	Matimba Power Station Emissions report	Matimba Power Station
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Title: **Matimba Power Station May 2021
emissions report**

Document Identifier: **RP/247/008**

Plant Location: **Emission management**

Area of Applicability: **Matimba Power Station**

Functional Area
Applicability: **Environment**

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Classification: **Controlled**

Compiled by



**WC Mocke
Environmental Officer**

Date: 2021/10/28

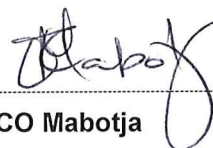
Functional Responsibility



**MC Mamabolo
Environmental Manager**

Date: 29/10/2021

Authorized by



**CO Mabotja
General Manager**

Date: 2021/10/29

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1. Report Summary

Matimba Power Station was issued with an Atmospheric Emission License (12/4/12L-W4/A4) in March 2020. Condition 7.7.1 of the License requires the license holder to submit monthly reports to the Department. This report contains the required information as specified in condition 7.7.1 for May 2021.



Due to recommendations received from an internal emission data review the Matimba Power Station May 2021 emissions report was reviewed.

Changes were made to correlation curves which were incorrectly captured and averaged Quality Assurance level 2 test data was used where raw data was unreliable.

These changes influenced the pollutant tonnages and the monitor reliability reported in the revision 1 of the report. The influenced data has been updated and is provided in the specific sections in the report

During the period under review, Matimba experienced thirteen exceedances of the daily particulate matter emission limit ($50\text{mg}/\text{Nm}^3$). All exceedances remained within the 48 hour grace period. No exceedances of the monthly SO_x limit ($3500\text{mg}/\text{Nm}^3$) or the daily NO_x limit ($750\text{mg}/\text{Nm}^3$) occurred.

The Gaseous emission (SO_x and NO_x) monitor for unit 6 is currently not in service. The monitor cannot be repaired at this time due to the stack lifts being closed after a safety incident that occurred in March 2021. The monitor will be repaired as soon as it is safe to do so.

Issues mentioned above are discussed further under the respective sections within the report.

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2. Emission information

2.1 Raw materials and products

Table 1: Quantity of Raw Materials and Products used/produced for the month

Raw Materials and Products used	Raw Material Type	Unit	Maximum Permitted Consumption Rate (Quantity)	Consumption Rate
	Coal	Tons/month	1 500 000	1 126 747
	Fuel Oil	Tons/month	1 200	908,515
Production Rates	Product/ By-Product Name	Unit	Maximum Production Capacity Permitted (Quantity)	Production Rate
	Energy	GWh	4 212.6	2 144,421

The coal and fuel oil consumptions rates for the month of May 2021 were within the permitted maximum limit. An increased amount of fuel oil was consumed compared to previous months due to multiple unit start-ups after unplanned unit trips.

2.2 Abatement technology

Table 2: Abatement Equipment Control Technology Utilised

Associated Unit	Technology Type	Minimum utilisation (%)	Actual Utilisation (%)
Unit 1	Electrostatic Precipitator	100%	99,9%
Unit 2	Electrostatic Precipitator	100%	99,91%
Unit 3	Electrostatic Precipitator	100%	99,93%
Unit 4	Electrostatic Precipitator	100%	99,86%
Unit 5	Electrostatic Precipitator	100%	99,91%
Unit 6	Electrostatic Precipitator	100%	99,93%
Associated Unit	Technology Type	Minimum utilisation (%)	Actual Utilisation (%)
Unit 1	SO ₃ Plant	100%	96.77%
Unit 2	SO ₃ Plant	100%	96.77%
Unit 3	SO ₃ Plant	100%	96.77%
Unit 4	SO ₃ Plant	100%	100%
Unit 5	SO ₃ Plant	100%	100%
Unit 6	SO ₃ Plant	100%	96.77%

Sulphur plant availability was below the required 100% for unit 1, unit 2, unit 3 and unit 6 due to unexpected breakdowns.

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2.3 Energy source characteristics

Table 3: Energy Source Material Characteristics.

	Characteristic	Stipulated Range (Unit)	Monthly Average Content
Coal burned	Sulphur Content	0.8-1.6%	1,09%
	Ash Content	30-40%	35,07%

Energy source characteristics remained within the ranges stipulated in the license.

2.4 Emissions reporting

2.4.1 Particulate Matter Emissions

Unit 1 Particulate Emissions

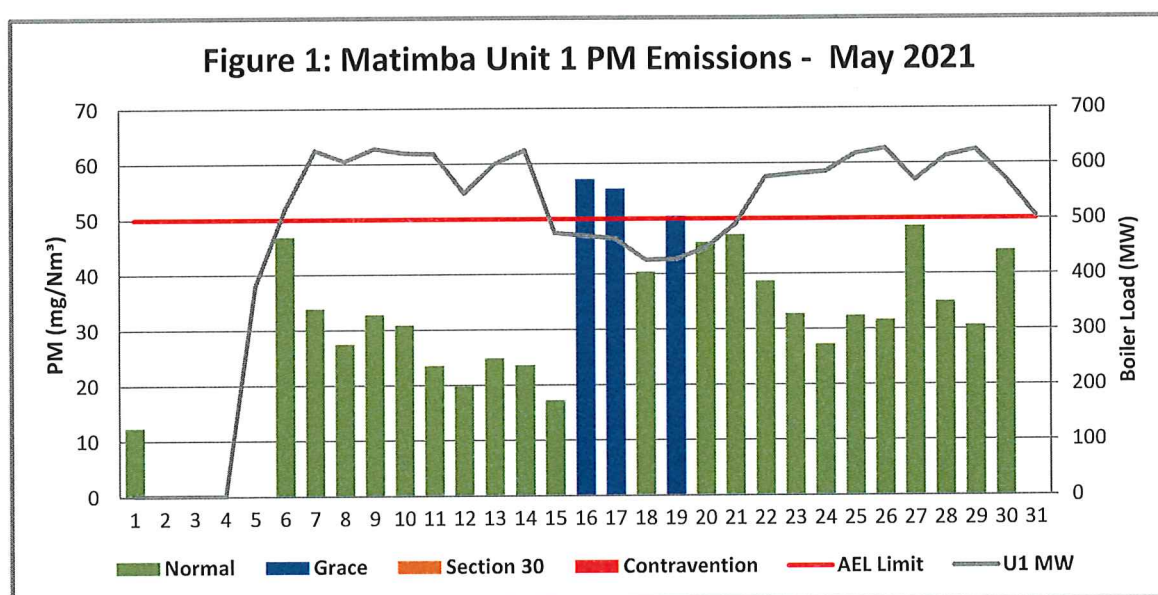


Figure 1: Particulate matter daily average emissions against emission limit for unit 1 for the month of May 2021

Interpretation:

Unit 1 exceeded the daily limit of 50mg/Nm³ on the 16th, 17th, and 19th of May 2021. The 48-hour grace period was not exceeded.

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Unit 2 Particulate Emissions

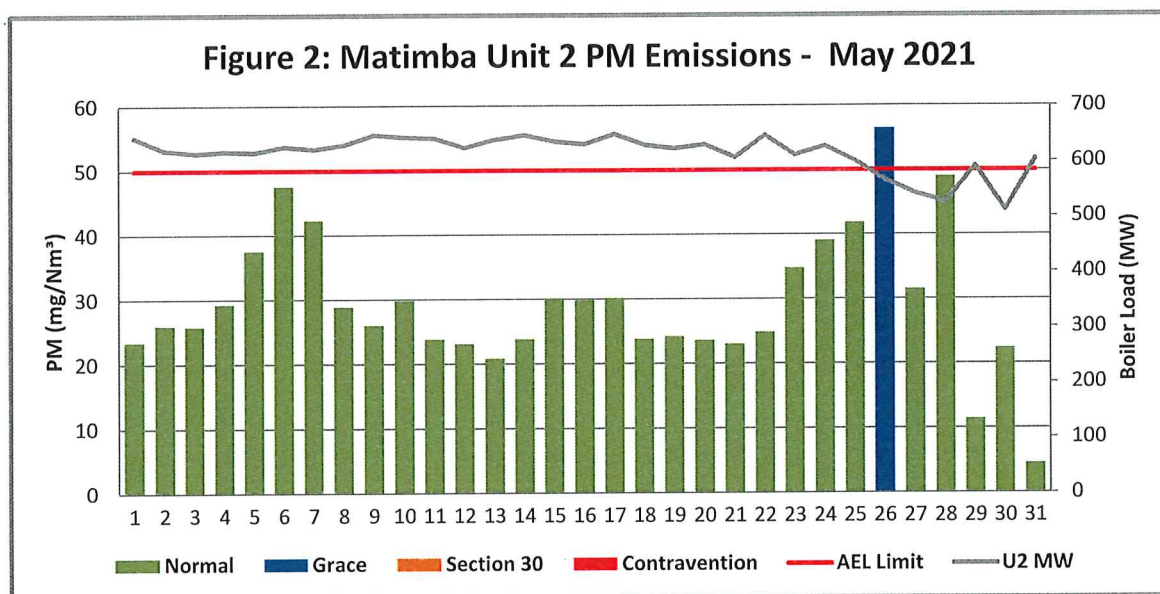


Figure 2: Particulate matter daily average emissions against emission limit for unit 2 for the month of May 2021

Interpretation:

Unit 2 PM emissions exceeded the limit of 50mg/Nm^3 on the 26th of May 2021. The exceedance did not exceed the 48 hour grace period. The exceedance was due to a defect on the sulphur plant. The plant was repaired and emissions returned to below the limit.

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Unit 3 Particulate Emissions

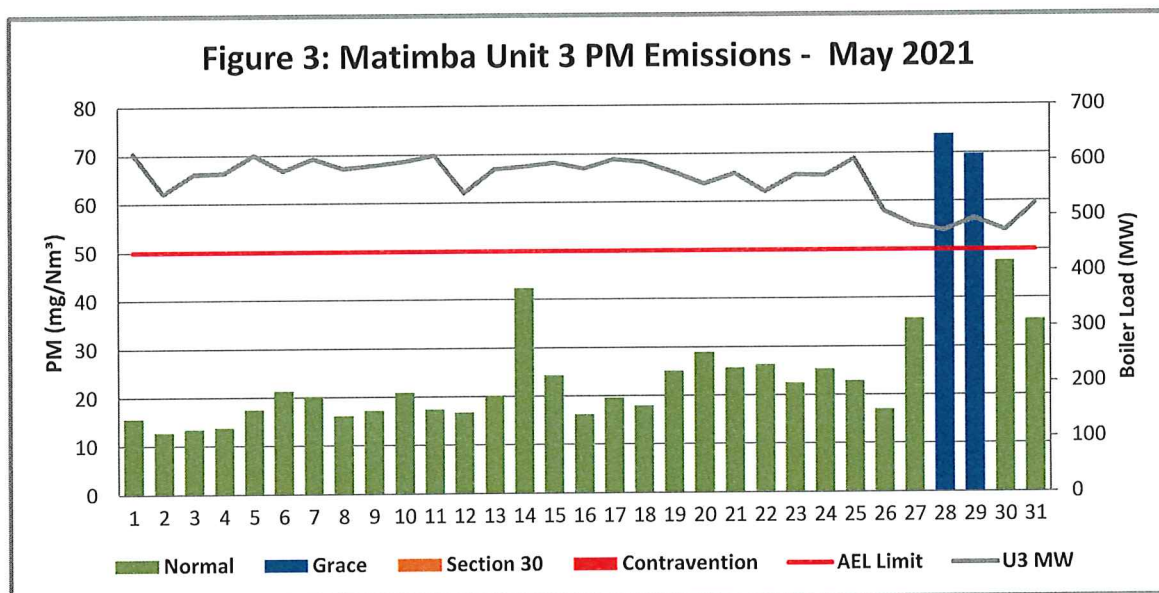


Figure 3: Particulate matter daily average emissions against emission limit for unit 3 for the month of May 2021

Interpretation:

Unit 3 PM emissions exceeded the limit of 50mg/Nm³ on the 28th and 29th of May 2021. The exceedance did not exceed the 48-hour grace period. The exceedance was due to a defect on the ash handling plant. The plant was repaired and emissions returned to normal

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Unit 4 Particulate Emissions

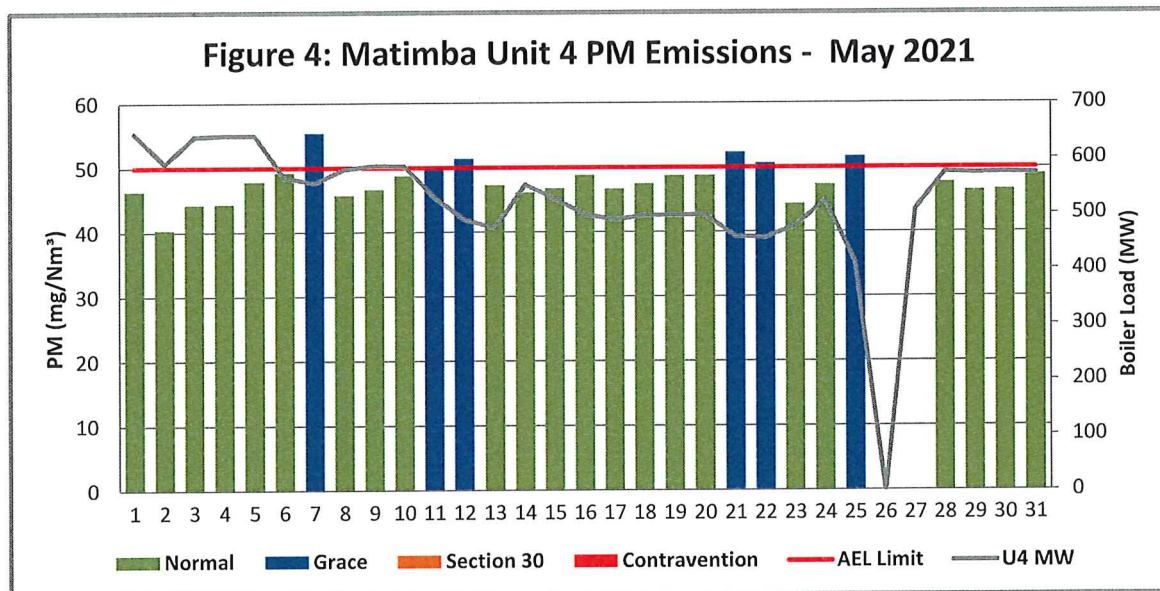


Figure 4: Particulate matter daily average emissions against emission limit for unit 4 for the month of May 2021

Interpretation:

Unit 4 exceeded the particulate emission limit of 50 mg/Nm³ on the 7th, 11th, 12th, 21st, 22nd and 25th of May 2021. The exceedances were due to defects on the ash handling plant. The plant was repaired and emissions returned to normal. The exceedances did not exceed the 48-hour grace period.

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Unit 5 Particulate Emissions

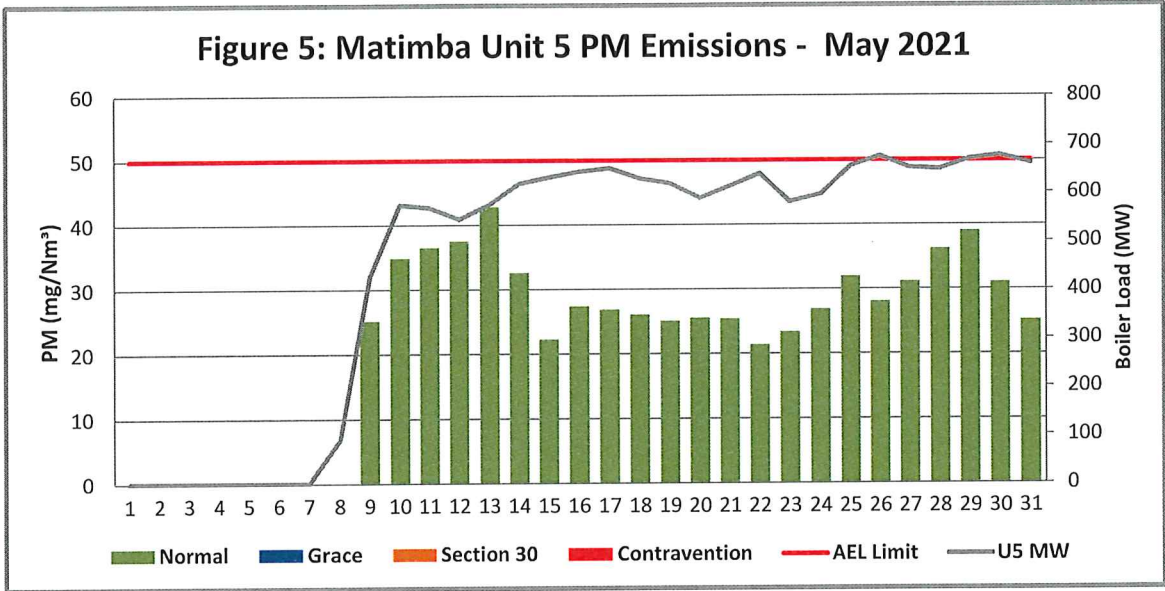


Figure 5: Particulate matter daily average emissions against emission limit for unit 5 for the month of May 2021

Interpretation:

All daily averages below particulate emission limit of 50 mg/Nm³.

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Unit 6 Particulate Emissions

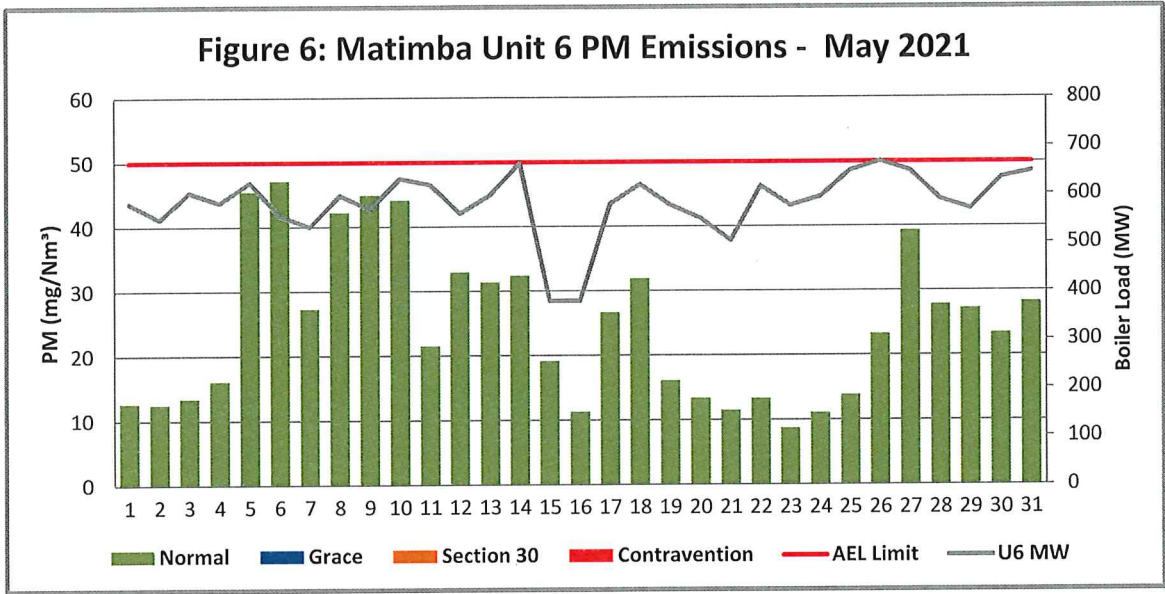


Figure 6: Particulate matter daily average emissions against emission limit for unit 6 for the month of May 2021

Interpretation:

All daily averages below particulate emission limit of 50 mg/Nm³.

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2.4.2 Gaseous Emissions

Unit 1 SO₂ Emissions

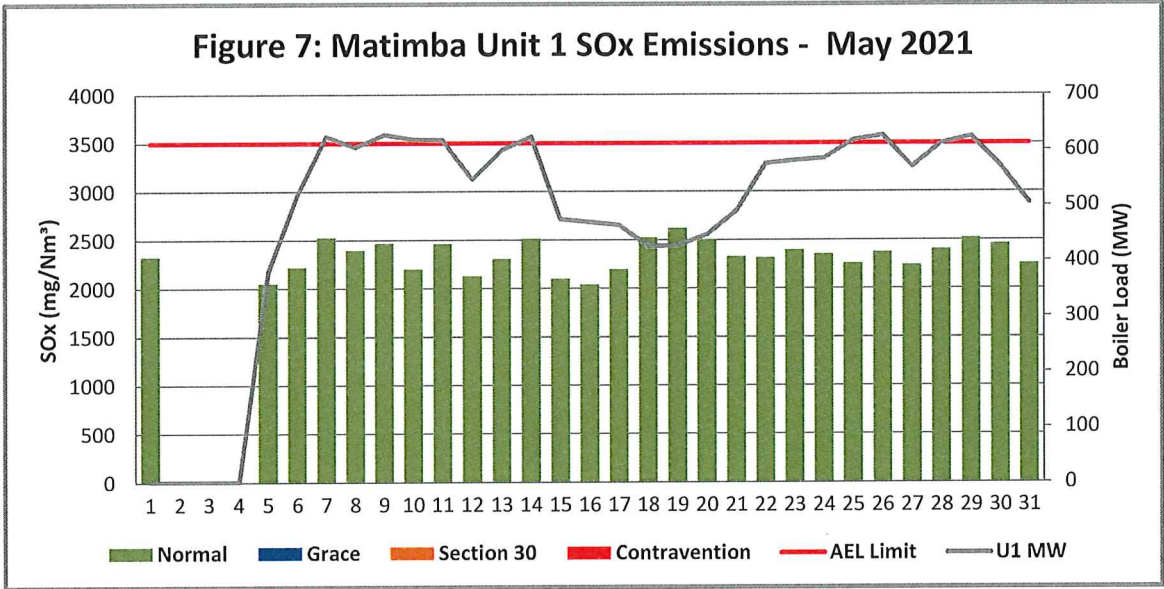


Figure 7: SO₂ daily average emissions against emission limit for unit 1 for the month of May 2021

Interpretation:

All daily averages below SO₂ emission monthly limit of 3500 mg/Nm³.

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Unit 2 SO₂ Emissions

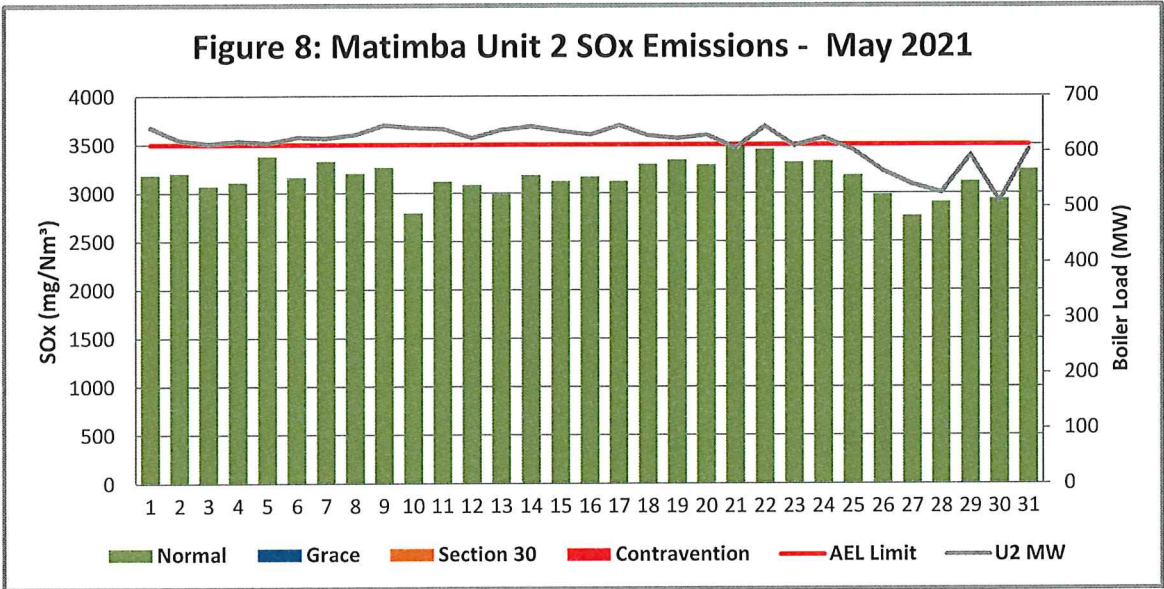


Figure 8: SO₂ daily average emissions against emission limit for unit 2 for the month of May 2021

Interpretation:

All daily averages below SO₂ emission monthly limit of 3500 mg/Nm³.

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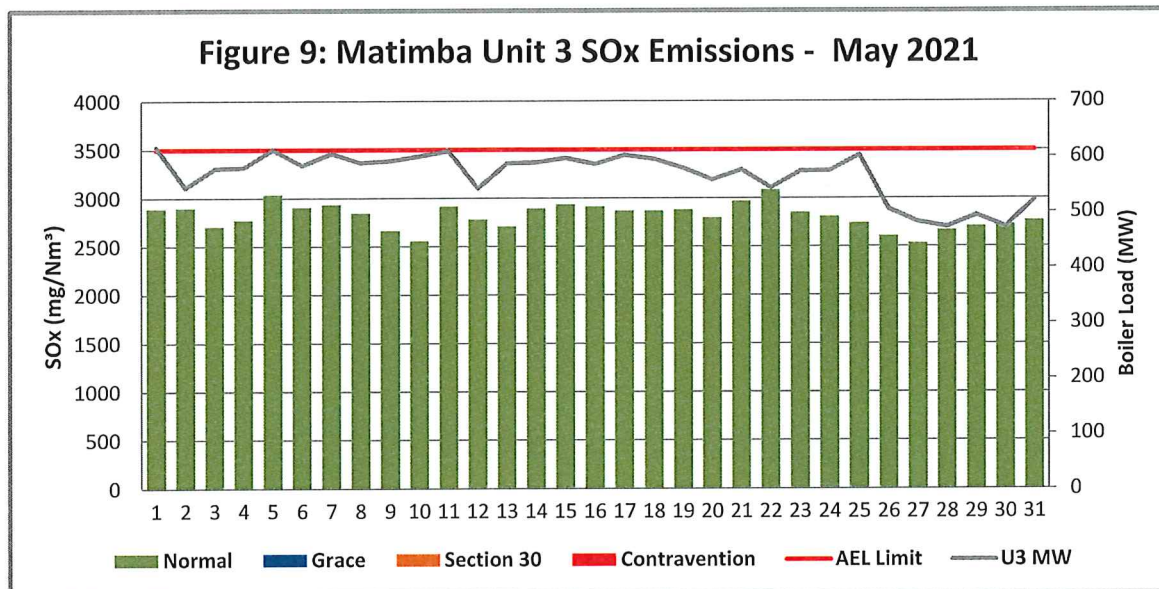
Unit 3 SO₂ Emissions

Figure 9: SO₂ daily average emissions against emission limit for unit 3 for the month of May 2021

Interpretation:

All daily averages below SO₂ emission monthly limit of 3500 mg/Nm³.

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Unit 4 SO₂ Emissions

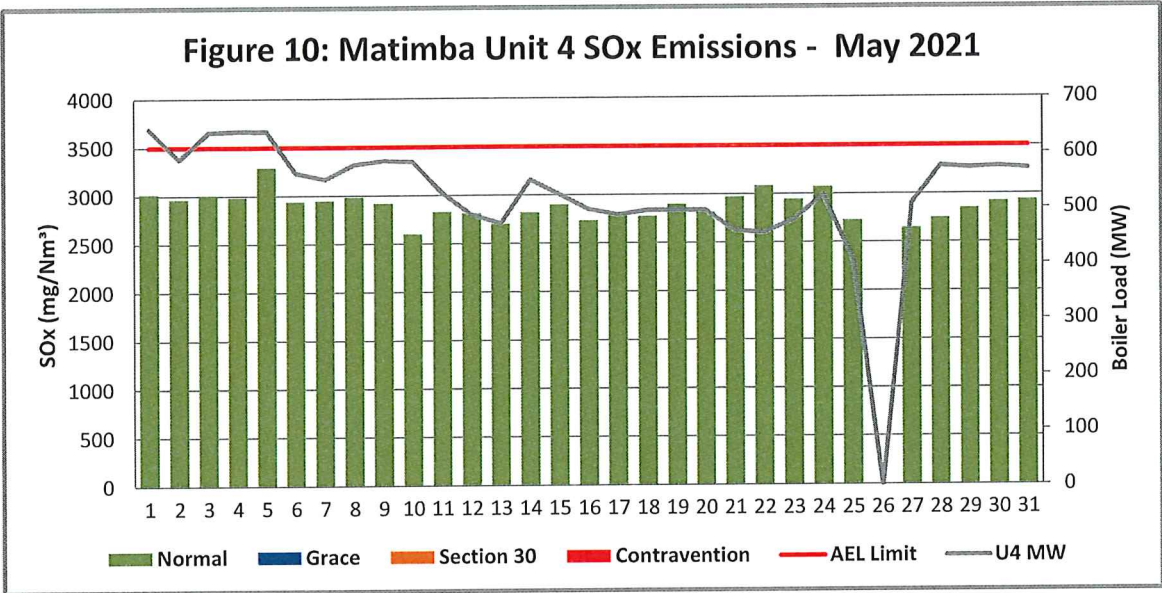


Figure 10: SO₂ daily average emissions against emission limit for unit 4 for the month of May 2021

Interpretation:

All daily averages below SO₂ emission monthly limit of 3500 mg/Nm³.

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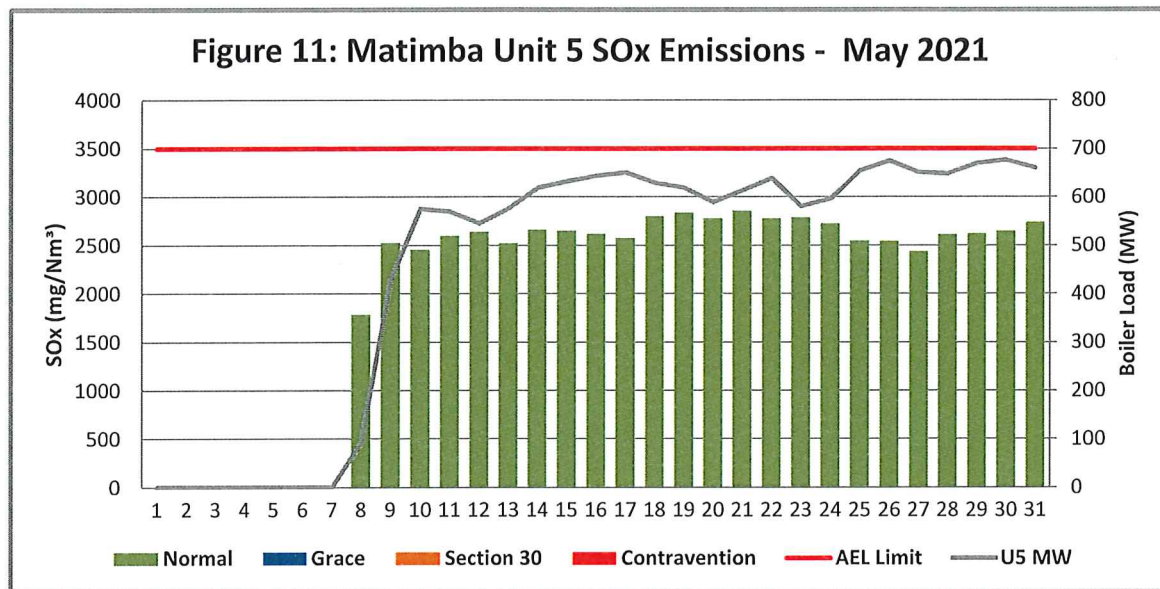
Unit 5 SO₂ Emissions

Figure 11: SO₂ daily average emissions against emission limit for unit 5 for the month of May 2021

Interpretation:

All daily averages below SO₂ emission monthly limit of 3500 mg/Nm³.

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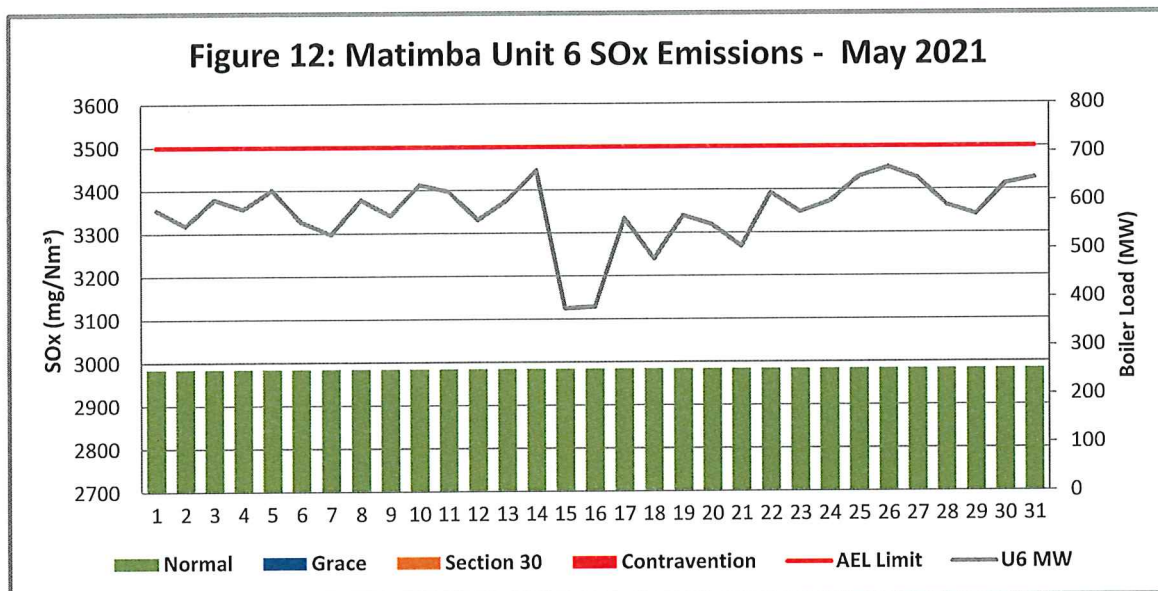
Unit 6 SO₂ Emissions

Figure 12: SO₂ daily average emissions against emission limit for unit 6 for the month of May 2021

Interpretation:

As per the notification sent to your office on the 4th of June 2021, the Gaseous emission monitor for unit 6 has been defective since the 17th of April 2021. The supplier has been notified but cannot access the monitor for repairs due to defects on the stack lift causing a safety risk. Averaged gaseous emission data from the QAL 2 test report was used to report gaseous emissions for unit 6.

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Unit 1 NO_x Emissions

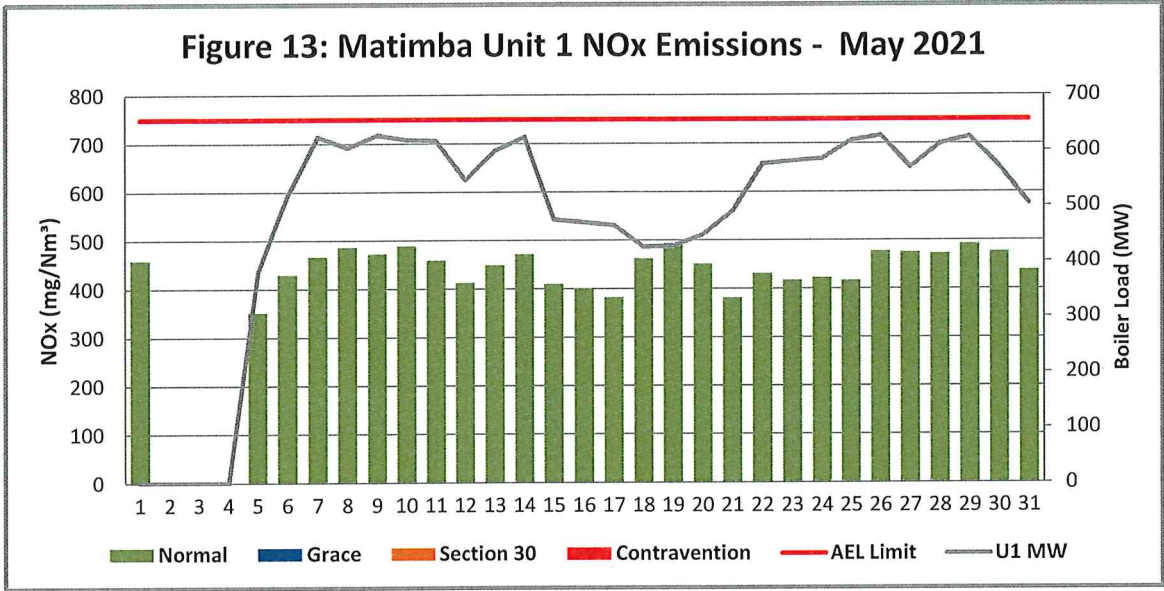


Figure 13: NO_x daily average emissions against emission limit for unit 1 for the month of May 2021

Interpretation:

All daily averages below NO_x emission limit of 750 mg/Nm³.

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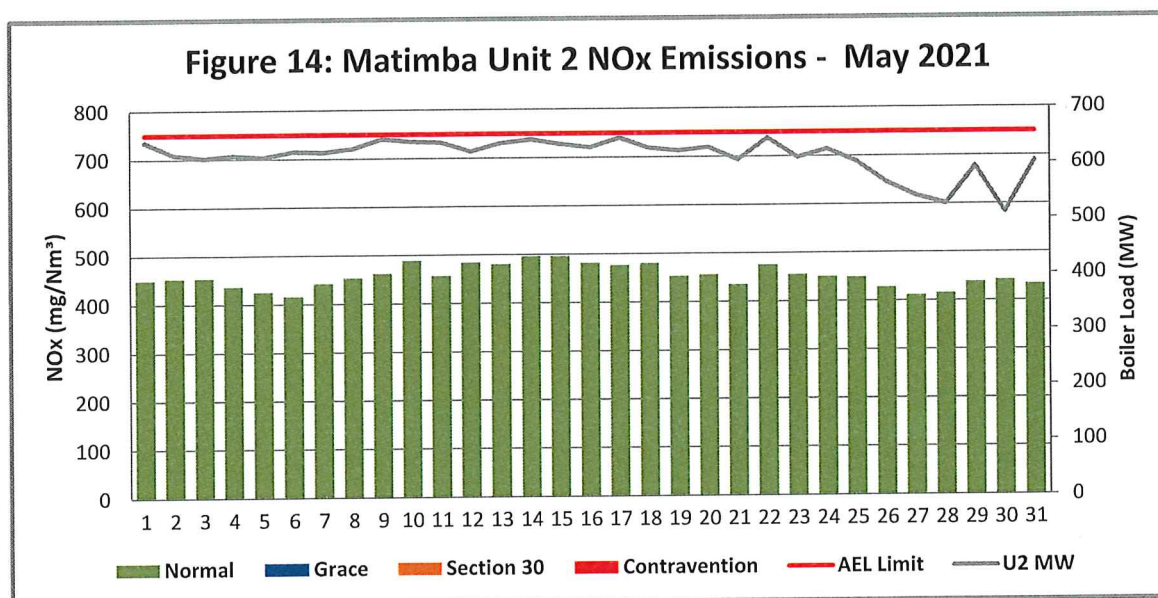
Unit 2 NO_x Emissions

Figure 14: NO_x daily average emissions against emission limit for unit 2 for the month of May 2021

Interpretation:

All daily averages below NO_x emission limit of 750 mg/Nm³.

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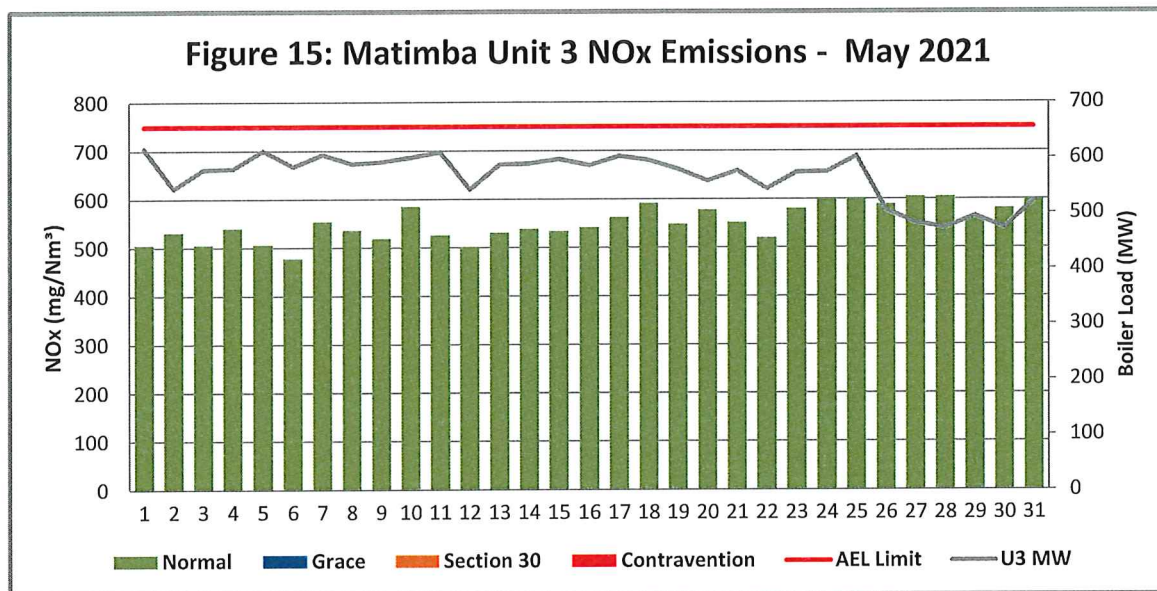
Unit 3 NO_x Emissions

Figure 15: NO_x daily average emissions against emission limit for unit 3 for the month of May 2021

Interpretation:

All daily averages below NO_x emission limit of 750 mg/Nm³.

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Unit 4 NO_x Emissions

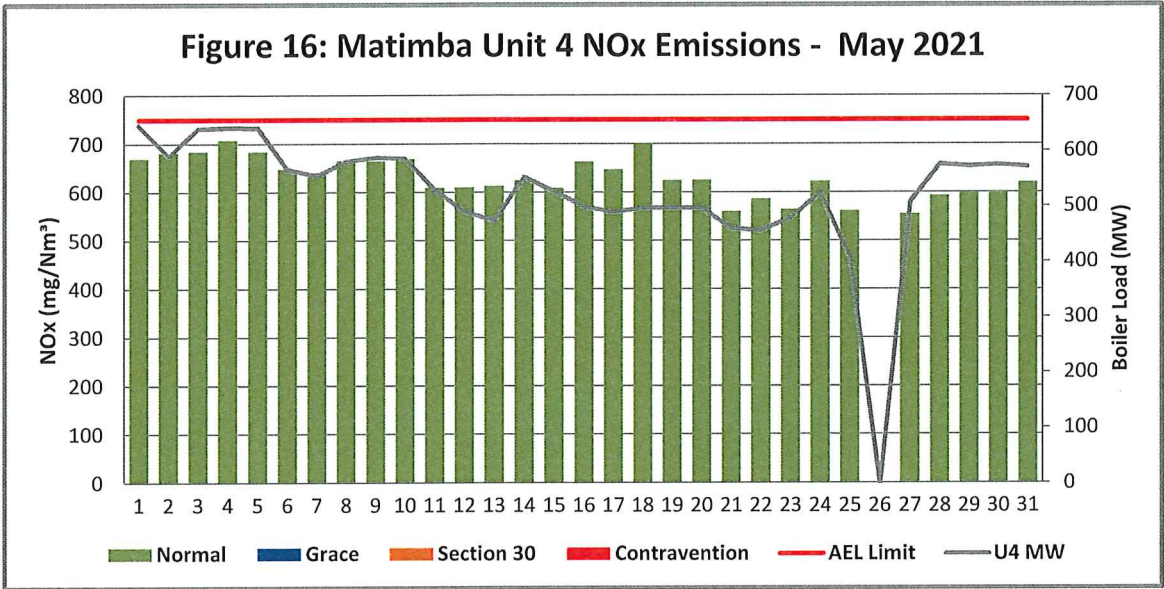


Figure 16: NO_x daily average emissions against emission limit for unit 4 for the month of May 2021

Interpretation:

All daily averages below NO_x emission limit of 750 mg/Nm³.

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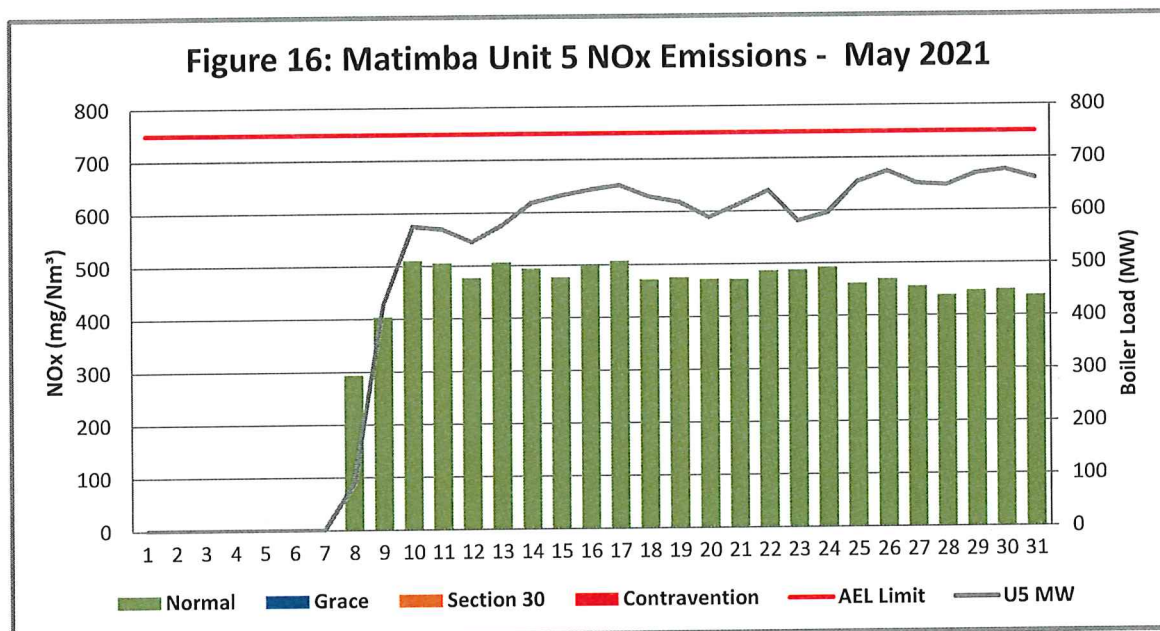
Unit 5 NO_x Emissions

Figure 17: NO_x daily average emissions against emission limit for unit 5 for the month of May 2021

Interpretation:

All daily averages below NO_x emission limit of 750 mg/Nm³.

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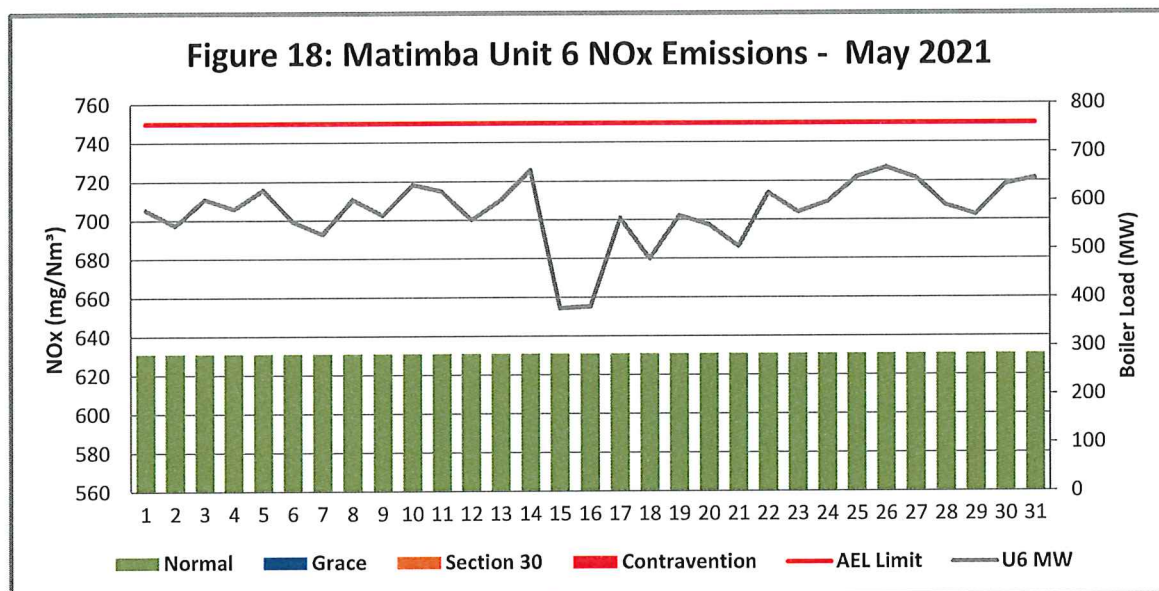
Unit 6 NO_x Emissions

Figure 18: NO_x daily average emissions against emission limit for unit 5 for the month of May 2021

Interpretation:

The Gaseous emission monitor for unit 6 has been defective since the unit was synchronised from outage on the 17th of April 2021. Averaged gaseous emission data from the QAL 2 test report was used to report gaseous emissions for unit 6.


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2.4.3 Total Volatile Organic Compounds

Table 4: Total volatile compound estimates

																										
CALCULATION OF EMISSIONS OF TOTAL VOLATILE COMPOUNDS FROM FUEL OIL STORAGE TANKS*																										
Date:	Wednesday, 09 June 2021																									
Station:	Matimba Power Station																									
Province:	Limpopo Province																									
Tank no.	1-4																									
Description:	Outdoor fuel oil storage tank																									
Tank Type:	Vertical fixed roof (vented to atmosphere)																									
Material stored:	Fuel Oil 150																									
<p align="center">MONTHLY INPUT DATA FOR THE STATION</p> <p align="center">Please only insert relevant monthly data inputs into the blue cells below</p> <p align="center">Choose from a dropdown menu in the green cells</p> <p align="center">The total VOC emissions for the month are in the red cells</p> <p align="center">IMPORTANT: Do not change any other cells without consulting the AQ CoE</p>																										
MONTH:	May																									
<table border="1"> <thead> <tr> <th>GENERAL INFORMATION:</th> <th>Data</th> <th>Unit</th> </tr> </thead> <tbody> <tr> <td>Total number of fuel oil tanks:</td> <td>4</td> <td>NA</td> </tr> <tr> <td>Height of tank:</td> <td>13,34</td> <td>m</td> </tr> <tr> <td>Diameter of tank:</td> <td>9,53</td> <td>m</td> </tr> <tr> <td>Net fuel oil throughput for the month:</td> <td>908,515</td> <td>tons/month</td> </tr> <tr> <td>Molecular weight of the fuel oil:</td> <td>166,00</td> <td>Lb/lb-mole</td> </tr> </tbody> </table>			GENERAL INFORMATION:	Data	Unit	Total number of fuel oil tanks:	4	NA	Height of tank:	13,34	m	Diameter of tank:	9,53	m	Net fuel oil throughput for the month:	908,515	tons/month	Molecular weight of the fuel oil:	166,00	Lb/lb-mole						
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<table border="1"> <thead> <tr> <th>METEROLOGICAL DATA FOR THE MONTH</th> <th>Data</th> <th>Unit</th> </tr> </thead> <tbody> <tr> <td>Daily average ambient temperature</td> <td>19,51</td> <td>°C</td> </tr> <tr> <td>Daily maximum ambient temperature</td> <td>28,42</td> <td>°C</td> </tr> <tr> <td>Daily minimum ambient temperature</td> <td>12,06</td> <td>°C</td> </tr> <tr> <td>Daily ambient temperature range</td> <td>15,04</td> <td>°C</td> </tr> <tr> <td>Daily total insolation factor</td> <td>3,91</td> <td>kWh/m²/day</td> </tr> <tr> <td>Tank paint colour</td> <td>Grey/medium</td> <td>NA</td> </tr> <tr> <td>Tank paint solar absorptance</td> <td>0,68</td> <td>NA</td> </tr> </tbody> </table>			METEROLOGICAL DATA FOR THE MONTH	Data	Unit	Daily average ambient temperature	19,51	°C	Daily maximum ambient temperature	28,42	°C	Daily minimum ambient temperature	12,06	°C	Daily ambient temperature range	15,04	°C	Daily total insolation factor	3,91	kWh/m²/day	Tank paint colour	Grey/medium	NA	Tank paint solar absorptance	0,68	NA
METEROLOGICAL DATA FOR THE MONTH	Data	Unit																								
Daily average ambient temperature	19,51	°C																								
Daily maximum ambient temperature	28,42	°C																								
Daily minimum ambient temperature	12,06	°C																								
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Tank paint solar absorptance	0,68	NA																								
<table border="1"> <thead> <tr> <th>FINAL OUTPUT:</th> <th>Result</th> <th>Unit</th> </tr> </thead> <tbody> <tr> <td>Breathing losses:</td> <td>0,54</td> <td>kg/month</td> </tr> <tr> <td>Working losses:</td> <td>0,03</td> <td>kg/month</td> </tr> <tr> <td>TOTAL LOSSES (Total TVOC Emissions for the month):</td> <td>0,56</td> <td>kg/month</td> </tr> </tbody> </table>			FINAL OUTPUT:	Result	Unit	Breathing losses:	0,54	kg/month	Working losses:	0,03	kg/month	TOTAL LOSSES (Total TVOC Emissions for the month):	0,56	kg/month												
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Working losses:	0,03	kg/month																								
TOTAL LOSSES (Total TVOC Emissions for the month):	0,56	kg/month																								
<p>*Calculations performed on this spreadsheet are taken from the USEPA AP-42- Section 7.1 Organic Liquid Storage Tanks - January 1996. This spreadsheet is derived from materials provided by Jimmy Peress, PE, Trittech Consulting Engineers, 85-93 Chevy Chase Street, Jamaica, NY 11432 USA, Tel - 718-454-3920, Fax - 718-454-6330, e-mail - PeressJ@nyc.rr.com.</p>																										

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2.4.4 Greenhouse gas (CO₂) emissions

CO₂ emissions are reported in terms of the Greenhouse gas reporting regulations (GN 43712, No.R. 994) and are not included in the monthly AEL compliance report.

2.5 Daily power generated

Table 5: Daily power generated per unit in MWh for the month of May 2021

Date	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
2021/05/01	58,2667	15205	14720,1	15406	0	13848,9
2021/05/02	0	14680	12988,8	14097	0	13077,9
2021/05/03	0	14537,9	13812,1	15258	0	14370,6
2021/05/04	0	14615,1	13857,9	15284	0	13877,8
2021/05/05	1826,73	14581	14635,7	15301	0	14867,8
2021/05/06	12471,5	14818	13947	13463	0	13251,7
2021/05/07	15029,3	14717,9	14472,5	13256	0	12696,3
2021/05/08	14501,5	14901,2	14037,9	13840	74,5	14262,7
2021/05/09	15077,1	15324,1	14163,4	13991	10189	13566,8
2021/05/10	14896,3	15217,3	14333,7	13956	13685,4	15072,7
2021/05/11	14867,7	15166	14588,6	12624	13558,4	14763,4
2021/05/12	13148,1	14776,7	12973,9	11641	12977,8	13355,4
2021/05/13	14345,9	15109,6	13990,4	11263	13698,9	14257,5
2021/05/14	15019,3	15309,7	14096,1	13171	14722,5	15842,4
2021/05/15	11439,9	15092,5	14250,6	12528	15041,5	9054,47
2021/05/16	11276,9	14936,6	14001,5	11871	15300,9	9060,67
2021/05/17	11153,5	15358,2	14391,6	11616	15484,2	13876,5
2021/05/18	10227,3	14883	14260	11834	14967,3	14830,3
2021/05/19	10252,1	14728	13827,9	11843	14728,2	13818,3
2021/05/20	10724,2	14886,6	13320,5	11865	14017,1	13153,8
2021/05/21	11748,7	14339,6	13768,2	10916	14593,7	12033,8
2021/05/22	13836,8	15296,7	12980,7	10848	15203,2	14727,6
2021/05/23	13913,1	14446,7	13691,7	11368	13818,8	13695,1
2021/05/24	14020,2	14828,3	13674,5	12440	14194,4	14157,3
2021/05/25	14822,5	14212,3	14386,9	3694	15572,4	15424,9
2021/05/26	15040	13397,1	12104,4	0	16051,1	15892
2021/05/27	14879,6	12826,8	11498,5	8088	15490,4	15421,7
2021/05/28	14655,9	12439,5	11281,9	13668	15418,5	14011,1
2021/05/29	14997,3	13990,3	11798,2	13623	15928,5	13565,9
2021/05/30	3925,67	9181,73	11282,9	13674	16092,6	15089,8
2021/05/31	10074,4	14280,7	12421,4	13636	15718,7	15404,6

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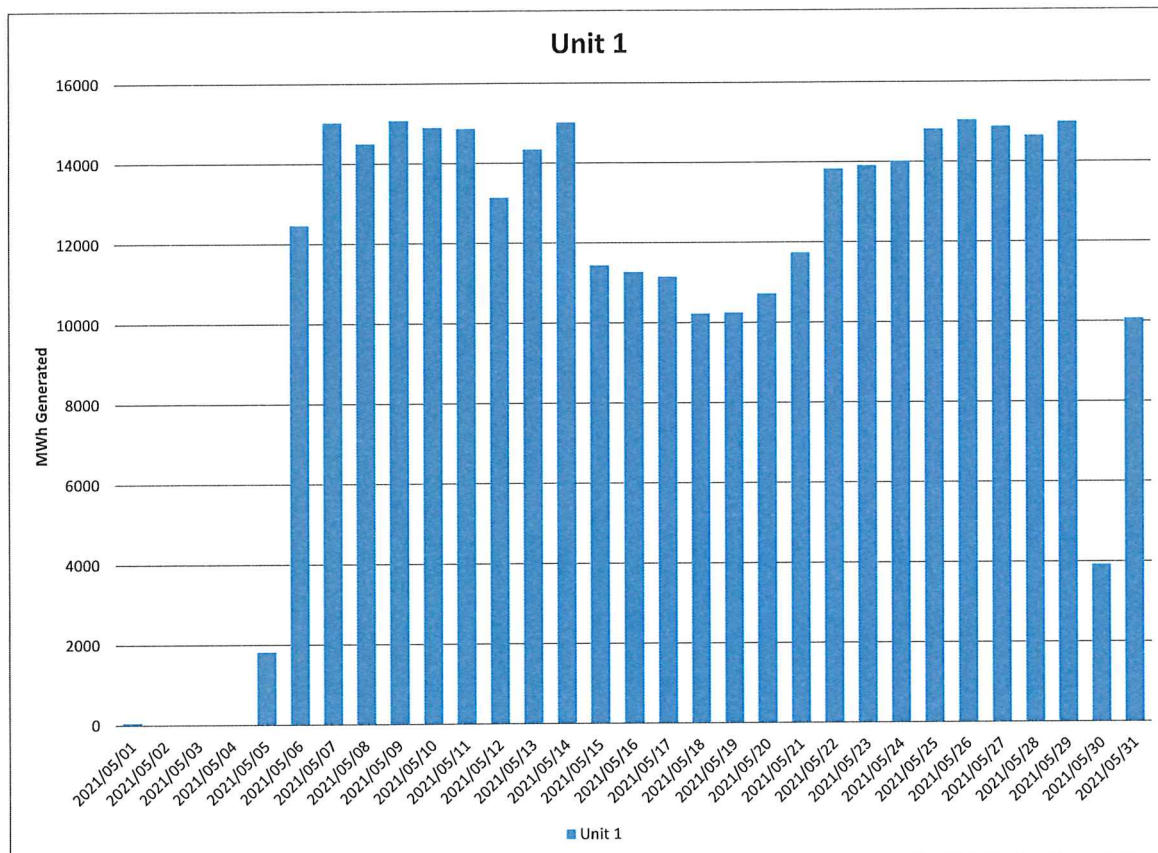


Figure 19: Unit 1 daily generated power in MWh for the month of May 2021

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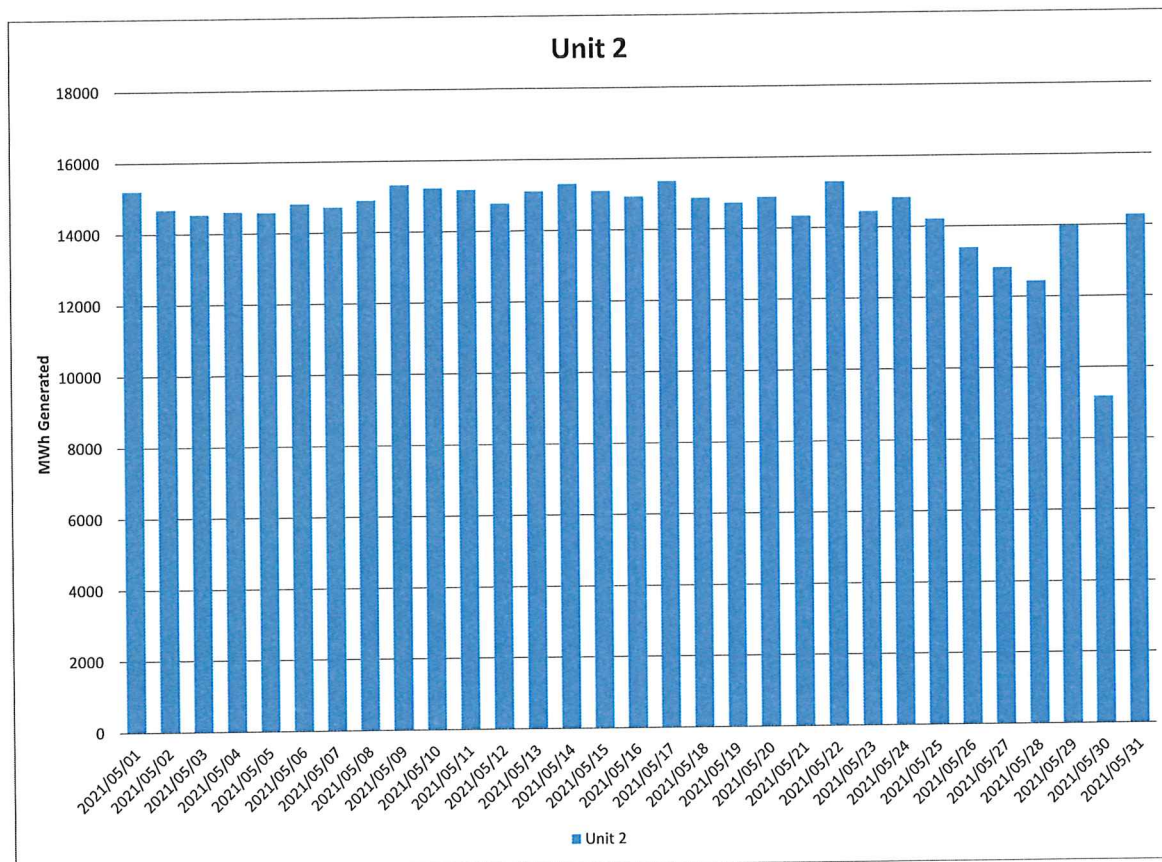


Figure 20: Unit 2 daily generated power in MWh for the month of May 2021

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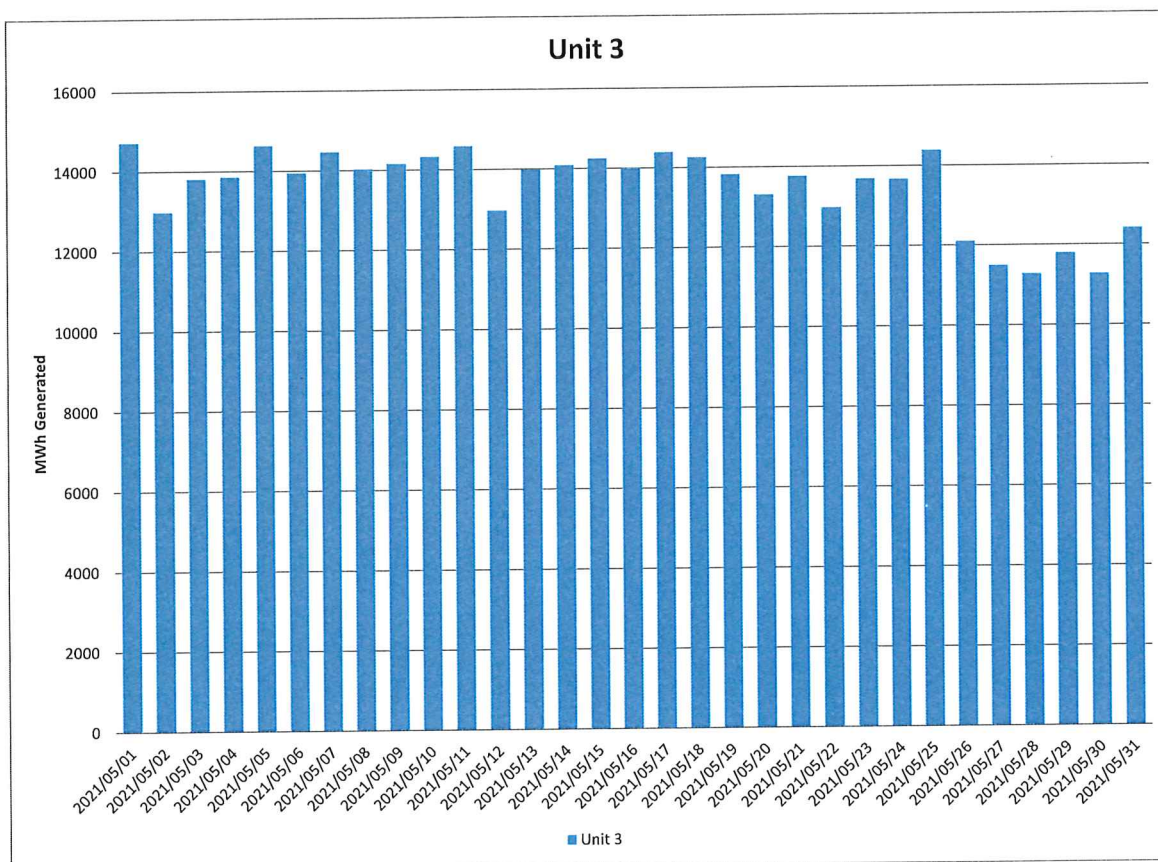


Figure 21: Unit 3 daily generated power in MWh for the month of May 2021

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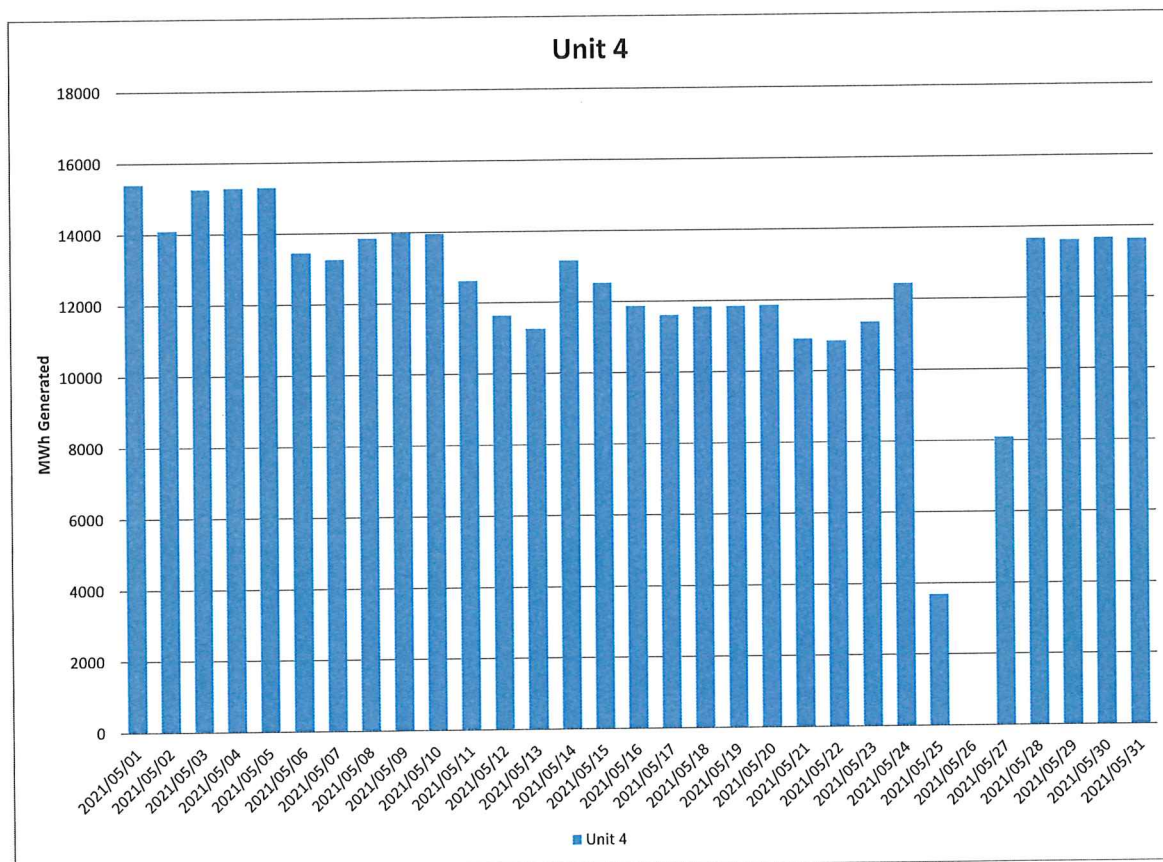


Figure 22: Unit 4 daily generated power in MWh for the month of May 2021

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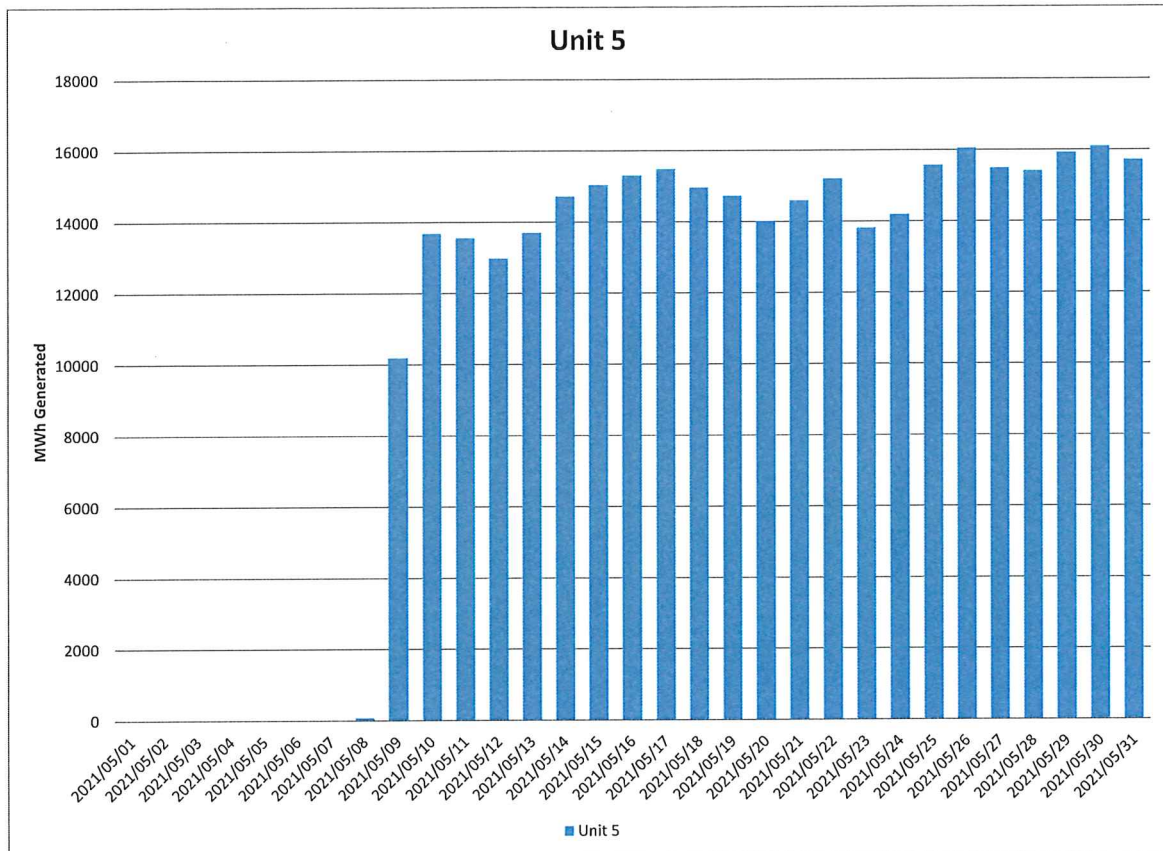


Figure 23: Unit 5 daily generated power in MWh for the month of May 2021

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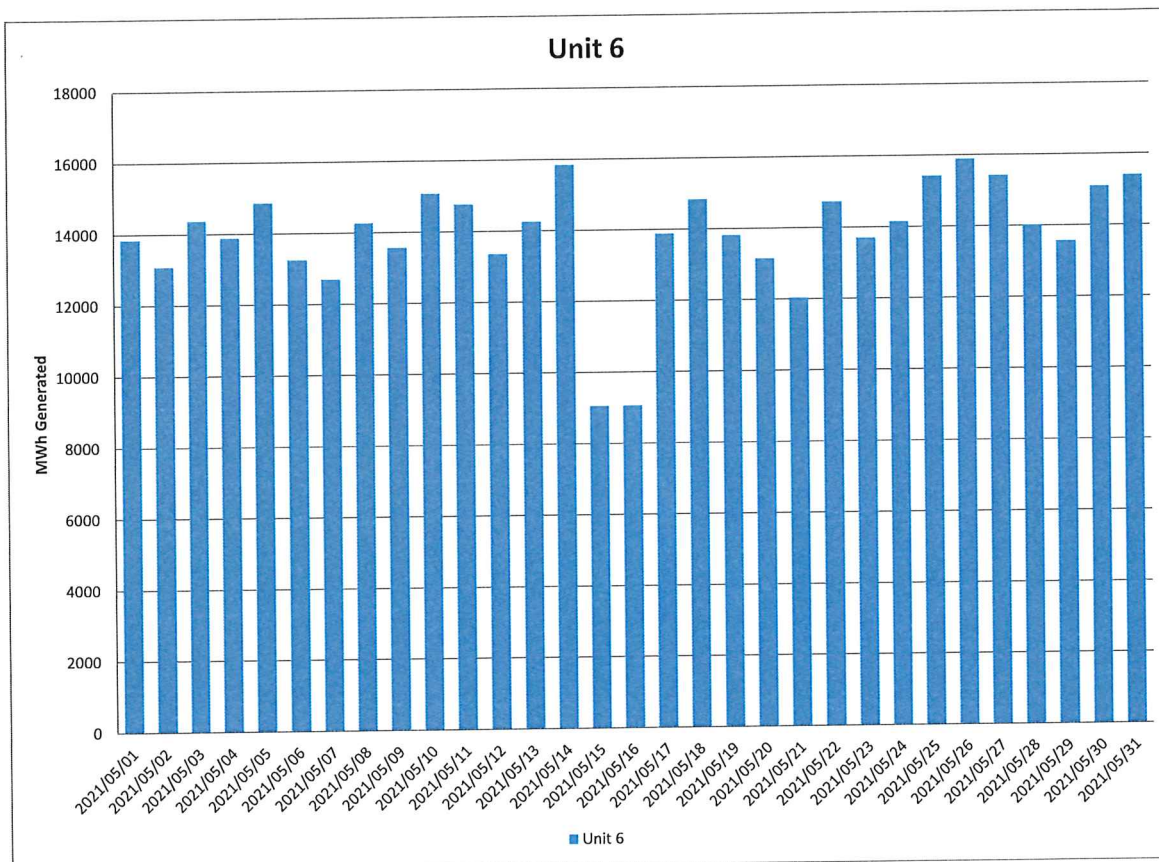


Figure 24: Unit 6 daily generated power in MWh for the month of May 2021

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2.6 Pollutant Tonnages

Table 6: Pollutant tonnages for the month of May 2021

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO _x (tons)	CO ₂ (tons)
Unit 1	55,4	4 181,3	796,5	364 994
Unit 2	59,6	5 812,3	833,9	373 514
Unit 3	52,2	6 449,2	1 261,9	422 270
Unit 4	77,0	5 039,2	1 103,2	319 807
Unit 5	48,4	4 161,2	743,7	310 416
Unit 6	46,4	6 383,1	1 349,6	395 872
SUM	339,0	32 026,4	6 088,9	2 186 872

The emitted pollutant tonnages for May 2021 are provided in table 6. The gaseous monitor for Unit 6 has been defective since the 17th of April 2021. Details are provided in section 2.8.1. Averaged gaseous emission data from the QAL 2 test report was used to report gaseous emissions for unit 6.

2.7 Reference values

Table 7: Reference values for data provided

Compound / Parameter	Units of Measure	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Oxygen	%	9,14	7,71	7,87	8,03	7,31	8,16
Moisture	%	4,29	5,01	4,05	3,28	5,47	4,12
Velocity	m/s	29,2	23,9	28,2	23,3	24,6	27,7
Temperature	°C	140,8	131,1	128,4	134,5	126,5	123,0
Pressure	mBar	937,6	879,7	921,4	929,1	934,4	892,9

Table 7 shows the reference values for the emission data provided for the month of May 2021. The gaseous monitor for Unit 6 has been defective since the 17th of April 2021. Details are provided in section 2.8.1. Averaged gaseous emission data from the QAL 2 test report was used to report gaseous emissions for unit 6.

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2.8 Continuous Emission Monitors

2.8.1 Reliability

Table 8: Average percentage (%) availability of monitors for the month of May 2021.

Associated Unit/Stack	PM	SO ₂	NO	CO ₂
Unit 1	100,0	97,8	97,1	94,2
Unit 2	100,0	100,0	100,0	100,0
Unit 3	100,0	100,0	100,0	100,0
Unit 4	100,0	100,0	100,0	100,0
Unit 5	100,0	100,0	100,0	100,0
Unit 6	100,0	0,0	0,0	0,0

Gaseous emission monitor for Unit 6 has been identified to be defective on the 17th of April 2021. On the 13th of March 2021 a safety incident, which occurred on one of the stack lifts, led to the inspection and closure of both stack lifts until certain maintenance activities are performed. Due to the stack lifts not being available the supplier cannot access the gaseous monitors with the required equipment to perform maintenance. Maintenance of the monitor will take place as soon as the lifts are available and safe for use. Averaged gaseous emission data from the QAL 2 test report was used to report gaseous emissions for unit 6.

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2.8.2 Changes, downtime and repairs

Unit 1

- No adjustments done on the CEMs. Calibration of gaseous analysers is done every second week.
- No downtime or repairs done on the particulate monitors

Unit 2

- No adjustments done on the CEMs. Calibration of gaseous analysers is done every second week.
- No downtime or repairs done on the particulate monitors

Unit 3

- No adjustments done on the CEMs. Calibration of gaseous analysers is done every second week.
- No downtime or repairs done on the particulate monitors

Unit 4

- No adjustments done on the CEMs. Calibration of gaseous analysers is done every second week.
- No downtime or repairs done on the particulate monitors

Unit 5

- No adjustments done on the CEMs. Calibration of gaseous analysers is done every second week.
- No downtime or repairs done on the particulate monitors

Unit 6

- Unit 6 gaseous emission monitor is defective.
- No downtime or repairs done on the particulate monitors

2.8.3 Sampling dates and times

Continuous

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2.9 Start-up information

Table 9: Start-up information

Unit	1	
Fires in	05 May 2021	14h28
Synchronization with Grid	05 May 2021	18h59
Emissions below limit	06 May 2021	01h11
Fires in to synchronization	4,52	HOURS
Synchronization to < Emission limit	6,2	HOURS

Unit	1	
Fires in	30 May 2021	17h57
Synchronization with Grid	30 May 2021	23h21
Emissions below limit	31 May 2021	00h21
Fires in to synchronization	5,4	HOURS
Synchronization to < Emission limit	1	HOUR

Unit	1	
Fires in	31 May 2021	05h36
Synchronization with Grid	31 May 2021	08h26
Emissions below limit	31 May 2021	10h03
Fires in to synchronization	2,83	HOURS
Synchronization to < Emission limit	1,62	HOURS

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Unit	2	
Fires in	30 May 2021	03h12
Synchronization with Grid	30 May 2021	06h51
Emissions below limit	30 May 2021	08h38
Fires in to synchronization	3,65	HOURS
Synchronization to < Emission limit	1,78	HOURS

Unit	4	
Fires in	25 May 2021	07h42
Synchronization with Grid	25 May 2021	15h22
Emissions below limit	25 May 2021	18h01
Fires in to synchronization	7,67	HOURS
Synchronization to < Emission limit	2,65	HOURS

Unit	4	
Fires in	27 May 2021	04h03
Synchronization with Grid	27 May 2021	07h58
Emissions below limit	27 May 2021	12h00
Fires in to synchronization	3,92	HOURS
Synchronization to < Emission limit	4,03	HOURS

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Unit	5	
Fires in	08 May 2021	18h48
Synchronization with Grid	08 May 2021	23h07
Emissions below limit	09 May 2021	14h01
Fires in to synchronization	4,31	HOURS
Synchronization to < Emission limit	14,9	HOURS

2.10 Emergency generation

Table 10: Emergency generation

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Emergency Generation hours declared by national Control	291	404	410	363	219	410
Emergency Hours declared including hours after stand down	314	427	433	386	242	433
Days over the Limit during Emergency Generation	4	1	2	6	0	0

Unit 1 particulate emissions exceeded the 50mg/Nm³ emission limit during emergency generation from the 16th until the 19th of May 2021. Unit 2 particulate emissions exceeded the 50mg/Nm³ emission limit during emergency generation on the 26th of May 2021. Unit 3 emissions exceeded the 50mg/Nm³ emission limit during emergency generation on the 28th and the 29th of May 2021. Unit 4 particulate emissions exceeded the 50mg/Nm³ emission limit during emergency generation on the 7th, 11th, 12th, 21st, 22nd and the 25th of May 2021. The exceedance on Unit 1 exceeded the 48 grace period for 5 hours and led to a section 30 incident being reported. The rest of the exceedances did not exceed the 48-hour grace period. Detailed emission information for particulate emissions can be found on figures 1 to 4.

2.11 Complaints register

Table 11: Complaints

Source Code/ Name	Root Cause Analysis	Calculation of Impacts/ emissions associated with the incident	Dispersion modelling of pollutants where applicable	Measures implemented to prevent reoccurrence	Date by which measure will be implemented
None					

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2.12 Air quality improvements and social responsibility conducted

2.12.1 Air quality improvements

None

2.12.2 Social responsibility conducted

None

2.13 Ambient air quality monitoring

Ten exceedances of the SO₂ 10-minute limit, four exceedances of the SO₂ hourly limit, twelve exceedances of the PM_{2.5} daily limit and thirteen exceedances of the PM₁₀ daily limit were noted. No other parameters exceeded the set limits during the monitoring period.

Ambient CO, PM_{2.5}, PM₁₀ and NO₂ concentrations at Marapong monitoring site show influence of emissions from low level sources in the area while ambient Hg show influence of emissions from low level sources, tall stack emitters and other industrial activities. Ambient SO₂ concentrations show influence of emissions from tall stack emitters and other industrial activities.

The average data recovery for the period was 92,4% and the station availability was 98,8%.

Detailed results can be found in Attachment 1, "Marapong monthly Report_May 2021".

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2.14 Electrostatic precipitator and Sulphur plant status

Unit 1

- All precipitator fields in service.
- No abnormalities on the SO₃ plant. Preventative maintenance done during the month.

Unit 2

- All precipitator fields in service.
- No abnormalities on the SO₃ plant. Preventative maintenance done during the month.

Unit 3

- 2 out of 32 precipitator fields is out of service. Repairs will be done during the next opportunity outage.
- No abnormalities on the SO₃ plant. Preventative maintenance done during the month.

Unit 4

- 6 out of 32 precipitator fields is out of service.
- No abnormalities on the SO₃ plant. Preventative maintenance done during the month.

Unit 5

- All precipitator fields in service.
- No abnormalities on the SO₃ plant. Preventative maintenance done during the month.

Unit 6

- All precipitator fields in service.
- No abnormalities on the SO₃ plant. Preventative maintenance done during the month.

SO₃ common plant

- No abnormalities on the sulphur storage plant.

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2.15 General

Name and reference number of the monitoring method used:

1. Particulate and gas monitoring according to standards
 - a. BS EN 14181:2004 - Quality Assurance of Automated Measuring Systems
 - b. ESKOM internal standard 240-56242363 Emissions Monitoring and Reporting Standard

Sampling locations:

1. Stack one
 - a. Particulates:
 - i. S23° 40' 2.8" E027° 36' 34.8" 175m from ground level and 75m from the top.
 - b. Gas:
 - i. S23° 40' 2.8" E027° 36' 34.8" 100m from ground level and 150m from the top.
 - c. Stack height
 - i. 250 meter consist of 3 flues
2. Stack two
 - a. Particulates:
 - i. S23° 40' 14.8" E027° 36' 47.5" 175m from ground level and 75m from the top.
 - b. Gas:
 - i. S23° 40' 14.8" E027° 36' 47.5" 100m from ground level and 150m from the top.
 - c. Stack height
 - i. 250 meter consist of 3 flues

3. Attachments

Marapong monthly Report_May 2021

4. Report Conclusion

The rest of the information demonstrating compliance with the emission license conditions is supplied in the annual emission report sent to your office.

Hoping the above will meet your satisfaction.

I hereby declare that the information in this report is correct.

Yours sincerely



GENERAL MANAGER: MATIMBA POWER STATION

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