

Mr. Chakane Sibaya  
Air Quality Officer  
Fezile Dabi District Municipality  
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1947

Date:  
04 June 2021

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**LRP03PLA000 \_0244/202106/03**

Dear Mr. Sibaya

**LETHABO POWER STATION EMISSION MONTHLY REPORT FOR APRIL 2021**

Please find attached Lethabo Power Station emission report for the month of April 2021.

Also attached are the Ambient Air Quality Monitoring Report, Complaints Register and the Fugitive Dust Fallout Monitoring Report for April 2021.

For any additional information please do not hesitate to contact us.

Yours sincerely



Karabo Rakgolela  
**GENERAL MANAGER**

	<b>Report</b>	<b>Lethabo Power Station</b>
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Report name: **Lethabo Power Station  
April 2021  
Emission Report**

Reference number: **LRP03PLA000  
\_0244/202106/0  
3**

Document Type: **Report**

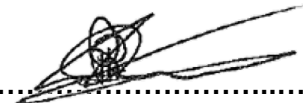
Area of Applicability: **Environment**

Report Date: **June 2021**

Classification: **Controlled  
Disclosure**

**Signatures:**

**Compiled by:**

  
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P Parag  
**System Engineer**

**Verified by :**

  
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W de Klerk  
**Environmental Officer**

**Reviewed by:**

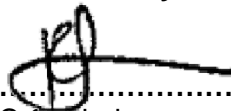
  
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N Mazibuko  
**BPE Manager**

**Date:** 2021-06-03  
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**Date:** 2021-06-03  
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**Date:** 2021-06-03  
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**Reviewed by:**

  
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C Govinden  
**PE Manager**

**Reviewed by:**

  
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L Nel  
**C&I Manager**

**Reviewed by:**

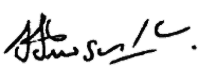
  
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M Hariram  
**Environmental Manager**

**Date:** 2021-06-07  
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**Date:** 2021-06-07  
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**Date:** 2021-06-09  
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**Approved by:**

  
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H Sewsunker  
**Engineering Manager**

**Date:** 2021/06/09  
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**LETHABO POWER STATION MONTHLY EMISSIONS REPORT**

Atmospheric Emission License FDDM-MET-2011-08-P1


**1. RAW MATERIALS AND PRODUCTS**

Raw Materials and Products	Raw Material Type	Units	Maximum Permitted Consumption Rate	Consumption Rate Apr-2021
	Coal	Tons	2 000 000	1 350 172
	Fuel Oil	Tons	1 700	1439.16
Production Rates	Product / By-Product Name	Units	Maximum Production Capacity Permitted	Production Rate Apr-2021
	Energy	GWh	2743.2	1 940.73
	Ash	Tons	770 000	522 651.6
	RE Ash	kg/MWh	not specified	269.31

**2. ENERGY SOURCE CHARACTERISTICS**

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.656 (Standard)	0.680
Ash Content	%	37.37 (Standard)	38.710

\*Please note the "standard" is not necessary a limit, but merely a optimum indication, it will fluctuate as the coal quality changes. The Stipulated Range are the Station acceptance test values.

### 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 Apr-2021
Unit 1	<i>Electrostatic Precipitator (ESP)</i>	99.68%
Unit 2	<i>Electrostatic Precipitator (ESP)</i>	99.79%
Unit 3	<i>Electrostatic Precipitator (ESP)</i>	99.78%
Unit 4	<i>Electrostatic Precipitator (ESP)</i>	99.82%
Unit 5	<i>Electrostatic Precipitator (ESP)</i>	99.86%
Unit 6	<i>Electrostatic Precipitator (ESP)</i>	99.79%

### 5. MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO <sub>2</sub>	NO	CO <sub>2</sub>
Unit 1	83.7	99.5	99.8	95.7
Unit 2	99.7	99.8	99.8	99.8
Unit 3	99.3	100.0	100.0	100.0
Unit 4	99.6	100.0	100.0	99.9
Unit 5	99.9	100.0	100.0	100.0
Unit 6	99.9	99.8	99.8	98.2

## 6. EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of April 2021

Associated Unit/Stack	PM (tons)	SO <sub>2</sub> (tons)	NO <sub>x</sub> (tons)
Unit 1	133	1 359	633
Unit 2	150.3	3 830	1 557
Unit 3	200.4	3 870	1 893
Unit 4	178.5	4 530	2 142
Unit 5	123.0	3 200	1 526
Unit 6	168.5	3 567	1 716
<b>SUM</b>	<b>953.5</b>	<b>20 355.9</b>	<b>9 466.3</b>

Table 6.2: Operating days in compliance to PM AEL Limit - April 2021

Associated Unit/Stack	Normal	Grace	Section 30	Contra-vention	Total Exceedance	Average PM (mg/Nm <sup>3</sup> )
Unit 1	6	3	4	0	7	266.7
Unit 2	19	5	0	0	5	92.9
Unit 3	18	11	0	0	11	108.4
Unit 4	27	3	0	0	3	78.0
Unit 5	30	0	0	0	0	73.2
Unit 6	21	5	0	0	5	102.7
<b>SUM</b>	<b>121</b>	<b>27</b>	<b>4</b>	<b>0</b>	<b>31</b>	

Table 6.3: Operating days in compliance to SO<sub>x</sub> AEL Limit - April 2021

Associated Unit/Stack	Normal	Grace	Section 30	Contra-vention	Total Exceedance	Average SO <sub>x</sub> (mg/Nm <sup>3</sup> )
Unit 1	14	0	0	0	0	2 029.0
Unit 2	25	0	0	0	0	2 164.5
Unit 3	30	0	0	0	0	2 007.4
Unit 4	30	0	0	0	0	1 997.7
Unit 5	30	0	0	0	0	1 916.9
Unit 6	27	0	0	0	0	2 099.0
<b>SUM</b>	<b>156</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

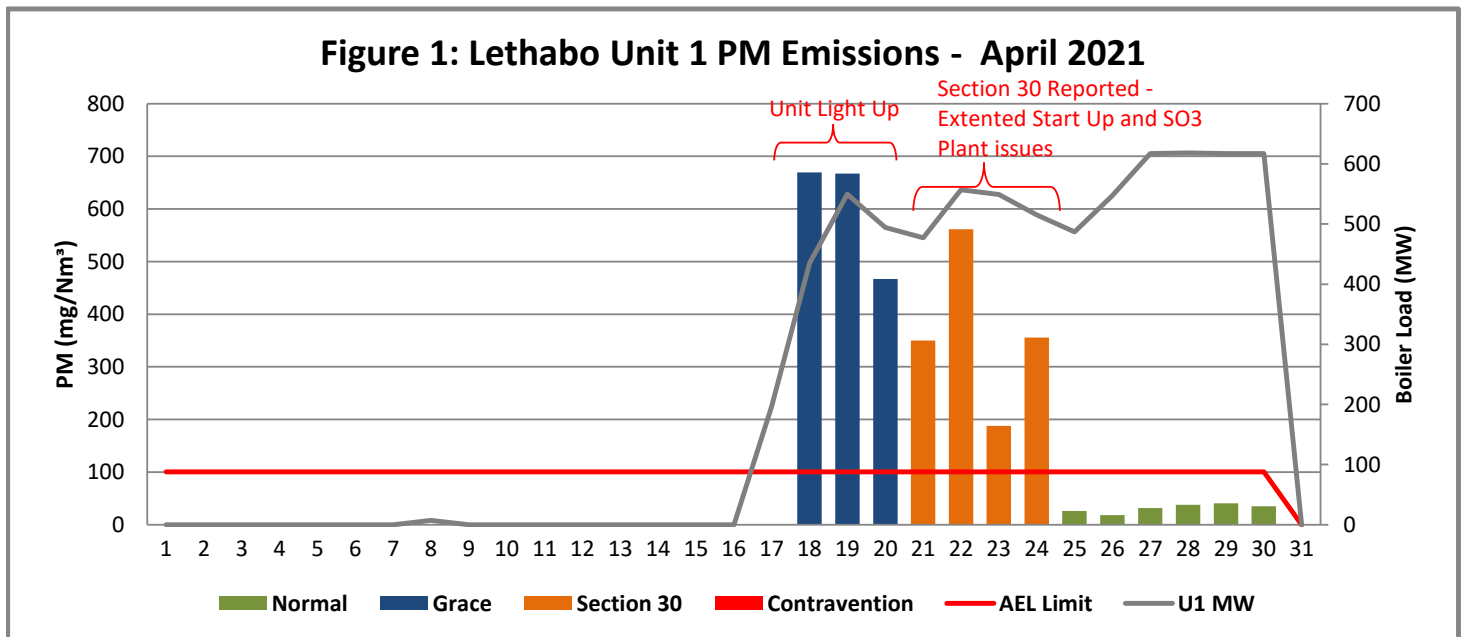
Table 6.4: Operating days in compliance to NOx AEL Limit - April 2021

Associated Unit/Stack	Normal	Grace	Section 30	Contra-vention	Total Exceedance	Average NOx (mg/Nm³)
Unit 1	14	0	0	0	0	930.8
Unit 2	25	0	0	0	0	861.8
Unit 3	26	0	0	4	4	976.7
Unit 4	30	0	0	0	0	940.5
Unit 5	30	0	0	0	0	914.9
Unit 6	25	0	0	2	2	994.1
<b>SUM</b>	<b>150</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>6</b>	

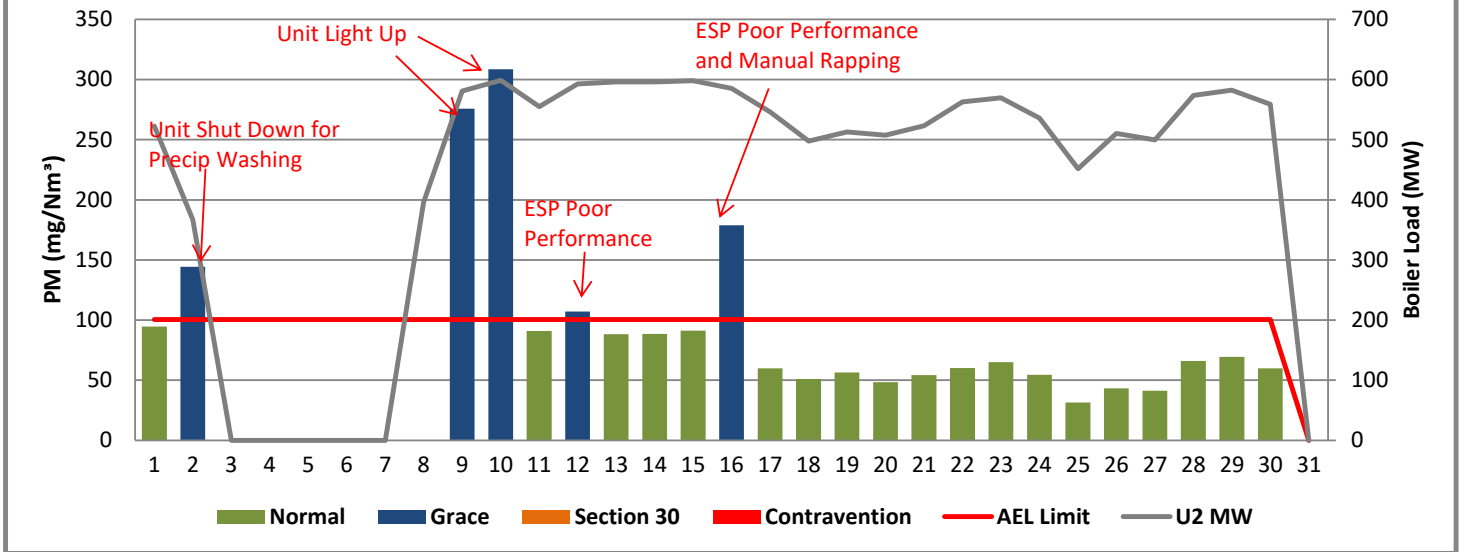
Table 6.5: Legend Description

Condition	Colour	Description
Normal	Light Green	Emissions below Emission Limit Value (ELV)
Grace	Dark 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

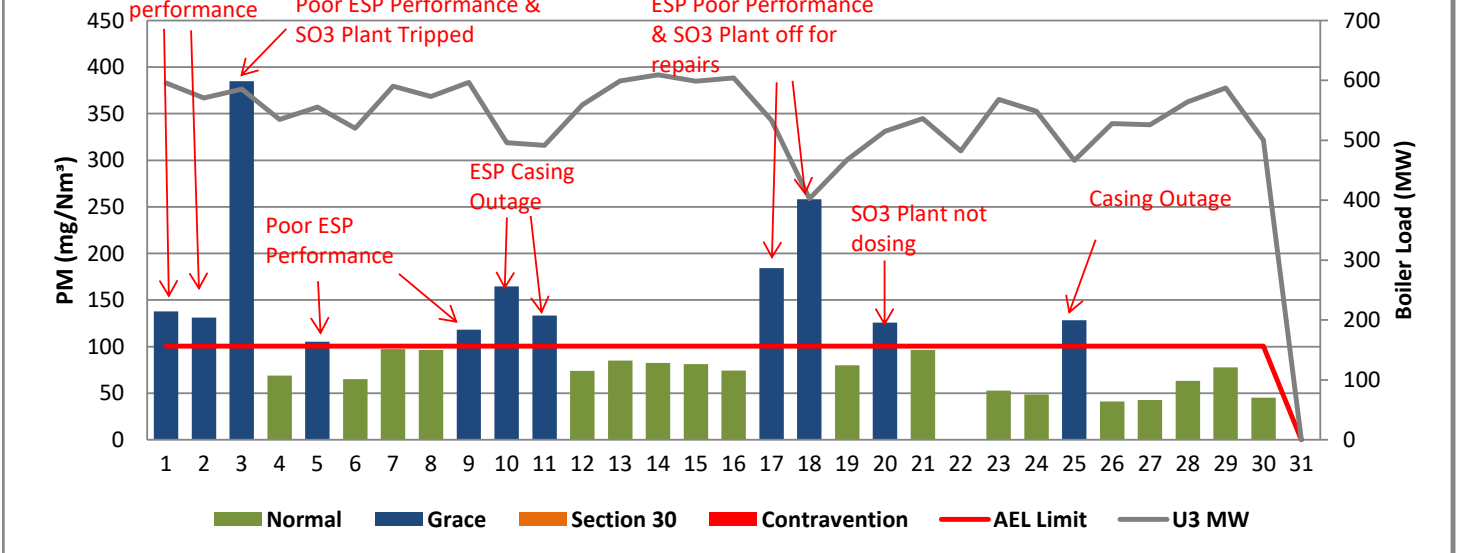
Figure 1: Lethabo Unit 1 PM Emissions - April 2021



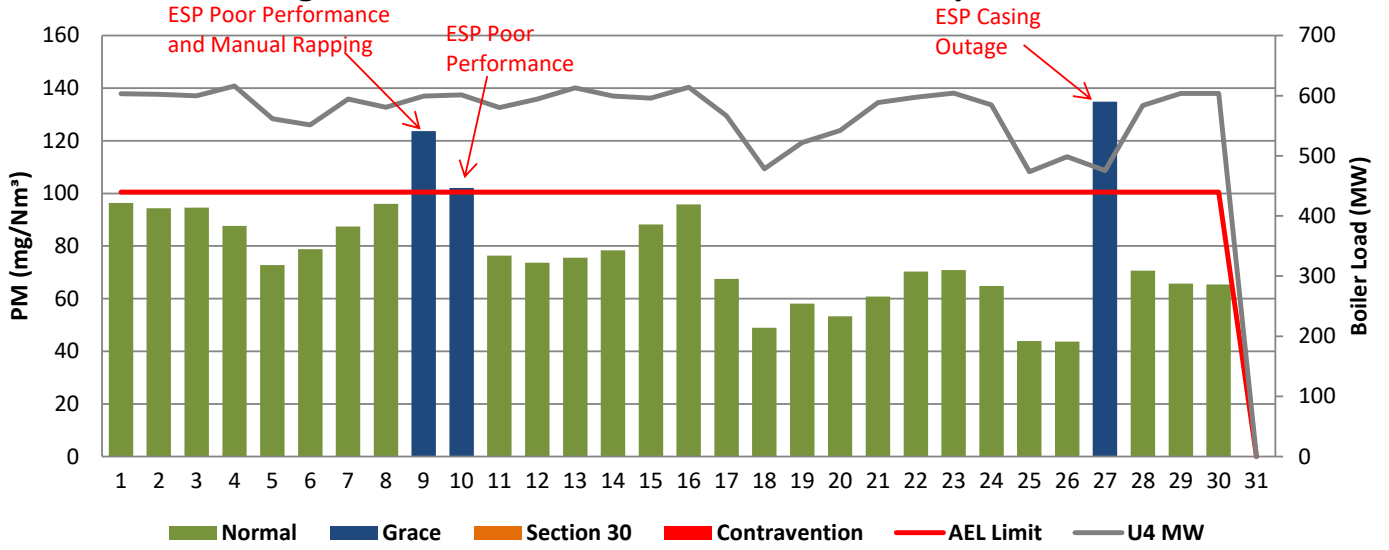
**Figure 2: Lethabo Unit 2 PM Emissions - April 2021**



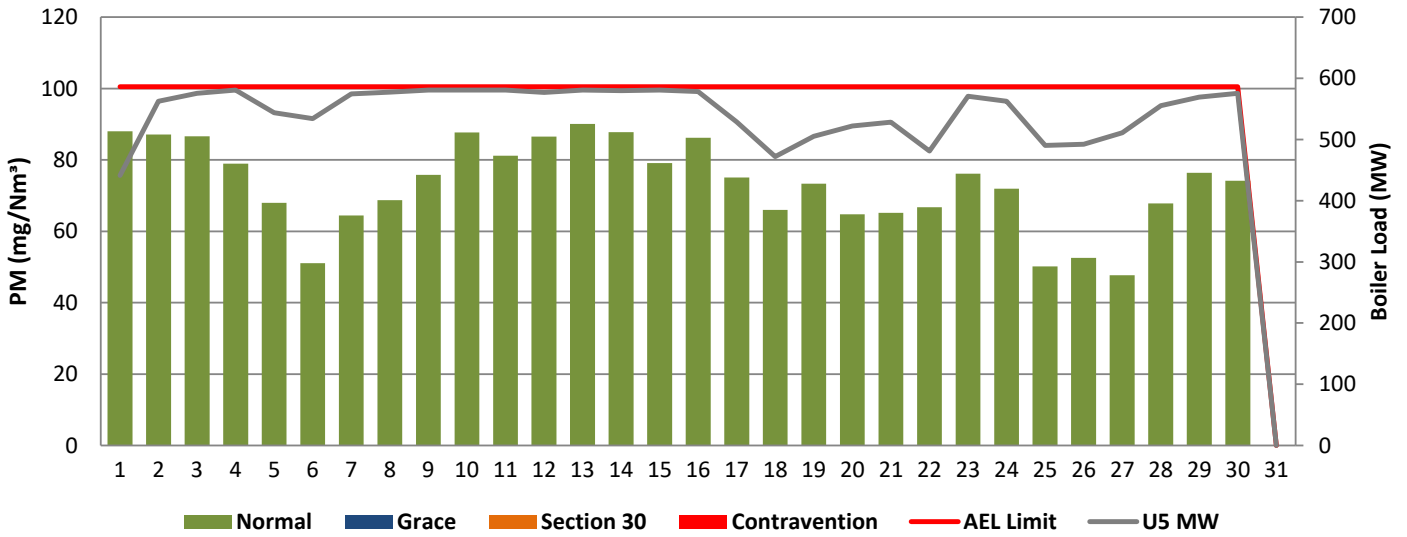
**Figure 3: Lethabo Unit 3 PM Emissions - April 2021**



**Figure 4: Lethabo Unit 4 PM Emissions - April 2021**

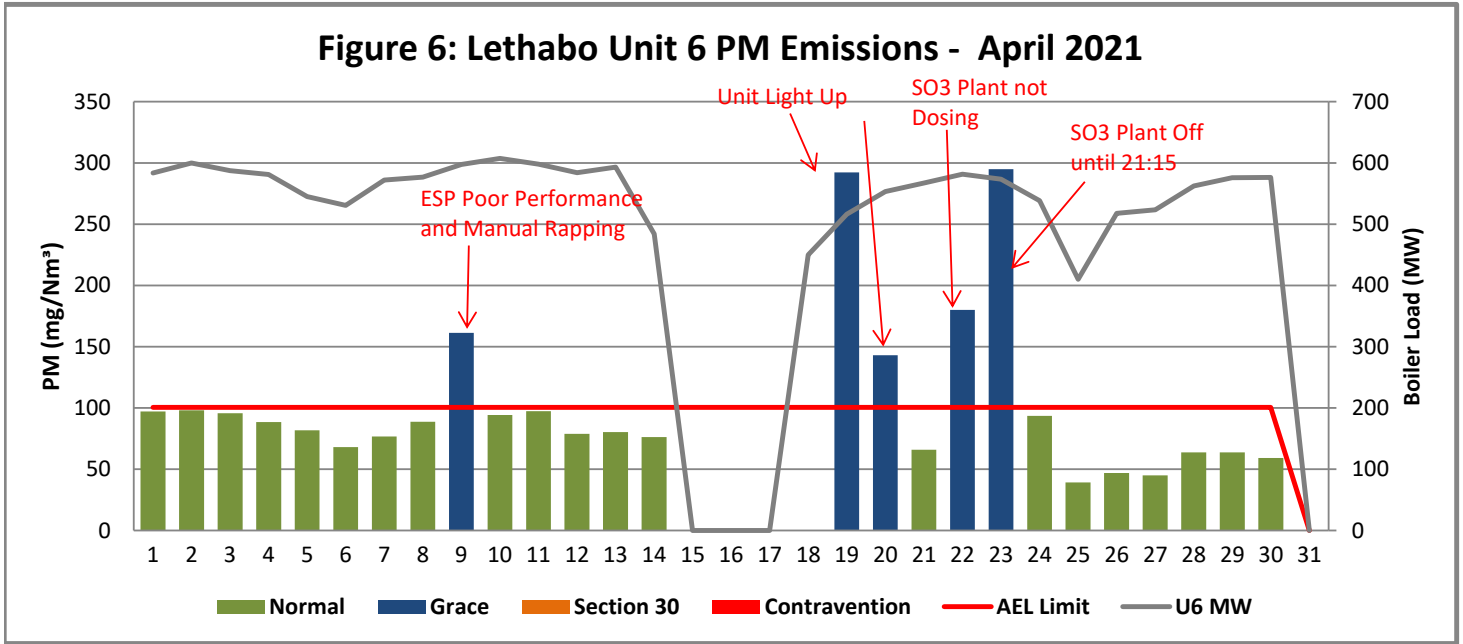


**Figure 5: Lethabo Unit 5 PM Emissions - April 2021**

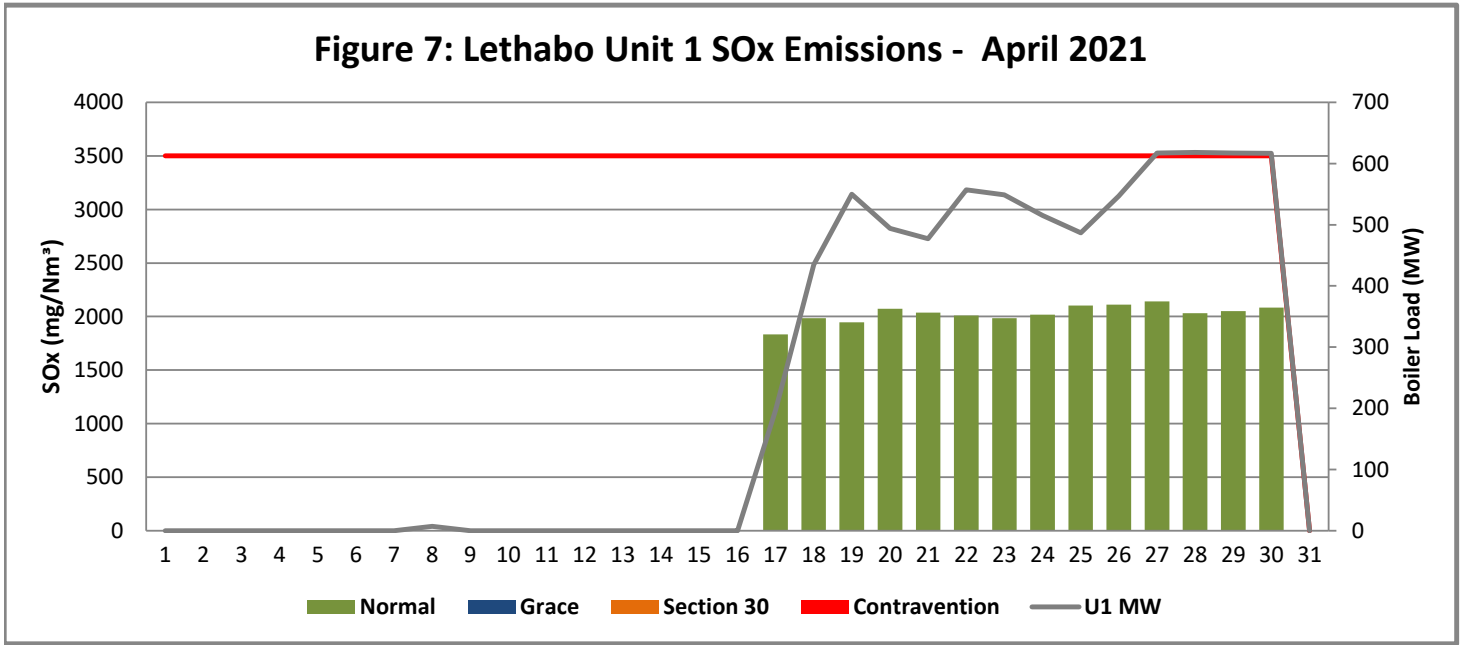




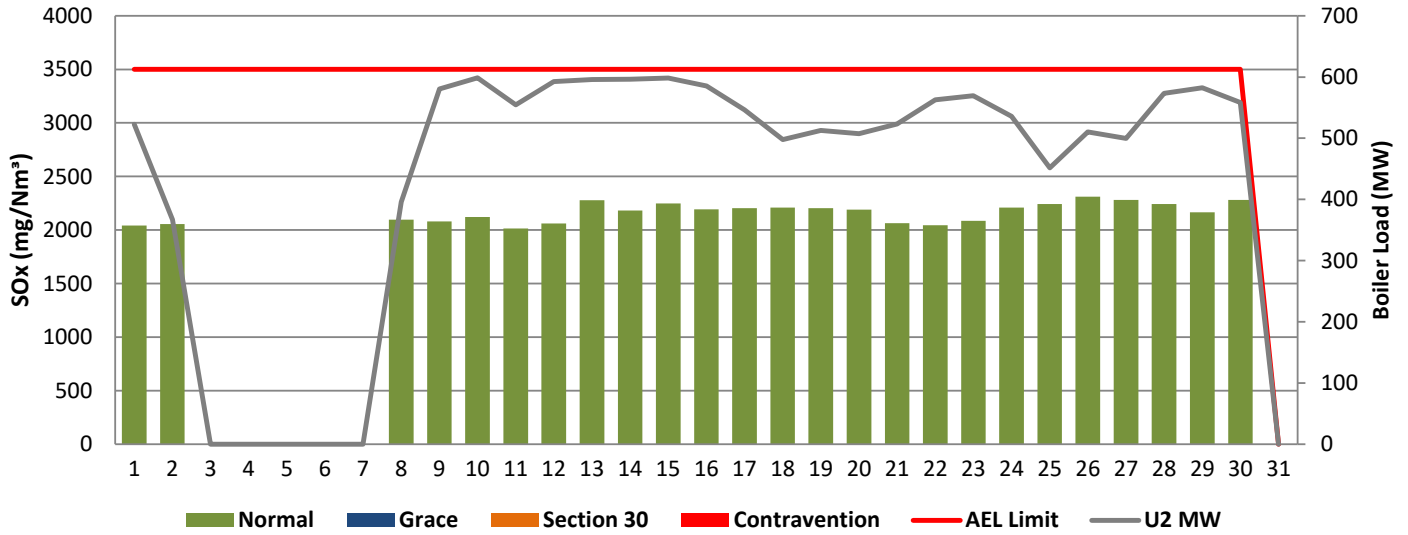
**Figure 6: Lethabo Unit 6 PM Emissions - April 2021**



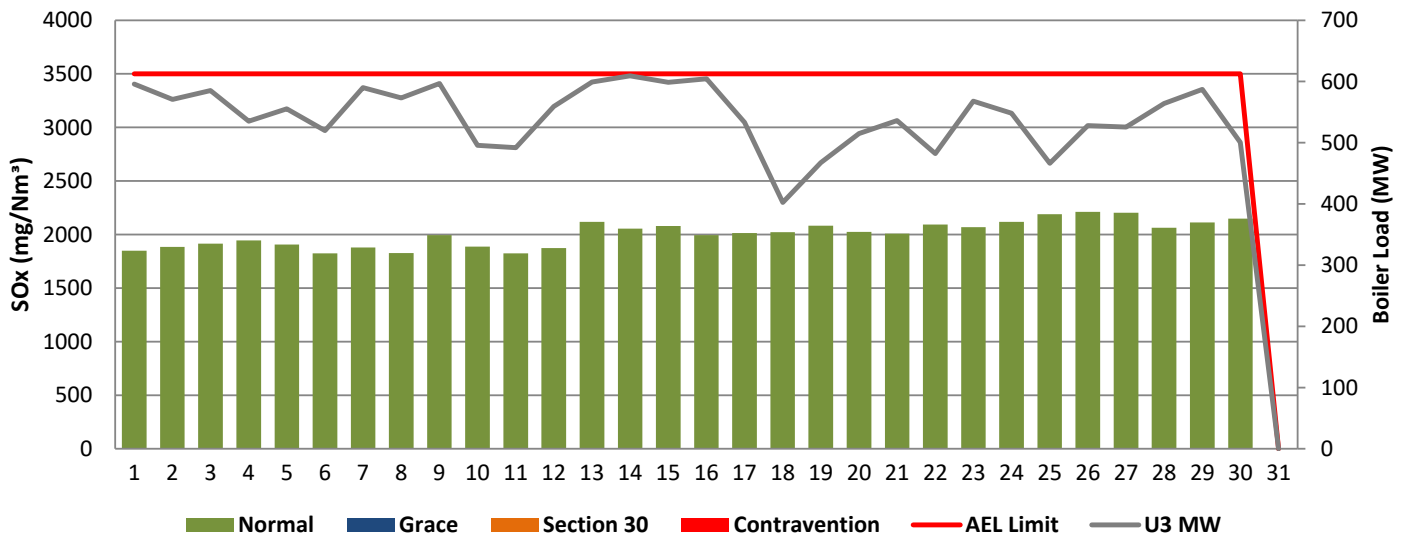
**Figure 7: Lethabo Unit 1 SOx Emissions - April 2021**



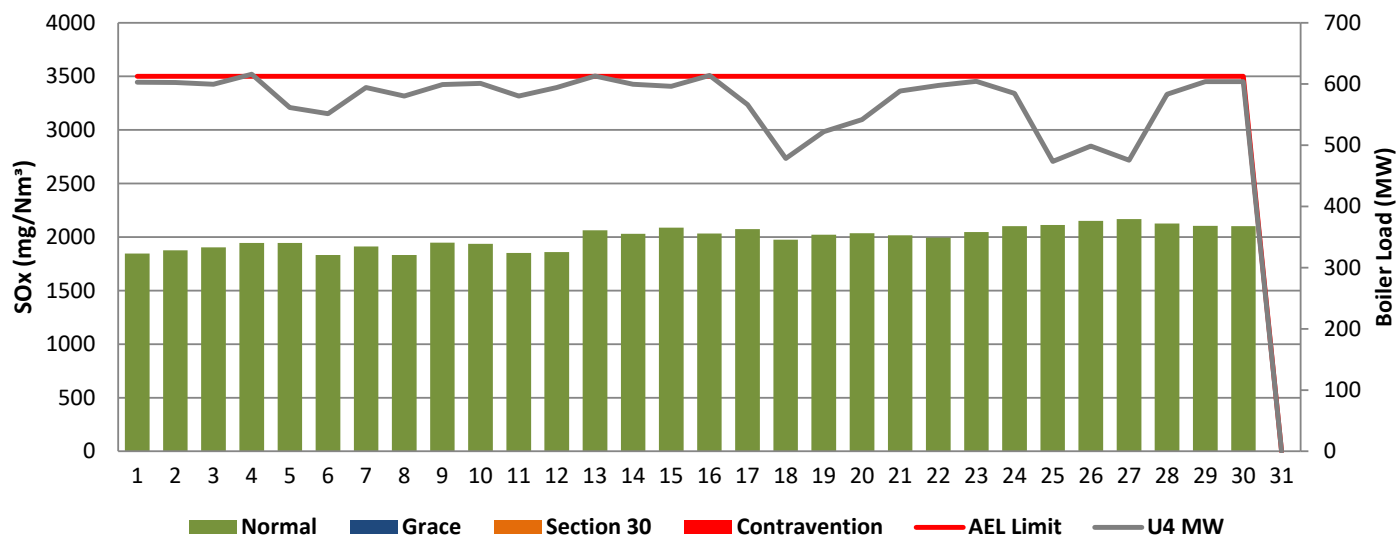
**Figure 8: Lethabo Unit 2 SOx Emissions - April 2021**



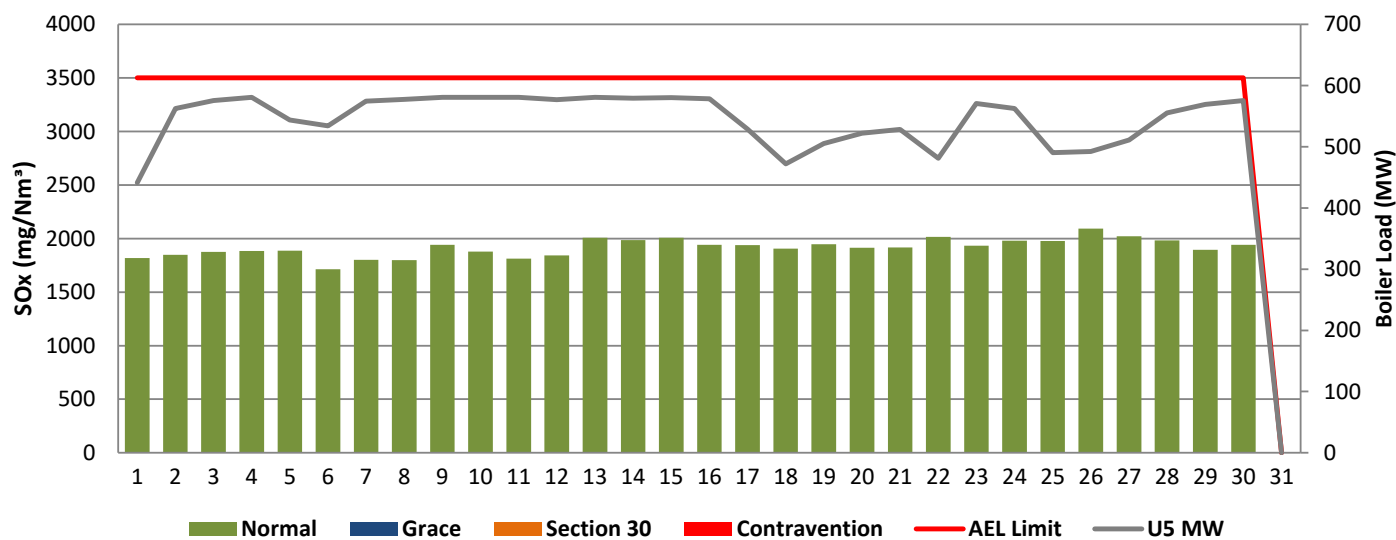
**Figure 9: Lethabo Unit 3 SOx Emissions - April 2021**



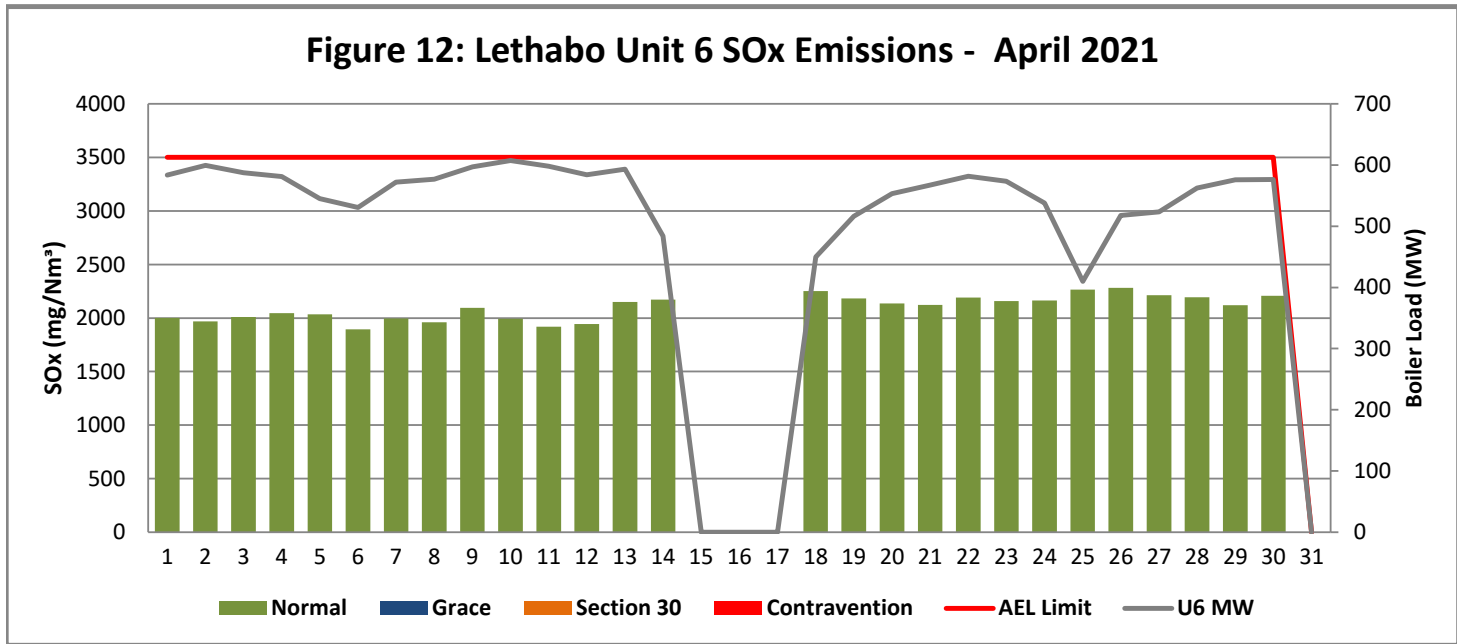
**Figure 10: Lethabo Unit 4 SOx Emissions - April 2021**



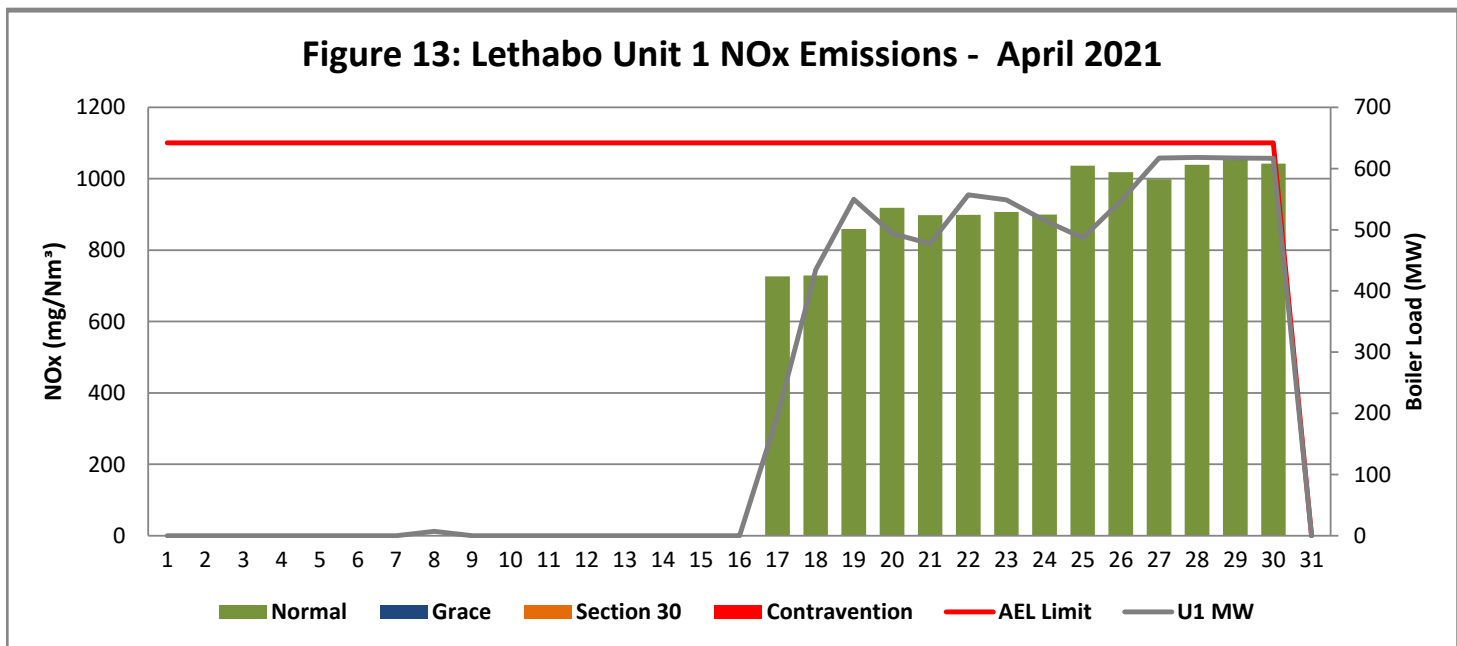
**Figure 11: Lethabo Unit 5 SOx Emissions - April 2021**



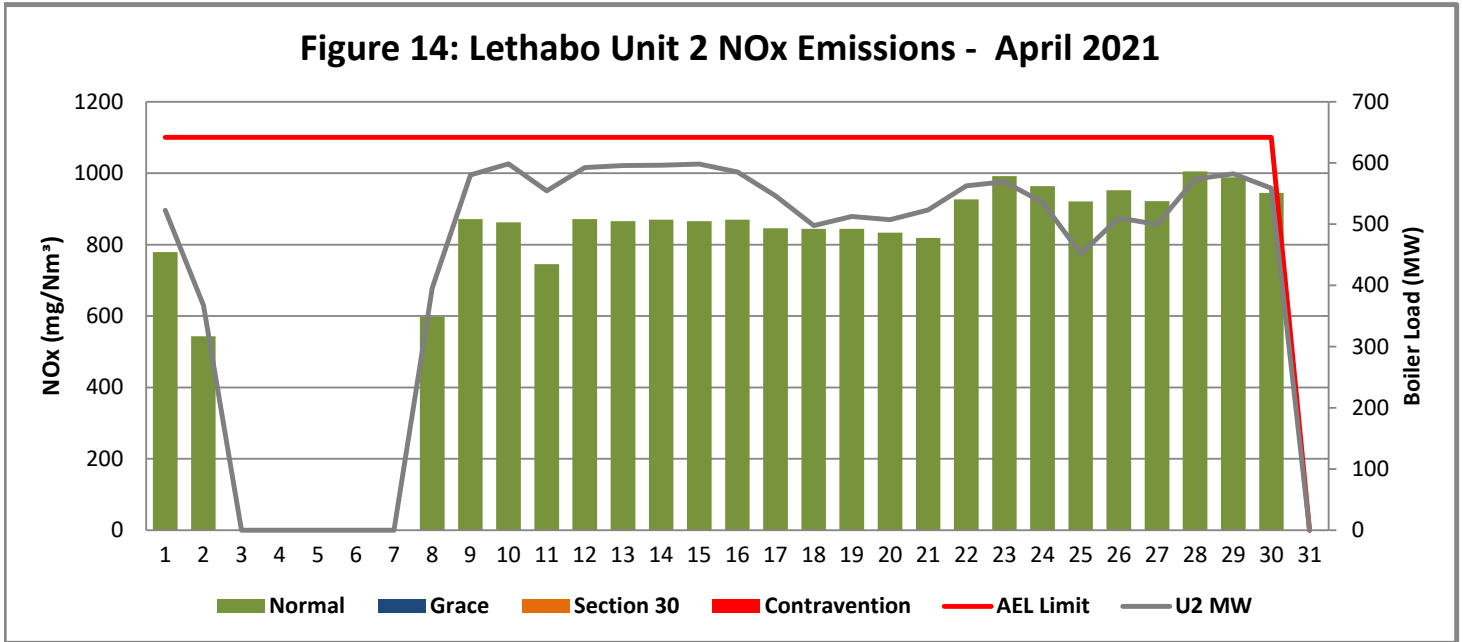
**Figure 12: Lethabo Unit 6 SOx Emissions - April 2021**



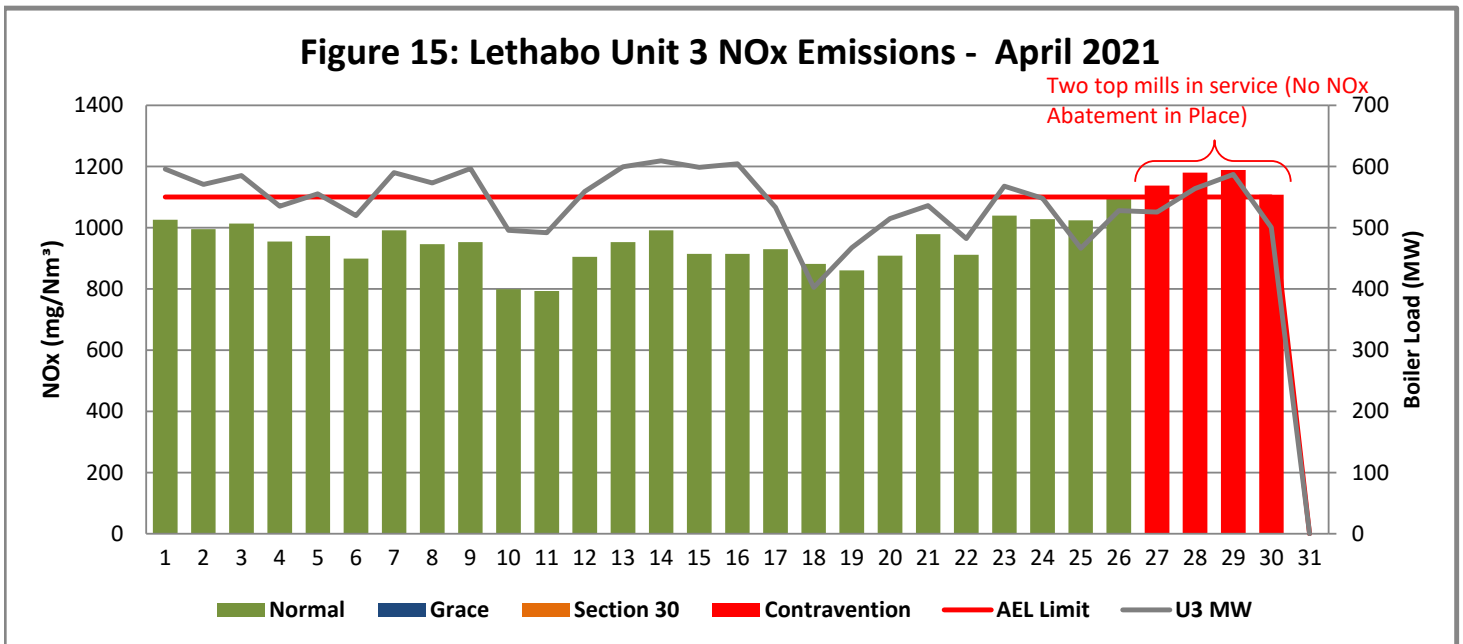
**Figure 13: Lethabo Unit 1 NOx Emissions - April 2021**



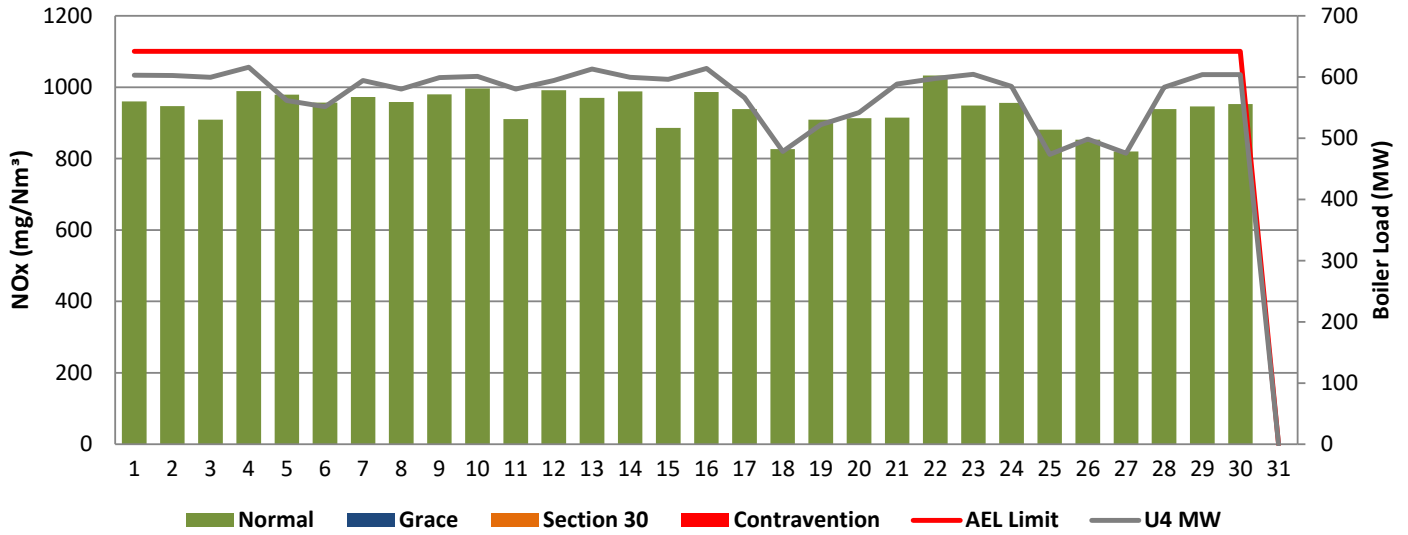
**Figure 14: Lethabo Unit 2 NOx Emissions - April 2021**



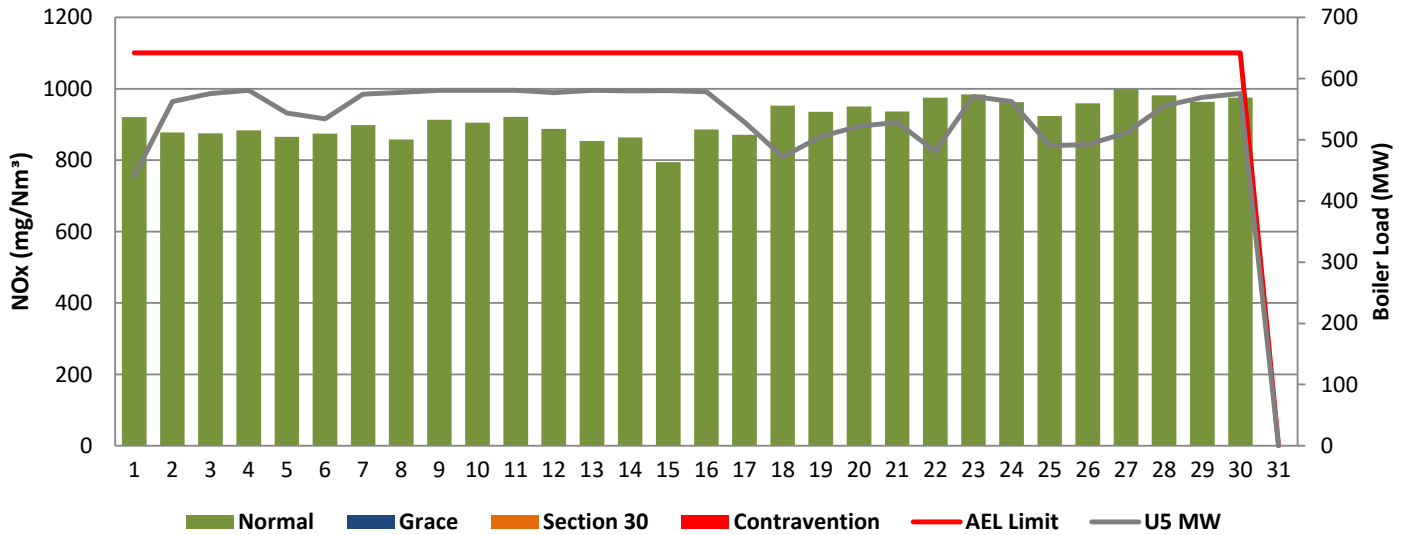
**Figure 15: Lethabo Unit 3 NOx Emissions - April 2021**

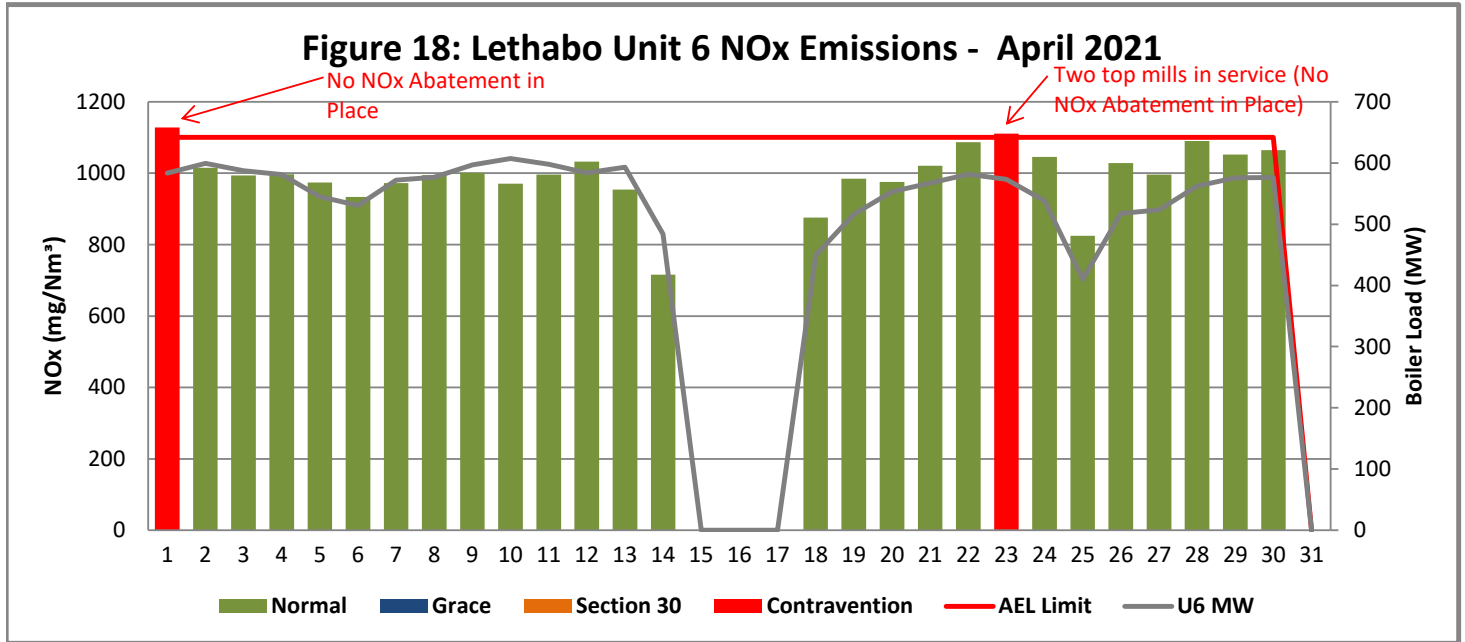


**Figure 16: Lethabo Unit 4 NOx Emissions - April 2021**



**Figure 17: Lethabo Unit 5 NOx Emissions - April 2021**





## 7. SHUT DOWN AND LIGHT UP INFORMATION

Table 7.1: PM Start-up information for the month of April 2021

Unit No.1	GO		Main turbine over speed test					
Breaker Open (BO)			12:30 AM	2021/04/23				
Draught Group (DG) Shut Down (SD)			DG did not trip or SD	DG did not trip or SD				
BO to DG SD (duration)		DD:HH:MM	n/a	DD:HH:MM				
Fires in time	8:55 PM	2021/04/15						
Synch. to Grid (or BC)	6:05 PM	2021/04/17						
Fires in to BC (duration)	01:21:10	DD:HH:MM		DD:HH:MM				
Emissions below limit from BC (end date)	12:00 AM	2021/04/25						
Emissions below limit from BC (duration)	07:05:55	DD:HH:MM		DD:HH:MM				

<b>Unit No.2</b>	<b>For casing washing and F-mill PA isol damper repairs</b>							
<b>Breaker Open (BO)</b>	2:45 AM	2021/04/02						
<b>Draught Group (DG) Shut Down (SD)</b>	3:35 PM	2021/04/02						
<b>BO to DG SD (duration)</b>	00:12:50	DD:HH:MM						
<b>Fires in time</b>	7:25 AM	2021/04/08						
<b>Synch. to Grid (or BC)</b>	1:52 PM	2021/04/08						
<b>Fires in to BC (duration)</b>	00:06:27	DD:HH:MM						
<b>Emissions below limit from BC (end date)</b>	12:00 AM	2021/04/11						
<b>Emissions below limit from BC (duration)</b>	02:10:08	DD:HH:MM						

<b>Unit No.3</b>	<b>Secondary CW system fault</b>							
<b>Breaker Open (BO)</b>	9:50 PM	2021/04/21						
<b>Draught Group (DG) Shut Down (SD)</b>	12:15 AM	2021/04/22						
<b>BO to DG SD (duration)</b>	00:02:25	DD:HH:MM						
<b>Fires in time</b>	4:40 AM	2021/04/22						
<b>Synch. to Grid (or BC)</b>	6:14 AM	2021/04/22						
<b>Fires in to BC (duration)</b>	00:01:34	DD:HH:MM						
<b>Emissions below limit from BC (end date)</b>	3:00 AM	2021/04/23						
<b>Emissions below limit from BC (duration)</b>	00:20:46	DD:HH:MM						



<b>Unit No.4</b>								
<b>Breaker Open (BO)</b>								
<b>Draught Group (DG) Shut Down (SD)</b>								
<b>BO to DG SD (duration)</b>								
<b>Fires in time</b>								
<b>Synch. to Grid (or BC)</b>								
<b>Fires in to BC (duration)</b>								
<b>Emissions below limit from BC (end date)</b>								
<b>Emissions below limit from BC (duration)</b>								

Unit No.5							
Breaker Open (BO)							
Draught Group (DG) Shut Down (SD)							
BO to DG SD (duration)							
Fires in time							
Synch. to Grid (or BC)							
Fires in to BC (duration)							
Emissions below limit from BC (end date)							
Emissions below limit from BC (duration)							

Unit No.6	<i>Boiler tube leak</i>		<i>Main turbine over speed test</i>				
Breaker Open (BO)	7:15 AM	2021/04/14	12:40 AM	2021/04/25			
Draught Group (DG) Shut Down (SD)	6:45 PM	2021/04/14	DG did not trip or SD	DG did not trip or SD			
BO to DG SD (duration)	00:11:30	DD:HH:MM	n/a	DD:HH:MM			
Fires in time	12:20 AM	2021/04/18					
Synch. to Grid (or BC)	3:49 AM	2021/04/18					
Fires in to BC (duration)	00:03:29	DD:HH:MM		DD:HH:MM			
Emissions below limit from BC (end date)	2:00 AM	2021/04/21					
Emissions below limit from BC (duration)	02:22:11	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 April 2021 in mg/Nm³

## 8. MAINTENANCE

<b>Unit 1</b>				
<b>Beginning of</b>	2021/04/20 00:00:00			
<b>Reason for Maintenance</b>	Precip casing washing (Unit Off Load)			
<b>End (Time):</b>	2021/04/24 11:33:00			
<b>Duration</b>	107:33:00			

<b>Unit 2</b>				
<b>Beginning of</b>	2021/04/02 02:45:00			
<b>Reason for Maintenance</b>	Precip casing washing (Unit Off Load)			
<b>End (Time):</b>	2021/04/08 13:52:00			
<b>Duration</b>	155:07:00			

<b>Unit 3</b>				
<b>Beginning of</b>	2021/04/04 00:12:00	2021/04/18 00:00:00	2021/04/10 00:08	2021/04/11 00:00
<b>Reason for Maintenance</b>	SO3 plant air blower replacement	SO3 plant leak repairs	RHI precip casing repairs	LHO Precip casing repairs
<b>End (Time):</b>	2021/04/04 05:08:00	2021/04/21 06:09:00	2021/04/11 00:00	2021/04/12 00:00
<b>Duration</b>	4:56:00	78:09:00	23:52:00	24:00:00

<b>Unit 3</b>				
<b>Beginning of</b>	2021/04/25 00:00			
<b>Reason for Maintenance</b>	RHO precip casing repairs			
<b>End (Time):</b>	2021/04/25 16:58			
<b>Duration</b>	16:58:00			

<b>Unit 4</b>				
<b>Beginning of</b>	2021/04/27 00:00:00			
<b>Reason for Maintenance</b>	RHO precip casing repairs			
<b>End (Time):</b>	2021/04/27 22:15:00			
<b>Duration</b>	22:15:00			

<b>Unit 5</b>				
<b>Beginning of</b>	2021/04/01 00:00:00			
<b>Reason for Maintenance</b>	SO3 Plant maintenance			
<b>End (Time):</b>	2021/04/01 04:50:00			
<b>Duration</b>	4:50:00			

<b>Unit 6</b>				
<b>Beginning of</b>	2021/04/01 08:17:00			
<b>Reason for Maintenance</b>	SO3 Plant maintenance			
<b>End (Time):</b>	2021/04/03 04:01:00			
<b>Duration</b>	43:44:00			

## 9. GENERAL

### Unit 1:

A Section 30 was reported for extended start up condition, Unit synchronized on 17/04/2021 @ 18:05, needed to be below the limit by 20/01/2021 @ 18:05. SO3 Plant challenges coupled with start up conditions contributed to the Section 30 being incurred.

### Unit 3:

NOx Exceedance on 27/04/2021-30/02/2021 and 16/02/2021-17-02/2021 due to there being no NOx Abatement system and is further aggravated by two top mills in operation (B Mill unavailable)

### Unit 6:

NOx Exceedance on 23/04/2021: Due to there being no NOx Abatement system and Process engineering assisted with lowering the Right Hand Side O2's and assisted with mill configurations to try lower the NOx. However, NOx still trending high and exceeded for the day.

NOx Exceedance on 01/04/2021: Due to there being no NOx Abatement system and is further aggravated by two top mills in operation.

**ADDENDUM TO MONTHLY EMISSIONS REPORT**

**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 Acknowledgment	Date DEA Acceptable	Comments / Reference No.
Unit 1	20/04/2021	24/04/2021	Extended Start Up - SO3 Plant Issues	Defective Plant issues addressed	20/04/2021	04/05/2021	No		

**11. PARTICULATE EMISSIONS**

**EMISSION RATE (ACTUAL EMISSION/MWh GENERATED - kg/MWh)**

MONTH	UNIT 1	UNIT 2	UNIT 3	UNIT 4	UNIT 5	UNIT 6	STATION
May-20	0.83	0.34	0.54	0.20	0.20	0.26	0.36
Jun-20	0.23	0.26	0.29	0.18	0.20	0.27	0.24
Jul-20	0.36	0.53	0.36	0.22	0.22	0.33	0.32
Aug-20	0.25	0.57	0.41	0.33	0.31	0.39	0.36
Sep-20	0.22	0.51	OFF	0.25	0.20	0.32	0.29
Oct-20	0.30	0.54	OFF	0.26	0.32	0.31	0.34
Nov-20	0.42	0.49	OFF	0.40	0.32	0.41	0.41
Dec-20	0.46	0.94	OFF	0.66	0.54	0.48	0.63
Jan-21	0.75	0.66	0.68	0.39	0.40	0.54	0.53
Feb-21	OFF	0.64	0.59	0.49	0.51	0.52	0.56
Mar-21	OFF	0.80	0.54	0.45	0.46	0.42	0.54
Apr-21	0.78	0.49	0.52	0.43	0.31	0.48	0.47

**ADDENDUM TO MONTHLY EMISSIONS REPORT**

**12. DAILY EMISSIONS FIGURES**

**Final Dust Concentration (mg/Nm<sup>3</sup>)**

Date	U1	U2	U3	U4	U5	U6	Limit
01-Apr	OFF	95	138	96	88	97	100
02-Apr	OFF	144	131	94	87	98	100
03-Apr	OFF	OFF	385	95	87	96	100
04-Apr	OFF	OFF	69	88	79	88	100
05-Apr	OFF	OFF	105	73	68	82	100
06-Apr	OFF	OFF	65	79	51	68	100
07-Apr	OFF	OFF	97	87	64	77	100
08-Apr	OFF	OFF	96	96	69	89	100
09-Apr	OFF	276	118	124	76	161	100
10-Apr	OFF	309	165	102	88	94	100
11-Apr	OFF	91	133	76	81	97	100
12-Apr	OFF	107	74	74	87	79	100
13-Apr	OFF	88	85	76	90	80	100
14-Apr	OFF	89	82	78	88	76	100
15-Apr	OFF	91	81	88	79	OFF	100
16-Apr	OFF	179	74	96	86	OFF	100
17-Apr	OFF	60	184	68	75	OFF	100
18-Apr	670	51	258	49	66	OFF	100
19-Apr	667	57	80	58	73	292	100
20-Apr	467	48	126	53	65	143	100
21-Apr	368	54	96	61	65	66	100
22-Apr	561	60	OFF	70	67	180	100
23-Apr	188	65	53	71	76	295	100
24-Apr	356	55	49	65	72	94	100
25-Apr	26	32	128	44	50	39	100
26-Apr	18	43	41	44	53	47	100
27-Apr	32	41	42	135	48	45	100
28-Apr	38	66	63	71	68	64	100
29-Apr	41	69	78	66	76	64	100
30-Apr	35	60	45	65	74	59	100

**ADDENDUM TO MONTHLY EMISSIONS REPORT**

**Final SOx Concentration (mg/Nm<sup>3</sup>)**

Date	U1	U2	U3	U4	U5	U6	Limit
01-Apr	OFF	2041	1850	1846	1818	2002	3500
02-Apr	OFF	2057	1885	1877	1848	1969	3500
03-Apr	OFF	OFF	1915	1905	1876	2009	3500
04-Apr	OFF	OFF	1944	1944	1883	2045	3500
05-Apr	OFF	OFF	1906	1946	1886	2035	3500
06-Apr	OFF	OFF	1824	1833	1712	1894	3500
07-Apr	OFF	OFF	1879	1911	1802	1997	3500
08-Apr	OFF	2096	1827	1833	1797	1959	3500
09-Apr	OFF	2080	1995	1947	1941	2096	3500
10-Apr	OFF	2122	1888	1935	1878	1993	3500
11-Apr	OFF	2014	1824	1851	1813	1920	3500
12-Apr	OFF	2062	1873	1861	1844	1943	3500
13-Apr	OFF	2280	2118	2062	2007	2151	3500
14-Apr	OFF	2182	2054	2030	1986	2172	3500
15-Apr	OFF	2249	2079	2087	2007	OFF	3500
16-Apr	OFF	2194	1996	2033	1942	OFF	3500
17-Apr	1834	2204	2014	2073	1939	OFF	3500
18-Apr	1985	2211	2023	1976	1905	2252	3500
19-Apr	1947	2205	2082	2022	1946	2182	3500
20-Apr	2072	2190	2025	2036	1914	2137	3500
21-Apr	2036	2065	2008	2017	1917	2121	3500
22-Apr	2009	2043	2094	1993	2015	2191	3500
23-Apr	1986	2085	2068	2046	1934	2159	3500
24-Apr	2018	2210	2117	2103	1980	2165	3500
25-Apr	2102	2243	2190	2111	1978	2266	3500
26-Apr	2112	2312	2212	2151	2094	2281	3500
27-Apr	2141	2280	2204	2167	2022	2213	3500
28-Apr	2032	2244	2064	2127	1982	2194	3500
29-Apr	2050	2165	2114	2105	1894	2119	3500
30-Apr	2084	2282	2149	2101	1943	2207	3500

**ADDENDUM TO MONTHLY EMISSIONS REPORT**

**Final NOx Concentration (mg/Nm<sup>3</sup>)**

Date	U1	U2	U3	U4	U5	U6	Limit
01-Apr	OFF	779	1027	960	920	1128	1100
02-Apr	OFF	543	995	947	878	1015	1100
03-Apr	OFF	OFF	1014	909	875	994	1100
04-Apr	OFF	OFF	955	989	884	997	1100
05-Apr	OFF	OFF	973	979	865	974	1100
06-Apr	OFF	OFF	899	957	875	934	1100
07-Apr	OFF	OFF	991	973	898	973	1100
08-Apr	OFF	598	946	958	858	995	1100
09-Apr	OFF	872	953	980	913	1001	1100
10-Apr	OFF	862	799	997	905	971	1100
11-Apr	OFF	745	793	911	921	996	1100
12-Apr	OFF	871	905	992	887	1033	1100
13-Apr	OFF	866	953	970	854	954	1100
14-Apr	OFF	870	992	988	863	716	1100
15-Apr	OFF	866	914	886	794	OFF	1100
16-Apr	OFF	870	914	987	886	OFF	1100
17-Apr	727	846	930	939	871	OFF	1100
18-Apr	729	844	882	826	953	876	1100
19-Apr	860	844	861	909	935	985	1100
20-Apr	918	834	909	913	950	975	1100
21-Apr	898	819	979	915	936	1021	1100
22-Apr	898	926	912	1033	975	1087	1100
23-Apr	907	992	1039	949	984	1111	1100
24-Apr	900	964	1028	956	963	1046	1100
25-Apr	1036	921	1024	881	924	825	1100
26-Apr	1018	953	1100	853	960	1028	1100
27-Apr	999	922	1138	820	999	996	1100
28-Apr	1039	1005	1180	939	982	1091	1100
29-Apr	1059	989	1189	946	963	1053	1100
30-Apr	1042	945	1108	952	975	1065	1100



**ADDENDUM TO MONTHLY EMISSIONS REPORT**

**13. AVAILABILITY**

**ESP utilisation**

Availability												
Month	Unit 1	Days Affected	Unit 2	Days Affected	Unit 3	Days Affected	Unit 4	Days Affected	Unit 5	Days Affected	Unit 6	Days Affected
May-20	98.39%	2	98.39%	2	98.39%	2	100.00%	0	100.00%	0	100.00%	0%
Jun-20	98.33%	2	100.00%	0	100.00%	0	100.00%	0	100.00%	0	100.00%	0%
Jul-20	98.39%	2	98.39%	2	99.19%	1	100.00%	0	100.00%	0	100.00%	0
Aug-20	100.00%	0	100.00%	0	98.39%	2	100.00%	0	98.39%	2	100.00%	0
Sep-20	98.33%	2	98.33%	2	OFF LOAD	0	100.00%	0	100.00%	0	100.00%	0
Oct-20	99.19%	1	99.19%	1	OFF LOAD	0	100.00%	0	99.19%	1	100.00%	0
Nov-20	97.50%	3	98.33%	2	OFF LOAD	0	100.00%	0	100.00%	0	99.17%	1
Dec-20	98.39%	2	97.58%	3	OFF LOAD	0	100.00%	0	99.19%	1	100.00%	0
Jan-21	100.00%	0	99.19%	1	100%	0	100.00%	0	99.19%	1	99.19%	1
Feb-21	OFF LOAD	0	99.11%	1	98%	2	100.00%	0	100.00%	0	100.00%	0
Mar-21	OFF LOAD	0	97.58%	3	99.19%	1	100.00%	0	100.00%	0	100.00%	0
Apr-21	100.00%	0	100.00%	0	97.75%	3	99.23%	1	100.00%	0	98.48%	2

**SO<sub>3</sub> plant utilisation**

Availability												
Month	Unit 1	Days Affected	Unit 2	Days Affected	Unit 3	Days Affected	Unit 4	Days Affected	Unit 5	Days Affected	Unit 6	Days Affected
May-20	93.55%	2	100.00%	0	100.00%	0	100.00%	0	100.00%	0	100%	0
Jun-20	100.00%	0	100.00%	0	96.67%	1	100.00%	0	100.00%	0	100.00%	0
Jul-20	100.00%	0	96.77%	1	100.00%	0	100.00%	0	100.00%	0	100.00%	0
Aug-20	93.55%	2	100.00%	0	100.00%	0	100.00%	0	77.42%	7	100.00%	0
Sep-20	100.00%	0	93.33%	2	100.00%	0	100.00%	0	100.00%	0	100.00%	0
Oct-20	100.00%	0	100.00%	0	100.00%	0	100.00%	0	100.00%	0	100.00%	0
Nov-20	100.00%	0	96.67%	1	OFF LOAD	0	100.00%	0	100.00%	0	100.00%	0
Dec-20	100.00%	0	100.00%	0	OFF LOAD	0	100.00%	0	93.55%	2	100.00%	0
Jan-21	57.14%	3	100.00%	0	84%	5	100.00%	0	96.77%	1	100.00%	0
Feb-21	OFF LOAD	0	100.00%	0	96%	1	92.86%	2	100.00%	0	100.00%	0
Mar-21	OFF LOAD	0	100.00%	0	100.00%	0	100.00%	0	87.10%	4	100.00%	0
Apr-21	85.06%	4	100.00%	0	88.46%	3	100.00%	0	99.33%	0	100.00%	0

**ADDENDUM TO MONTHLY EMISSIONS REPORT**

**Particulate Emission Monitors**

<b>Availability</b>						
	<b>Unit 1</b>	<b>Unit 2</b>	<b>Unit 3</b>	<b>Unit 4</b>	<b>Unit 5</b>	<b>Unit 6</b>
<b>May-20</b>	88.89%	99.19%	99.19%	100.00%	100.00%	99.94%
<b>Jun-20</b>	89.86%	99.20%	99.17%	98.75%	97.78%	98.75%
<b>Jul-20</b>	92.47%	98.48%	99.33%	99.35%	100.00%	100.00%
<b>Aug-20</b>	100.00%	100.00%	99.85%	100.00%	98.22%	100.00%
<b>Sep-20</b>	99.84%	99.63%	OFF	100.00%	100.00%	100.00%
<b>Oct-20</b>	98.79%	99.19%	OFF	99.33%	99.19%	100.00%
<b>Nov-20</b>	94.04%	94.58%	OFF	97.17%	97.28%	99.69%
<b>Dec-20</b>	98.99%	99.01%	OFF	98.92%	93.67%	99.19%
<b>Jan-21</b>	86.90%	99.60%	99.74%	100.00%	91.53%	99.44%
<b>Feb-21</b>	OFF	99.70%	98.46%	100.00%	94.64%	98.90%
<b>Mar-21</b>	OFF	99.87%	99.06%	96.15%	99.60%	100.00%
<b>Apr-21</b>	83.69%	99.65%	99.28%	99.58%	99.86%	99.87%

**Gaseous Emission Monitors**

<b>Availability</b>												
	<b>Unit 1</b>		<b>Unit 2</b>		<b>Unit 3</b>		<b>Unit 4</b>		<b>Unit 5</b>		<b>Unit 6</b>	
<b>Month</b>	<b>SO<sub>x</sub></b>	<b>NO<sub>x</sub></b>	<b>SO<sub>x</sub></b>	<b>NO<sub>x</sub></b>	<b>SO<sub>x</sub></b>	<b>NO<sub>x</sub></b>	<b>SO<sub>x</sub></b>	<b>NO<sub>x</sub></b>	<b>SO<sub>x</sub></b>	<b>NO<sub>x</sub></b>	<b>SO<sub>x</sub></b>	<b>NO<sub>x</sub></b>
<b>May-20</b>	94.74%	94.74%	100.00%	100.00%	99.87%	100.00%	99.84%	99.84%	93.47%	93.61%	90.89%	90.89%
<b>Jun-20</b>	99.44%	99.44%	99.33%	99.33%	99.33%	99.33%	100.00%	100.00%	100.00%	100.00%	93.30%	93.10%
<b>Jul-20</b>	99.73%	99.73%	99.07%	99.07%	99.73%	99.87%	98.54%	98.85%	99.60%	99.87%	99.86%	99.87%
<b>Aug-20</b>	99.91%	99.91%	100.00%	100.00%	99.85%	99.85%	100.00%	100.00%	100.00%	100.00%	96.55%	96.53%
<b>Sep-20</b>	100.00%	100.00%	99.86%	99.86%	OFF	OFF	100.00%	100.00%	100.00%	100.00%	99.77%	99.77%
<b>Oct-20</b>	99.87%	100.00%	99.87%	99.60%	OFF	OFF	99.46%	99.46%	99.46%	99.46%	99.46%	99.46%
<b>Nov-20</b>	97.66%	97.66%	97.64%	97.78%	OFF	OFF	94.14%	94.14%	94.55%	94.55%	94.64%	94.64%
<b>Dec-20</b>	99.17%	99.17%	98.89%	99.05%	OFF	OFF	99.22%	99.22%	95.32%	95.32%	99.33%	99.33%
<b>Jan-21</b>	99.56%	99.56%	99.60%	99.73%	99%	99%	92.39%	92.39%	99.87%	99.87%	100.00%	100.00%
<b>Feb-21</b>	OFF	OFF	99.70%	99.70%	100%	100%	92.56%	92.71%	98.65%	98.65%	98.27%	98.52%
<b>Mar-21</b>	OFF	OFF	100.00%	100.00%	100%	100%	96.07%	96.07%	99.97%	99.97%	99.60%	99.60%
<b>Apr-21</b>	99.47%	99.76%	99.83%	99.83%	100%	100%	100.00%	100.00%	100.00%	100.00%	99.84%	99.84%

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<b>Oxygen Monitor Availability</b>						
	<b>Unit 1</b>	<b>Unit 2</b>	<b>Unit 3</b>	<b>Unit 4</b>	<b>Unit 5</b>	<b>Unit 6</b>
<b>May-20</b>	89.69%	100.00%	100.00%	0.00%	0.00%	13.33%
<b>Jun-20</b>	99.31%	99.92%	99.33%	98.85%	0.00%	100.00%
<b>Jul-20</b>	99.87%	99.30%	99.87%	99.02%	48.39%	99.87%
<b>Aug-20</b>	99.86%	99.92%	99.85%	100.00%	100.00%	96.67%
<b>Sep-20</b>	99.68%	99.86%	OFF	100.00%	100.00%	98.97%
<b>Oct-20</b>	99.73%	99.87%	0.00%	99.33%	99.33%	99.46%
<b>Nov-20</b>	99.45%	99.72%	OFF	93.97%	94.55%	94.64%
<b>Dec-20</b>	99.31%	98.85%	OFF	99.22%	95.32%	99.33%
<b>Jan-21</b>	99.56%	99.06%	99.54%	100.00%	99.87%	99.87%
<b>Feb-21</b>	OFF	99.70%	99.55%	99.26%	98.32%	98.52%
<b>Mar-21</b>	OFF	100.00%	100.00%	96.43%	99.97%	99.87%
<b>Apr-21</b>	99.40%	98.91%	99.87%	99.72%	100.00%	99.37%

**14. EFFICIENCY**

<b>ESP Efficiency (%)</b>						
	<b>Unit 1</b>	<b>Unit 2</b>	<b>Unit 3</b>	<b>Unit 4</b>	<b>Unit 5</b>	<b>Unit 6</b>
<b>May-20</b>	99.652%	99.847%	99.760%	99.912%	99.907%	99.880%
<b>Jun-20</b>	99.907%	99.883%	99.876%	99.922%	99.909%	99.877%
<b>Jul-20</b>	99.850%	99.759%	99.839%	99.905%	99.901%	99.846%
<b>Aug-20</b>	99.894%	99.738%	99.818%	99.855%	99.856%	99.819%
<b>Sep-20</b>	99.904%	99.757%	OFF	99.882%	99.906%	99.848%
<b>Oct-20</b>	99.866%	99.744%	OFF	99.876%	99.845%	99.850%
<b>Nov-20</b>	99.835%	99.792%	OFF	99.833%	99.863%	99.822%
<b>Dec-20</b>	99.816%	99.605%	OFF	99.734%	99.779%	99.791%
<b>Jan-21</b>	99.622%	99.689%	99.717%	99.832%	99.813%	99.745%
<b>Feb-21</b>	OFF	99.722%	99.736%	99.799%	99.779%	99.775%
<b>Mar-21</b>	OFF	99.659%	99.769%	99.823%	99.802%	99.817%
<b>Apr-21</b>	99.679%	99.788%	99.777%	99.825%	99.858%	99.788%

ADDENDUM TO MONTHLY EMISSIONS REPORT

15. REMARKS

UNIT	MWLOSS	REASON	ACTUALSTARTDATE	ACTUALENDDATE
1	593	GO	2021/04/01 00:00:00	2021/04/17 04:03:00
1	593	System Generated Slip Event linked to PCLF Event : 1515557	2021/04/17 04:03:00	2021/04/17 18:05:00
1	139	LH draught group tripped	2021/04/18 12:14:00	2021/04/18 15:04:00
1	217	High stack emissions.	2021/04/20 15:57:00	2021/04/20 17:48:00
1	109	High stack emissions.	2021/04/20 17:48:00	2021/04/20 19:01:00
1	215	EF:High stack emissions	2021/04/20 19:01:00	2021/04/21 05:50:00
1	115	EF:High stack emissions	2021/04/21 05:50:00	2021/04/22 04:54:00
1	119	High stack emissions.	2021/04/22 10:09:00	2021/04/22 16:16:00
1	593	Main turbine over speed test	2021/04/23 00:22:00	2021/04/23 01:43:00
2	80	High stack emissions	2021/04/01 08:02:00	2021/04/02 02:38:00
2	593	For casing washing and F-mill PA isol damper repairs	2021/04/02 02:38:00	2021/04/08 02:37:00
2	593	System Generated Slip Event linked to PCLF Event : 1542143	2021/04/08 02:37:00	2021/04/08 13:52:00
2	98	High stack emissions	2021/04/11 00:42:00	2021/04/11 05:59:00
2	99	EF: High stack emissions	2021/04/11 12:33:00	2021/04/11 14:38:00
2	153	EF: High stack emissions	2021/04/11 14:38:00	2021/04/11 17:04:00
3	217	AM: SO3 plant air blower replacement	2021/04/04 00:12:00	2021/04/04 05:08:00
3	68	High stack emissions.	2021/04/08 21:22:00	2021/04/08 23:59:00
3	118	RHI precip casing repairs.	2021/04/10 00:08:00	2021/04/11 00:00:00
3	118	LHO pricip casing repairs	2021/04/11 00:00:00	2021/04/12 00:00:00
3	218	AM: SO3 plant leak repairs	2021/04/18 00:00:00	2021/04/19 00:00:00
3	118	AM: High Emissions due to SO3 plant off	2021/04/19 00:00:00	2021/04/19 12:21:00
3	68	AM:SO3 plant leak repairs.	2021/04/19 12:21:00	2021/04/20 00:00:00
3	218	AM: So3 plant leak repairs.	2021/04/20 00:00:00	2021/04/20 05:22:00
3	218	SO3 Plant leak repairs	2021/04/21 01:47:00	2021/04/21 06:09:00
3	118	High stack emissions	2021/04/21 10:17:00	2021/04/21 12:19:00
3	88	EF:High stack emissions.	2021/04/21 12:19:00	2021/04/21 14:44:00
3	593	Secondary CW system fault	2021/04/21 21:43:00	2021/04/22 06:14:00
3	118	RHO precip casing repairs.	2021/04/25 00:00:00	2021/04/25 16:58:00
4	114	High stack emissions	2021/04/02 20:37:00	2021/04/03 00:43:00
4	100	High stack emissions.	2021/04/08 20:16:00	2021/04/09 00:09:00
4	98	High stack emissions	2021/04/11 01:09:00	2021/04/11 05:57:00
4	118	RHO precip casing repairs.	2021/04/27 00:00:00	2021/04/27 22:15:00
5	199	AM: SO3 plant maintenance	2021/04/01 00:00:00	2021/04/01 04:50:00
5	128	EF: High stack emissions	2021/04/01 10:30:00	2021/04/01 11:10:00
5	178	EF: High stack emissions	2021/04/01 11:10:00	2021/04/02 02:28:00
6	120	D Mill tripped	2021/04/01 16:02:00	2021/04/01 17:13:00
6	593	Boiler tube leak	2021/04/14 07:09:00	2021/04/18 03:49:00
6	593	Main turbine over speed test	2021/04/25 00:33:00	2021/04/25 01:38:00

PM Exceedances		
U1.	Unit synchronized 2021/04/17 @ 18:05	18-Apr
U1.	• Unit synchronized 2021/04/17 @ 18:05 • SO3 plant, cannot establish Sulphur flow	19-Apr
U1.	Section 30 Reported SO3 plant not in service	20-Apr
U1.	Section 30 SO3 plant Sulphur control valve was replaced	21-Apr
U1.	SO3 Plant offload	22-Apr
U1.	Unit Shut Down for overspeed test 00:23-1:43 Synchronised SO3 plant not in service	23-Apr
U1.	SO3 plant in service from 11:33 and Manual ESP rapping from 21:00	24-Apr
U2.	Unit Shut down for precip washing	02-Apr
U2.	Unit synchronized on 2021/04/08 @ 13:53, emissions to be below by 2021/04/11 @ 13:53	08-Apr
U2.	SO3 plant tripped and was off from 19:02-00:53	09-Apr
U2.	SO3 plant tripped at 2:08 (air blower fault), and was giving challenges through the day	10-Apr
U2.	ESP Poor Performance	12-Apr
U2.	ESP Poor Performance & Manual Rapping	16-Apr
U3.	ESP Poor Performance LHO F1 and F7 is on permit Sulphur flow is still fluctuating	01-Apr
U3.	Poor ESP Performance	02-Apr
U3.	SO3 plant tripped and unable to reset air purge valve @23:40 02/04/2021 to 03/04/2021 23:30 (Air blower failed and replaced) ESP poor Performance	03-Apr
U3.	ESP Poor Performance Two high hopper levels on LHO F7 and RHO F7. Ops checked this morning, indication to be verified RHI duct cleaning is complete	05-Apr
U3.	ESP Poor Performance	09-Apr
U3.	ESP Casing Outages	10-Apr
U3.	ESP Casing Outages	11-Apr
U3.	SO3 plant offload for repairs	17-Apr
U3.	ESP Poor Performance and SO3 Plant Offline	18-Apr
U3.	SO3 Plant not dosing still	20-Apr
U3.	Unit synchronized 2021/04/22 @ 06:14,	22-Apr
U3.	Casing Outage	25-Apr
U4.	Manual rapping at 21:00 and 23:19	09-Apr
U4.	ESP Poor Performance	10-Apr
U4.	RHO Casing	27-Apr
U6.	Manual rapping 19:53	09-Apr
U6.	Unit synchronized 2021/04/18 @ 03:49	19-Apr
U6.	Unit synchronized 2021/04/18 @ 03:49	20-Apr
U6.	SO3 Plant not dosing	22-Apr
U6.	SO3 plant offload for most of the day, only in service from 21:15	23-Apr
NOX Exceedances		
U3.	Two top mills in service and No NOx Abatement in Place	27-Apr
U3.	Two top mills in service and No NOx Abatement in Place	28-Apr
U3.	Two top mills in service and No NOx Abatement in Place	29-Apr
U3.	Two top mills in service and No NOx Abatement in Place	30-Apr
U6.	No NOx Abatement in Place	01-Apr
U6.	Two top mills in service and No NOx Abatement in Place	23-Apr