FEBRUARY 2023

CAMDEN POWER STATION MONTHLY EMISSIONS REPORT

Atmospheric Emission License CPS/0012/2019/F03

1 RAW MATERIALS AND PRODUCTS

Raw Materials and Products	Raw Material Type	Units	Maximum Permitted Consumption	Actual Consumption Feb-2023
	Coal	Tons	550 000	229 706.75
	Fuel Oil	Tons	5 000	5 758.20
Production Rates	**Product / By-Product Name**	**Units**	**Maximum Production Capacity Permitted**	**Actual Production Feb-2023**
	Energy	GWh	1600	486.00
	Ash	Tons	not specified	51 202
	RE PM	kg/MWh	not specified	0.241

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
CV Content	MJ/kg	19.56	22.59
Sulphur Content	%	< 2	0.90
Ash Content	%	25 to 35	22.29

3 EMISSION LIMITS (mg/Nm³)

Associated Unit/Stack	PM	SO_2	NOx
Stack 1	*100*	*3500*	*1100*
Stack 2	*100*	*3500*	*1100*
Stack 3	*100*	*3500*	*1100*
Stack 4	*100*	*3500*	*1100*

4 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Feb-2023
Unit 1	*Fabric Filter Plant (FFP)*	99.996%
Unit 2	*Fabric Filter Plant (FFP)*	99.998%
Unit 3	*Fabric Filter Plant (FFP)*	99.995%
Unit 4	*Fabric Filter Plant (FFP)*	99.995%
Unit 5	*Fabric Filter Plant (FFP)*	99.998%
Unit 6	*Fabric Filter Plant (FFP)*	99.999%
Unit 7	*Fabric Filter Plant (FFP)*	100.000%
Unit 8	*Fabric Filter Plant (FFP)*	100.000%

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

5 MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO_2	NO	CO_2	O_2
Stack 1	*100.0*	*97.9*	*96.1*	*0.0*	*0.0*
Stack 2	*100.0*	*89.4*	*89.7*	*0.0*	*0.0*
Stack 3	*100.0*	*88.2*	*53.3*	*0.0*	*0.0*
Stack 4	*96.7*	*77.7*	*77.7*	*0.0*	*0.0*

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

6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of February-2023

Associated Unit/Stack	PM (tons)	SO_2 (tons)	NO_X (tons)
1	15.7	761	313
2	15.1	867	376
3	27.8	636	352
4	34.9	757	392
5	17.9	913	247
6	4.5	500	126
7	0.9	830	369
8	0.4	257	110
SUM	117.1	5 520	2 286

Table 6.2: Operating days in compliance to PM AEL Limit - February 2023

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm³)
Stack 1	25	0	0	0	0	27.5
Stack 2	25	2	0	0	2	73.5
Stack 3	28	0	0	0	0	26.9
Stack 4	25	0	0	0	0	1.3
SUM	**103**	**2**	**0**	**0**	**2**	

Table 6.3: Operating days in compliance to SO_2 AEL Limit - February 2023

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO_2 (mg/Nm³)
Stack 1	26	0	0	0	0	1 433.4
Stack 2	28	0	0	0	0	1 454.9
Stack 3	28	0	0	0	0	1 453.1
Stack 4	26	0	0	0	0	1 143.7
SUM	**108**	**0**	**0**	**0**	**0**	

Table 6.4: Operating days in compliance to NOx AEL Limit - February 2023

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm³)
Stack 1	26	0	0	0	0	631.1
Stack 2	28	0	0	0	0	772.3
Stack 3	28	0	0	0	0	425.3
Stack 4	26	0	0	0	0	508.4
SUM	**108**	**0**	**0**	**0**	**0**	

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

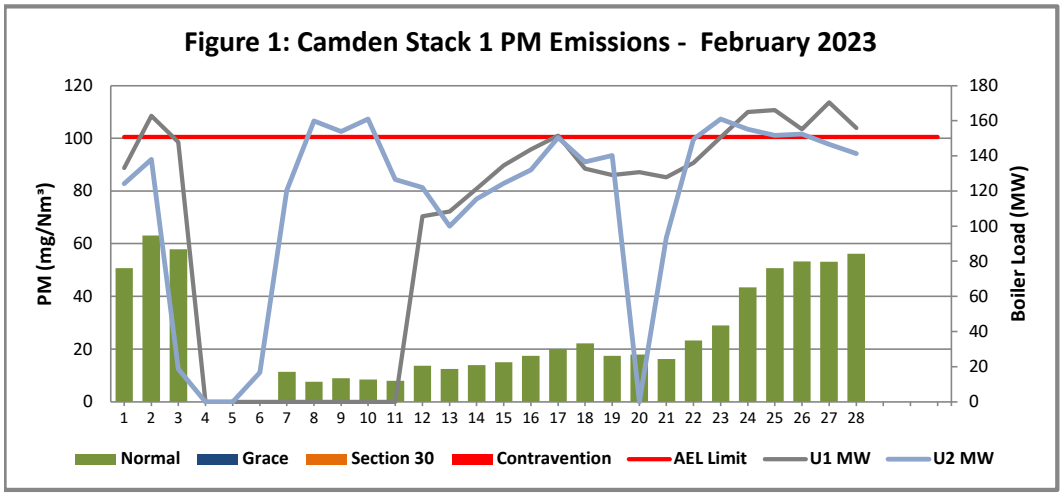
Figure 1: Camden Stack 1 PM Emissions - February 2023
PM (mg/Nm³)
Boiler Load (MW)
Normal
Grace
Section 30
Contravention
AEL Limit
U1 MW
U2 MW

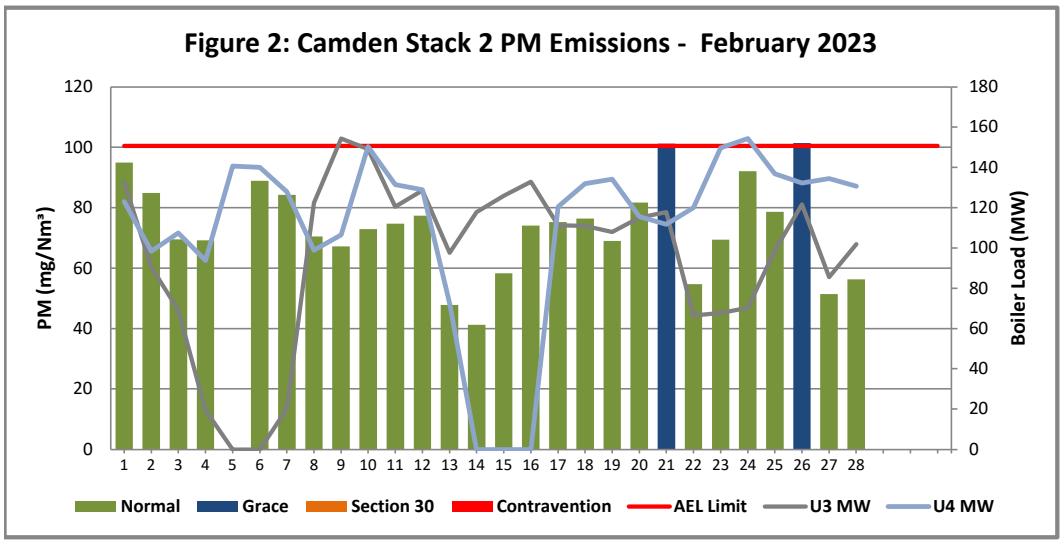
Figure 2: Camden Stack 2 PM Emissions - February 2023
PM (mg/Nm³)
Boiler Load (MW)
Normal
Grace
Section 30
Contravention
AEL Limit
U3 MW
U4 MW

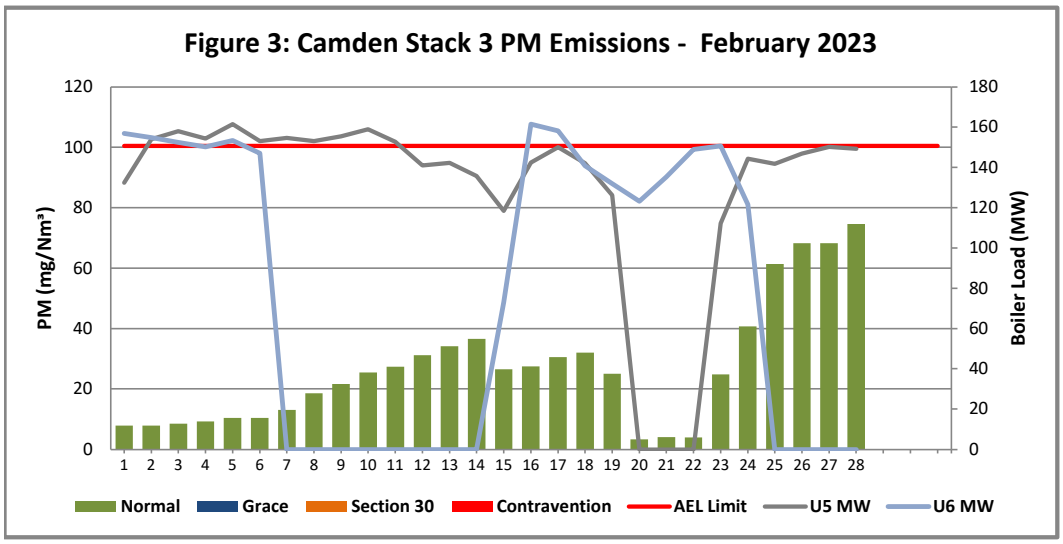
Figure 3: Camden Stack 3 PM Emissions - February 2023
PM (mg/Nm³)
Boiler Load (MW)
120
100
80
60
40
20
0
180
160
140
120
100
80
60
40
20
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
Normal
Grace
Section 30
Contravention
AEL Limit
U5 MW
U6 MW

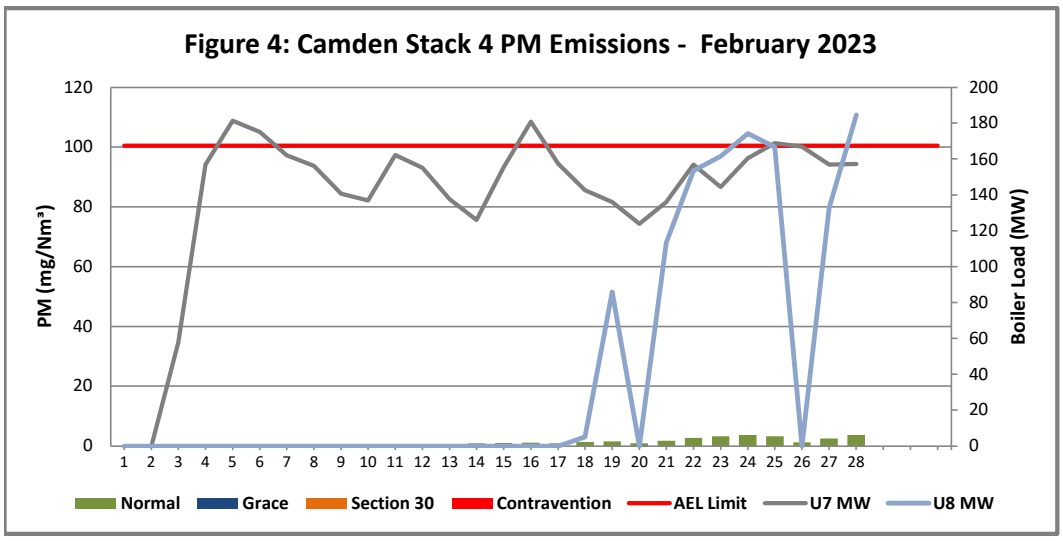
Figure 4: Camden Stack 4 PM Emissions - February 2023
PM (mg/Nm³)
Boiler Load (MW)
120
100
80
60
40
20
0
200
180
160
140
120
100
80
60
40
20
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
Normal
Grace
Section 30
Contravention
AEL Limit
U7 MW
U8 MW

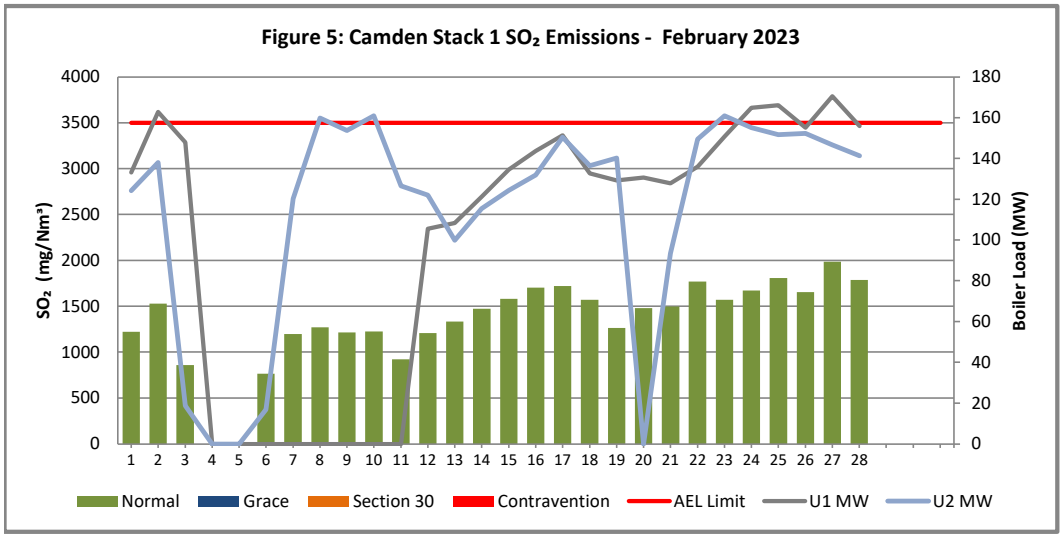
Figure 5: Camden Stack 1 SO₂ Emissions - February 2023
SO₂ (mg/Nm³)
Boiler Load (MW)
4000
3500
3000
2500
2000
1500
1000
500
0
180
160
140
120
100
80
60
40
20
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
Normal
Grace
Section 30
Contravention
AEL Limit
U1 MW
U2 MW

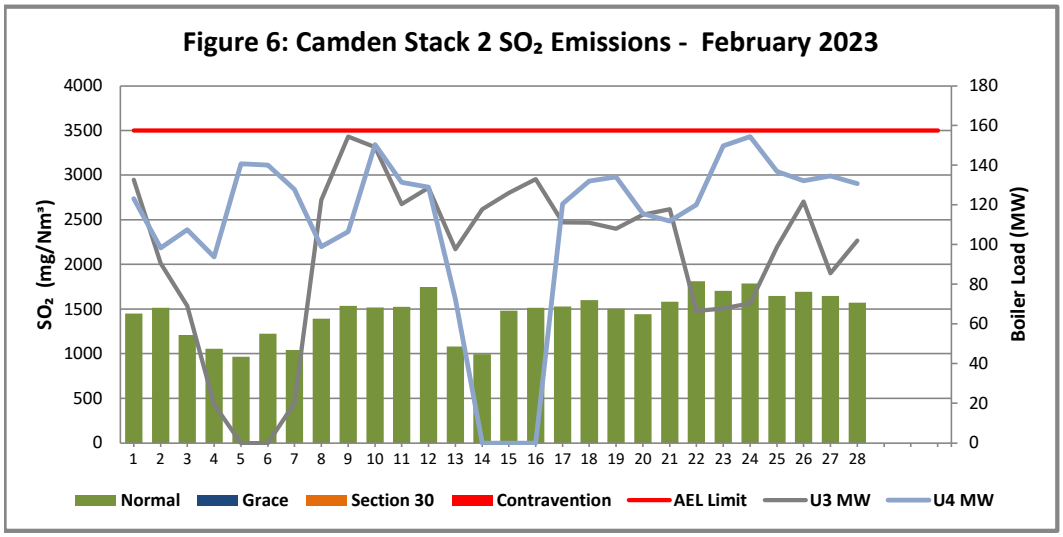
Figure 6: Camden Stack 2 SO₂ Emissions - February 2023
SO₂ (mg/Nm³)
Boiler Load (MW)
4000
3500
3000
2500
2000
1500
1000
500
0
180
160
140
120
100
80
60
40
20
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
Normal
Grace
Section 30
Contravention
AEL Limit
U3 MW
U4 MW

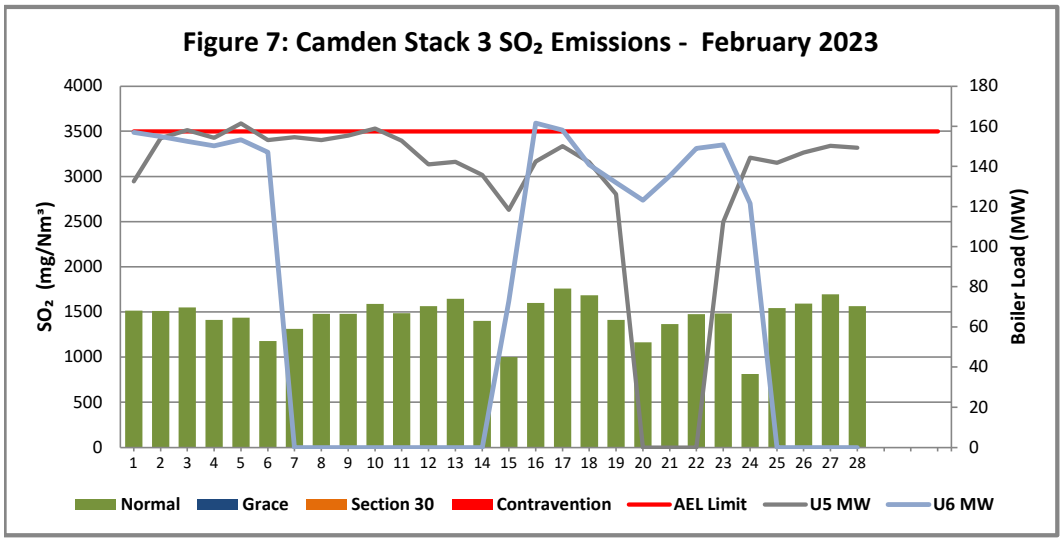
Figure 7: Camden Stack 3 SO_2 Emissions - February 2023
SO_2 (mg/Nm³)
Boiler Load (MW)
Normal
Grace
Section 30
Contravention
AEL Limit
U5 MW
U6 MW

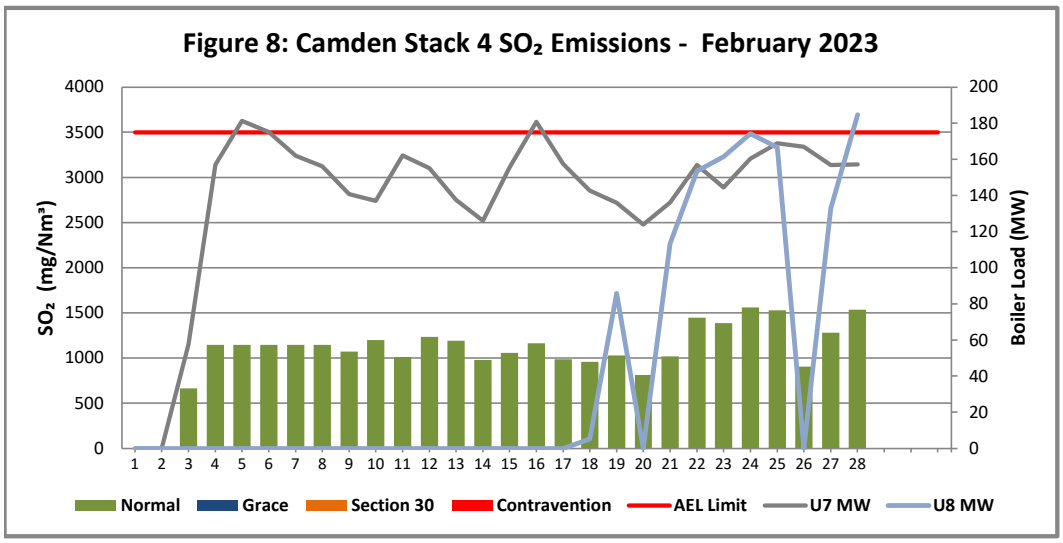
Figure 8: Camden Stack 4 SO_2 Emissions - February 2023
SO_2 (mg/Nm³)
Boiler Load (MW)
Normal
Grace
Section 30
Contravention
AEL Limit
U7 MW
U8 MW

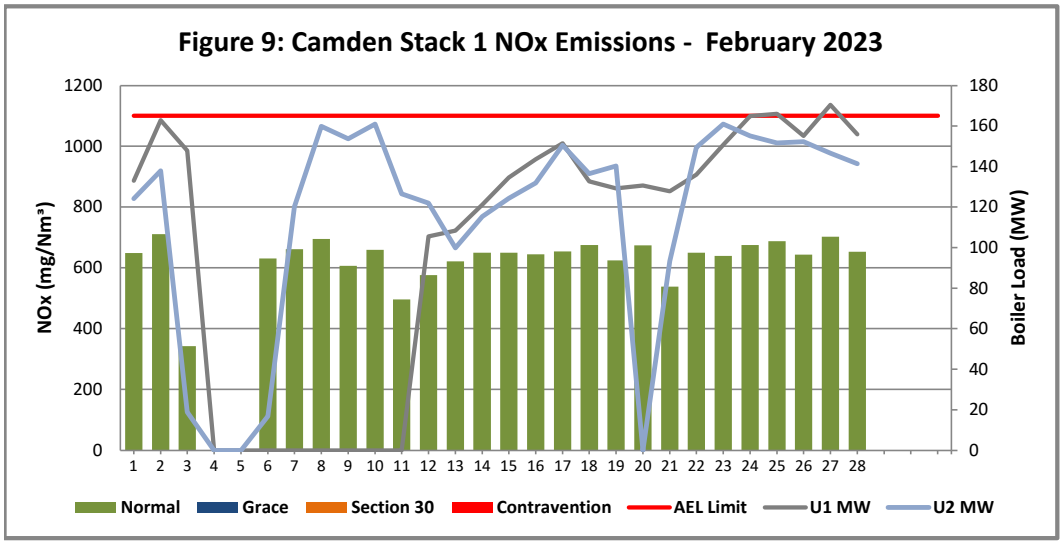
Figure 9: Camden Stack 1 NOx Emissions - February 2023
NOx (mg/Nm³)
Boiler Load (MW)
Normal
Grace
Section 30
Contravention
AEL Limit
U1 MW
U2 MW

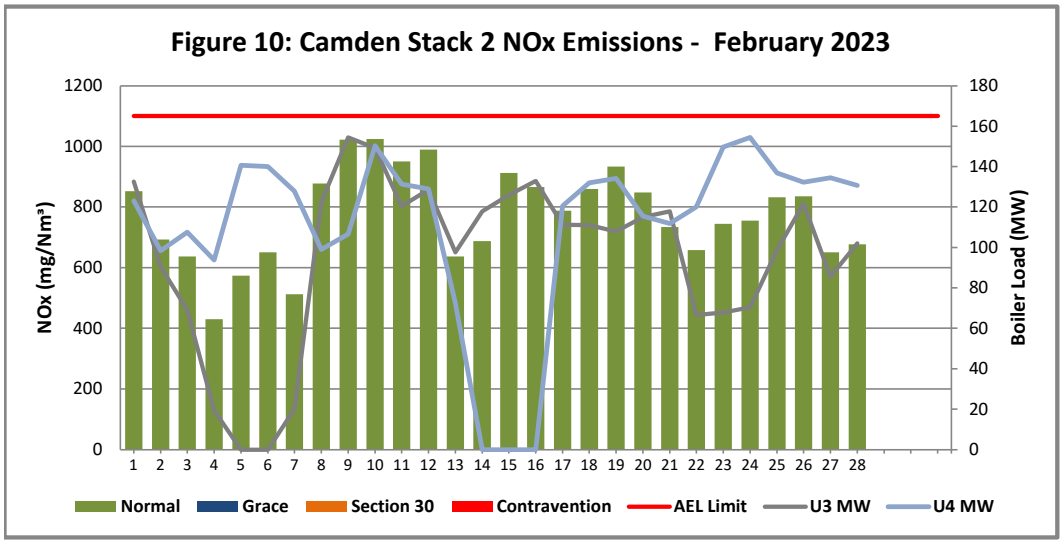
Figure 10: Camden Stack 2 NOx Emissions - February 2023
NOx (mg/Nm³)
Boiler Load (MW)
Normal
Grace
Section 30
Contravention
AEL Limit
U3 MW
U4 MW

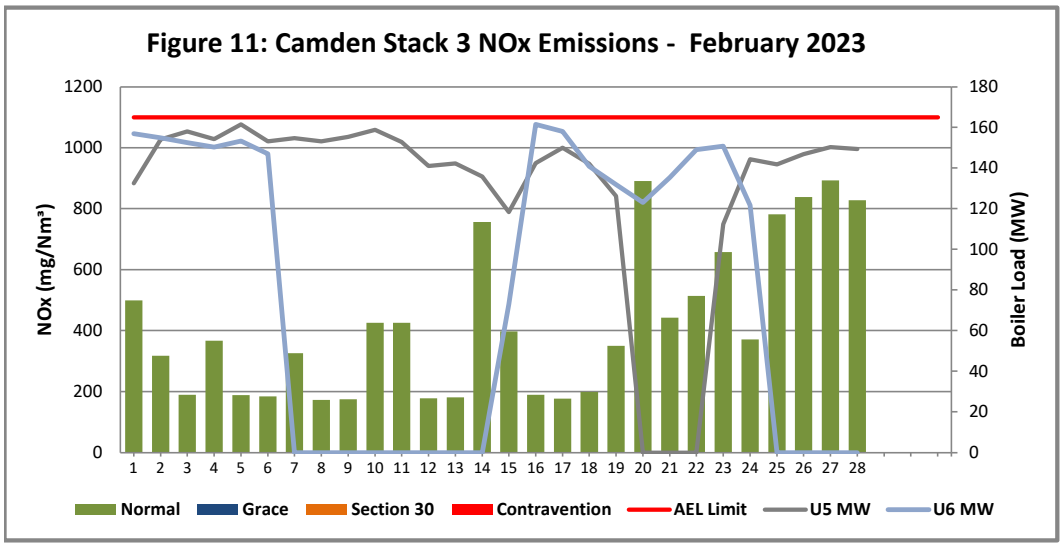
Figure 11: Camden Stack 3 NOx Emissions - February 2023
NOx (mg/Nm³)
Boiler Load (MW)
Normal
Grace
Section 30
Contravention
AEL Limit
U5 MW
U6 MW

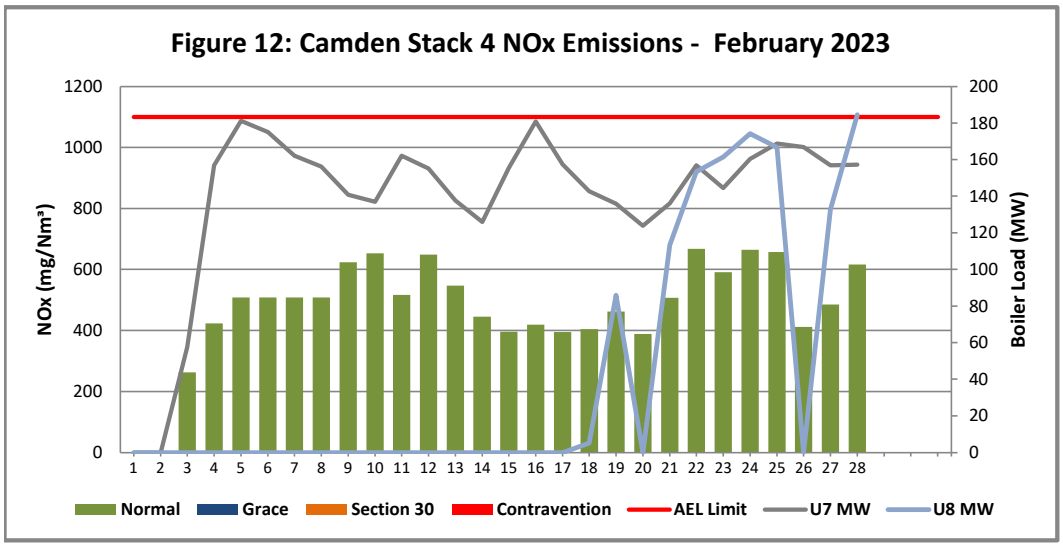
Figure 12: Camden Stack 4 NOx Emissions - February 2023
NOx (mg/Nm³)
Boiler Load (MW)
Normal
Grace
Section 30
Contravention
AEL Limit
U7 MW
U8 MW

10 GENERAL / ABNORMALITIES

Unit 1:
None
Unit 2:
None
Unit 3:
None
Unit 4:
None
Unit 5:
None
Unit 6:
None
Unit 7:
None
Unit 8:
None

Comments on Use of avarages for O2 and CO2 from QAL2 tests as per previous months
Fuel Oil Tonnage burnt exeeded the 5000 tons limit for the month of February 2023
Stack 3 - Low reliability issues as per letter from C&I
Stack 4 - SOx & NOx also experienced lower than 80% reliability due to a purge air line that was disconnected and affected reading from the 3-8 February 2023. This was rectified on the 9th February 2023.

Engineering Manager	27/03/2023 **Date**	**Environmental Manager**	31/03/2023 **Date**

Compiled by:	Environmental Department&verified by Boiler Eng	Env. Practitioner & System Eng
For:	Department of Environment, Forestry & Fisheries	Chief Air Pollution Control Officer
Copies:	Eskom Environmental Management	D Herbst B Mccourt
	Gx Compliance Management Gx Asset Management	R Rampiar E Patel
	Camden Power Station:	Engineering Manager Operating Manager Maintenance Manager Production Managers Boiler Engineering Manager System Engineer Environmental Manager Environmental Officer P&T and Process Engineering Manager