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Date:
24 August 2023

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LRP02PLA000 _0364/20230810

Dear Mr. Sibaya

LETHABO POWER STATION EMISSION MONTHLY REPORT FOR JULY 2023

Please find attached Lethabo Power Station emission report for the month of July 2023.

Also attached are the Ambient Air Quality Monitoring Report, Complaints Register and the Fugitive Dust Fallout Monitoring Report for July 2023.

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

Yours sincerely

Karabo Rakgolela
GENERAL MANAGER

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Eskom Holdings SOC Ltd Reg No 2002/015527/30



Report

Lethabo Power Station

Report name: **Lethabo Power Station**
July 2023
Emission Report

Reference number: **LRP02PLA000_0364/20230810**
Document Type: **Report**
Area of Applicability: **Environment**
Report Date: **August-2023**
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Signatures:

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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 Jul-2023
	Coal	Tons	2 000 000	1 484 141
	Fuel Oil	Tons	1 700	859.48
Production Rates	Product / By-Product Name	Units	Maximum Production Capacity Permitted	Indicative Production Rate Jul-2023
	Energy	GWh	2834.64	2 183.05
	Ash	Tons	770 000	520 785.2
	RE Ash	kg/MWh	Not Specified	0.31

2. ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.656 (Standard)	0.610
Ash Content	%	37.37 (Standard)	35.090

*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/Nm³)

Associated Unit/Stack	PM	SO ₂	NO _x
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. ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Jul-2023	Technology Type	SO ₃ Utilization Jul-2023
Unit 1	<i>Electrostatic Precipitator (ESP)</i>	99.90%	SO ₃	98.0%
Unit 2	<i>Electrostatic Precipitator (ESP)</i>	99.86%	SO ₃	97.8%
Unit 3	<i>Electrostatic Precipitator (ESP)</i>	99.79%	SO ₃	100.0%
Unit 4	<i>Electrostatic Precipitator (ESP)</i>	99.87%	SO ₃	97.8%
Unit 5	<i>Electrostatic Precipitator (ESP)</i>	99.88%	SO ₃	99.7%
Unit 6	<i>Electrostatic Precipitator (ESP)</i>	99.84%	SO ₃	100.0%

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

5. MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO ₂	NO
Unit 1	98.9	98.4	98.4
Unit 2	100.0	98.1	97.9
Unit 3	99.6	98.1	98.4
Unit 4	99.7	98.4	98.3
Unit 5	98.3	97.9	97.9
Unit 6	99.9	98.3	98.4

Note: NO_x emissions is measured as NO in PPM. Final NO_x value is expressed as total NO₂

6. EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of July 2023 Before

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO _x (tons)
Unit 1	89.5	3 104	1 947
Unit 2	87.4	2 506	1 224
Unit 3	179.2	3 462	1 789
Unit 4	105.0	2 833	1 725
Unit 5	75.6	2225	989
Unit 6	134.8	3 247	1 777
SUM	671.5	17 376	9 451

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

Associated Unit/Stack	Normal	Grace	Section 30	Contraven- tion	Total Exceedance	Average PM (mg/Nm ³)
Unit 1	30	1	0	0	1	46.2
Unit 2	24	1	0	0	1	58.5
Unit 3	26	5	0	0	5	87.2
Unit 4	28	3	0	0	3	55.7
Unit 5	21	1	0	0	1	57.9
Unit 6	28	3	0	0	3	67.9
SUM	157	14	0	0	14	

Table 6.3: Operating days in compliance to SO₂ AEL Limit - July 2023

Associated Unit/Stack	Normal	Grace	Section 30	Contraven- tion	Total Exceedance	Average SO ₂ (mg/Nm ³)
Unit 1	31	0	0	0	0	1 510.6
Unit 2	26	0	0	0	0	1 642.2
Unit 3	31	0	0	0	0	1 670.0
Unit 4	31	0	0	0	0	1 518.5
Unit 5	24	0	0	0	0	1 523.6
Unit 6	31	0	0	0	0	1 639.4
SUM	174	0	0	0	0	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contra-vention	Total Exceedance	Average NOx (mg/Nm ³)
Unit 1	30	0	0	1	1	945.6
Unit 2	26	0	0	0	0	798.8
Unit 3	31	0	0	0	0	859.8
Unit 4	31	0	0	0	0	927.0
Unit 5	24	0	0	0	0	668.7
Unit 6	31	0	0	0	0	896.3
SUM	173	0	0	1	1	

Note: NOx emissions is measured as NO in PPM. Final NOx value is expressed as total NO₂

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

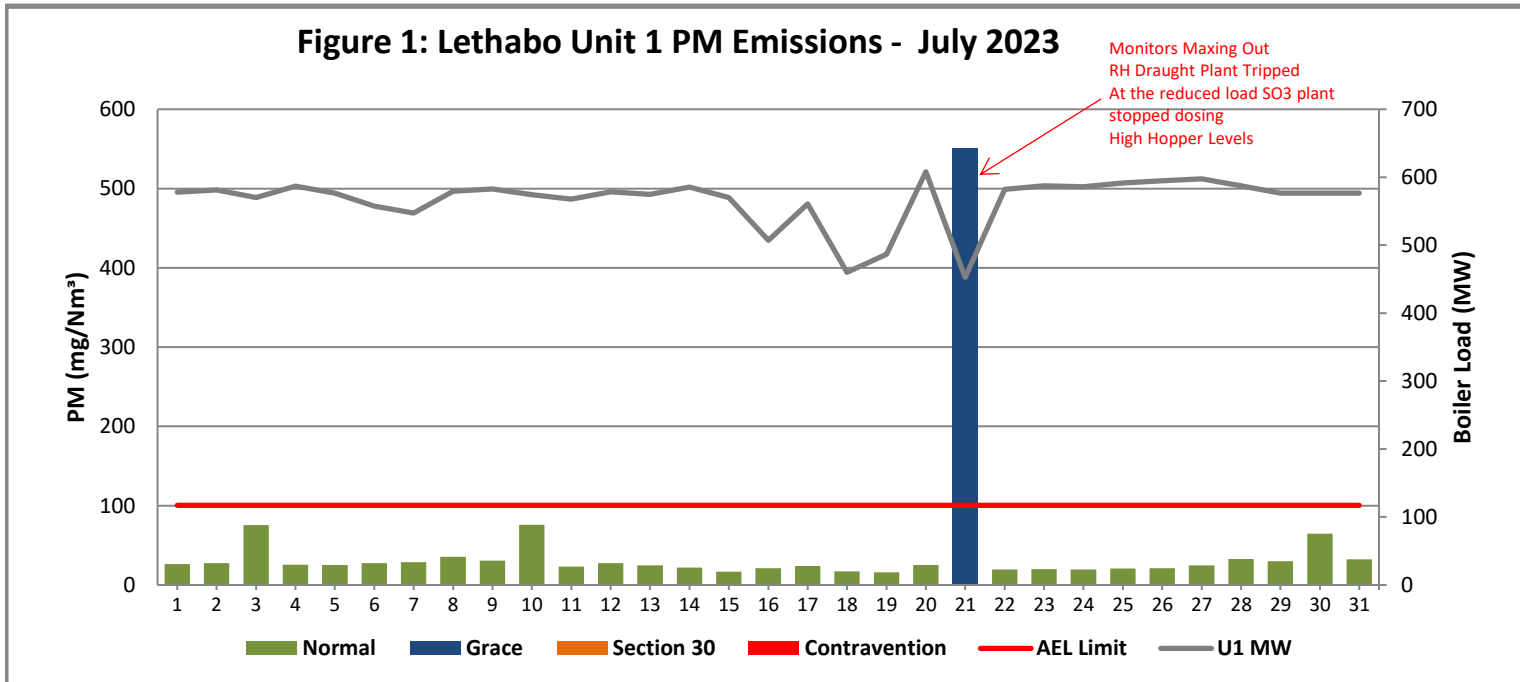


Figure 2: Lethabo Unit 2 PM Emissions - July 2023

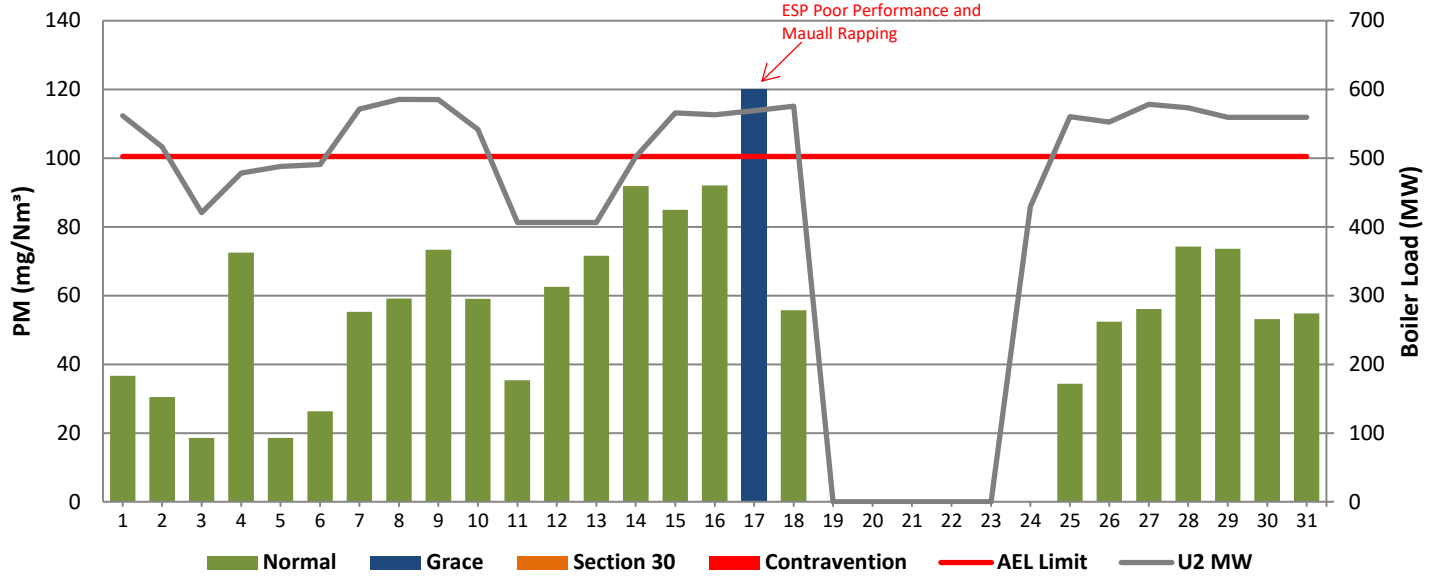


Figure 3: Lethabo Unit 3 PM Emissions - July 2023

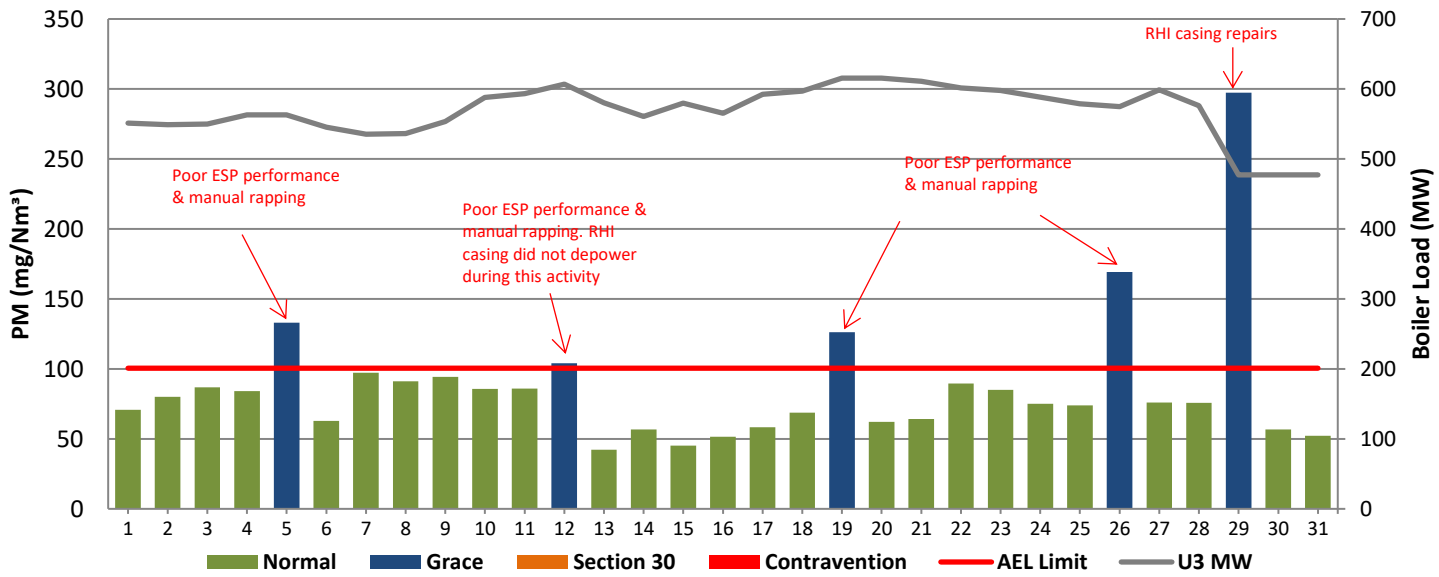


Figure 4: Lethabo Unit 4 PM Emissions - July 2023

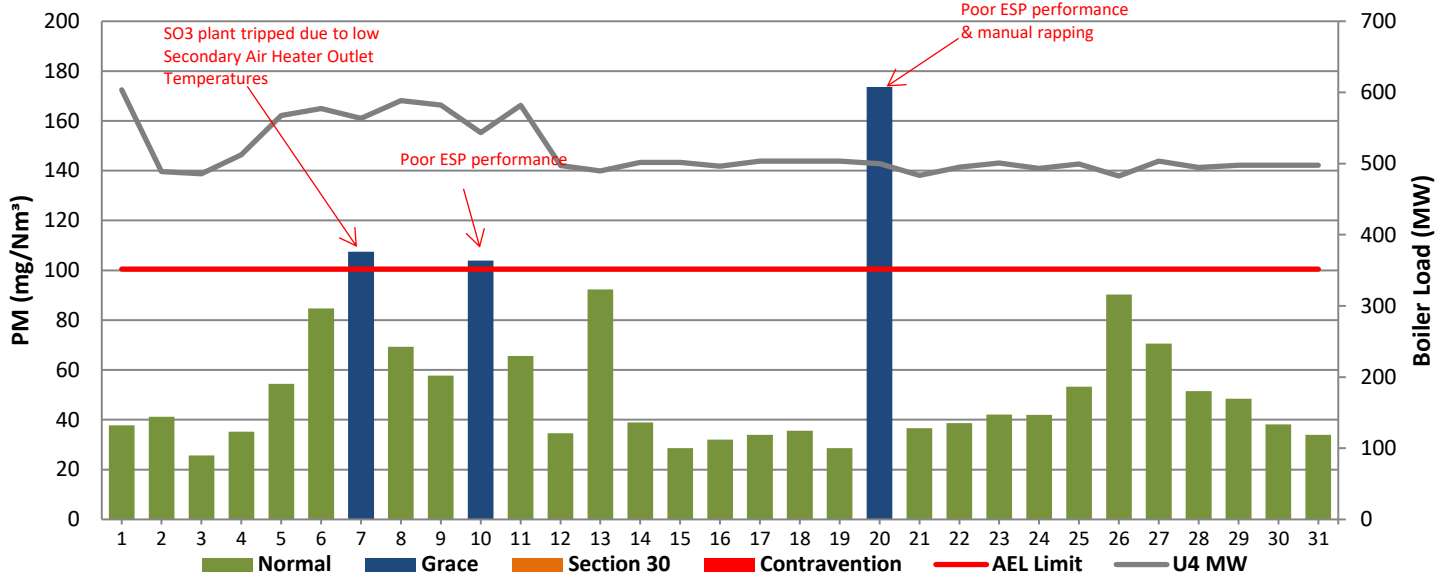


Figure 5: Lethabo Unit 5 PM Emissions - July 2023

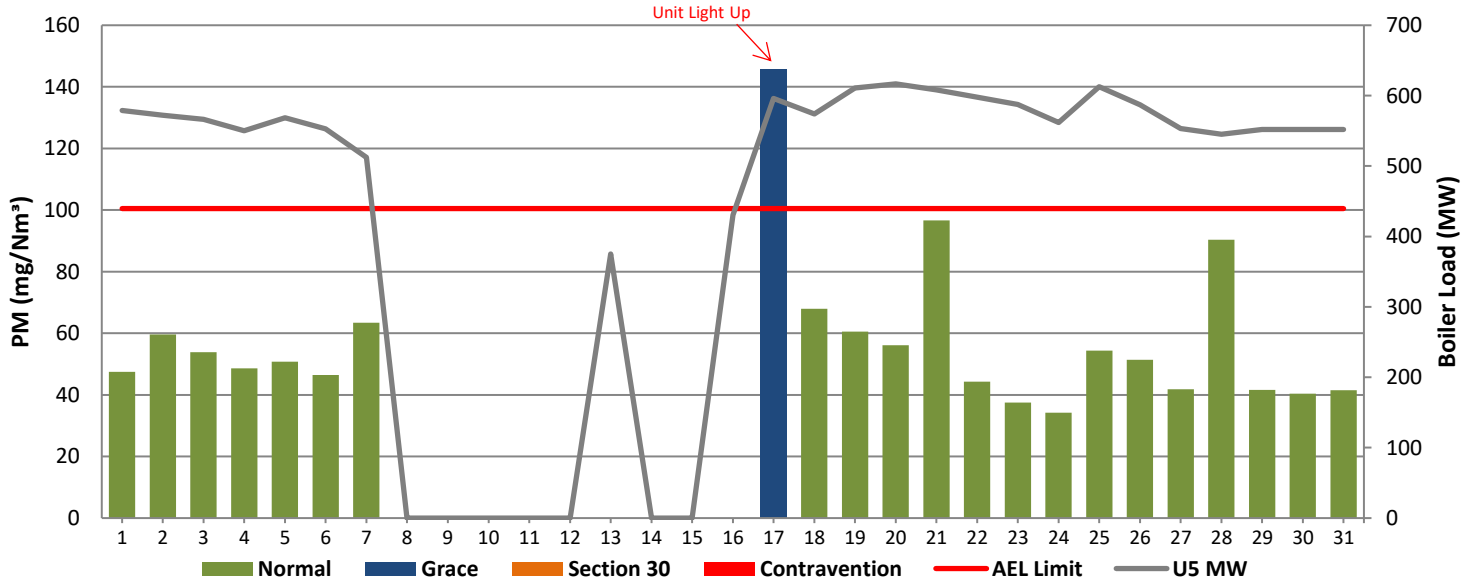


Figure 6: Lethabo Unit 6 PM Emissions - July 2023

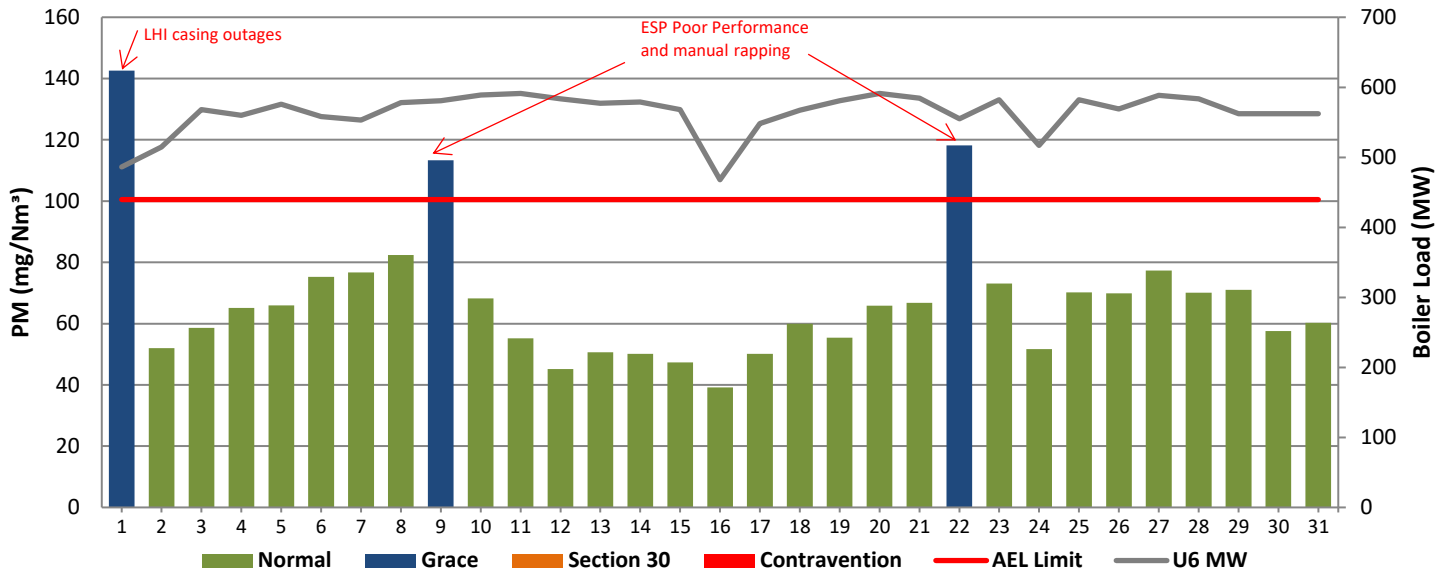


Figure 7: Lethabo Unit 1 SO₂ Emissions - July 2023

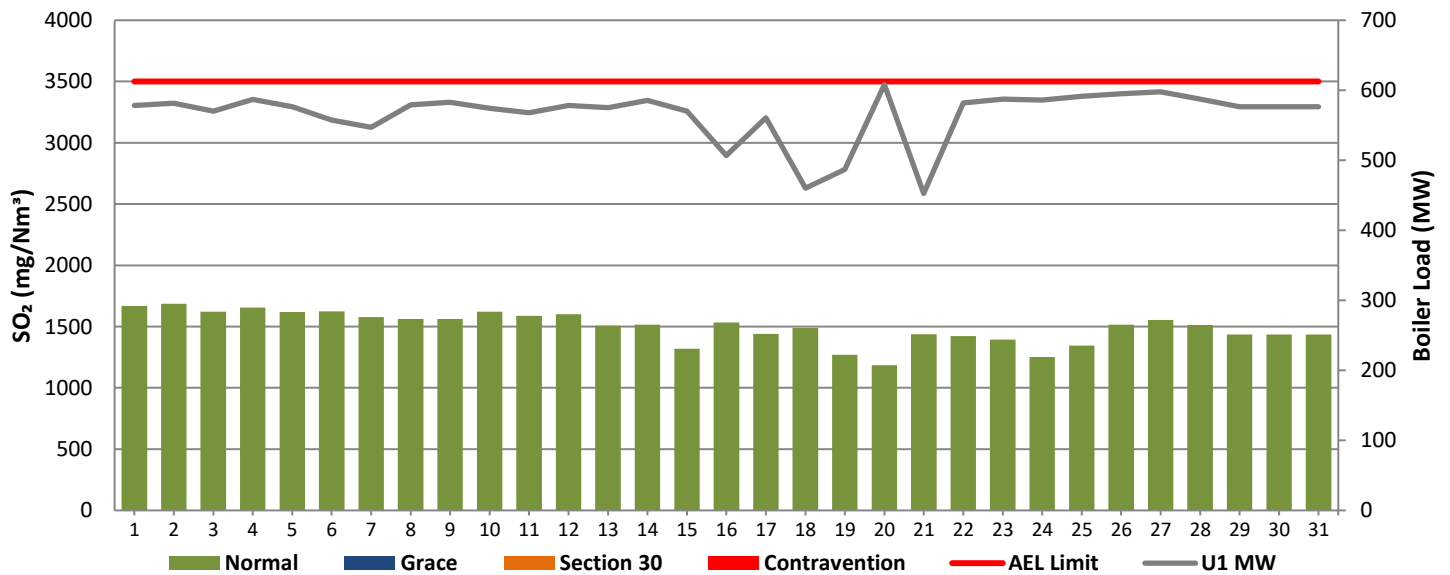


Figure 8: Lethabo Unit 2 SO₂ Emissions - July 2023

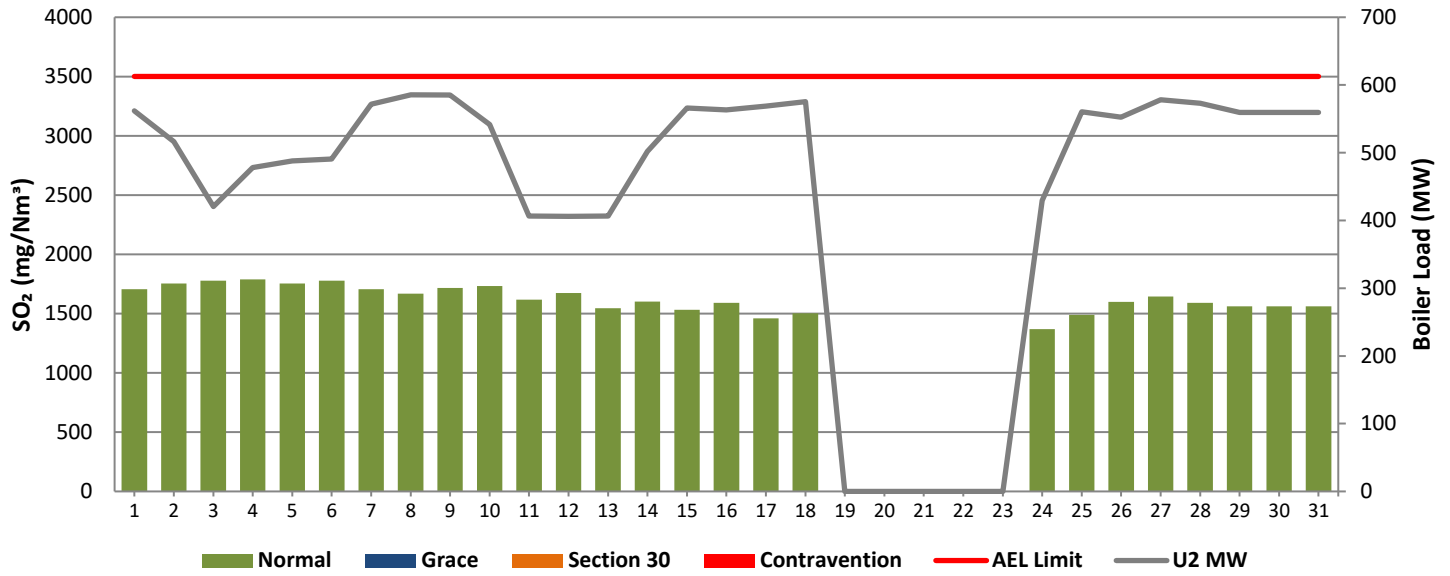


Figure 9: Lethabo Unit 3 SO₂ Emissions - July 2023

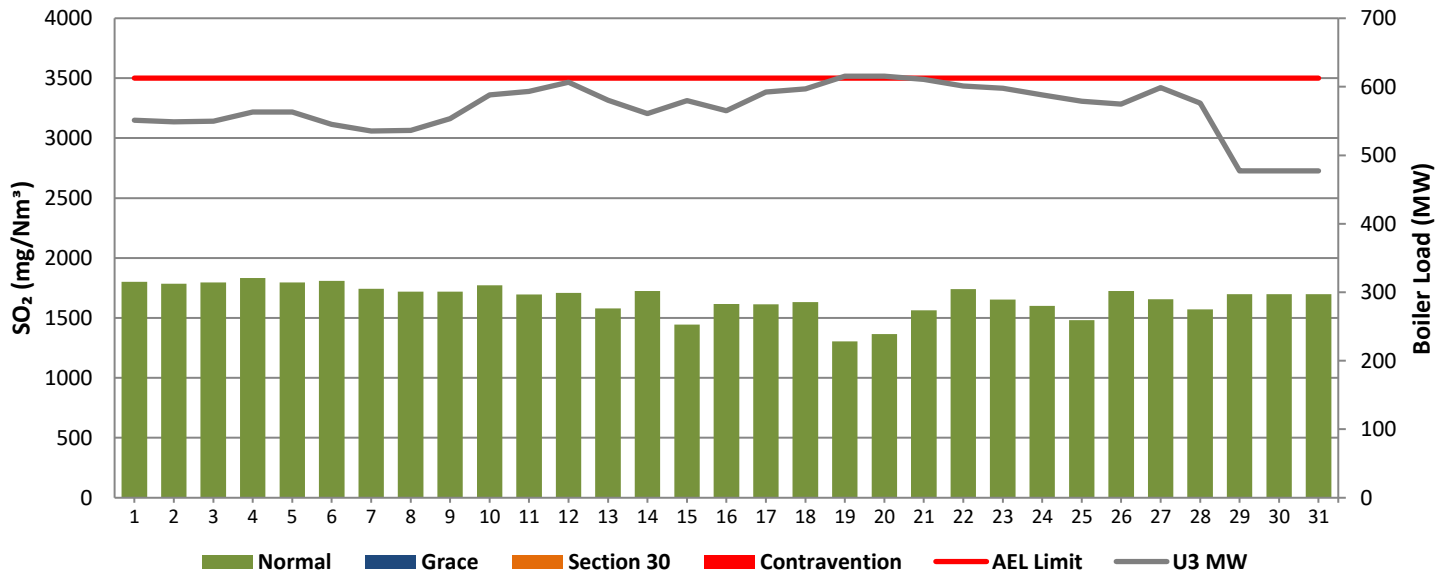


Figure 10: Lethabo Unit 4 SO₂ Emissions - July 2023

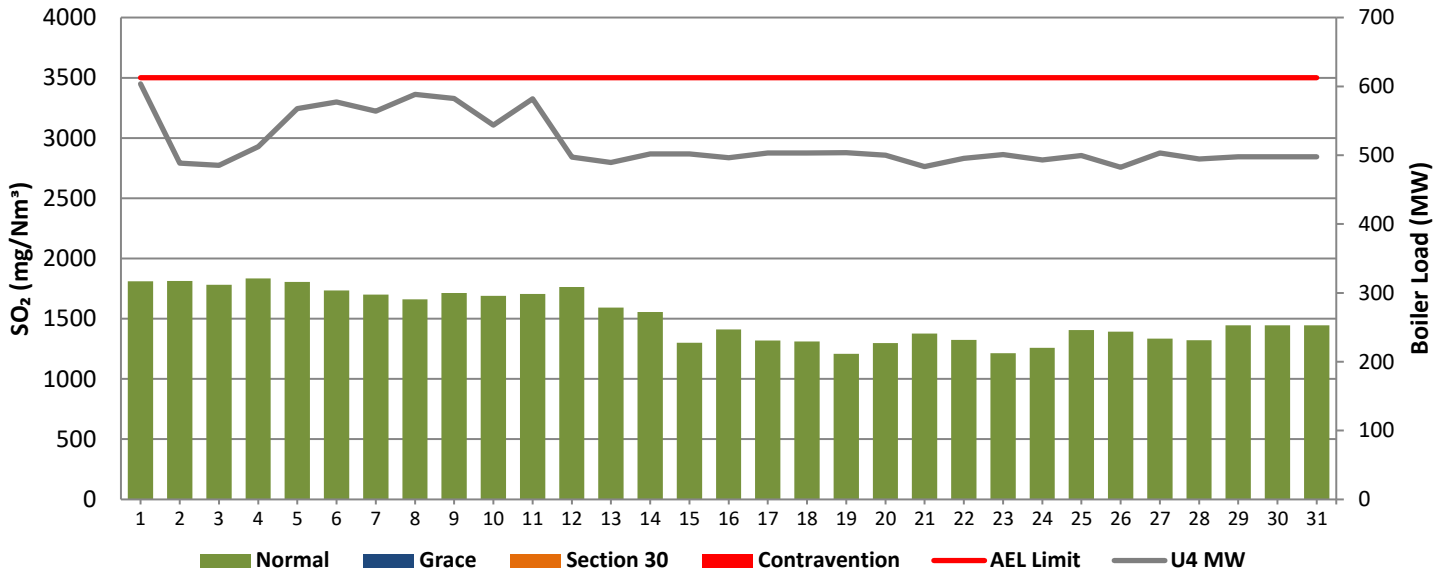


Figure 11: Lethabo Unit 5 SO₂ Emissions - July 2023

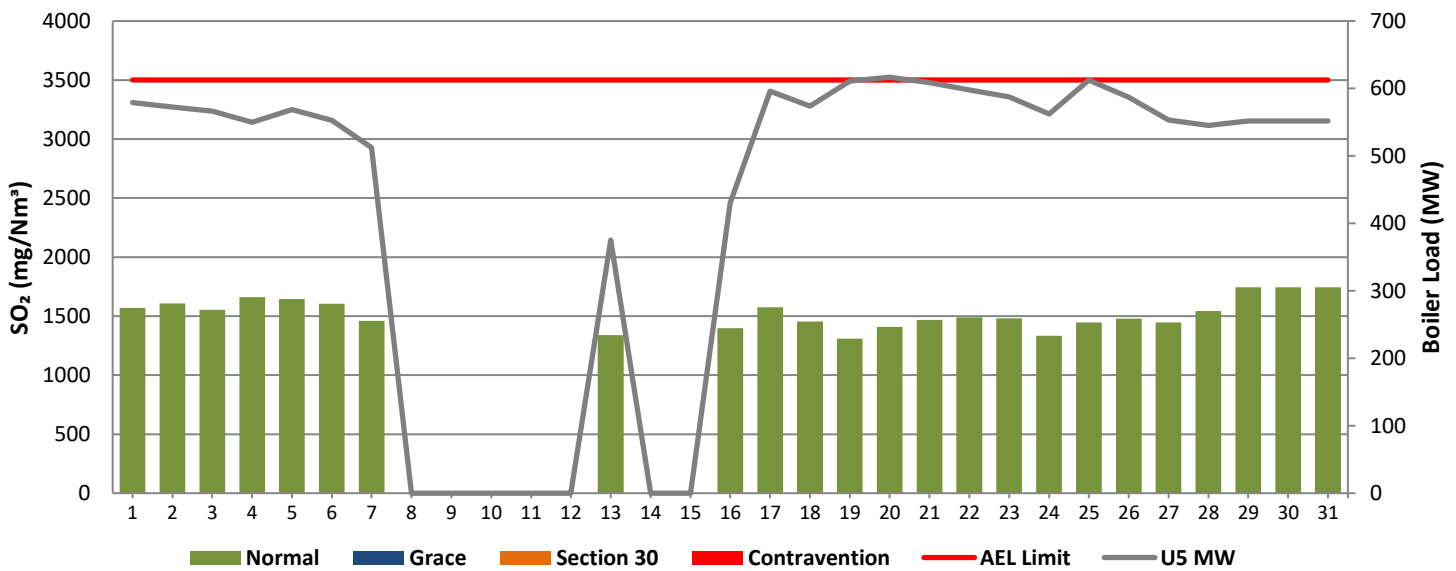


Figure 12: Lethabo Unit 6 SO₂ Emissions - July 2023

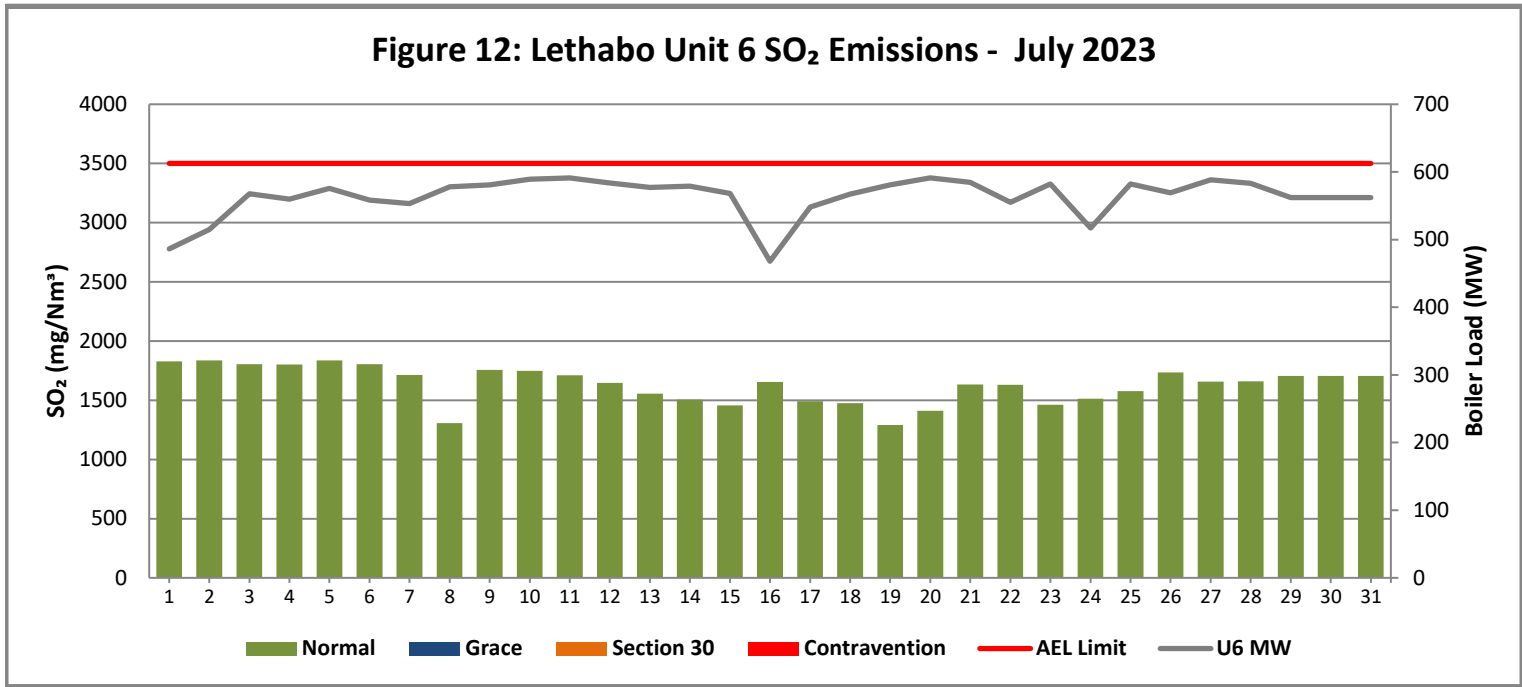


Figure 13: Lethabo Unit 1 NO_x Emissions - July 2023

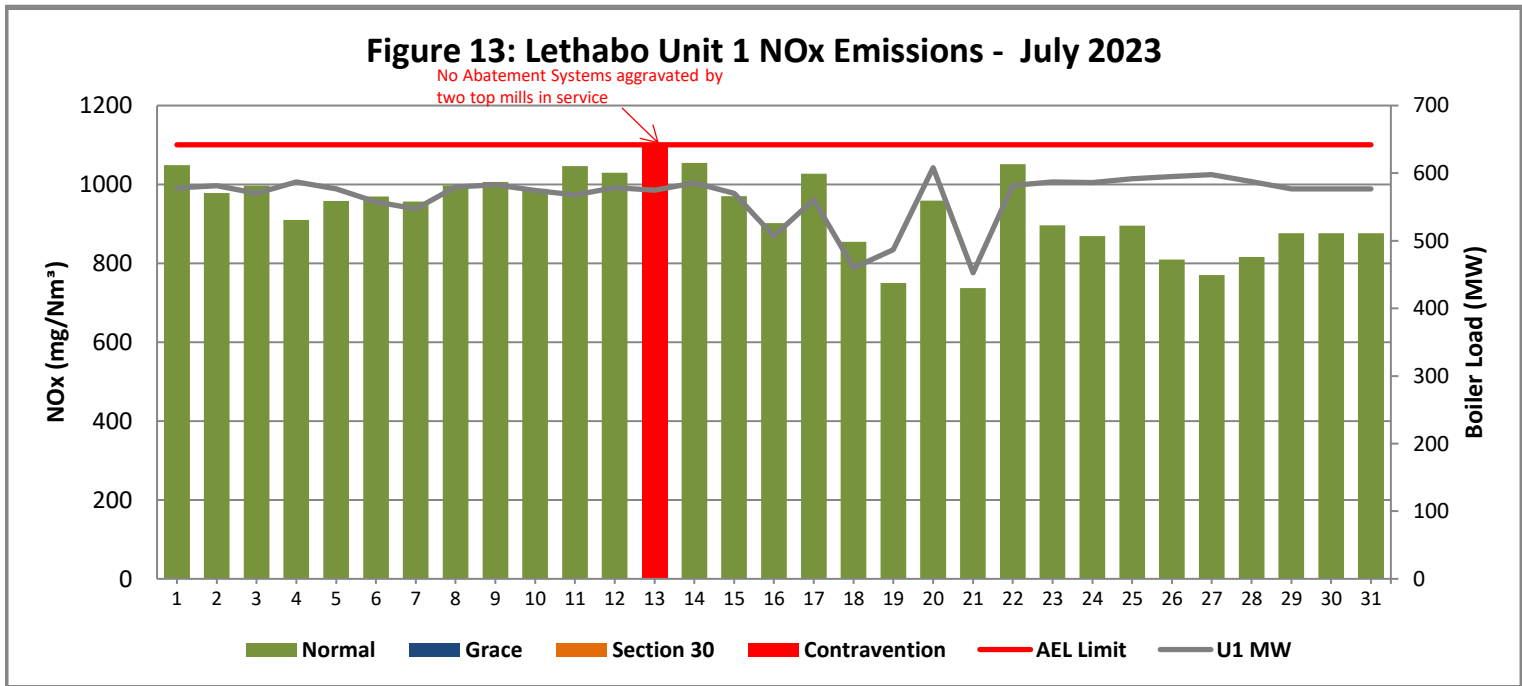


Figure 14: Lethabo Unit 2 NOx Emissions - July 2023

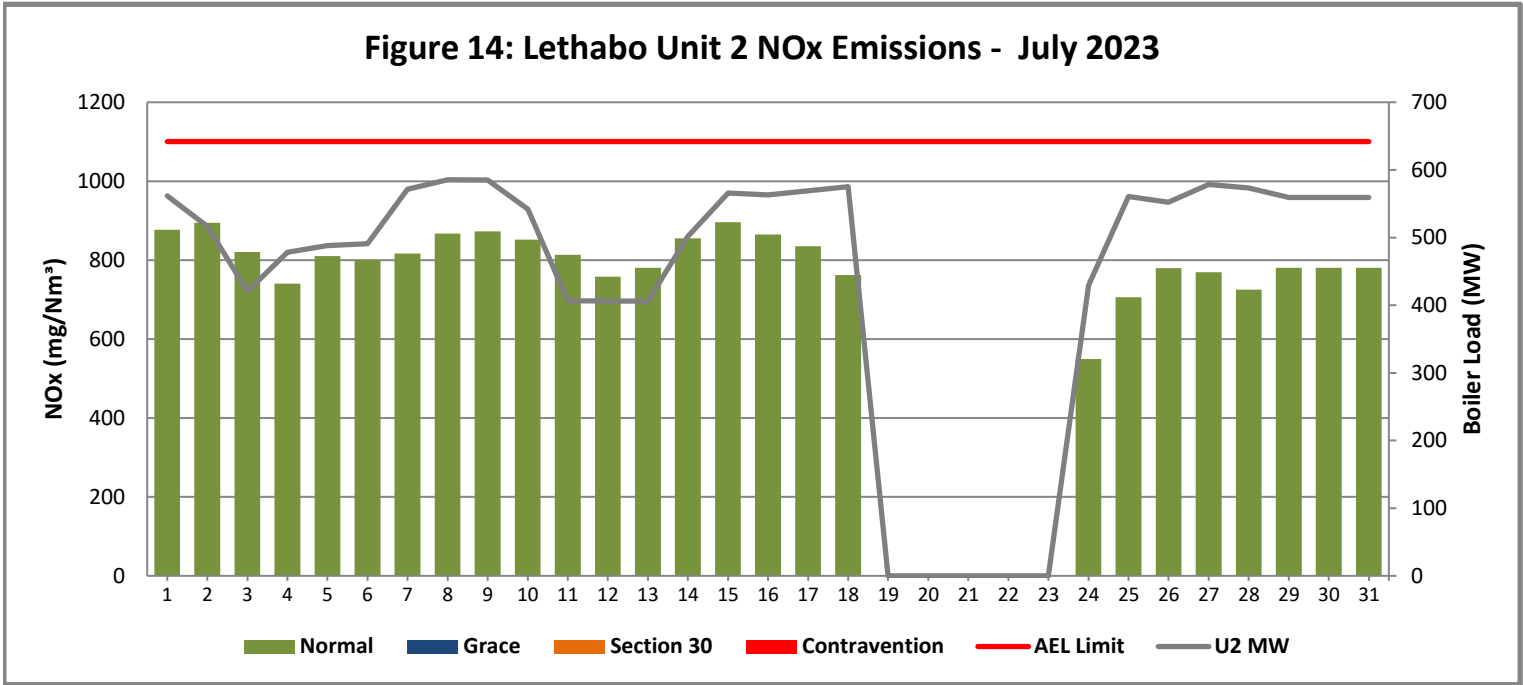


Figure 15: Lethabo Unit 3 NOx Emissions - July 2023

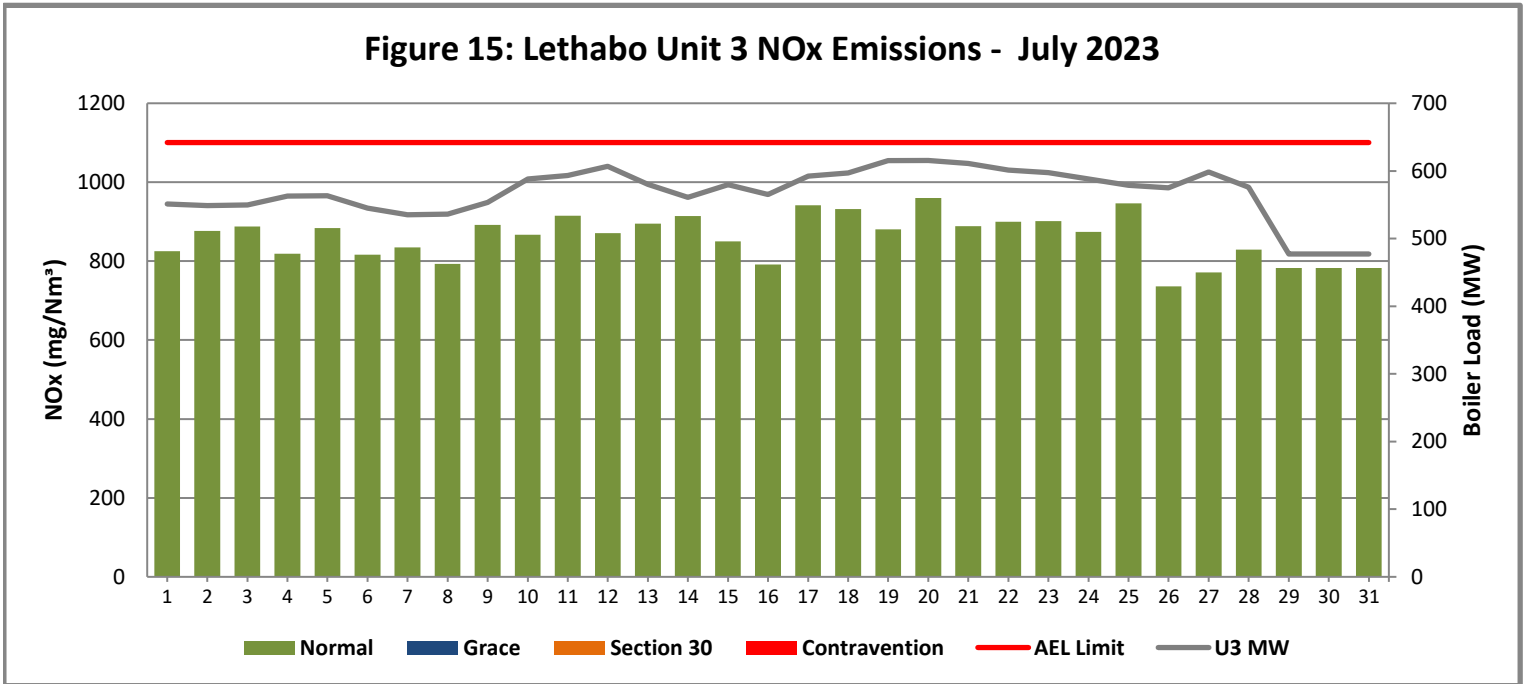


Figure 16: Lethabo Unit 4 NOx Emissions - July 2023

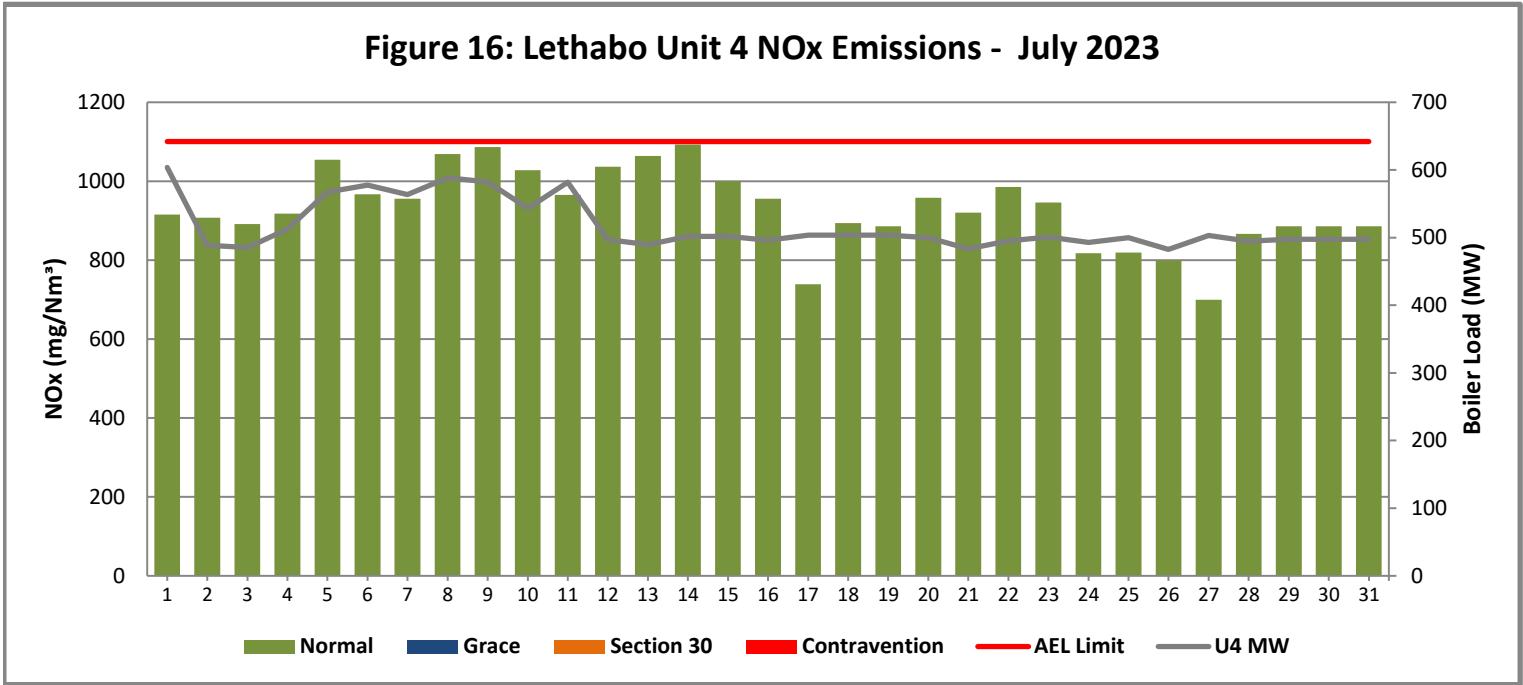


Figure 17: Lethabo Unit 5 NOx Emissions - July 2023

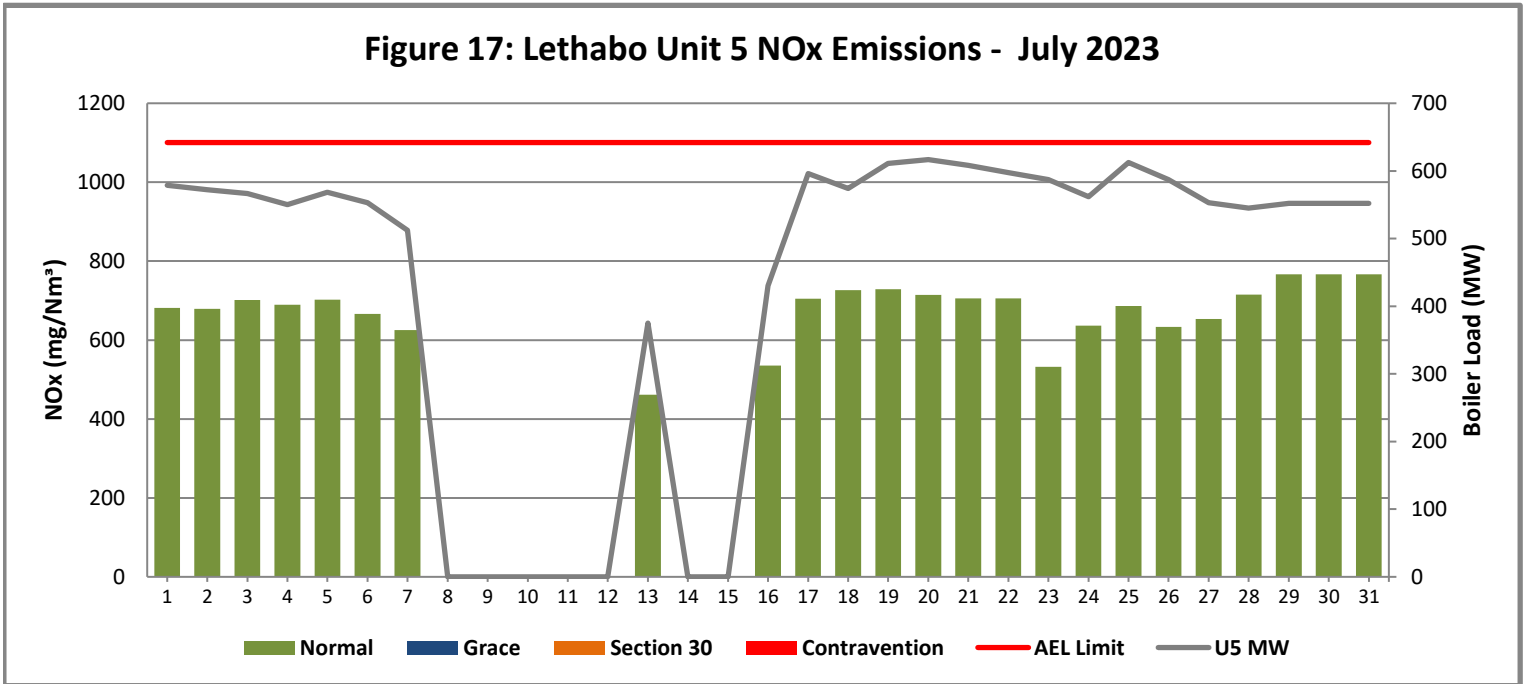
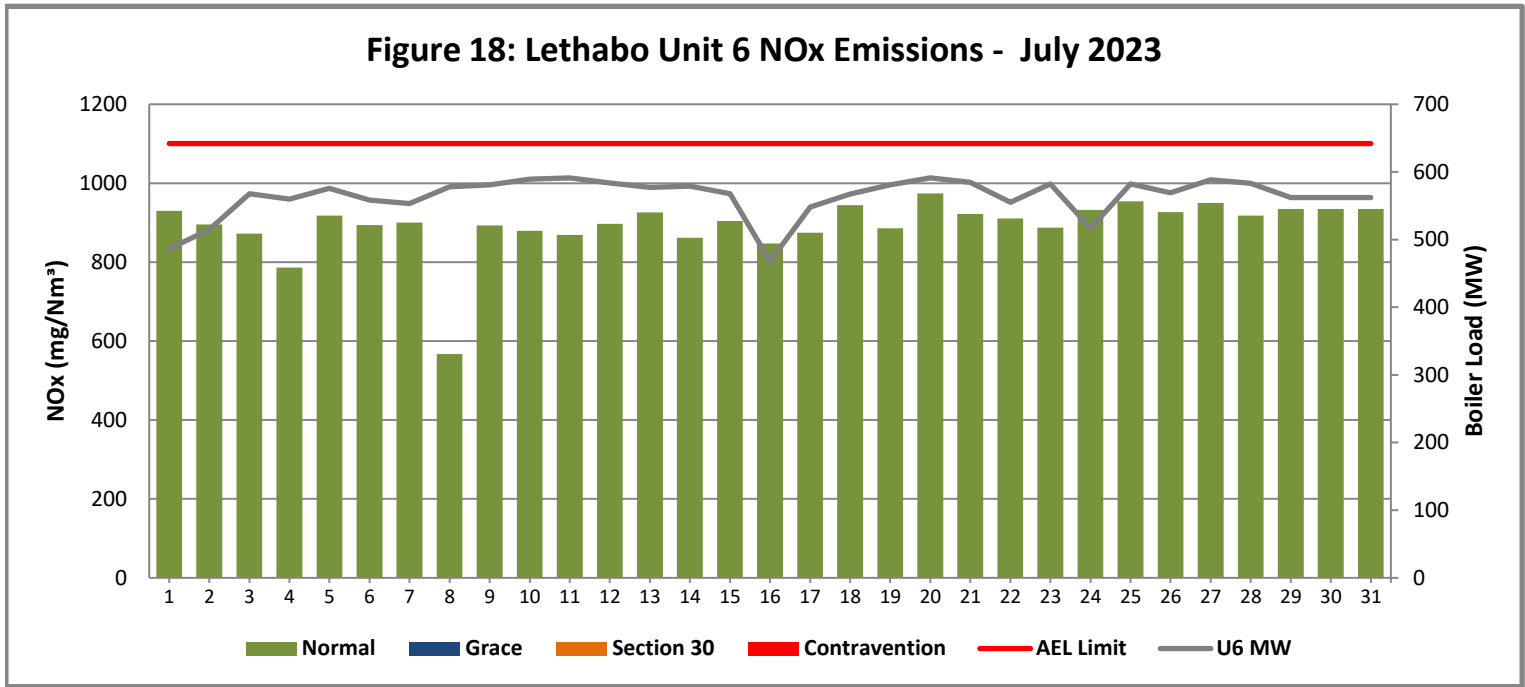


Figure 18: Lethabo Unit 6 NOx Emissions - July 2023



7 SHUT DOWN AND LIGHT UP INFORMATION

Table 7.1: PM Start-up information for the month of July 2023

Unit No.1	<i>Turbine Delt T's</i>							
Breaker Open (BO)	<i>2:24 AM</i>	<i>2023/07/16</i>						
Draught Group (DG) Shut Down (SD)	<i>DG did not trip or SD</i>	<i>DG did not trip or SD</i>						
BO to DG SD (duration)	<i>n/a</i>	DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time								
Synch. to Grid (or BC)								
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)								
Emissions below limit from BC (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM

Unit No.2	<i>Fuel oil leak repairs.</i>							
Breaker Open (BO)	<i>10:54 PM</i>	<i>2023/07/18</i>						
Draught Group (DG) Shut Down (SD)	<i>10:53 AM</i>	<i>2023/07/20</i>						
BO to DG SD (duration)	<i>01:11:59</i>	DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time	<i>6:05 AM</i>	<i>2023/07/24</i>						
Synch. to Grid (or BC)	<i>6:23 AM</i>	<i>2023/07/24</i>						
Fires in to BC (duration)	<i>00:00:18</i>	DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)	<i>not > limit</i>	<i>not > limit</i>						
Emissions below limit from BC (duration)	<i>n/a</i>	DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM

Unit No.3								
Breaker Open (BO)								
Draught Group (DG) Shut Down (SD)								
BO to DG SD (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time								
Synch. to Grid (or BC)								
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)								
Emissions below limit from BC (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM

Unit No.4								
Breaker Open (BO)								
Draught Group (DG) Shut Down (SD)								
BO to DG SD (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time								
Synch. to Grid (or BC)								
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)								
Emissions below limit from BC (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM

Unit No.5	<i>HP heater Sempole valve, EFP A and BFPT condenser tube leak & EFP A re-heat spray water v/v seal repair.</i>		<i>Boiler Tube leak, LH side front gas pass superheater.</i>					
Breaker Open (BO)	<i>2:55 PM</i>	<i>2023/07/07</i>	<i>8:11 AM</i>	<i>2023/07/13</i>				
Draught Group (DG) Shut Down (SD)	<i>3:10 AM</i>	<i>2023/07/08</i>	<i>9:13 PM</i>	<i>2023/07/13</i>				
BO to DG SD (duration)	<i>00:12:15</i>	<i>DD:HH:MM</i>	<i>00:13:02</i>	<i>DD:HH:MM</i>		<i>DD:HH:MM</i>		<i>DD:HH:MM</i>
Fires in time	<i>9:41 PM</i>	<i>2023/07/12</i>	<i>3:57 PM</i>	<i>2023/07/16</i>				
Synch. to Grid (or BC)	<i>12:08 AM</i>	<i>2023/07/13</i>	<i>4:30 PM</i>	<i>2023/07/16</i>				
Fires in to BC (duration)	<i>00:02:27</i>	<i>DD:HH:MM</i>	<i>00:00:33</i>	<i>DD:HH:MM</i>		<i>DD:HH:MM</i>		<i>DD:HH:MM</i>
Emissions below limit from BC (end date)	<i>not > limit</i>	<i>not > limit</i>	<i>not > limit</i>	<i>not > limit</i>				
Emissions below limit from BC (duration)	<i>n/a</i>	<i>DD:HH:MM</i>	<i>n/a</i>	<i>DD:HH:MM</i>		<i>DD:HH:MM</i>		<i>DD:HH:MM</i>

Unit No.6								
Breaker Open (BO)								
Draught Group (DG) Shut Down (SD)								
BO to DG SD (duration)		<i>DD:HH:MM</i>		<i>DD:HH:MM</i>		<i>DD:HH:MM</i>		<i>DD:HH:MM</i>
Fires in time								
Synch. to Grid (or BC)								
Fires in to BC (duration)		<i>DD:HH:MM</i>		<i>DD:HH:MM</i>		<i>DD:HH:MM</i>		<i>DD:HH:MM</i>
Emissions below limit from BC (end date)								
Emissions below limit from BC (duration)		<i>DD:HH:MM</i>		<i>DD:HH:MM</i>		<i>DD:HH:MM</i>		<i>DD:HH:MM</i>

7.2: Point Source emissions released during start-up (fires-in) and Shut-down (SD) for the month of July 2023 in mg/Nm³

8. MAINTENANCE

Unit 1				
Beginning of				
Reason for Maintenance				
End (Time):				
Duration				

Unit 2				
Beginning of				
Reason for Maintenance				
End (Time):				
Duration				

Unit 3				
Beginning of	2023/07/28 23:56:00			
Reason for Maintenance	RHI Precip casing repairs			
End (Time):	2023/07/30 00:00:00			
Duration	24:04:00			

Unit 4				
Beginning of				
Reason for Maintenance				
End (Time):				
Duration				

Unit 5				
Beginning of				
Reason for Maintenance				
End (Time):				
Duration				

Unit 6				
Beginning of	2023/07/01 00:28:00			
Reason for Maintenance	LHI Casing Outage			
End (Time):	2023/07/01 23:48:00			
Duration	23:20:00			

9. GENERAL

Unit 1 Monitor Reliability

21/07/2023: PM Monitor Reliability low (66.7%) due to monitors reading maximum

Unit 1, 2, 3, 4, 5, and 6 Monitor Reliability:

04/07/2023: Gas Monitors (SO_x, NO_x, CO, CO₂, O₂, H₂O, Temperature, Pressure and Velocity) Reliability Low (66.7%) due to communication error on the network

Unit 3 Monitor Reliability

29/07/2023: PM Monitor Reliability low (87.5%) due to monitors reading maximum

Unit 5 Monitor Reliability

29/07/2023: PM Monitor Reliability low (67.4%) due to monitors reading maximum and Unit Light Up

14/07/2023 - 31/07/2023: Gas Monitors (Pressure and Velocity) Reliability Low (66.7%) due to Pressure monitor reading low.

Unit 6 Monitor Reliability

08/07/2023: CO₂ Monitor Reliability low (50%) due to monitors reading low

01/07/2023 - 31/07/2023: Gas Monitors (SO_x, NO_x, CO, CO₂, O₂, and Velocity) Reliability Low (79.2%) due to monitor not reading for some parts of the day

Unit 1 NO_x Exceedance

13/07/2023: NO_x limit Exceeded (1101.1 mg/Nm³) due to Lethabo Power Station does not have abatement technology for NO_x installed and Concurrent operation of both top mills with one middle mill out of service (due to mill unavailability). A Legal Contravention was reported.

CO₂ and Velocity Monitors Low Reliability Units 1-6:

Due to correction of bad data as per internal emission data integrity review actions in 2021 and 2022. Bad Velocity data and Bad CO₂ data were corrected/removed as per the review actions and findings.

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.
1	13/07/2023	13/07/2023	No abatement technology for NOx installed and Concurrent operation of both top mills with one middle mill out of service	Process parameter assessed and adjustments made to aid in lowering NOx production					Legal Contravention incurred

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
Aug-22	0.28	0.41	0.50	0.64	0.27	0.32	0.40
Sep-22	0.40	0.24	0.31	0.80	0.33	0.40	0.42
Oct-22	0.54	0.39	0.44	0.40	0.47	0.44	0.44
Nov-22	0.62	0.39	0.33	0.59	0.59	0.57	0.52
Dec-22	0.58	0.67	0.58	OFF	0.94	0.50	0.65
Jan-23	0.40	0.69	0.59	OFF	0.74	0.45	0.57
Feb-23	0.51	0.48	0.53	OFF	0.83	0.63	0.59
Mar-23	0.51	0.37	0.52	0.54	0.63	0.39	0.50
Apr-23	OFF	0.29	0.61	0.35	0.86	OFF	0.56
May-23	OFF	0.48	0.46	0.32	0.79	0.41	0.50
Jun-23	0.13	0.64	0.47	0.30	0.46	0.30	0.36
Jul-23	0.21	0.27	0.42	0.27	0.25	0.32	0.30

ADDENDUM TO MONTHLY EMISSIONS REPORT

12. DAILY EMISSIONS FIGURES

Final Dust Concentration (mg/Nm³)

Date	U1	U2	U3	U4	U5	U6	Limit
01-Jul	26	37	71	38	47	143	100
02-Jul	28	30	80	41	60	52	100
03-Jul	75	19	87	26	54	59	100
04-Jul	26	73	84	35	49	65	100
05-Jul	25	19	133	54	51	66	100
06-Jul	28	26	63	85	46	75	100
07-Jul	29	55	97	107	63	77	100
08-Jul	35	59	91	69	OFF	82	100
09-Jul	31	73	94	58	OFF	113	100
10-Jul	76	59	86	104	OFF	68	100
11-Jul	23	35	86	66	OFF	55	100
12-Jul	27	63	104	35	OFF	45	100
13-Jul	25	72	42	92	OFF	51	100
14-Jul	22	92	57	39	OFF	50	100
15-Jul	17	85	45	29	OFF	47	100
16-Jul	21	92	51	32	OFF	39	100
17-Jul	24	120	58	34	146	50	100
18-Jul	17	56	69	36	68	60	100
19-Jul	16	OFF	126	29	61	55	100
20-Jul	25	OFF	62	174	56	66	100
21-Jul	550	OFF	64	37	97	67	100
22-Jul	19	OFF	90	39	44	118	100
23-Jul	20	OFF	85	42	37	73	100
24-Jul	20	OFF	75	42	34	52	100
25-Jul	21	34	74	53	54	70	100
26-Jul	21	52	169	90	51	70	100
27-Jul	25	56	76	71	42	77	100
28-Jul	33	74	76	52	90	70	100
29-Jul	30	74	297	48	42	71	100
30-Jul	65	53	57	38	40	58	100
31-Jul	32	55	52	34	42	60	100

ADDENDUM TO MONTHLY EMISSIONS REPORT

Final SOx Concentration (mg/Nm³)

Date	U1	U2	U3	U4	U5	U6	Limit
01-Jul	1667	1706	1800	1811	1569	1828	3500
02-Jul	1687	1753	1787	1814	1607	1837	3500
03-Jul	1622	1778	1796	1783	1554	1805	3500
04-Jul	1656	1790	1834	1833	1661	1802	3500
05-Jul	1620	1755	1795	1806	1644	1837	3500
06-Jul	1625	1778	1810	1735	1604	1805	3500
07-Jul	1578	1707	1742	1700	1461	1714	3500
08-Jul	1562	1667	1719	1662	OFF	1307	3500
09-Jul	1563	1718	1719	1712	OFF	1756	3500
10-Jul	1621	1732	1772	1690	OFF	1748	3500
11-Jul	1588	1617	1697	1704	OFF	1711	3500
12-Jul	1600	1675	1710	1764	OFF	1647	3500
13-Jul	1509	1545	1580	1593	1340	1555	3500
14-Jul	1515	1601	1724	1556	OFF	1506	3500
15-Jul	1320	1533	1443	1301	OFF	1456	3500
16-Jul	1534	1590	1615	1412	1398	1655	3500
17-Jul	1441	1460	1615	1319	1575	1491	3500
18-Jul	1489	1503	1633	1311	1455	1475	3500
19-Jul	1269	OFF	1304	1207	1309	1291	3500
20-Jul	1184	OFF	1364	1297	1409	1412	3500
21-Jul	1438	OFF	1563	1377	1467	1632	3500
22-Jul	1423	OFF	1741	1325	1488	1631	3500
23-Jul	1393	OFF	1654	1213	1480	1462	3500
24-Jul	1252	1368	1599	1259	1335	1513	3500
25-Jul	1345	1489	1481	1406	1446	1577	3500
26-Jul	1516	1598	1724	1392	1479	1736	3500
27-Jul	1554	1644	1656	1334	1446	1658	3500
28-Jul	1513	1591	1570	1323	1542	1659	3500
29-Jul	1435	1562	1697	1446	1744	1705	3500
30-Jul	1599	1760	1800	1463	1751	1706	3500
31-Jul	1711	1779	1823	1524	1801	1902	3500

ADDENDUM TO MONTHLY EMISSIONS REPORT

Final NOx Concentration (mg/Nm³)

Date	U1	U2	U3	U4	U5	U6	Limit
01-Jul	1049	877	825	915	682	930	1100
02-Jul	979	894	876	908	679	896	1100
03-Jul	996	821	888	891	701	873	1100
04-Jul	910	740	819	918	690	786	1100
05-Jul	958	810	884	1054	702	918	1100
06-Jul	969	801	816	967	666	894	1100
07-Jul	957	817	835	956	625	900	1100
08-Jul	998	867	793	1069	OFF	567	1100
09-Jul	1006	873	891	1086	OFF	893	1100
10-Jul	989	852	867	1028	OFF	879	1100
11-Jul	1046	814	915	965	OFF	869	1100
12-Jul	1029	758	871	1037	OFF	897	1100
13-Jul	1101	781	895	1064	461	926	1100
14-Jul	1055	856	914	1093	OFF	862	1100
15-Jul	970	896	850	1000	OFF	904	1100
16-Jul	902	865	792	956	535	847	1100
17-Jul	1027	835	942	739	705	875	1100
18-Jul	855	762	932	894	726	945	1100
19-Jul	750	OFF	881	886	729	886	1100
20-Jul	959	OFF	960	958	715	974	1100
21-Jul	737	OFF	889	920	706	922	1100
22-Jul	1052	OFF	900	985	706	911	1100
23-Jul	896	OFF	901	946	532	887	1100
24-Jul	869	549	874	817	636	932	1100
25-Jul	895	706	946	819	686	954	1100
26-Jul	810	779	736	799	633	927	1100
27-Jul	770	769	772	700	653	950	1100
28-Jul	816	725	829	866	715	918	1100
29-Jul	876	781	783	885	767	935	1100
30-Jul	1030	761	829	802	694	907	1100
31-Jul	1060	781	748	812	703	1023	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
Aug-22	99.42%	0.7	98.67%	1.6	100.00%	0.0	99.32%	0.8	100.00%	0.0	100.00%	0.0
Sep-22	98.86%	1.4	100.00%	0.0	100.00%	0.0	99.27%	0.9	98.44%	1.9	99.20%	1.0
Oct-22	98.80%	1.5	98.86%	1.4	100.00%	0.0	100.00%	0.0	99.24%	0.9	100.00%	0.0
Nov-22	99.29%	0.9	100.00%	0.0	100.00%	0.0	100.00%	0.0	98.86%	1.4	98.56%	1.7
Dec-22	99.29%	0.9	98.58%	1.8	98.66%	1.7	OFF	OFF	99.36%	0.8	98.46%	1.9
Jan-23	98.91%	1.3	99.90%	0.1	97.59%	3.0	OFF	OFF	99.23%	1.0	98.42%	2.0
Feb-23	99.19%	0.9	100.00%	0.0	96.88%	3.5	OFF	OFF	100.00%	0.0	99.16%	0.9
Mar-23	99.30%	0.9	99.19%	1.0	99.22%	1.0	100.00%	0.0	98.57%	1.8	99.19%	1.0
Apr-23	OFF	OFF	100.00%	0.0	97.91%	2.5	100.00%	0.0	99.24%	0.9	OFF	OFF
May-23	OFF	OFF	98.56%	1.8	99.36%	0.8	100.00%	0.0	96.91%	3.8	100.00%	0.0
Jun-23	100.00%	0.0	100.00%	0.0	99.41%	0.7	98.31%	2.0	98.52%	1.8	100.00%	0.0
Jul-23	100.00%	0.0	100.00%	0.0	99.19%	1.0	100.00%	0.0	100.00%	0.0	99.22%	1.0

SO₃ 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
Aug-22	98.52%	0.5	100.00%	0.0	96.51%	1.1	65.19%	10.8	99.33%	0.2	100.00%	0.0
Sep-22	100.00%	0.0	99.58%	0.1	100.00%	0.0	94.27%	1.7	97.92%	0.6	100.00%	0.0
Oct-22	89.39%	3.3	100.00%	0.0	82.41%	5.5	99.73%	0.1	79.69%	6.3	100.00%	0.0
Nov-22	100.00%	0.0	100.00%	0.0	97.21%	0.8	88.86%	3.3	100.00%	0.0	100.00%	0.0
Dec-22	85.12%	4.6	98.28%	0.5	99.88%	0.0	OFF	OFF	62.90%	11.5	100.00%	0.0
Jan-23	90.05%	3.1	93.82%	1.9	100.00%	0.0	OFF	OFF	91.52%	2.6	100.00%	0.0
Feb-23	89.39%	3.0	100.00%	0.0	82.41%	4.9	OFF	OFF	79.69%	5.7	100.00%	0.0
Mar-23	100.00%	0.0	98.89%	0.3	95.16%	1.5	95.50%	1.4	99.33%	0.2	95.00%	1.6
Apr-23	OFF	OFF	99.66%	0.1	100.00%	0.0	98.93%	0.3	94.58%	1.6	OFF	OFF
May-23	OFF	OFF	100.00%	0.0	99.89%	0.0	99.33%	0.2	100.00%	0.0	90.67%	2.9
Jun-23	85.96%	4.2	81.82%	5.5	96.56%	1.0	97.86%	0.6	86.81%	4.0	97.50%	0.8
Jul-23	97.98%	0.6	97.83%	0.7	100.00%	0.0	97.85%	0.7	99.67%	0.1	100.00%	0.0

ADDENDUM TO MONTHLY EMISSIONS REPORT

Particulate Emission Monitors

Availability						
	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Aug-22	99.85%	96.77%	100.00%	96.24%	98.61%	100.00%
Sep-22	98.69%	100.00%	92.89%	96.01%	99.31%	99.17%
Oct-22	96.61%	97.27%	99.38%	100.00%	95.14%	98.66%
Nov-22	94.72%	95.66%	97.08%	98.85%	98.92%	97.64%
Dec-22	99.09%	93.78%	98.73%	OFF	67.20%	98.66%
Jan-23	99.46%	90.07%	98.79%	OFF	96.28%	98.39%
Feb-23	99.11%	96.87%	98.72%	OFF	93.83%	96.29%
Mar-23	99.68%	98.75%	99.06%	97.17%	97.33%	99.12%
Apr-23	OFF	99.43%	98.61%	99.57%	94.31%	OFF
May-23	OFF	97.07%	99.85%	99.46%	95.56%	99.50%
Jun-23	99.23%	95.11%	99.19%	98.33%	99.03%	99.86%
Jul-23	98.92%	100.00%	99.60%	99.73%	98.33%	99.87%

Gaseous Emission Monitors

Availability												
Month	Unit 1		Unit 2		Unit 3		Unit 4		Unit 5		Unit 6	
	SO _x	NO _x	SO _x	NO _x	SO _x	NO _x	SO _x	NO _x	SO _x	NO _x	SO _x	NO _x
Aug-22	100.00%	100.00%	100.00%	100.00%	99.83%	99.83%	99.87%	99.73%	99.70%	99.57%	99.60%	99.73%
Sep-22	100.00%	100.00%	100.00%	100.00%	99.62%	100.00%	93.83%	93.83%	94.86%	94.86%	94.86%	94.86%
Oct-22	98.95%	78.72%	99.87%	100.00%	99.86%	99.86%	100.00%	100.00%	99.86%	99.86%	99.87%	99.87%
Nov-22	99.86%	99.86%	99.72%	99.86%	99.81%	99.81%	100.00%	100.00%	99.72%	99.72%	99.44%	99.44%
Dec-22	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	OFF	OFF	100.00%	99.87%	99.87%	100.00%
Jan-23	97.85%	97.85%	99.69%	99.69%	100.00%	100.00%	OFF	OFF	99.85%	99.85%	99.60%	99.60%
Feb-23	99.85%	99.85%	100.00%	100.00%	100.00%	100.00%	OFF	OFF	100.00%	99.28%	100.00%	100.00%
Mar-23	100.00%	100.00%	100.00%	100.00%	99.87%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Apr-23	OFF	OFF	100.00%	100.00%	99.86%	99.86%	99.95%	99.95%	100.00%	100.00%	OFF	OFF
May-23	OFF	OFF	100.00%	100.00%	100.00%	100.00%	99.60%	99.87%	99.73%	99.87%	99.52%	99.68%
Jun-23	99.70%	99.85%	99.58%	100.00%	99.71%	100.00%	100.00%	100.00%	100.00%	100.00%	99.86%	100.00%
Jul-23	98.39%	98.39%	98.08%	97.95%	98.12%	98.39%	98.39%	98.25%	97.92%	97.92%	98.25%	98.39%

Oxygen Monitor Availability						
	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Aug-22	99.73%	99.60%	99.67%	99.73%	99.40%	99.60%
Sep-22	99.72%	99.71%	99.62%	93.67%	94.72%	94.44%
Oct-22	99.27%	99.87%	99.57%	99.73%	99.72%	99.60%
Nov-22	99.72%	99.72%	99.62%	98.82%	99.44%	99.58%
Dec-22	99.65%	99.72%	99.72%	OFF	99.87%	99.87%
Jan-23	97.45%	99.04%	99.87%	OFF	99.70%	99.73%
Feb-23	100.00%	100.00%	100.00%	OFF	99.51%	100.00%
Mar-23	100.00%	100.00%	100.00%	86.16%	99.87%	99.81%
Apr-23	OFF	99.83%	99.86%	99.83%	99.86%	OFF
May-23	OFF	100.00%	100.00%	100.00%	99.87%	99.84%
Jun-23	100.00%	99.55%	99.86%	99.68%	100.00%	100.00%
Jul-23	98.12%	97.76%	98.12%	98.25%	100.00%	97.72%

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14. EFFICIENCY

ESP Efficiency (%)						
	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Aug-22	99.881%	99.804%	99.768%	99.708%	99.873%	99.846%
Sep-22	99.834%	99.888%	99.868%	99.660%	99.857%	99.815%
Oct-22	99.772%	99.814%	99.807%	99.826%	99.795%	99.796%
Nov-22	99.761%	99.828%	99.859%	99.769%	99.752%	99.756%
Dec-22	99.788%	99.724%	99.768%	OFF	99.637%	99.799%
Jan-23	99.848%	99.709%	99.766%	OFF	99.702%	99.813%
Feb-23	99.808%	99.800%	99.785%	OFF	99.669%	99.733%
Mar-23	99.797%	99.858%	99.780%	99.780%	99.745%	99.831%
Apr-23	OFF	99.893%	99.731%	99.854%	99.646%	OFF
May-23	OFF	99.812%	99.802%	99.868%	99.667%	99.822%
Jun-23	99.948%	99.717%	99.787%	99.864%	99.796%	99.858%
Jul-23	99.904%	99.864%	99.793%	99.869%	99.879%	99.837%

15. REMARKS

UNIT	MWLOSS	REASON	ACTUALSTARTDATE	ACTUALENDDATE
1	593	Turbine Delt T's	2023/07/16 02:24:00	2023/07/16 05:27:00
1	297	System Generated Ramp Event for Event id : 1836330	2023/07/16 05:27:00	2023/07/16 06:57:00
1	216	Ash plant standing- transfer chain conv broken	2023/07/18 10:11:00	2023/07/18 21:42:00
1	176	Ash plant standing- transfer chain conv broken	2023/07/18 21:42:00	2023/07/19 17:11:00
2	211	2A bucket elevator belt replacement.	2023/07/10 23:18:00	2023/07/14 05:24:00
2	110	A-bucket not working.	2023/07/14 21:21:00	2023/07/15 05:04:00
2	38	EF: High stack emissions	2023/07/16 20:30:00	2023/07/17 00:00:00
2	300	LH Draught group tripped.	2023/07/18 21:33:00	2023/07/18 22:54:00
2	593	Fuel oil leak repairs.	2023/07/18 22:54:00	2023/07/24 06:23:00
2	297	System Generated Ramp Event for Event id : 1837204	2023/07/24 06:23:00	2023/07/24 09:23:00
3	110	High stack emissions	2023/07/07 20:58:00	2023/07/07 23:51:00
3	99	EF: High stack emissions	2023/07/09 12:43:00	2023/07/09 16:50:00
3	118	AM: RHI Precip casing repair.	2023/07/28 23:56:00	2023/07/30 00:00:00
4	67	EF: High NOx reading	2023/07/10 12:51:00	2023/07/11 00:31:00
4	208	AM: L/H Draught grp. tripped.	2023/07/26 16:18:00	2023/07/26 18:16:00
5	593	HP heater Sempole valve ,EFP A and BFPT condenser tube leak	2023/07/07 14:55:00	2023/07/12 14:55:00
5	593	EFP A re-heat spray water v/v seal repair.	2023/07/12 14:55:00	2023/07/13 00:08:00
5	297	System Generated Ramp Event for Event id : 1833625	2023/07/13 00:08:00	2023/07/13 03:08:00
5	593	Boiler Tube leak, LH side front gas pass superheater.	2023/07/13 08:11:00	2023/07/16 16:30:00
5	297	System Generated Ramp Event for Event id : 1835556	2023/07/16 16:30:00	2023/07/16 19:30:00
6	117	LHI Casing repairs	2023/07/01 00:28:00	2023/07/01 23:48:00

PM Exceedances		
U1.	Monitors Maxing Out RH Draught Plant Tripped At the reduced load SO3 plant stopped dosing High Hopper Levels	21-Jul
U2.	ESP Poor Performance and Manual rapping	17-Jul
U3.	Manual rapping carried out	05-Jul
U3.	Manual rapping was conducted yesterday. However, during the clean rapping, the RHI casing did not depower. ESP Poor performance	12-Jul
U3.	ESP Poor Performance and Manual Rapping	19-Jul
U3.	ESP Poor Performance and Manual Rapping	26-Jul
U3.	RHI Casing Outage	29-Jul
U4.	SO3 plant tripped early this morning and therefore the unit is running high today. Gerald reported that the SO3 plant tripped due to the sec air heater temperatures which were low, and a notification was loaded for replacement of the thermocouple	07-Jul
U4.	ESP Poor Performance	10-Jul
U4.	ESP Poor Performance and Manual Rapping	20-Jul
U5.	Unit Light Up	17-Jul
U6.	LHI casing outage	01-Jul
U6.	ESP Poor Performance and Manual Rapping	09-Jul
U6.	ESP Poor Performance and Manual Rapping	22-Jul