

**KENDAL POWER STATION MONTHLY EMISSIONS REPORT**

Atmospheric Emission License 17/4/AEL/MP312/11/15


**1 RAW MATERIALS AND PRODUCTS**

Raw Materials and Products	Raw Material Type	Units	Maximum Permitted Consumption Rate	Consumption Rate Mar-2020
	Coal	Tons	2 260 000	1 093 349
Fuel Oil	Tons	5 000	2352.53	

Production Rates	Product / By-Product Name	Units	Maximum Production Capacity Permitted	Production Rate Mar-2020
	Energy	GWh	3062.304	1 478.06
	Ash	Tons	770 000	332 487.4
	RE Ash	kg/MWh	not specified	1.117

**2 ENERGY SOURCE CHARACTERISTICS**

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
CV Content	MJ/kg	16-24 (MJ/kg)	
Sulphur Content	%	0.7 TO >1 (%)	0.720
Ash Content	%	30 TO >40 (%)	30.410

### 3 EMISSION LIMITS (mg/Nm<sup>3</sup>)

Associated Unit/Stack	PM	SO <sub>x</sub>	NO <sub>x</sub>
Unit 1	100	3500	1100
Unit 2	100	3500	1100
Unit 3	100	3500	1100
Unit 4	100	3500	1100
Unit 5	100	3500	1100
Unit 6	100	3500	1100

### 4 ABATEMET TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Mar-2020	Technology Type	Utilization Mar-2020
Unit 1	ESP + SO <sub>3</sub>	99.8%	SO <sub>3</sub>	93.3%
Unit 2	ESP + SO <sub>3</sub>	99.5%	SO <sub>3</sub>	98.2%
Unit 3	ESP + SO <sub>3</sub>	99.7%	SO <sub>3</sub>	42.0%
Unit 4	ESP + SO <sub>3</sub>	99.4%	SO <sub>3</sub>	91.9%
Unit 5	ESP + SO <sub>3</sub>	Unit is off	SO <sub>3</sub>	Unit is off
Unit 6	ESP + SO <sub>3</sub>	98.1%	SO <sub>3</sub>	86.2%

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

### 5 MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO <sub>2</sub>	NO	CO <sub>2</sub>	O <sub>2</sub>
Unit 1	100.0	100.0	100.0		72.2
Unit 2	92.3	99.6	89.6		0.0
Unit 3	27.1	99.7	99.7		0.0
Unit 4	100.0	100.0	100.0		0.0
Unit 5	Unit off	Unit off	Unit off		Unit off
Unit 6	87.1	100.0	91.5		0.0

## 6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of March 2020

Associated Unit/Stack	PM (tons)	SO <sub>2</sub> (tons)	NO <sub>x</sub> (tons)	CO <sub>2</sub> (tons)
Unit 1	134.4	4 484	2 057	
Unit 2	130.9	3 548	1 621	
Unit 3	165.7	979	287	
Unit 4	330.4	3 321	1 189	
Unit 5	<i>Unit off</i>	<i>Unit off</i>	<i>Unit off</i>	
Unit 6	889.5	2 647	1 075	
SUM	1 650.90	14 979	6 229	

Table 6.2: Operating days in compliance to PM AEL Limit - March 2020

Associated Unit/Stack	Normal	Grace	Section 30	Contra-vention	Total Exceedance		Average PM (mg/Nm <sup>3</sup> )	
Unit 1	22	6	0	2	8		70.7	
Unit 2	18	4	0	5	9		105.8	
Unit 3	0	4	0	14	18		256.9	
Unit 4	3	4	0	24	28		165.5	
Unit 5	<i>Unit off</i>	<i>Unit off</i>	<i>Unit off</i>	<i>Unit off</i>	<i>Unit off</i>	<i>Unit off</i>	<i>Unit off</i>	<i>Unit off</i>
Unit 6	0	2	0	23	25		642.6	
SUM	43	20	0	68	88			

Table 6.3: Operating days in compliance to SO<sub>x</sub> AEL Limit - March 2020

Associated Unit/Stack	Normal	Grace	Section 30	Contra-vention	Total Exceedance		Average SO <sub>x</sub> (mg/Nm <sup>3</sup> )	
Unit 1	31	0	0	0	0		1 992.9	
Unit 2	27	0	0	0	0		2 296.3	
Unit 3	19	0	0	0	0		1 699.8	
Unit 4	31	0	0	0	0		2 326.9	
Unit 5	<i>Unit off</i>	<i>Unit off</i>	<i>Unit off</i>	<i>Unit off</i>	<i>Unit off</i>	<i>Unit off</i>	<i>Unit off</i>	<i>Unit off</i>
Unit 6	28	0	0	0	0		1 831.1	
SUM	108	0	0	0	0			



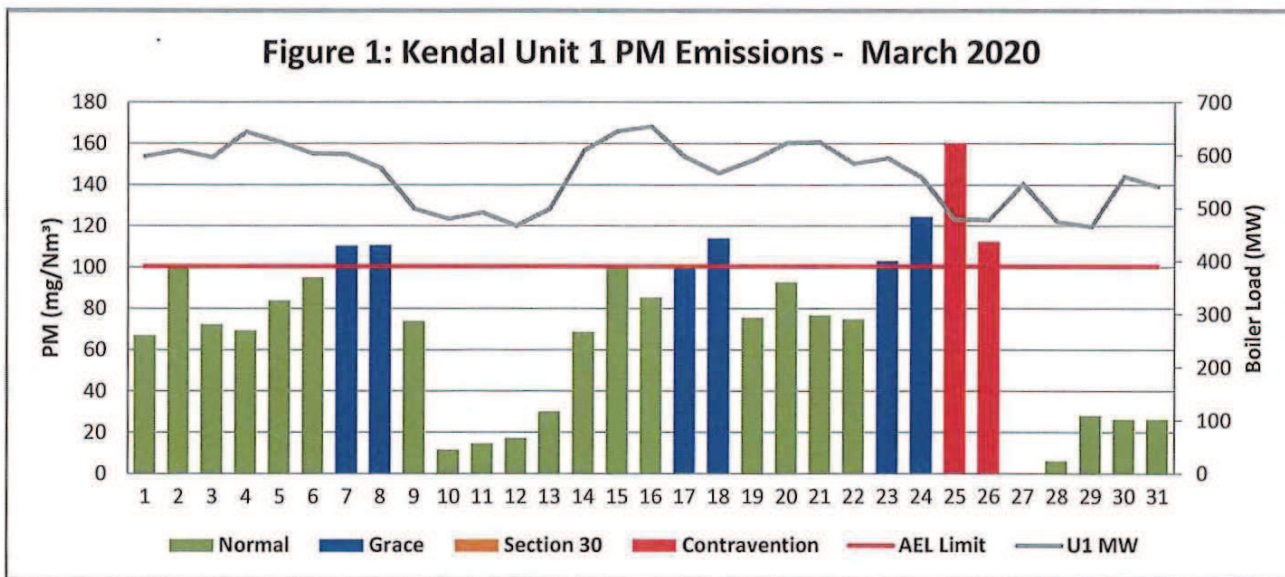
Table 6.4: Operating days in compliance to NOx AEL Limit - March 2020

Associated Unit/Stack	Normal	Grace	Section 30	Contra-vention	Total Exceedance		Average NOx (mg/Nm <sup>3</sup> )	
Unit 1	31	0	0	0	0		914.2	
Unit 2	27	0	0	0	0		1 052.2	
Unit 3	19	0	0	0	0		499.7	
Unit 4	31	0	0	0	0		837.8	
Unit 5	<i>Unit off</i>	<i>Unit off</i>	<i>Unit off</i>	<i>Unit off</i>	<i>Unit off</i>	<i>Unit off</i>	<i>Unit off</i>	<i>Unit off</i>
Unit 6	26	2	0	0	2		759.9	
<b>SUM</b>	<b>108</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>			

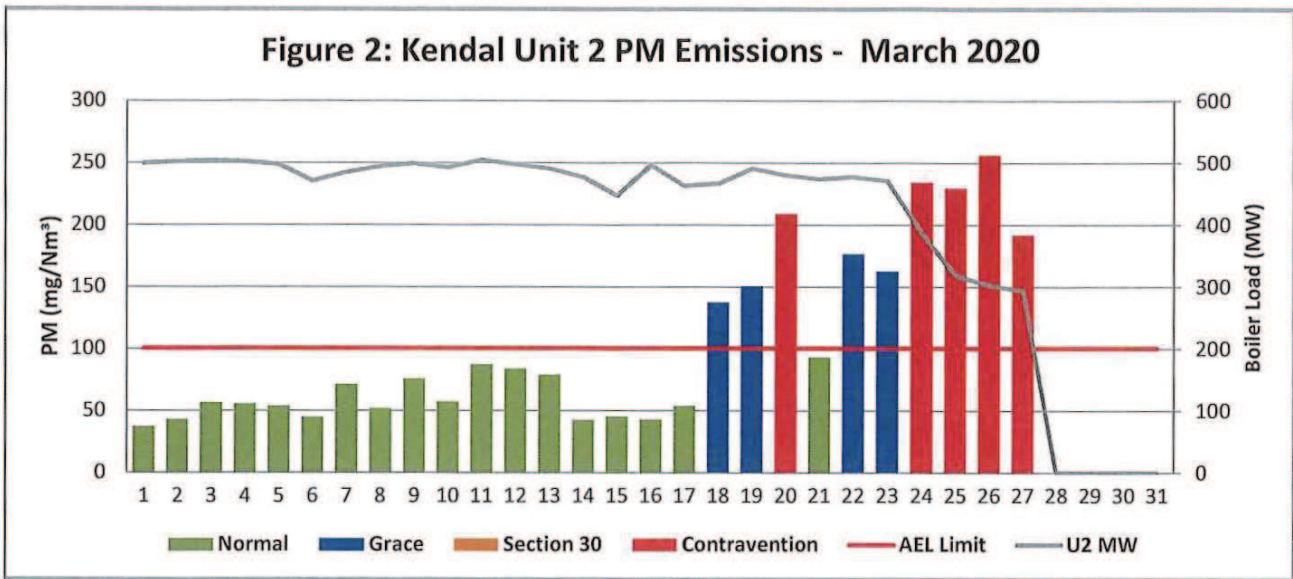
Table 6.5: Legend Description

Condition	Colour	Description
Normal	Green	Emissions below Emission Limit Value (ELV)
Grace	Blue	Emissions above the ELV during grace period
Section 30	Orange	Emissions above ELV during a NEMA S30 incident
Contra-vention	Red	Emissions above ELV but outside grace or S30 incident conditions

Figure 1: Kendal Unit 1 PM Emissions - March 2020



**Figure 2: Kendal Unit 2 PM Emissions - March 2020**



**Figure 3: Kendal Unit 3 PM Emissions - March 2020**

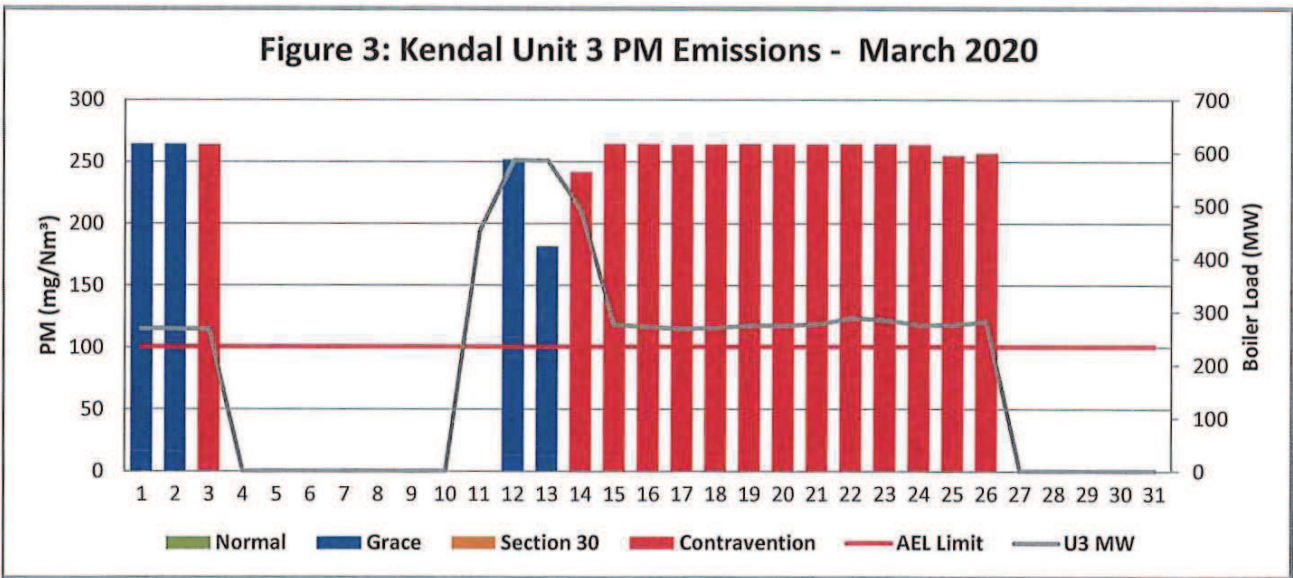


Figure 4: Kendal Unit 4 PM Emissions - March 2020

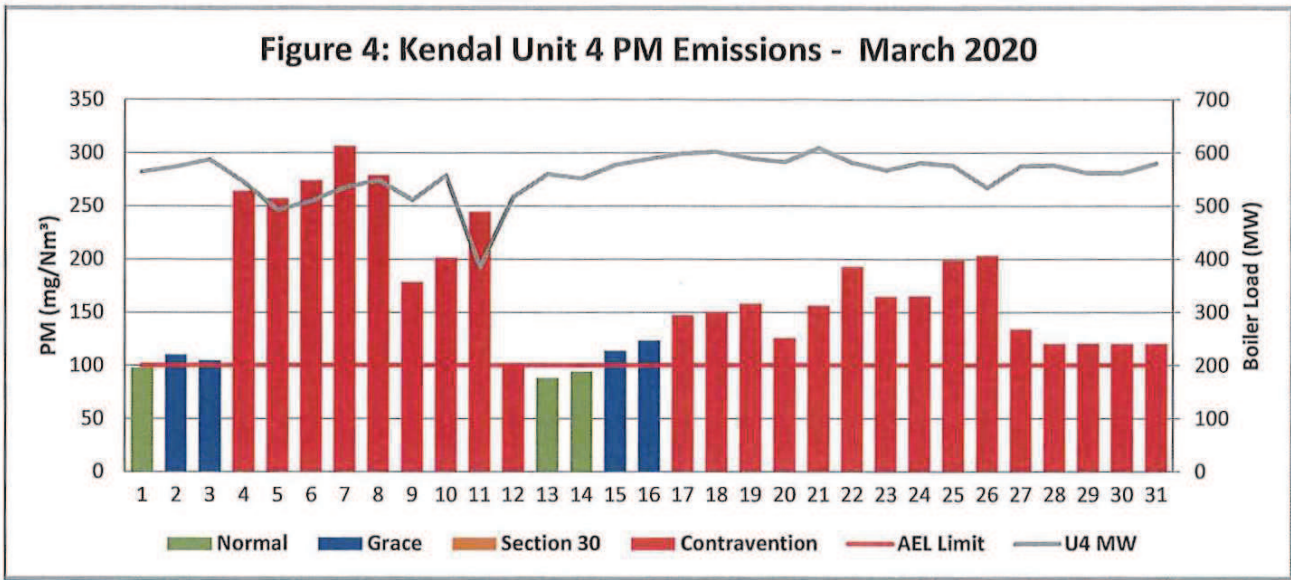
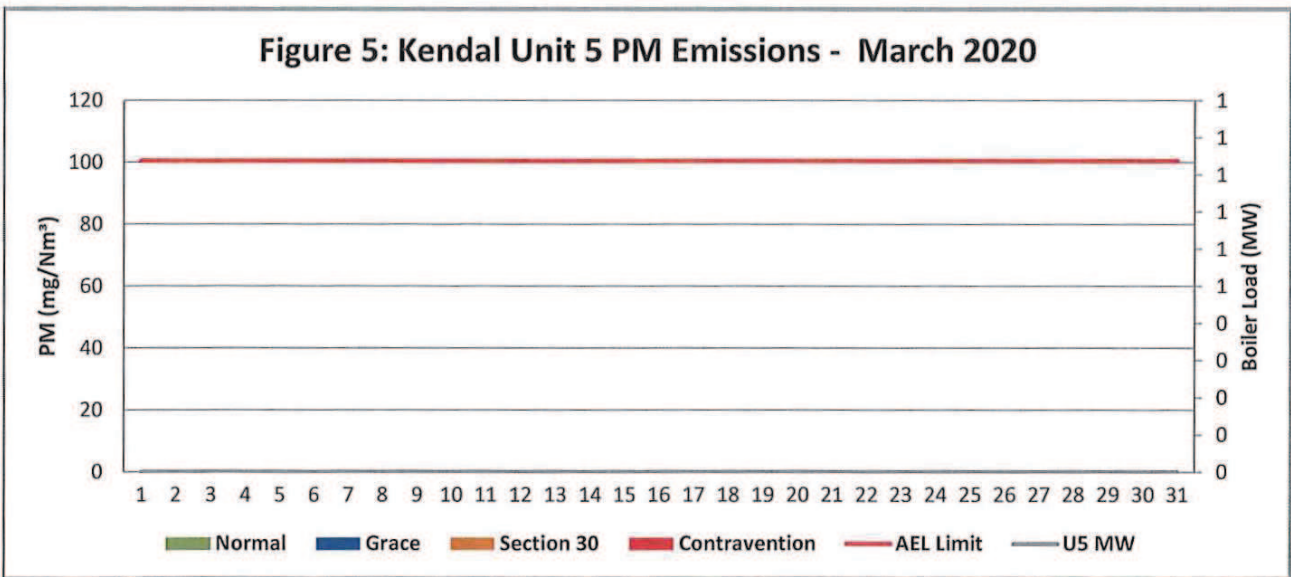
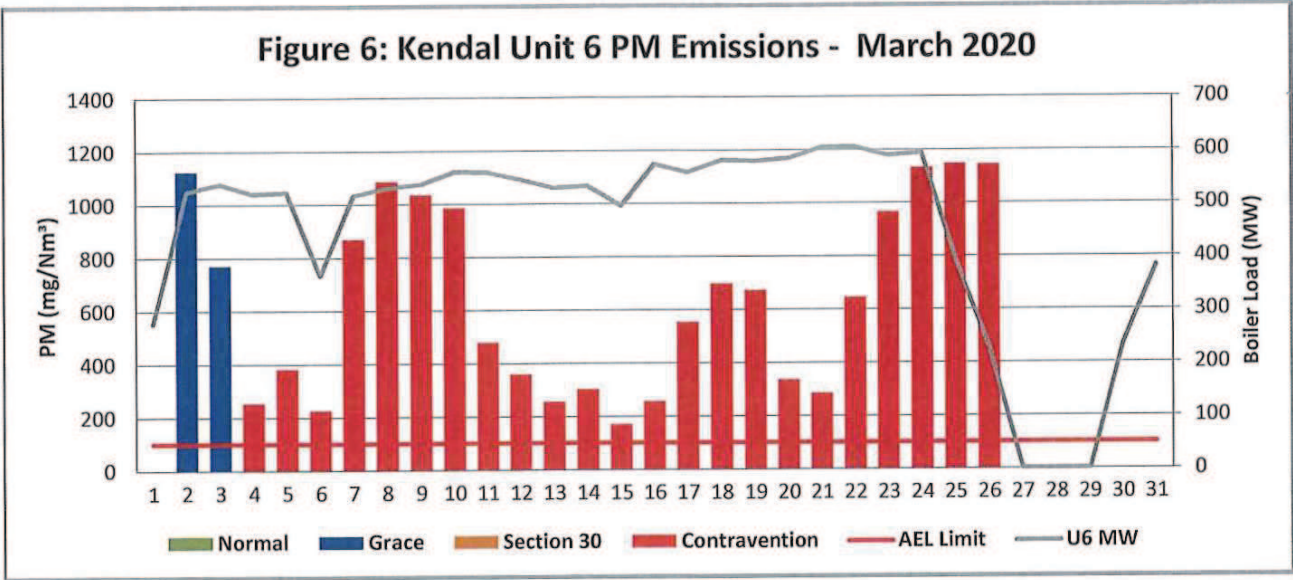


Figure 5: Kendal Unit 5 PM Emissions - March 2020





**Figure 6: Kendal Unit 6 PM Emissions - March 2020**



**Figure 7: Kendal Unit 1 SOx Emissions - March 2020**

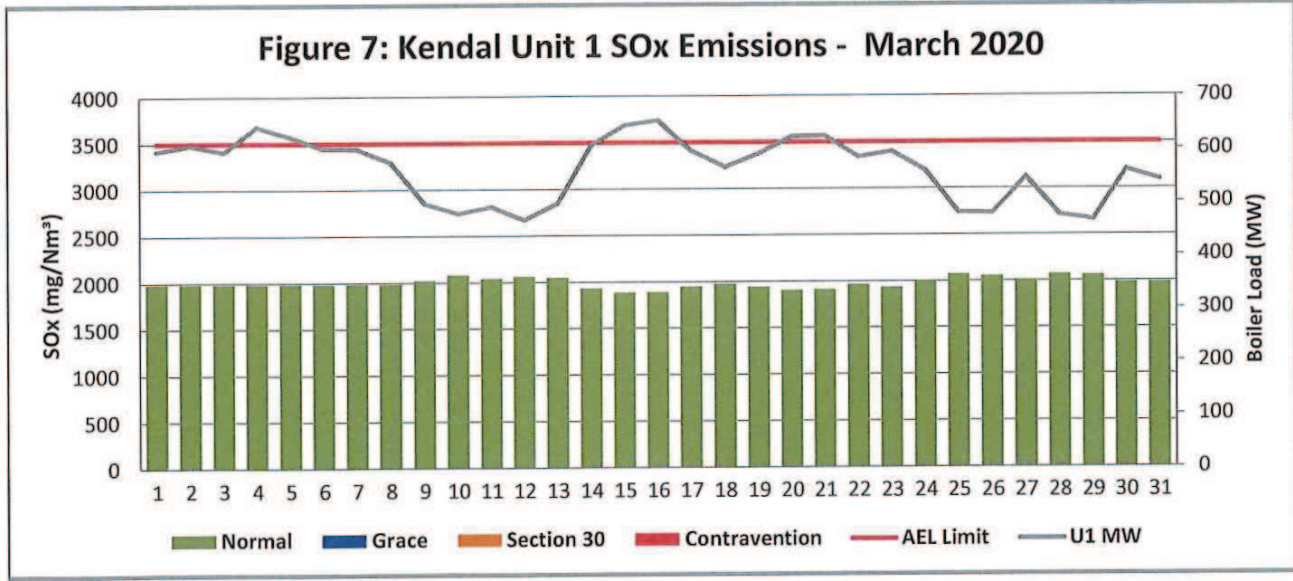


Figure 8: Kendal Unit 2 SOx Emissions - March 2020

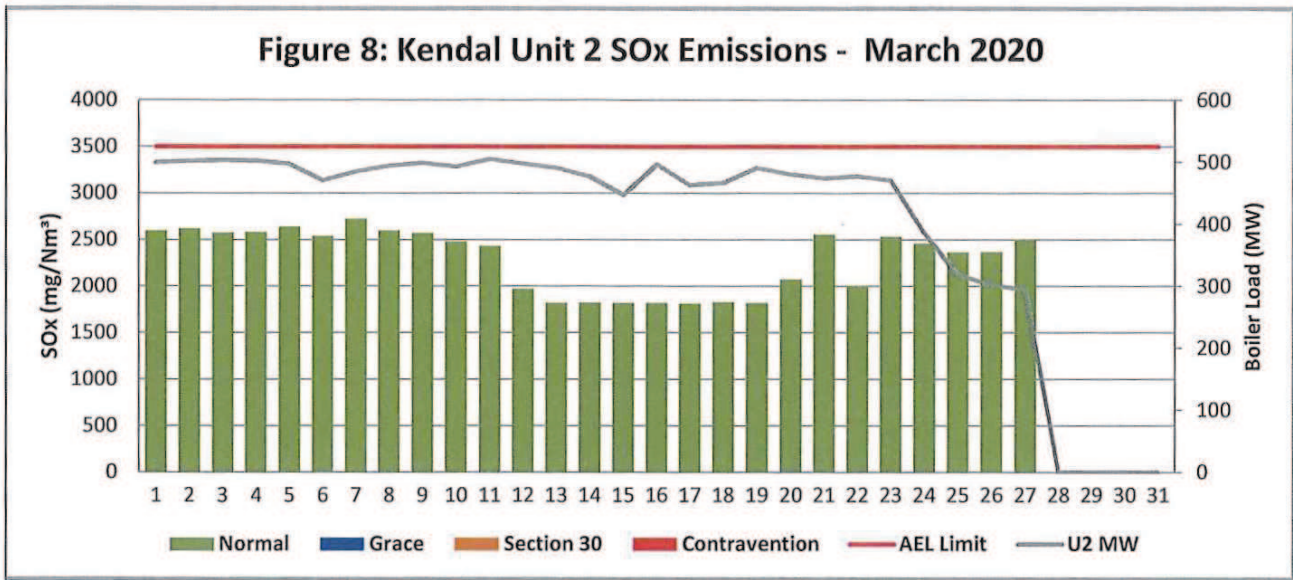


Figure 9: Kendal Unit 3 SOx Emissions - March 2020

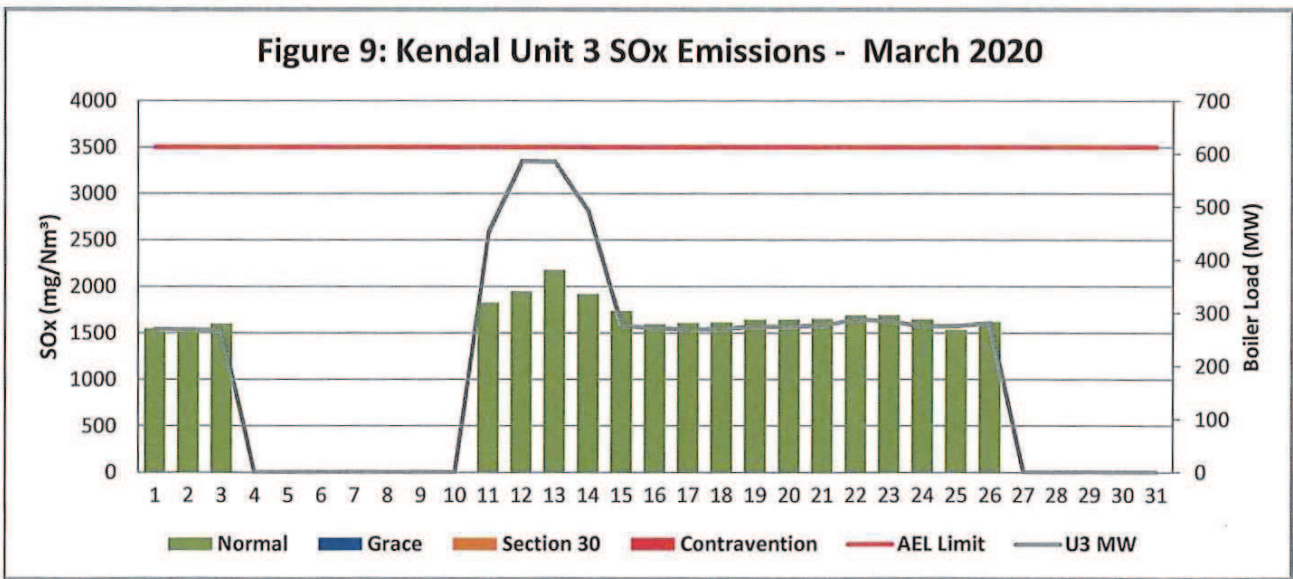




Figure 10: Kendal Unit 4 SOx Emissions - March 2020

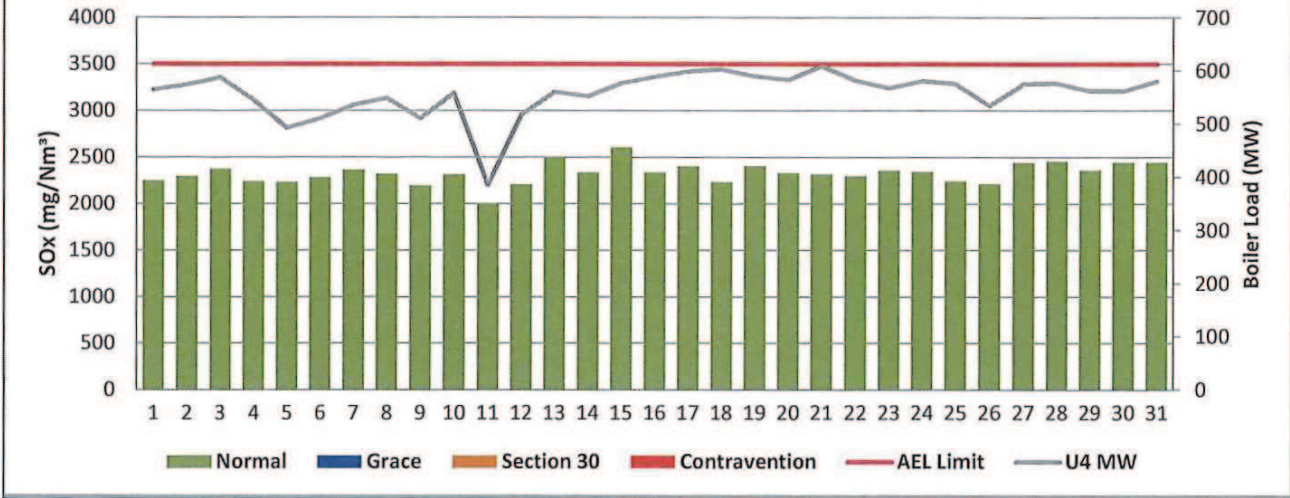
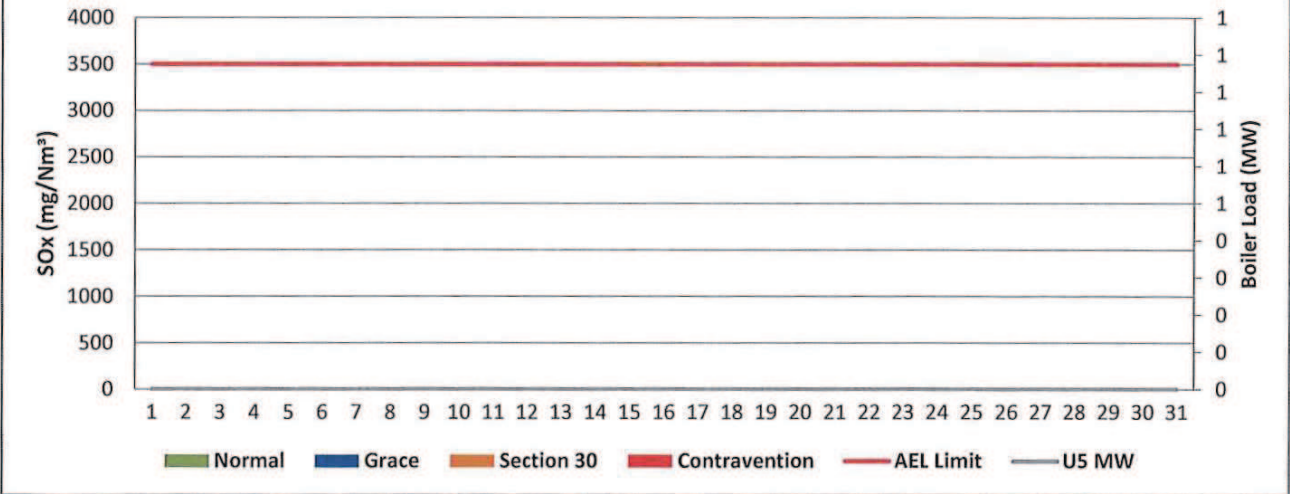
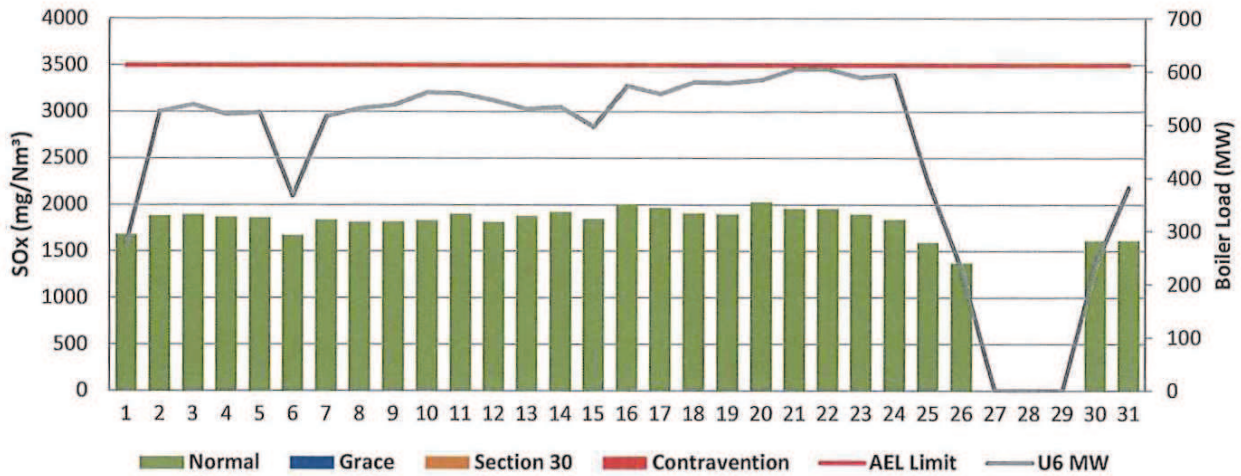


Figure 11: Kendal Unit 5 SOx Emissions - March 2020



**Figure 12: Kendal Unit 6 SOx Emissions - March 2020**



**Figure 13: Kendal Unit 1 NOx Emissions - March 2020**

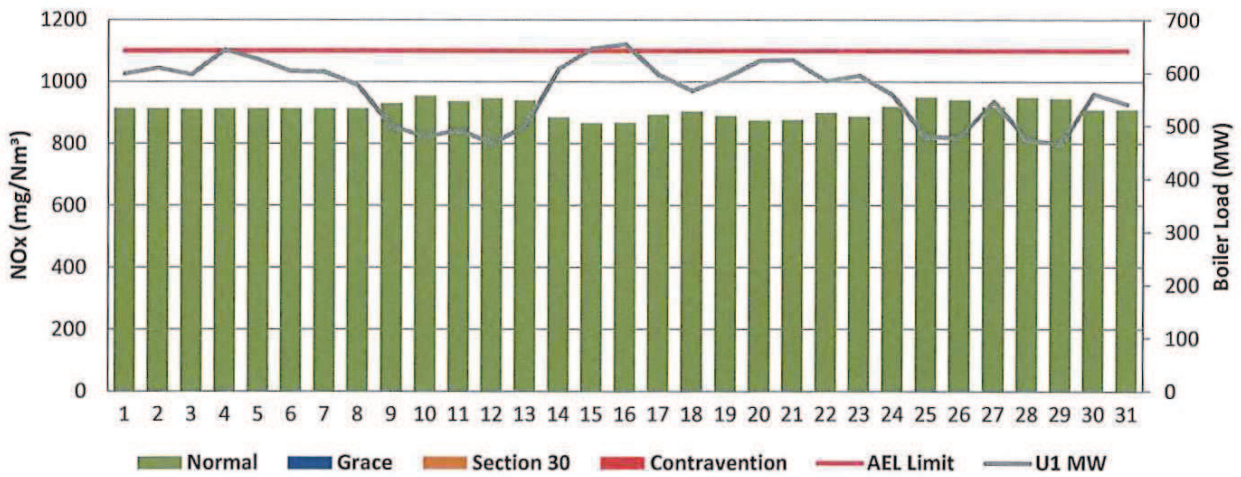


Figure 14: Kendal Unit 2 NOx Emissions - March 2020

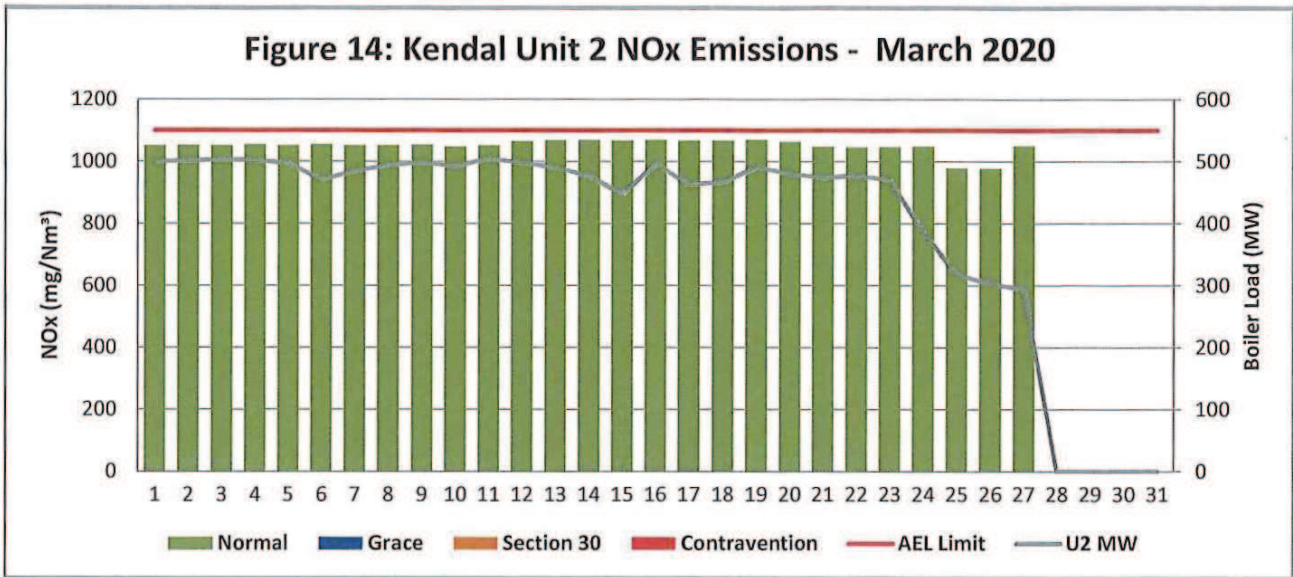
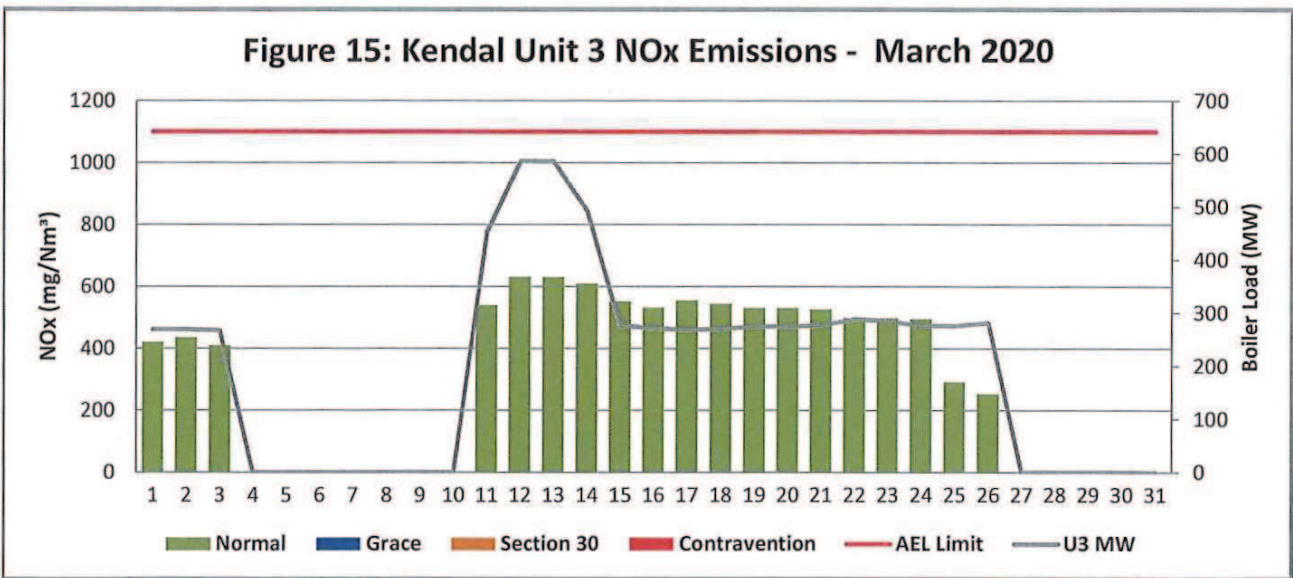
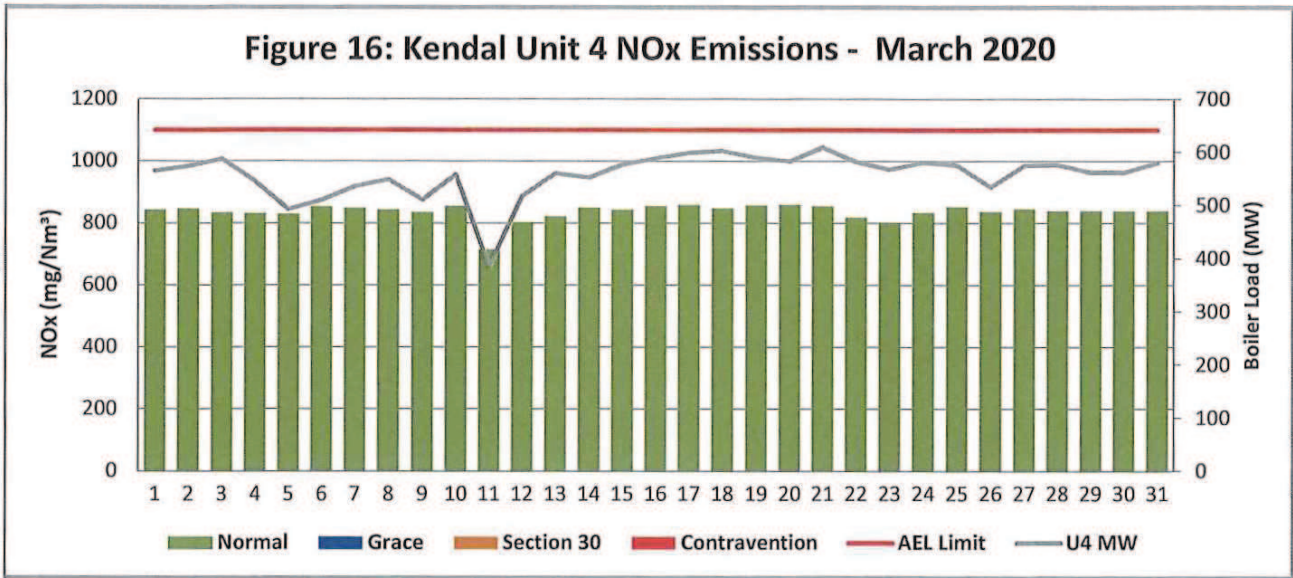


Figure 15: Kendal Unit 3 NOx Emissions - March 2020





**Figure 16: Kendal Unit 4 NOx Emissions - March 2020**



**Figure 17: Kendal Unit 5 NOx Emissions - March 2020**

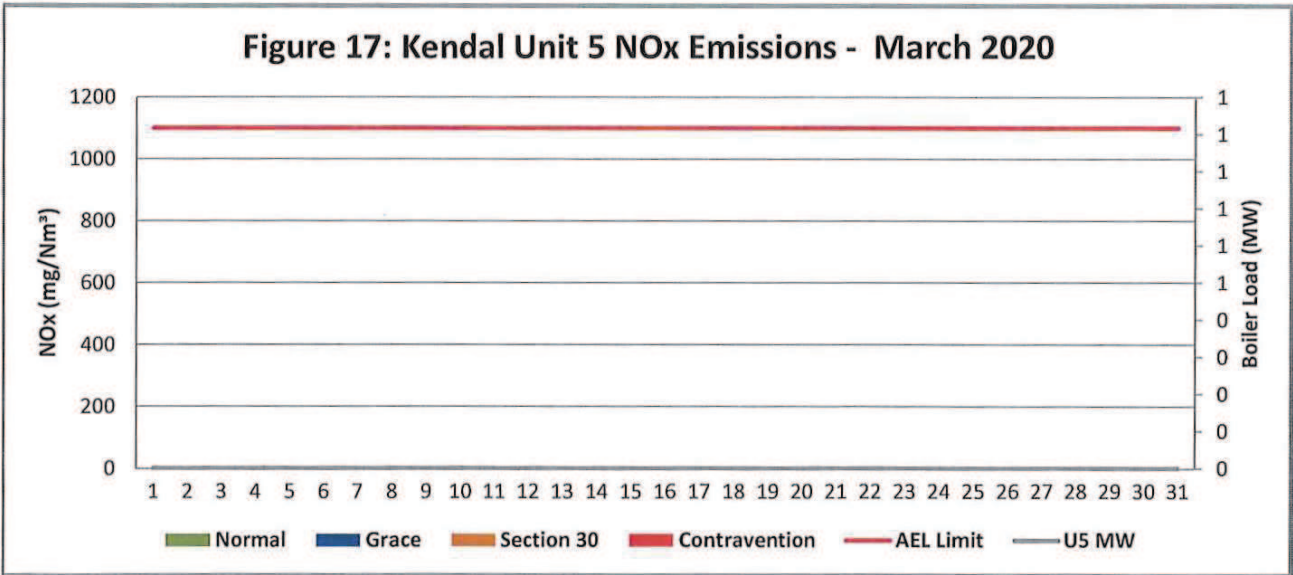


Figure 18: Kendal Unit 6 NOx Emissions - March 2020

