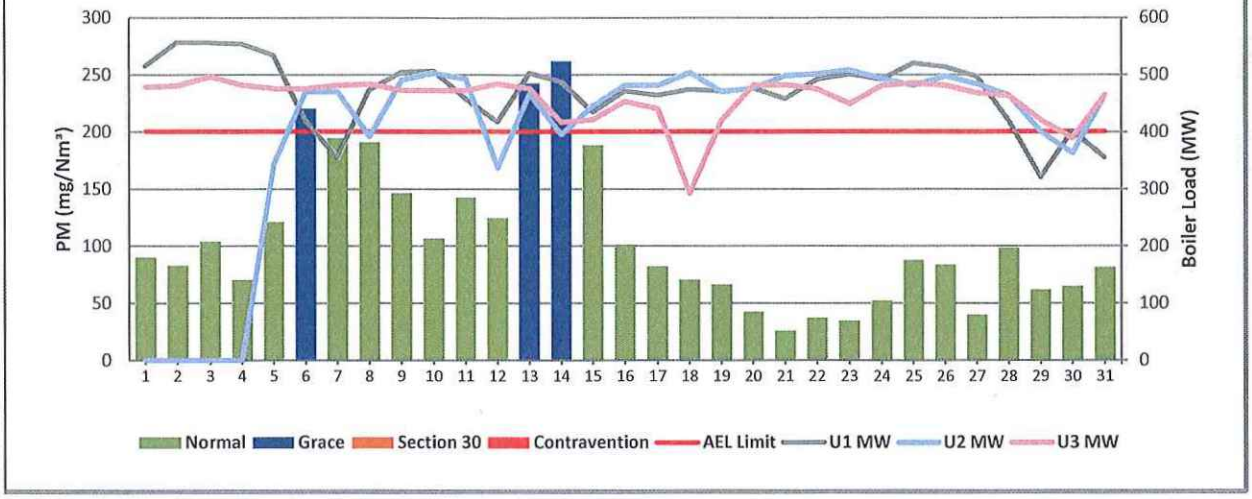
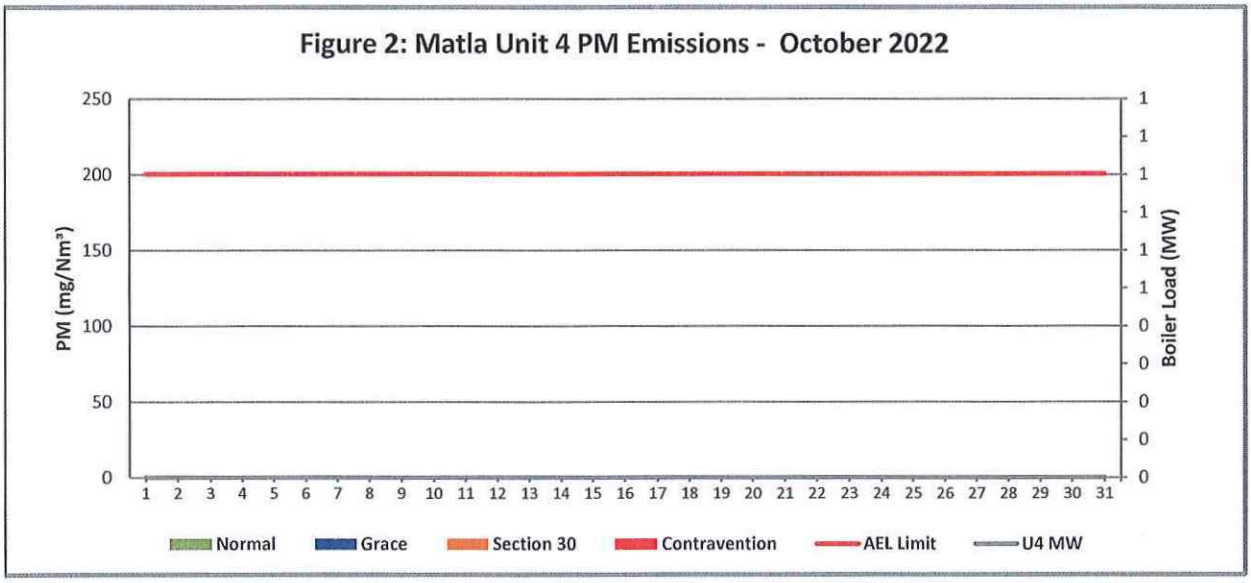


Figure 2: Matla Unit 4 PM Emissions - October 2022



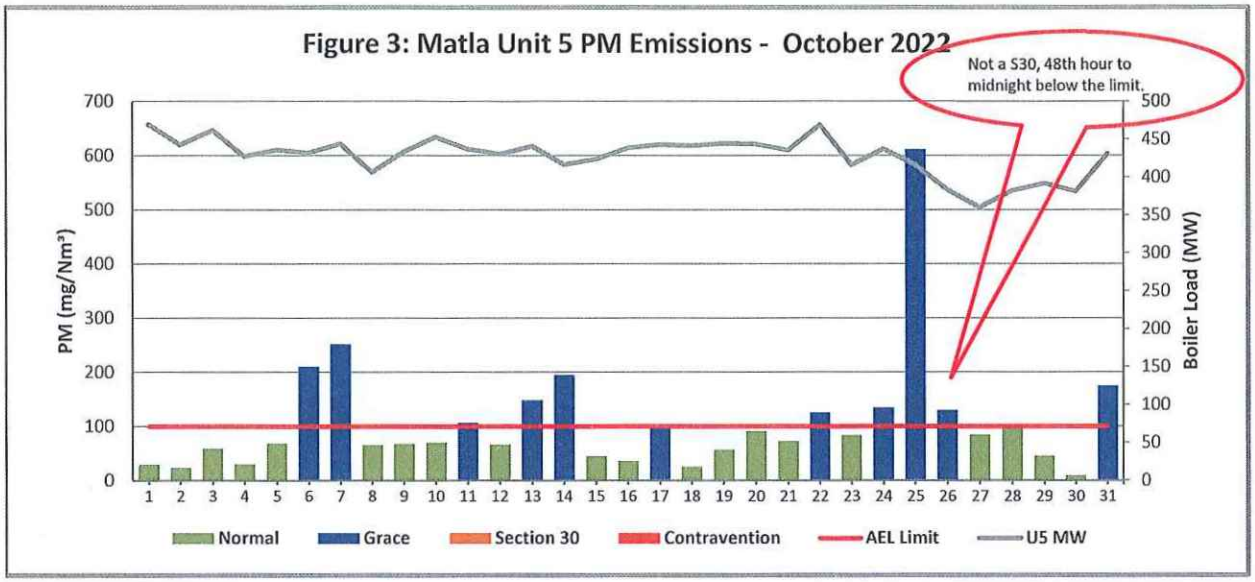


Figure 3: Matla Unit 5 PM Emissions - October 2022
Not a S30, 48th hour to midnight below the limit.
PM (mg/Nm³)
Boiler Load (MW)
Normal
Grace
Section 30
Contravention
AEL Limit
U5 MW

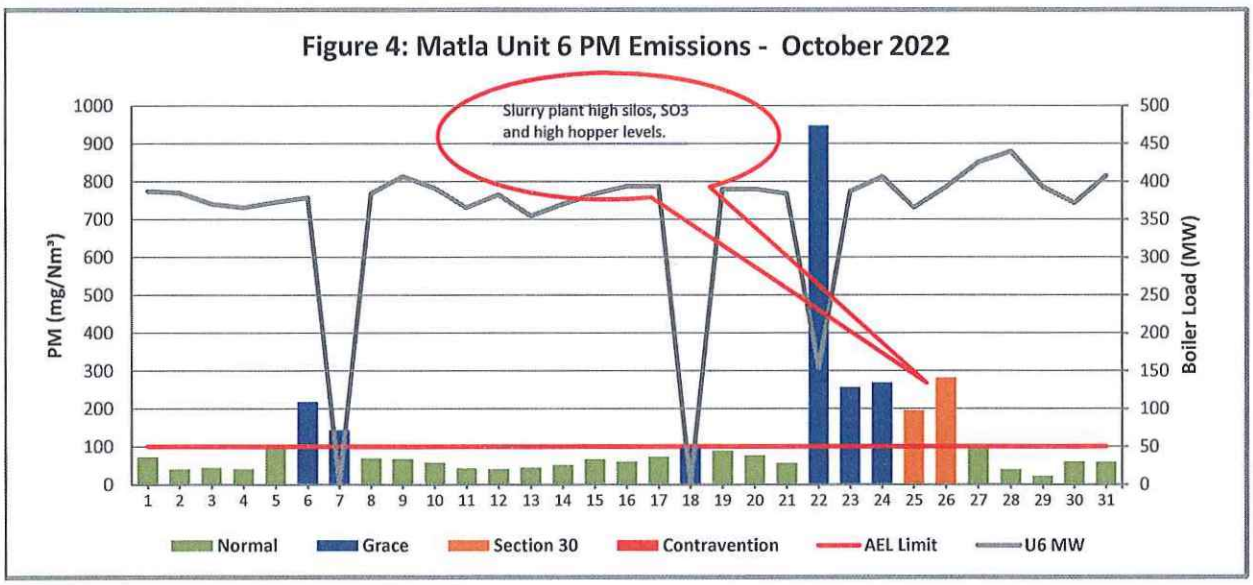


Figure 4: Matla Unit 6 PM Emissions - October 2022
Slurry plant high silos, SO3 and high hopper levels.
PM (mg/Nm³)
Boiler Load (MW)
Normal
Grace
Section 30
Contravention
AEL Limit
U6 MW

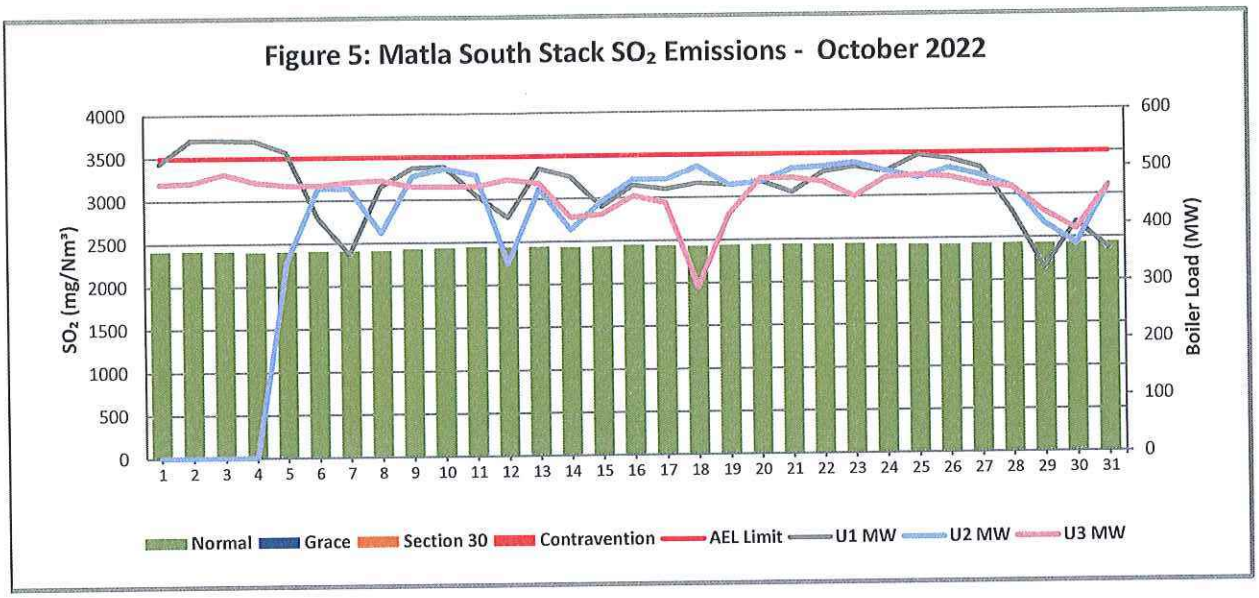


Figure 5: Matla South Stack SO_2 Emissions - October 2022
SO_2 (mg/Nm³)
Boiler Load (MW)
4000
3500
3000
2500
2000
1500
1000
500
0
600
500
400
300
200
100
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Normal
Grace
Section 30
Contravention
AEL Limit
U1 MW
U2 MW
U3 MW

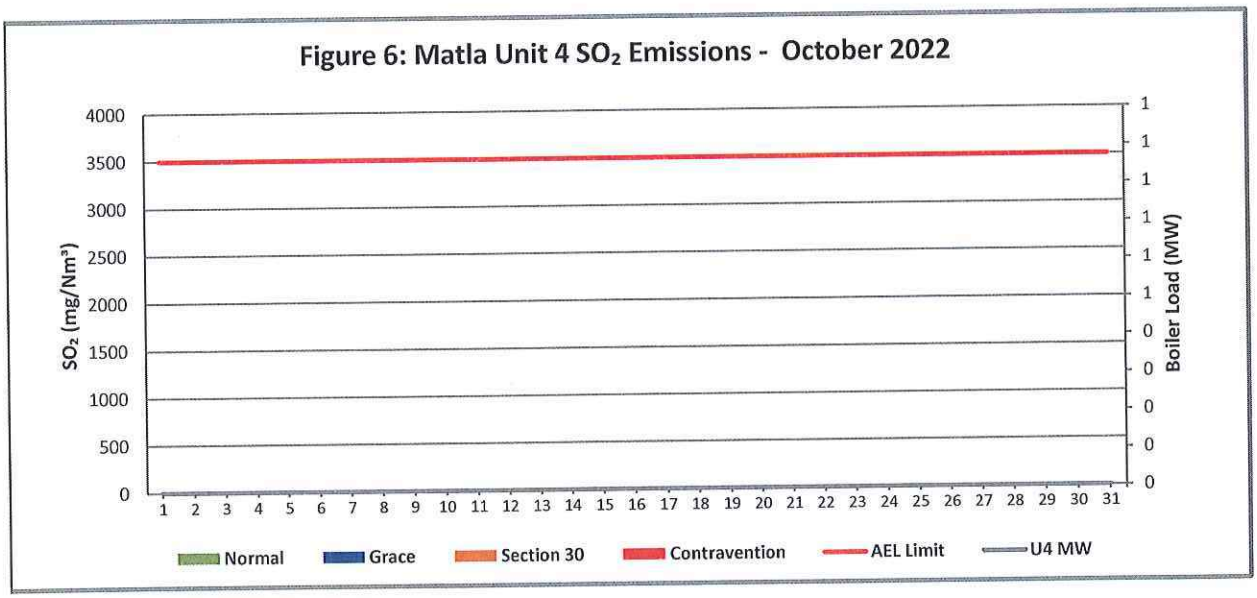


Figure 6: Matla Unit 4 SO_2 Emissions - October 2022
SO_2 (mg/Nm³)
Boiler Load (MW)
4000
3500
3000
2500
2000
1500
1000
500
0
1
1
1
1
1
1
0
0
0
0
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Normal
Grace
Section 30
Contravention
AEL Limit
U4 MW

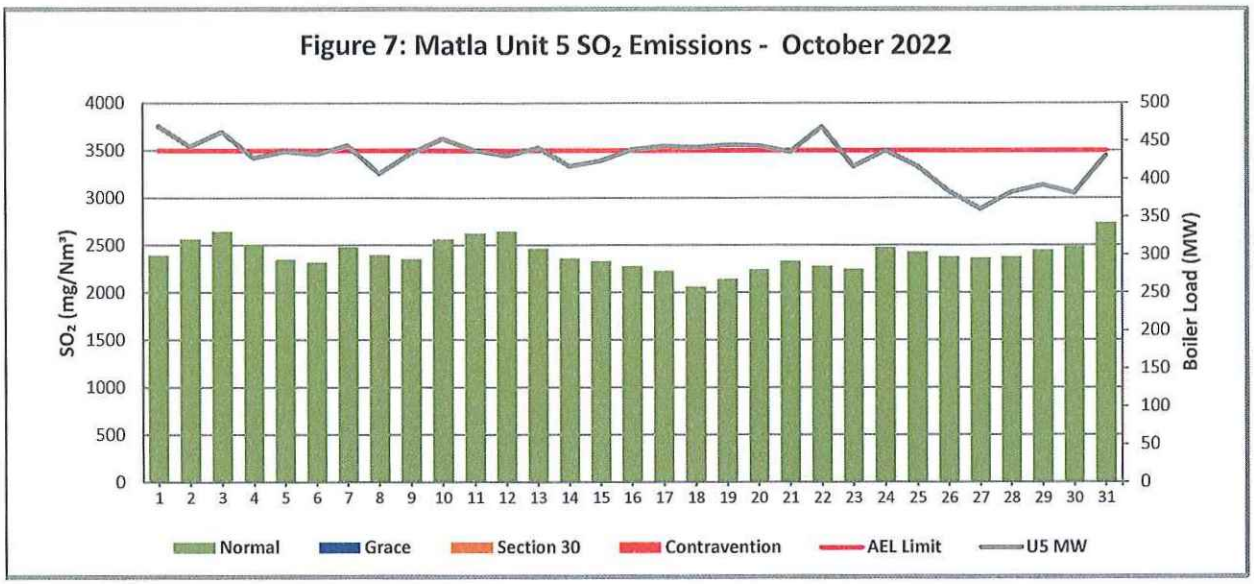


Figure 7: Matla Unit 5 SO_2 Emissions - October 2022
SO_2 (mg/Nm³)
Boiler Load (MW)
4000
3500
3000
2500
2000
1500
1000
500
0
500
450
400
350
300
250
200
150
100
50
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Normal
Grace
Section 30
Contravention
AEL Limit
U5 MW

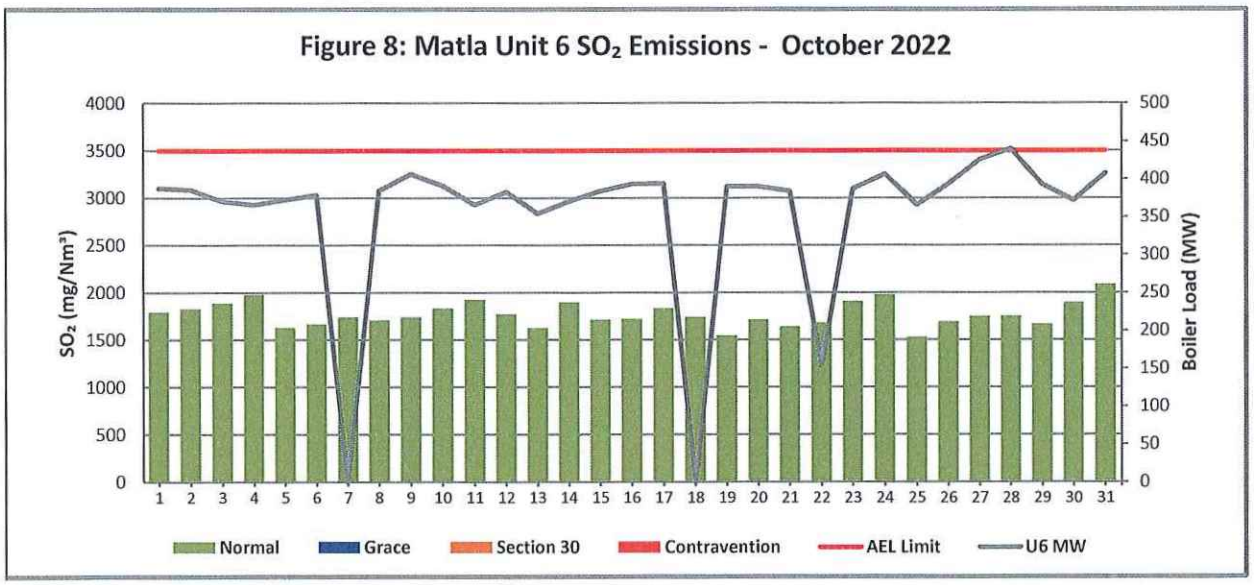


Figure 8: Matla Unit 6 SO_2 Emissions - October 2022
SO_2 (mg/Nm³)
Boiler Load (MW)
4000
3500
3000
2500
2000
1500
1000
500
0
500
450
400
350
300
250
200
150
100
50
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Normal
Grace
Section 30
Contravention
AEL Limit
U6 MW

Figure 9: Matla South Stack NOx Emissions - October 2022

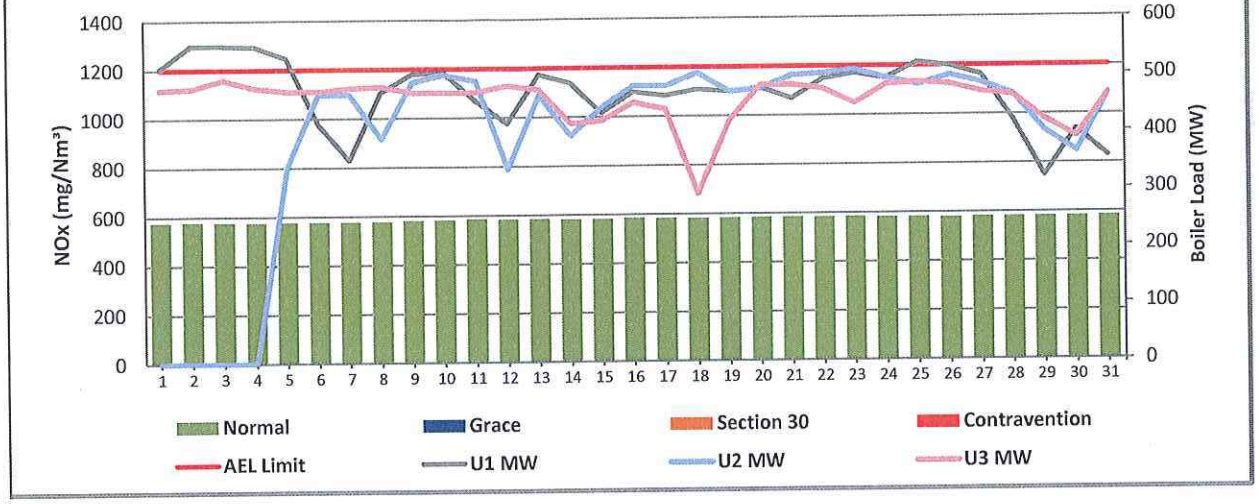
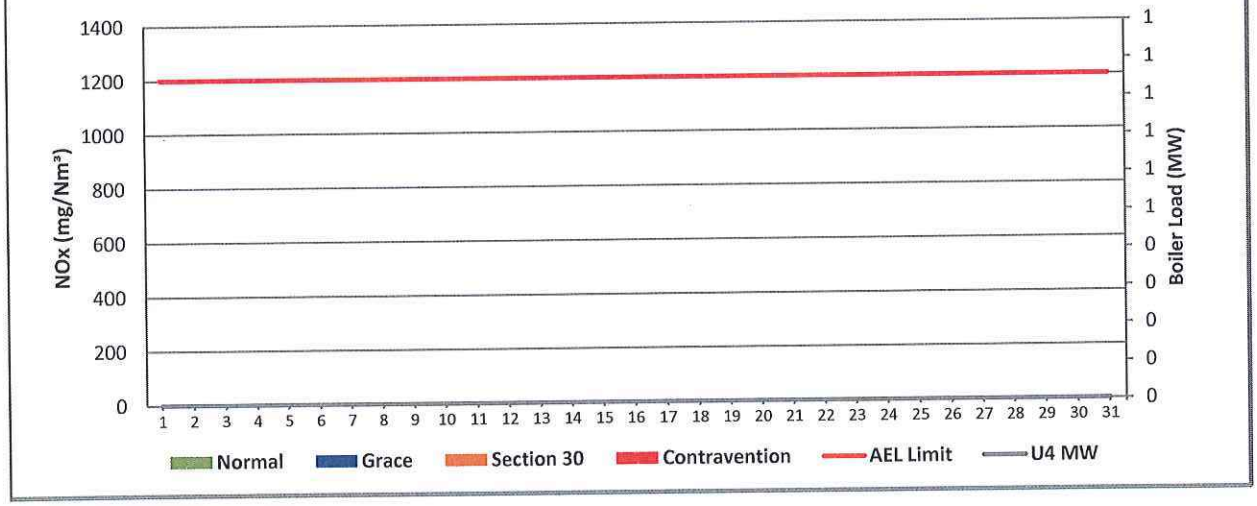


Figure 10: Matla Unit 4 NOx Emissions - October 2022



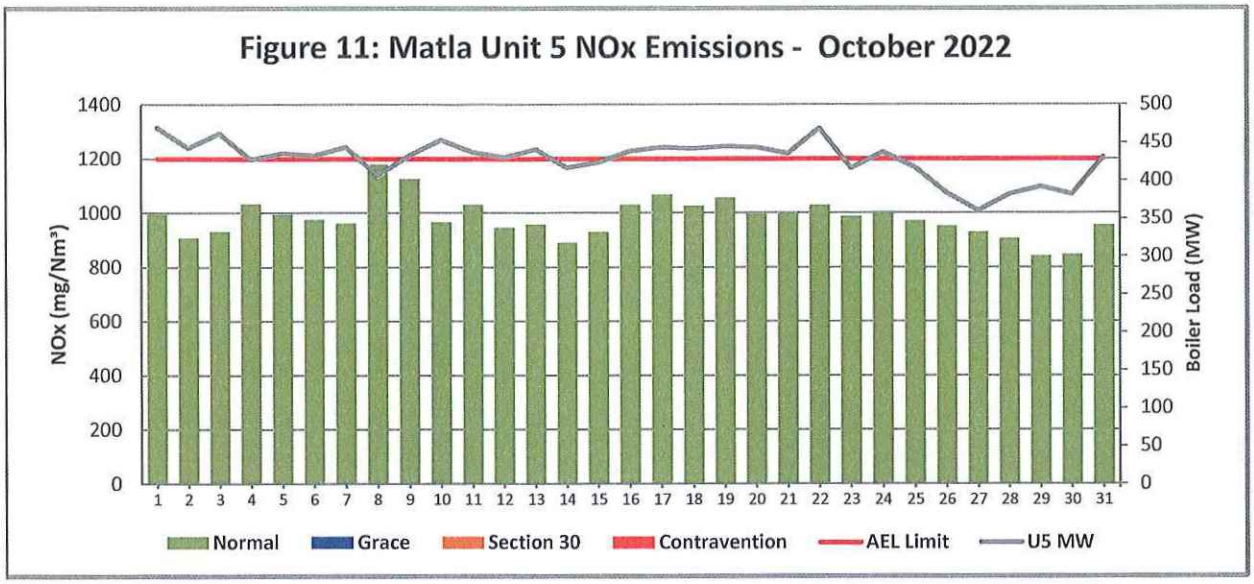


Figure 11: Matla Unit 5 NOx Emissions - October 2022
NOx (mg/Nm³)
Boiler Load (MW)
Normal
Grace
Section 30
Contravention
AEL Limit
U5 MW

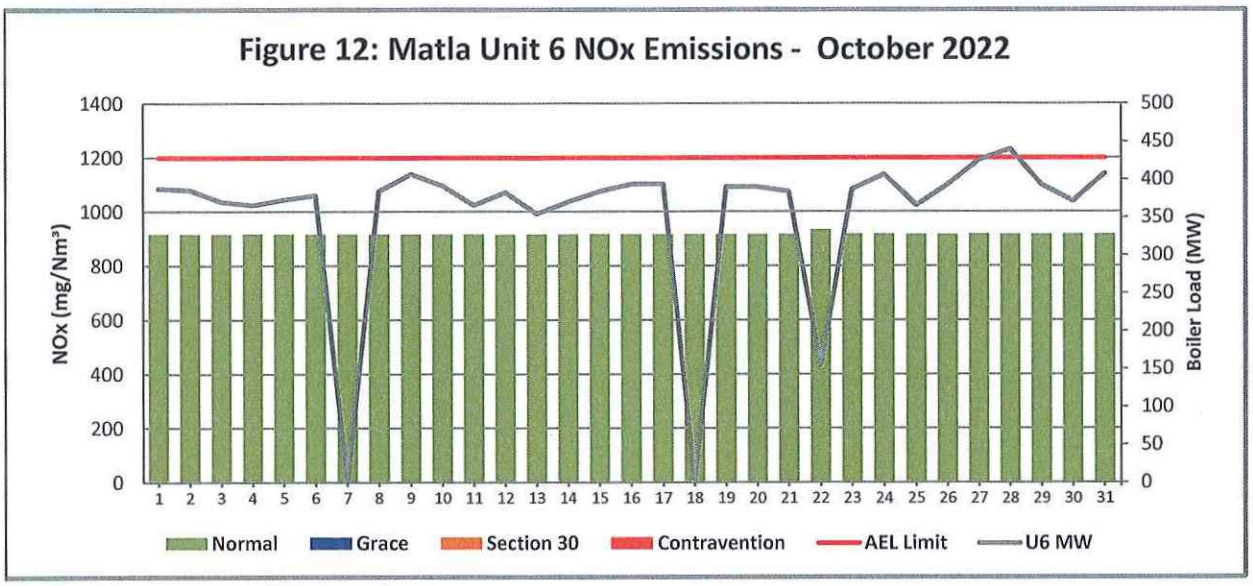


Figure 12: Matla Unit 6 NOx Emissions - October 2022
NOx (mg/Nm³)
Boiler Load (MW)
Normal
Grace
Section 30
Contravention
AEL Limit
U6 MW

7 SHUT DOWN AND LIGHT UP INFORMATION

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

South Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 1		Unit 2		Unit 1		Unit 1	
Breaker Open (BO)	1:15 AM	2022/10/07	9:40 PM	2022/10/04	12:15 PM	2022/10/11	6:40 AM	2022/10/29
Draught Group (DG) Shut Down (SD)	DG did not trip or SD	DG did not trip or SD	9:15 AM	2022/10/05	DG did not trip or SD	DG did not trip or SD	DG did not trip or SD	DG did not trip or SD
BO to DG SD (duration)	n/a	DD:HH:MM	00:11:35	DD:HH:MM	n/a	DD:HH:MM	n/a	DD:HH:MM
Fires in time	1:15 AM	2022/10/07	12:25 PM	2022/10/05	12:15 PM	2022/10/11	6:40 AM	2022/10/29
Synch. to Grid (or BC)	2:25 AM	2022/10/08	12:35 PM	2022/10/05	3:45 AM	2022/10/12	8:40 PM	2022/10/29
Fires in to BC (duration)	01:01:10	DD:HH:MM	00:00:10	DD:HH:MM	00:15:30	DD:HH:MM	00:14:00	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 ...cont.	Event 5		Event 6		Event 7		Event 8	
Unit No.	Unit 1		no event		no event		no event	
Breaker Open (BO)	11:55 AM	2022/10/31						
Draught Group (DG) Shut Down (SD)	DG did not trip or SD	DG did not trip or SD						
BO to DG SD (duration)	n/a	DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time	11:55 AM	2022/10/31						
Synch. to Grid (or BC)	5:10 PM	2022/11/01						
Fires in to BC (duration)	01:05:15	DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)	not > limit	not > limit						
Emissions below limit from BC (duration)	n/a	DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM

Unit No. 4	Event 1		Event 2		Event 3		Event 4	
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

Unit No. 5	Event 1		Event 2		Event 3		Event 4	
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

Unit No. 6	Event 1		Event 2		Event 3		Event 4	
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 October-2022 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

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 October 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 October 2022

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
(Insert name of affected	*(Insert root cause for incident)*	*(Insert emissions associated with incident)*	*(Insert dispersion model information where applicable)*	*(Insert mitigation measures taken)*	*(Insert date of implementation of*

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	S30 initial notification sent	Date S30 investigation report sent	Date DEA Acknowledg-ment	Date DEA Acceptabe	Comments / Reference No.
6	24/10/2022	26/10/2022	Slurry plant breakdown, high hopper levels and unavailability of sulphur plant		Yes				Final report submitted

11 General

Gas are reported using parallel tests averages. Unit 4 and 5 reliability is affected by high emissions. Unit 6 correlations not yet cunducted and are scheduled for from 07 December 2022. South stack correlations completed and awaiting to update the curve.

28-11-2022

Boiler Engineering Date

28.11.2022

Environmental Department Date

30/11/2022

General Manager Date

Compiled by:	Boiler Engineering Department	ESP & SO_3 System Engineer
For:	Department of Environmental Affairs and Tourism	Chief Air Pollution Control Officer
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	Matla Power Station:	Engineering Manager Operating Manager Maintenance Manager Unit Production Manager Boiler Engineering Manager System Engineer Environmental Officer Performance and Test Production Manager