

Department of Agriculture, Rural Development, Land and Environmental Affairs
 The Director: Pollution and Waste Management
 Private Bag X11219
 Nelspruit 1200

Date:
 15th July 2018
 Enquiries:

Attention:
 Mr. M Mahlalela

Nkangala District Municipality
 PO Box 437
 Middelburg 1050

Attention:
 Mr. V Mahlangu

MATLA POWER STATION AIR QUALITY REPORT FOR JUNE 2018

The figures reported in this report are preliminary, and are to be considered for information purposes only. Final annual figures are those reported within 60 days of the independent audit conducted at the end of the financial year (March).

1. PARTICULATE EMISSIONS: MONTHLY TONNAGES.

	BLR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
		2017	2017	2017	2017	2017	2017	2018	2018	2018	2018	2018	2018
Monthly Tonnage	1	34.95	61.36	65.19	71.68	108.77	90.10	46.69	Off	Off	Off	Off	Off
	2	31.62	47.40	56.79	51.66	99.27	84.35	165.43	57.98	60.80	28.57	44.25	74.24
	3	30.24	48.85	61.23	47.64	97.34	82.94	172.35	55.05	62.50	29.56	35.97	86.14
	4	22.41	165.94	148.80	183.23	165.67	173.61	188.43	166.34	132.22	87.07	123.63	67.06
	5	17.14	30.95	45.36	147.51	74.42	49.59	82.97	68.06	97.63	61.14	83.25	90.26
	6	39.51	Off	Off	Off	5.37	22.74	53.43	62.15	50.91	52.66	44.17	47.93
	Station	175.85	354.51	377.37	501.73	550.84	503.33	709.30	409.57	404.02	258.99	331.28	365.62
GWhSO		1977.7	1557.1	1703.4	1580.5	1802.7	1998.5	1783.6	1562.9	1733.7	1594.2	1627.7	1491.5

Generation Division (Operating Unit Coal 2)
 Matla Power Station SA
 Delmas Road
 Private Bag X 5012, Kriel, 2271 SA
 Tel +27 17 612 9111 Fax +27 17 612 6651 www.eskom.co.za

2. COAL AND LOAD FACTOR:

STATION		JUL 2017	AUG 2017	SEP 2017	OCT 2017	NOV 2017	DEC 2017	JAN 2018	FEB 2018	MAR 2018	APR 2018	MAY 2018	JUN 2018
Load Factor		73.03	75.25	78.05	80.55	83.88	85.33	82.96	88.34	86.45	78.39	89.58	76.24
Ash Content	%	26.24	28.42	28.70	24.34	24.11	29.57	27.15	23.3	26.41	25.3	27.70	27.92
Sulphur Content	%	0.94	1.00	1.00	1.00	1.0	1.0	1.0	0.95	0.90	1.00	1.2	1.00
Total Moisture	%	9.33	9.54	7.10	8.11	10.69	9.64	9.43	9.60	9.57	9.21	9.7	9.47

3. GASEOUS EMISSIONS:

CO₂ emissions: kilotons emitted per month, calculated from coal analysis and emission factors.

	JUL 2017	AUG 2017	SEP 2017	OCT 2017	NOV 2017	DEC 2017	JAN 2018	FEB 2018	MAR 2018	APR 2018	MAY 2018	JUN 2018
Units 1-3												
Unit 4												
Unit 5												
Unit 6												
All Units												

SO₂ emissions: kilotons emitted per month, calculated from coal analysis and emission factors.

	JUL 2017	AUG 2017	SEP 2017	OCT 2017	NOV 2017	DEC 2017	JAN 2018	FEB 2018	MAR 2018	APR 2018	MAY 2018	JUN 2018
Units 1-3	6.53	9.64	8.66	9.40	10.46	10.31	8.25	6.95	7.84	6.62	7.68	6.18
Unit 4	2.16	3.52	3.15	3.62	3.38	3.71	2.89	2.85	3.16	3.29	3.94	3.18
Unit 5	2.32	2.99	3.02	3.25	3.15	3.50	3.31	3.02	3.51	3.07	3.95	2.77
Unit 6	2.36	Off	Off	Off	0.44	2.80	3.70	2.46	3.13	3.15	3.93	2.99
All Units	13.37	16.15	14.83	16.27	17.43	20.32	18.15	15.28	17.64	16.12	19.50	15.12

NO_x emissions: kilotons emitted per month, calculated from coal analysis and emission factors.

	JUL 2017	AUG 2017	SEP 2017	OCT 2017	NOV 2017	DEC 2017	JAN 2018	FEB 2018	MAR 2018	APR 2018	MAY 2018	JUN 2018
Units 1-3	2.96	3.02	2.71	2.95	3.28	3.23	2.59	2.18	2.46	2.07	2.01	1.94
Unit 4	0.98	1.10	0.99	1.13	1.06	1.16	0.91	0.89	0.99	1.03	1.03	1.00
Unit 5	1.05	0.94	0.95	1.02	0.99	1.10	1.04	0.95	1.10	0.96	1.03	0.87
Unit 6	1.07	Off	Off	Off	0.14	0.88	1.16	0.77	0.98	0.99	10.3	0.94
All Units	6.07	5.06	4.65	5.10	5.46	6.37	5.69	4.79	5.53	5.05	5.09	4.74

CO₂ emissions: kilotons emitted per month, measured with the continuous emission monitoring system. NOTE: These are unverified values for information purposes only.

	JUL 2017	AUG 2017	SEP 2017	OCT 2017	NOV 2017	DEC 2017	JAN 2018	FEB 2018	MAR 2018	APR 2018	MAY 2018	JUN 2018
Units 1-3												
Unit 4												
Unit 5												
Unit 6												
All Units												

SO₂ emissions: kilotons emitted per month, measured with the continuous emission monitoring system. NOTE: These are unverified values for information purposes only.

	JUL 2017	AUG 2017	SEP 2017	OCT 2017	NOV 2017	DEC 2017	JAN 2018	FEB 2018	MAR 2018	APR 2018	MAY 2018	JUN 2018
Units 1-3	6.29	7.60	7.82	7.59	12.65	9.94	7.15	5.55	8.31	6.73	6.64	6.72
Unit 4	1.27	2.89	1.54	2.91	2.51	2.43	1.61	1.81	2.28	2.18	1.96	1.86
Unit 5	2.25	4.66	1.55	2.84	3.05	2.89	2.54	2.57	2.74	2.61	2.58	2.12
Unit 6	2.05	Off	Off	Off	0.14	1.06	1.44	1.03	1.22	2.73	2.65	2.40
All Units	11.85	15.15	10.91	13.35	18.36	16.33	12.74	10.96	14.55	14.26	13.83	13.10

NO_x emissions: kilotons emitted per month, measured with the continuous emission monitoring system. NOTE: These are unverified values for information purposes only.

	JUL 2017	AUG 2017	SEP 2017	OCT 2017	NOV 2017	DEC 2017	JAN 2018	FEB 2018	MAR 2018	APR 2018	MAY 2018	JUN 2018
Units 1-3	3.04	3.78	3.57	3.48	5.98	5.03	3.26	2.98	3.78	2.82	2.47	2.61
Unit 4	0.85	1.81	0.87	1.84	1.53	1.52	0.98	1.30	1.26	1.01	0.84	0.87
Unit 5	1.16	2.41	0.68	1.35	1.41	1.35	1.43	1.32	1.28	1.06	1.02	0.90
Unit 6	0.99	Off	Off	Off	0.07	0.54	0.79	0.55	0.63	1.25	1.10	1.19
All Units	6.04	8.01	5.12	6.66	8.99	8.44	6.46	6.15	6.95	6.15	5.43	5.57

CO₂ emissions (mg/Nm³): Average concentration per month (at 273 K, 101.3 kPa and 10% O₂), measured with the continuous emission monitoring system. NOTE: These are unverified values for information purposes only

	JUL 2017	AUG 2017	SEP 2017	OCT 2017	NOV 2017	DEC 2017	JAN 2018	FEB 2018	MAR 2018	APR 2018	MAY 2018	JUN 2018
Units 1-3												
Unit 4												
Unit 5												
Unit 6												

SO₂ emissions (mg/Nm³): Average concentration per month (at 273 K, 101.3 kPa and 10% O₂), measured with the continuous emission monitoring system. NOTE: These are unverified values for information purposes only

Limit	JUL 2017	AUG 2017	SEP 2017	OCT 2017	NOV 2017	DEC 2017	JAN 2018	FEB 2018	MAR 2018	APR 2018	MAY 2018	JUN 2018
4000												
Units 1-3	1582	1875	2094	1831	2390	2127	1883	1587	2246	2036	2153	2203
Unit 4	1589	2112	1627	2023	1513	1447	1476	1350	1626	1628	1685	1590
Unit 5	1749	2562	1731	1966	2046	1906	1751	1827	1856	1850	1797	1656
Unit 6	1395	Off	Off	Off	1421	1385	1353	1406	1425	1540	1620	1529

SO₂ daily average emissions: AEL limit exceedances

Limit	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
3500	2017	2017	2017	2017	2017	2017	2018	2018	2018	2018	2018	2018
Units 1-3	0	0	0	0	0	0	0	0	0	0	0	0
Unit 4	0	0	0	0	0	0	0	0	0	0	0	0
Unit 5	0	0	0	0	0	0	0	0	0	0	0	0
Unit 6	0	0	0	0	0	0	0	0	0	0	0	0

NO_x emissions (mg/Nm³): Average concentration per month (at 273 K, 101.3 kPa and 10% O₂), measured with the continuous emission monitoring system. NOTE: These are unverified values for information purposes only

Limit	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1700	2017	2017	2017	2017	2017	2017	2018	2018	2018	2018	2018	2018
Units 1-3	760	932	956	838	1128	1074	858	851	1017	852	797	853
Unit 4	1042	1313	914	1269	914	894	896	970	872	752	713	735
Unit 5	915	1291	759	938	949	892	982	936	859	753	708	703
Unit 6	657	Off	Off	Off	682	705	751	751	740	711	674	757

NO_x daily average emissions: AEL limit exceedances

Limit	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1200	2017	2017	2017	2017	2017	2017	2018	2018	2018	2018	2018	2018
Units 1-3	0	0	0	0	2	0	0	0	0	0	0	0
Unit 4	0	17	0	20	0	0	0	0	0	0	0	0
Unit 5	0	21	0	0	0	0	0	0	0	0	0	0
Unit 6	0	0	0	0	0	0	0	0	0	0	0	0

4. PARTICULATE EMISSION PERFORMANCE

UNIT	MONTH AVERAGE EMISSIONS	AEL LIMIT(DAILY AVERAGE)	HIGHEST DAILY AVERAGE
	mg/Nm ³	mg/Nm ³	mg/Nm ³
1, 2 & 3	51.55	200	159.9
4	54.66	200	147.5
5	69.27	100	117.3
6	28.60	100	93.6
Station	51.02		
YTD	46.75		

ABATEMENT APPARATUS AVAILABILITY

Unit		1	2	3	4	5	6	Station
Precipitator efficiency	%	Off	99.81	99.79	99.84	99.71	99.89	99.81
Precipitator availability	%	Off	99.70	100.00	97.55	97.90	98.69	98.79
SO ₃ plant utilisation	%	Off	97.72	99.64	99.52	99.43	99.40	99.16

ATMOSPHERIC EMISSION LICENSE LIMIT EXCEEDED

	AEL LIMIT EXCEEDED (TOTAL)	AEL LIMIT EXCEEDED (LIGHT-UP/SHUT DOWN)	AEL LIMIT EXCEEDED (UPSET CONDITIONS)	AEL LIMIT EXCEEDED (MAINTENANCE)	AEL LIMIT EXCEEDED (SECTION 30 / CONTRAVENTION)
UNIT	Days	Days	Days	Days	Days
1, 2 & 3	0	0	0	0	0
4	0	0	0	0	0
5	2	0	2	0	0
6	0	0	0	0	0
Station	2	0	2	0	0
YTD	7	0	6	1	0

5. DISCUSSION

Unit 1:

Unit was taken off load on the 10th January 2018 for a major refurbishment outage.

Unit 2:

The unit tripped on the 7th June 2018 at 00:53 due to an external power surge. The unit returned to service on the 7th June 2018 at 17:02 but tripped again at 17:29. The unit returned to service at 04:55 on the 9th June 2018.

The flue gas conditioning plant performed well during the month and emissions well below the AEL limit was recorded for the month.

The SO₃ flue gas conditioning plant tripped a few times during the month.

Elevated emissions were recorded for the 14th and 15th June 2018 due to full hoppers.

Unit 3:

The flue gas conditioning plant performed well during the month and emissions well below the AEL limit was recorded for the month.

Elevated emissions were recorded for the 14th and 15th June 2018 due to full hoppers.

Unit 4:

The unit experienced a substantial number of precipitator field failures due to full hoppers.

The monthly average particulate emissions increased as a result thereof.

The SO₃ flue gas conditioning plant tripped a few times during the month, mainly due to low load conditions.

Unit 5:

The unit experienced a number of precipitator field failures due to full dust hoppers. Elevated particulate emissions were recorded for the 15th to 17th June 2018 due to full dust hoppers.

The unit was taken off load on the 29th June 2018 at 00:30 for HP piping inspection.

Unit 6:

The unit experienced a number of precipitator field failures due to full dust hoppers. Elevated particulate emissions were recorded for the 14th June 2018 due to full dust hoppers. The unit was taken off load on the 16th June 2018 at 07:50 due to low bunker levels. The unit returned to service on the 17th June 2018 at 23:33

SO₃ common Plant:

The SO₃ flue gas conditioning common plant availability was high for the month.

Gas Emissions:

The south stack O₂ analyser reading remained high. The OEM established that the sensor is faulty. The procurement process to replace the sensor has commenced. The O₂ reading is thus calculated based on the O₂/CO₂ balance.

The availability of the CEMS was good for the month of June 2018.

The gas emissions measured by the CEMS was well below the AEL limit for the duration of the month.

General:

The coal quality supplied to boilers 5 and 6 remained poor during the month, impacting negatively on the particulate emissions.

6. LIGHT UP:

Unit:	2	
Fires in:	10:10	7 June 2018
Synchronisation:	17:02	7 June 2018
Emissions below Limit:	20:59	7 June 2018
Fires in to synchronisation:	6:52	Hours
Synchronisation to < Limit:	3:57	Hours

Unit:	2	
Fires in:	18:50	8 June 2018
Synchronisation:	04:55	9 June 2018
Emissions below Limit:	11:23	9 June 2018
Fires in to synchronisation:	10:05	Hours
Synchronisation to < Limit:	6:28	Hours

Unit:	6	
Fires in:	12:10	17 June 2018
Synchronisation:	23:33	17 June 2018
Emissions below Limit:	02:57	18 June 2018
Fires in to synchronisation:	11:23	Hours
Synchronisation to < Limit:	3:24	Hours

7. GRAPHS:

See attached graphs

8. COMPLAINTS

Name of complainant	Date	Description of complaint	Action taken
No Complaints			

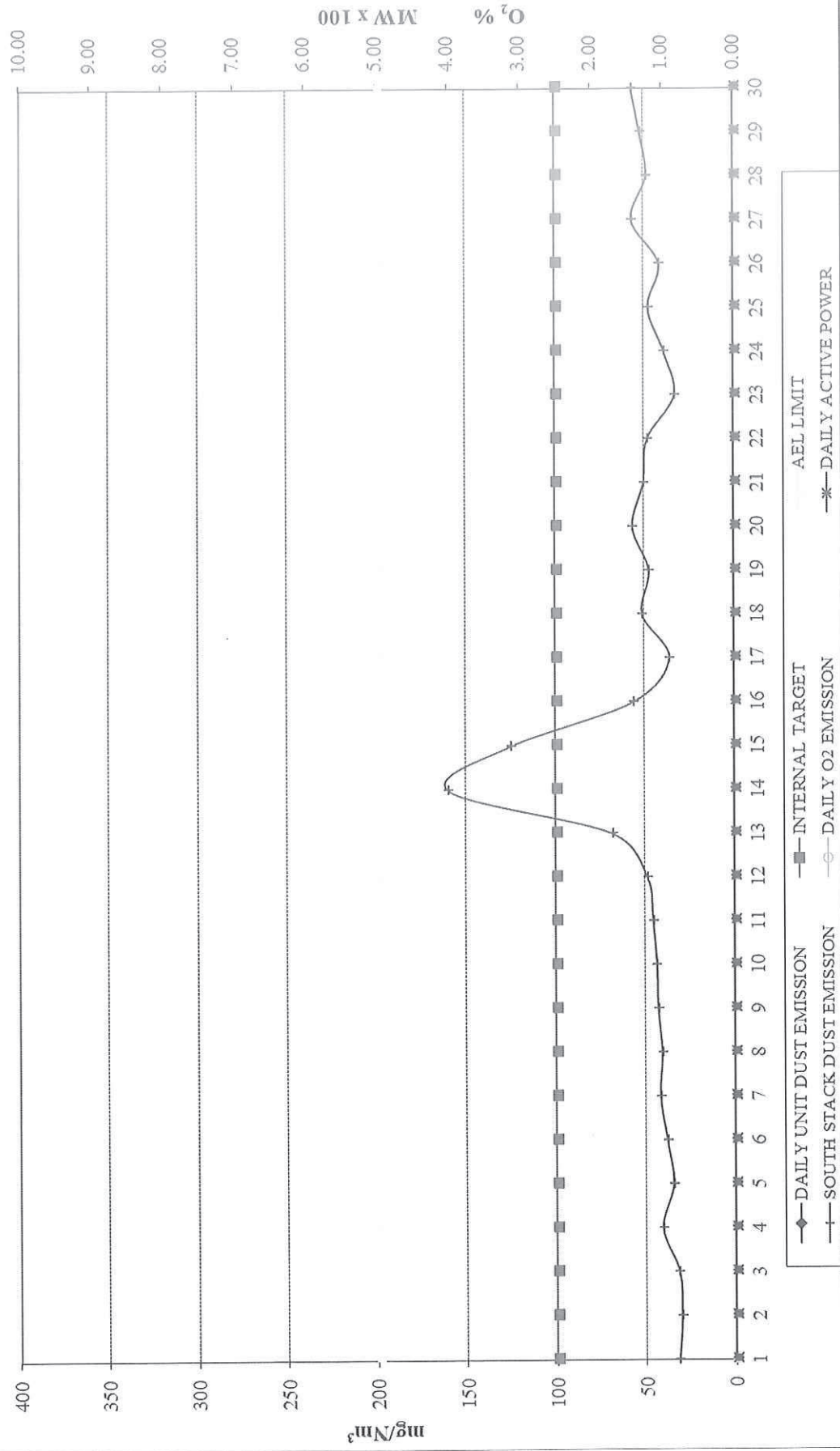
9. NOTIFICATION OF CONTRAVENTION OF EMISSION LICENCE CONDITIONS

<i>Date</i>	
<i>Power Station Unit(s)</i>	Matla Power Station –
<i>Date of incident</i> <i>Time of incident</i>	Start date and time: End date:
<i>Nature of incident</i>	Extended start-up <input type="checkbox"/> On-line maintenance <input type="checkbox"/> Extended shut-down <input type="checkbox"/>
<i>Emission limit exceedance</i>	
<i>Details of incident</i>	
<i>Risks posed by the incident to public health, safety and property</i>	
<i>Toxicity of substance or by-products released by the incident</i>	
<i>Mitigation to avoid or minimize the incident effects on public health and the environment</i>	
<i>Compiler and contact details</i>	Name: Tel no: Email:
<i>Responsible manager and contact details</i>	Name: Tel no: Email:

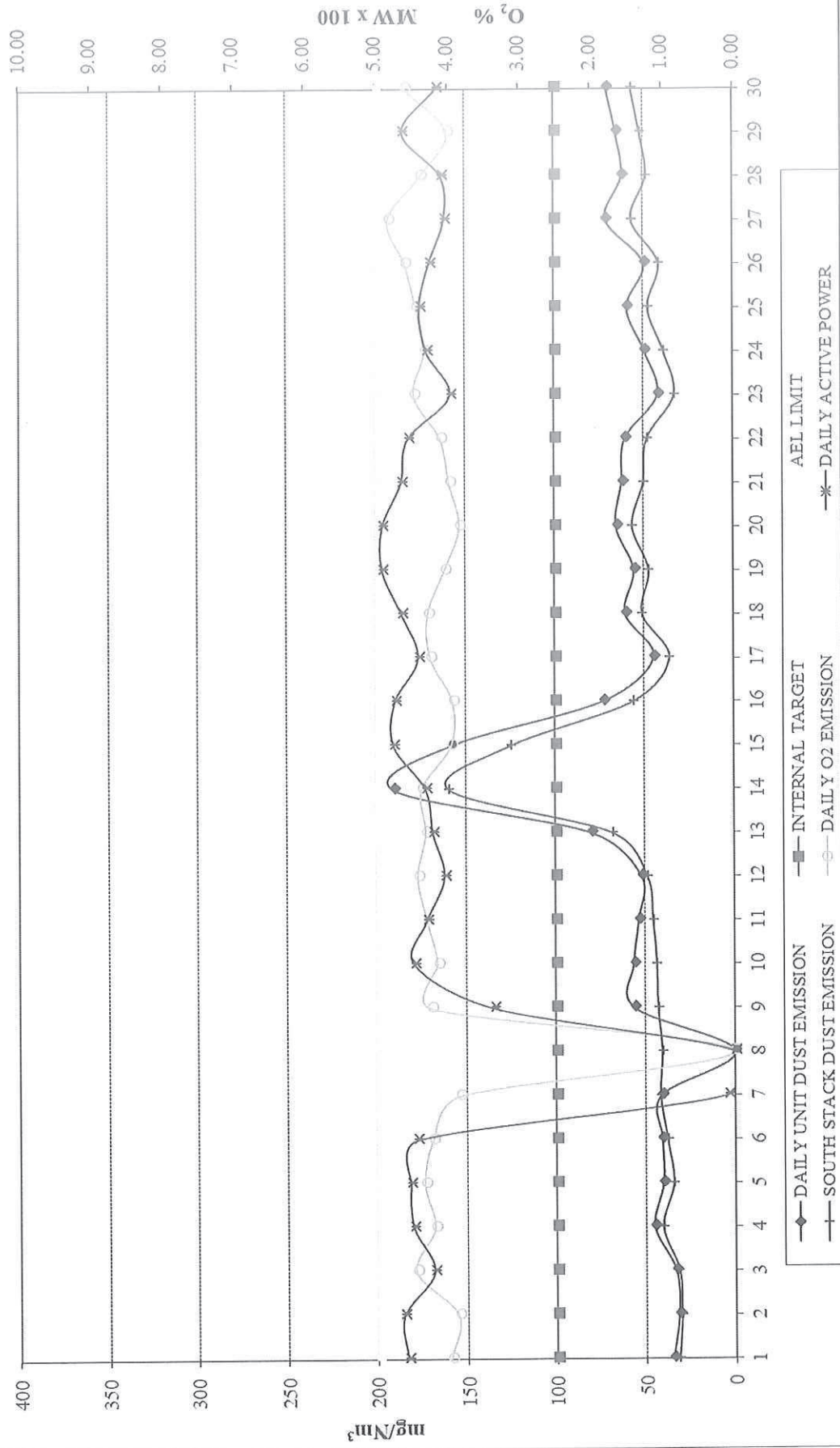
BOILER PLANT ENGINEERING

Copies to: Licensing Authority
 Power Station Manager
 Environmental Practitioner
 Engineering Manager
 Boiler Plant Engineering Manager
 Maintenance Manager
 Unit Electrical Maintenance Manager
 Operating Manage
 Production Manag
 Outside Plant Maintenance Manager
 Coal Manager
 Megawatt Park, Corporate Consultant Air Pollution
 Plant Performance Units 1 to 6

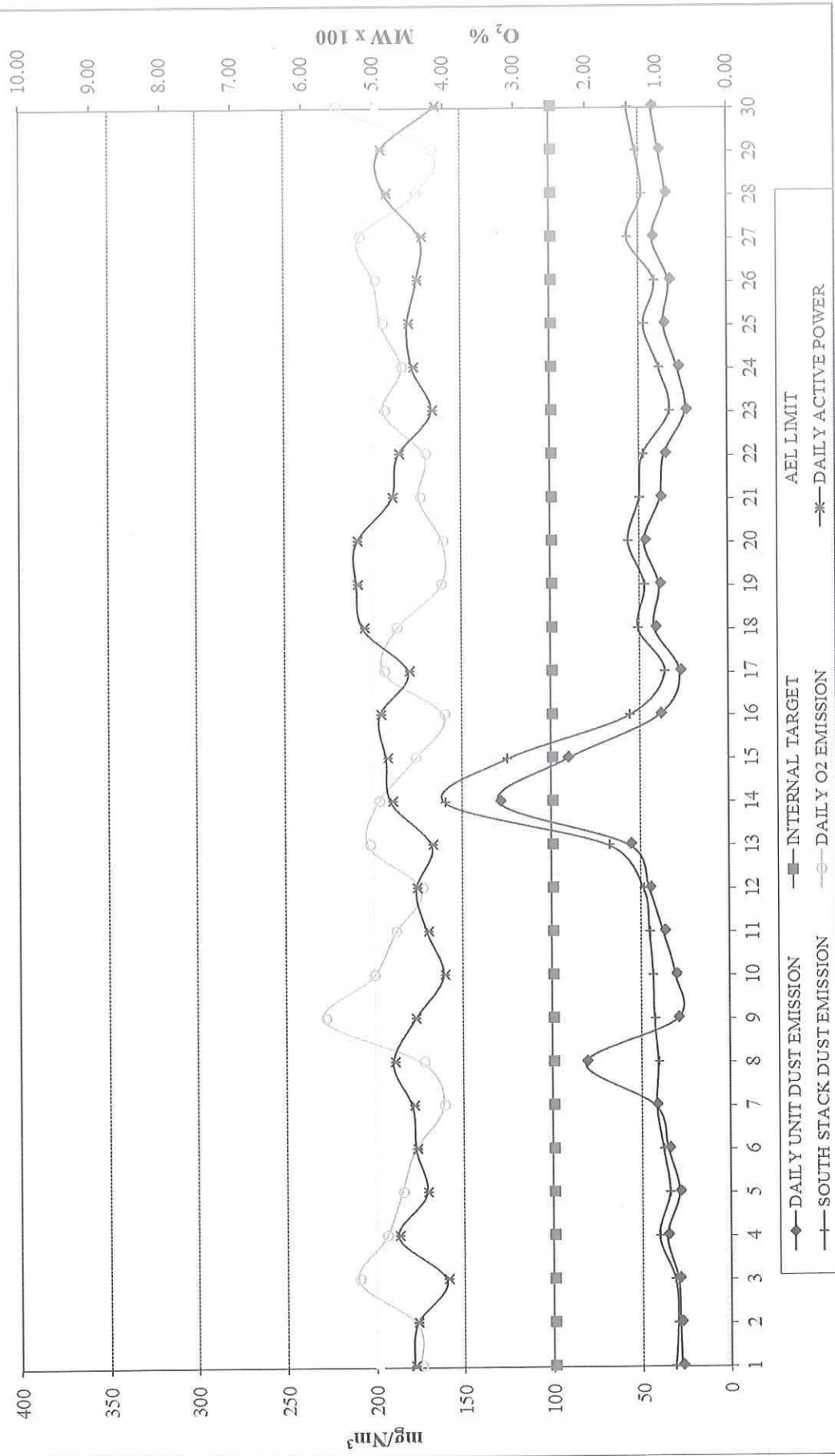
**MATLA POWER STATION
UNIT 1 DUST EMISSION REPORT
JUNE 2018**



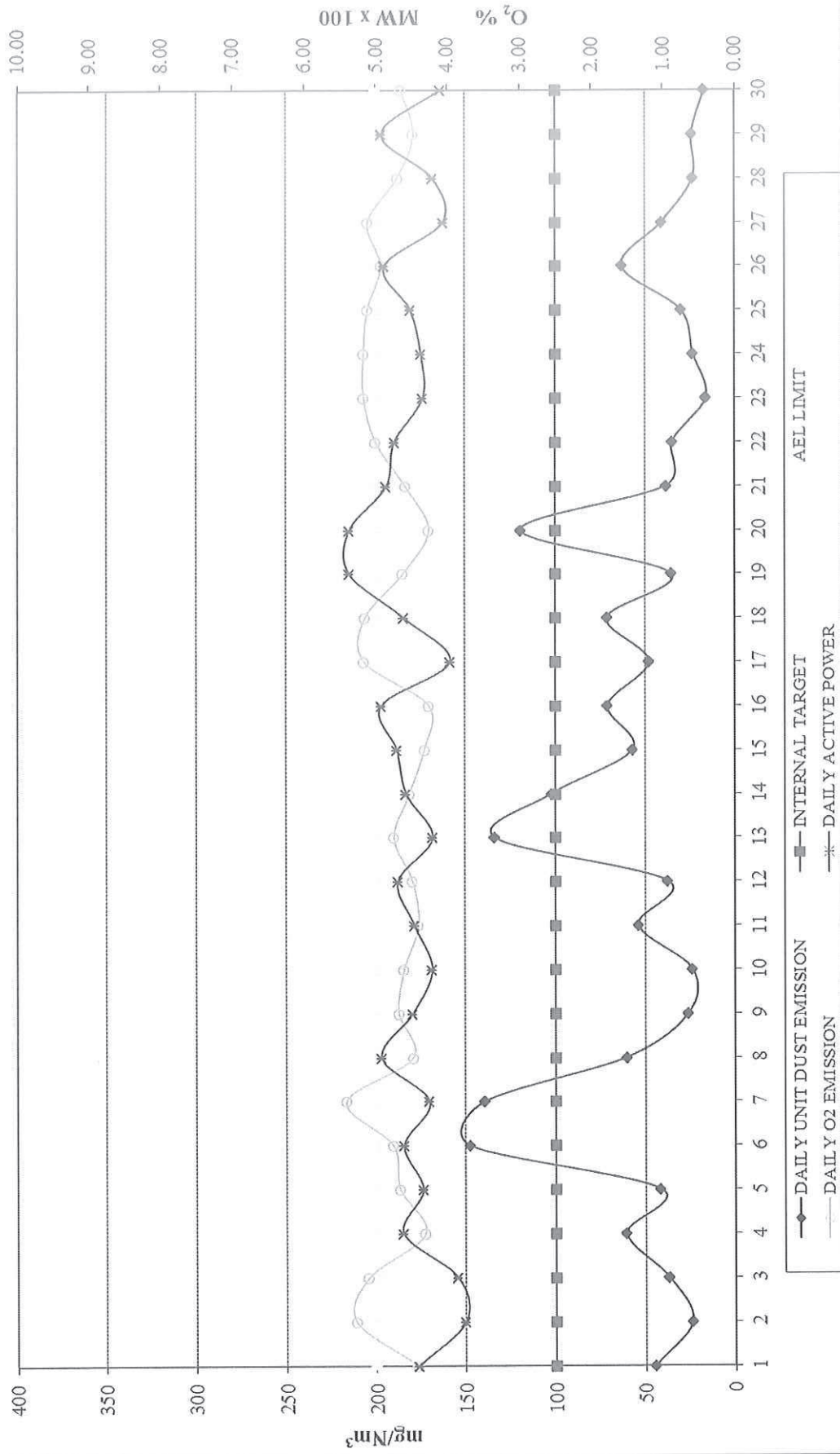
**MATLA POWER STATION
UNIT 2 DUST EMISSION REPORT
JUNE 2018**



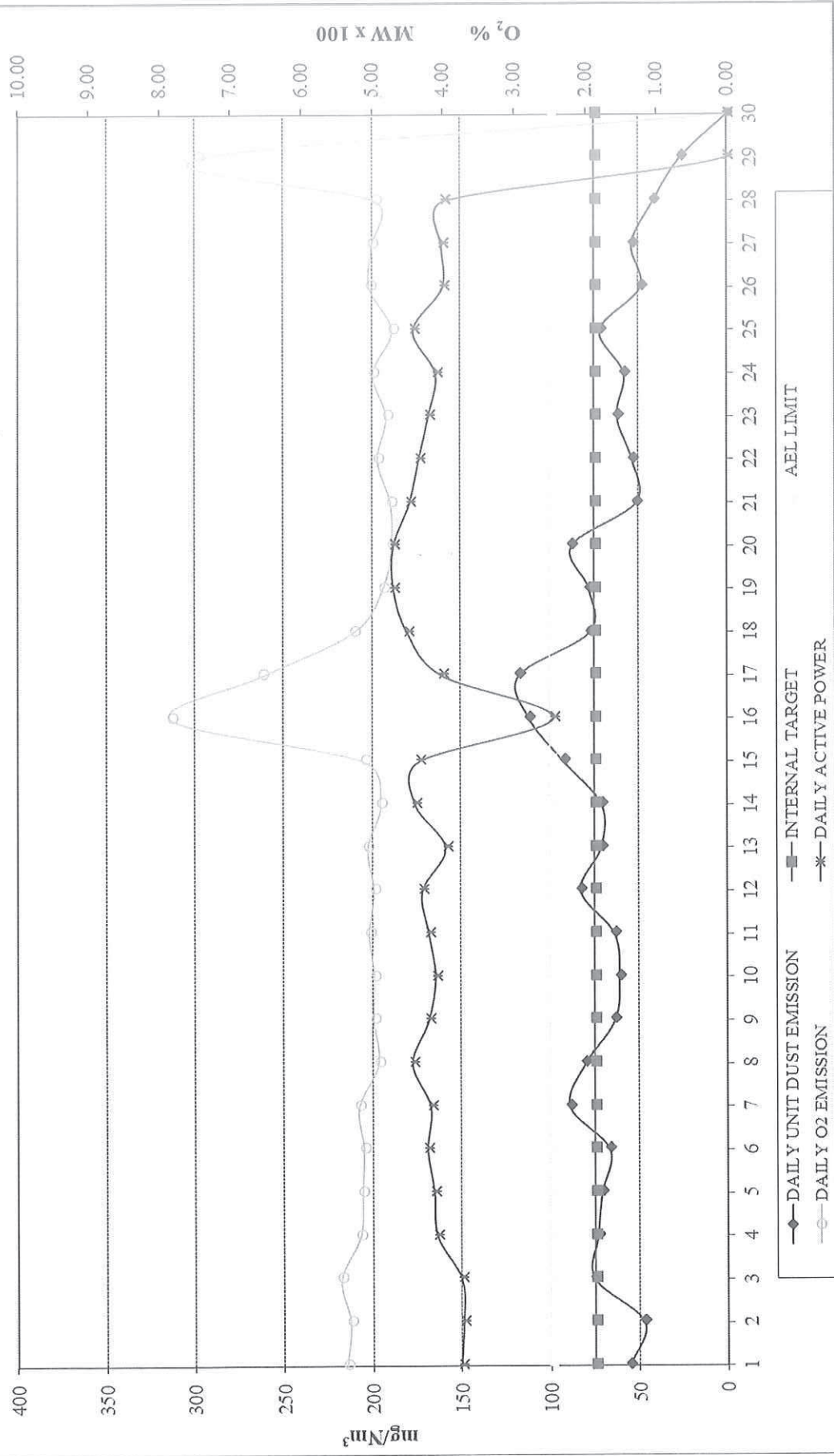
**MATLA POWER STATION
UNIT 3 DUST EMISSION REPORT
JUNE 2018**



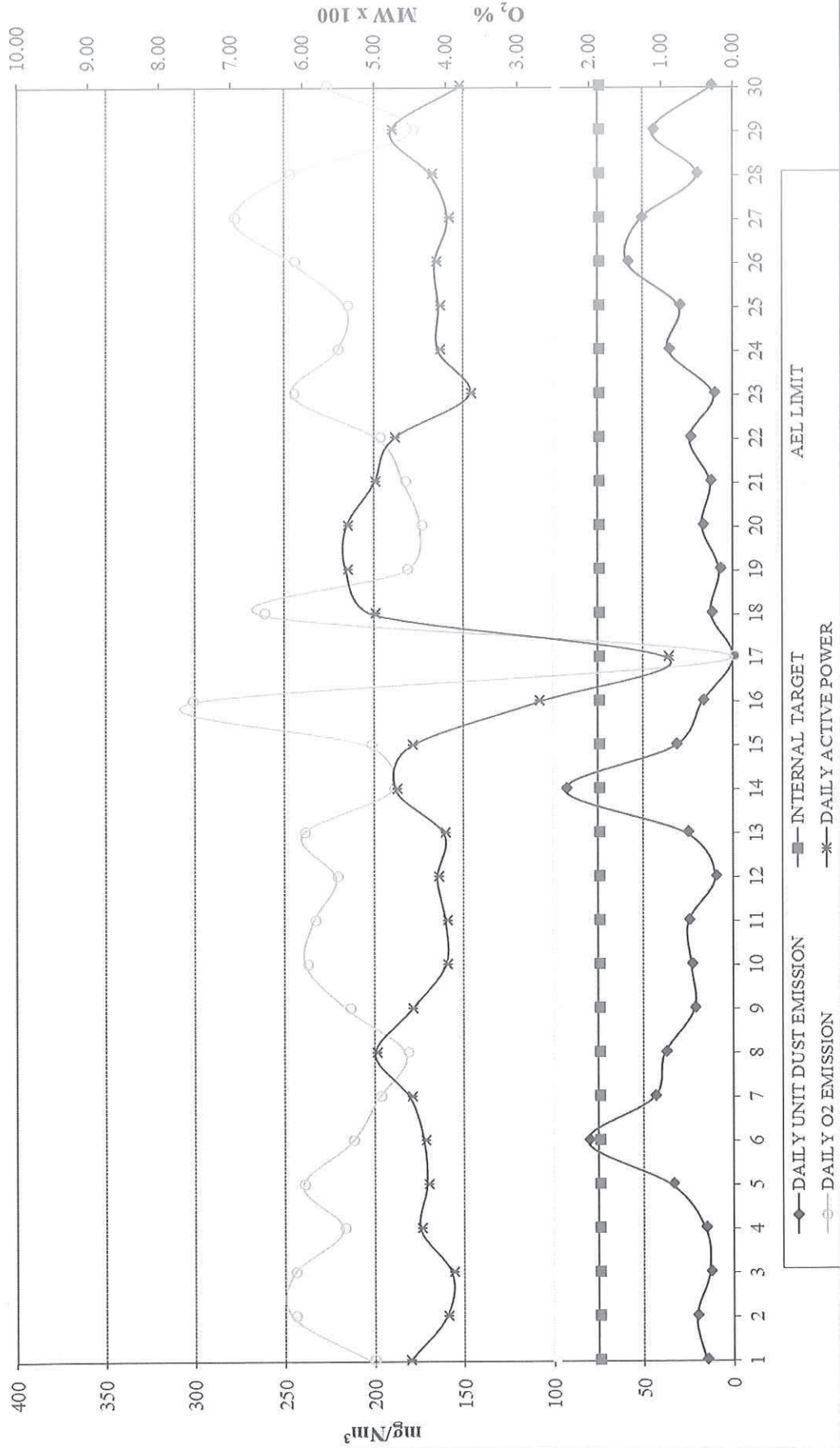
**MATLA POWER STATION
UNIT 4 DUST EMISSION REPORT
JUNE 2018**



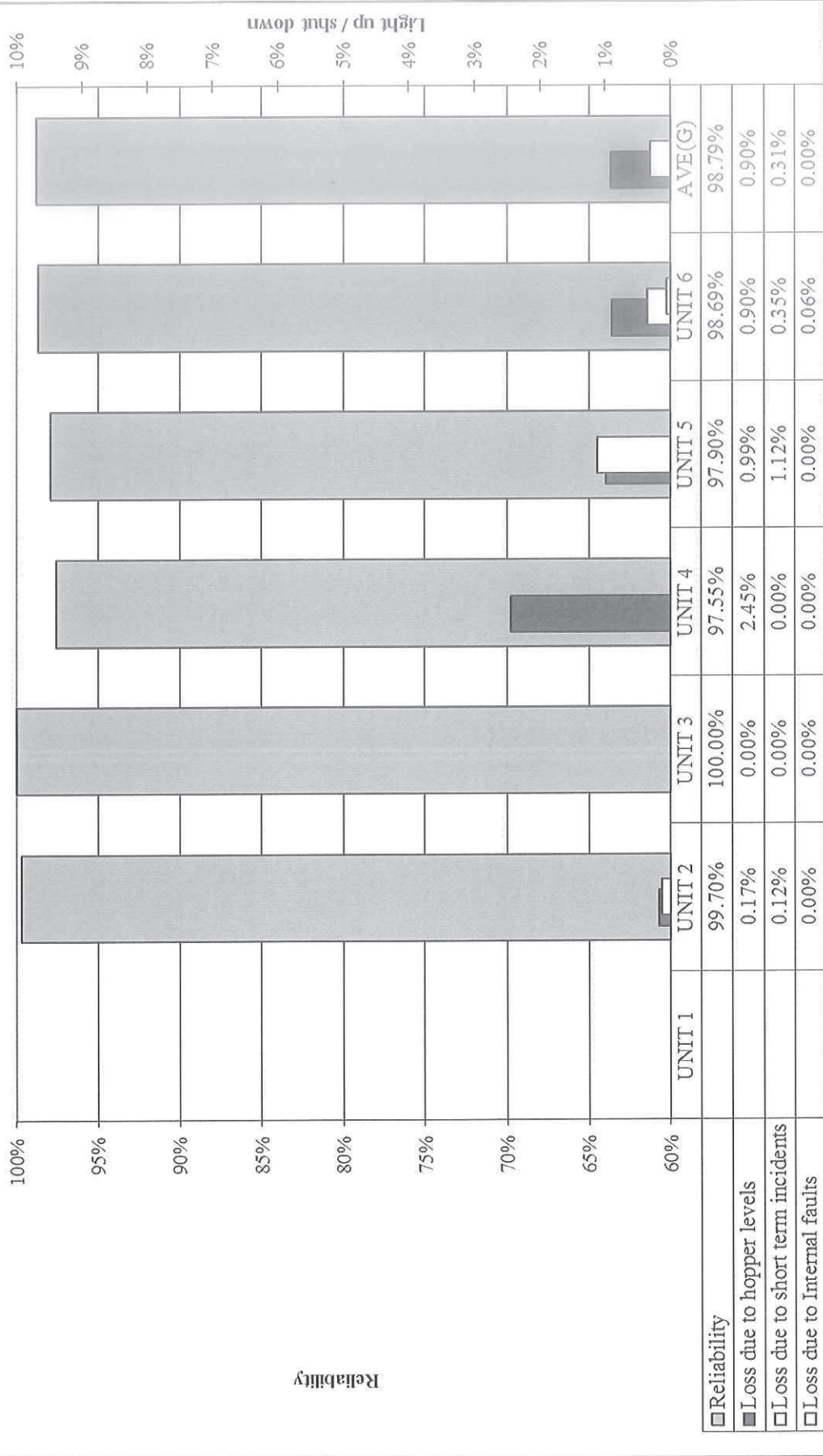
**MATLA POWER STATION
UNIT 5 DUST EMISSION REPORT
JUNE 2018**



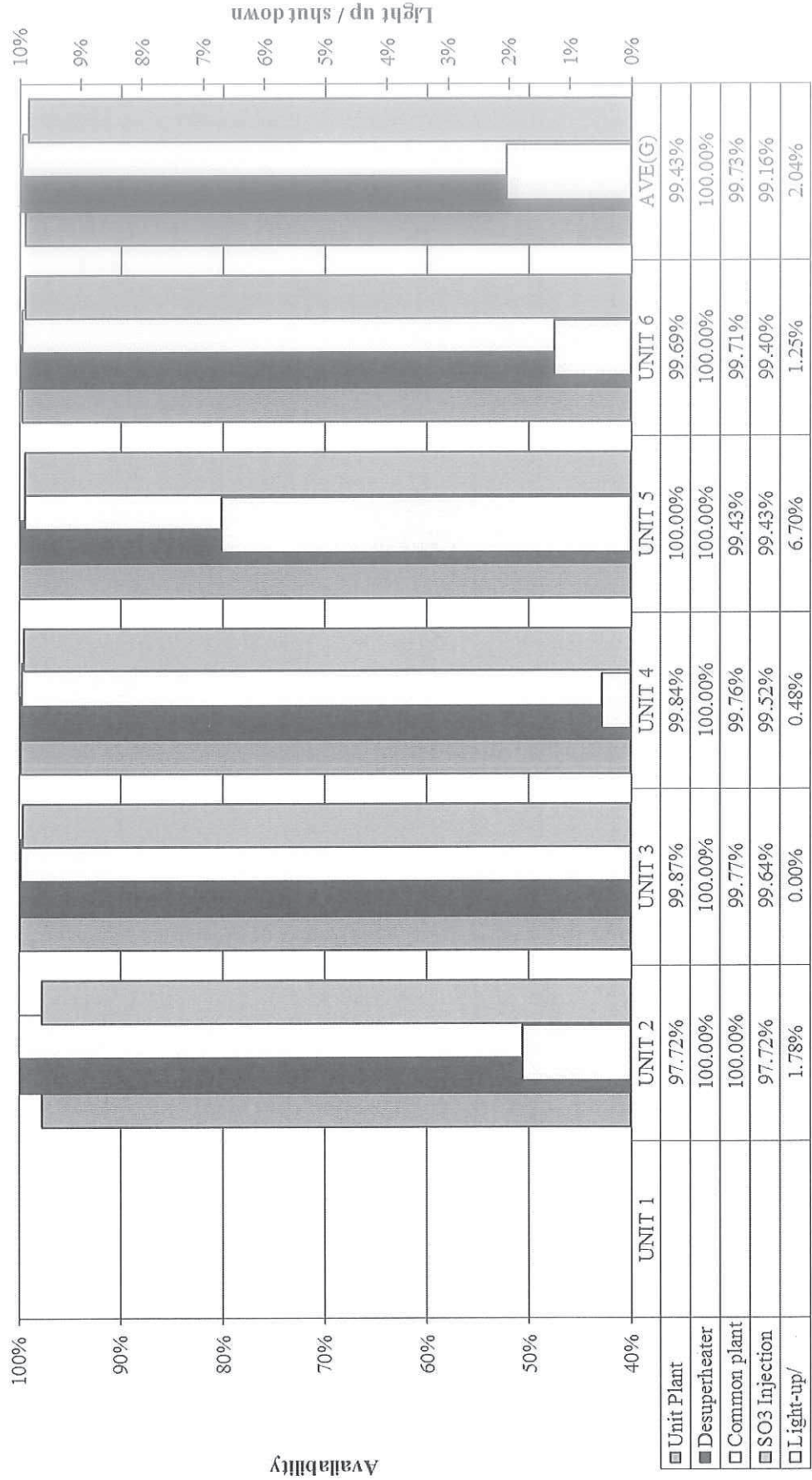
**MATLA POWER STATION
UNIT 6 DUST EMISSION REPORT
JUNE 2018**



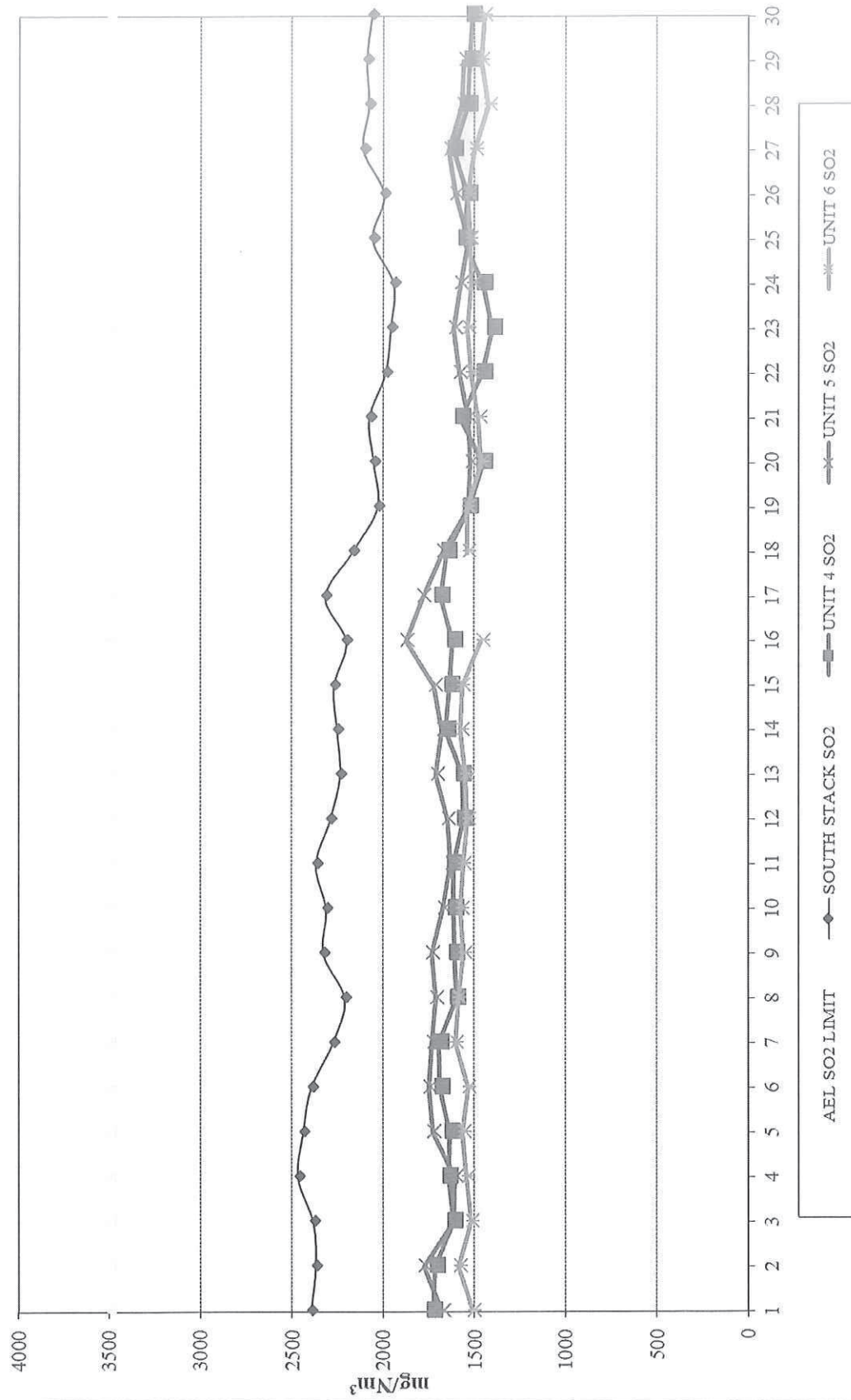
**MATLA POWER STATION
PRECIPITATOR RELIABILITY
JUNE 2018**



**MATLA POWER STATION
SO₃ PLANT AVAILABILITY
JUNE 2018**



**MATLA POWER STATION
SMOKE STACK SO₂ EMISSION REPORT
JUNE 2018**



**MATLA POWER STATION
SMOKE STACK NO₂ EMISSION REPORT
JUNE 2018**

