



Mr. Chakane Sibaya
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Date:
30 November 2023

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LCR01PLA000_0367/20231115

Dear Mr. Sibaya

LETHABO POWER STATION EMISSION MONTHLY REPORT FOR OCTOBER 2023

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

Also attached are the Ambient Air Quality Monitoring Report, Complaints Register and the Fugitive Dust Fallout Monitoring Report for October 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
October 2023
Emission Report**

Reference number: **LCR01PLA000_0367/20231115**
Document Type: **Report**
Area of Applicability: **Environment**
Report Date: **November-2023**
Classification: **Controlled Disclosure**

Signatures:

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Date: 23/11/2023

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Date: 2023 11 23

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Date: 23/11/2023

Reviewed by:


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Date: 2023-11-24

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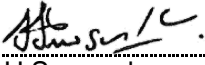
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Date: 2023/11/24

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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 Oct-2023
	Coal	Tons	2 000 000	1 711 497
Fuel Oil	Tons	1 700	862.490	

Production Rates	Product / By-Product Name	Units	Maximum Production Capacity Permitted	Indicative Production Rate Oct-2023
	Energy	GWh	2 834.640	2 140.950
Ash	Tons	770 000	632 227.140	
RE Ash	kg/MWh	Not Specified	295.302	

Note: Maximum energy rate is as per the maximum capacity stated in the AEL: $[3\ 810\ MW] \times 24\ hrs \times days\ in\ Month / 1000$ to convert to GWh.

2. ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.656 (Standard)	0.650
Ash Content	%	37.37 (Standard)	36.940

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	NOx
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 Oct-2023	Technology Type	SO ₃ Utilization Oct-2023
Unit 1	Electrostatic Precipitator (ESP)	99.90%	SO ₃	99.7%
Unit 2	Electrostatic Precipitator (ESP)	99.73%	SO ₃	100.0%
Unit 3	Electrostatic Precipitator (ESP)	99.73%	SO ₃	96.9%
Unit 4	Electrostatic Precipitator (ESP)	99.82%	SO ₃	100.0%
Unit 5	Electrostatic Precipitator (ESP)	99.86%	SO ₃	100.0%
Unit 6	Electrostatic Precipitator (ESP)	99.83%	SO ₃	97.3%

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	100.0	99.5	99.5
Unit 2	96.5	99.3	99.5
Unit 3	99.3	99.2	99.2
Unit 4	99.7	99.5	99.5
Unit 5	98.7	99.3	99.5
Unit 6	99.7	99.4	99.4

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

6. EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of October 2023

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO _x (tons)
Unit 1	104.0	3 751	2 056
Unit 2	264.5	4 514	1 929
Unit 3	240.8	3 325	1 587
Unit 4	160.0	3 768	2 124
Unit 5	143.4	3945	1670
Unit 6	142.9	3 384	1 561
SUM	1 055.6	22 687	10 927

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

Associated Unit/Stack	Normal	Grace	Section 30	Contra-vention	Total Exceedance	Average PM (mg/Nm ³)
Unit 1	31	0	0	0	0	45.4
Unit 2	24	7	0	0	7	103.1
Unit 3	19	12	0	0	12	128.5
Unit 4	30	1	0	0	1	68.4
Unit 5	27	4	0	0	4	65.5
Unit 6	23	4	0	0	4	83.8
SUM	154	28	0	0	28	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contra-vention	Total Exceedance	Average SO ₂ (mg/Nm ³)
Unit 1	31	0	0	0	0	1 644.9
Unit 2	31	0	0	0	0	1 751.7
Unit 3	31	0	0	0	0	1 798.0
Unit 4	31	0	0	0	0	1 626.7
Unit 5	31	0	0	0	0	1 794.9
Unit 6	28	0	0	0	0	1 903.2
SUM	183	0	0	0	0	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contra-vention	Total Exceedance	Average NOx (mg/Nm ³)
Unit 1	31	0	0	0	0	902.4
Unit 2	31	0	0	0	0	746.1
Unit 3	31	0	0	0	0	858.3
Unit 4	31	0	0	0	0	914.4
Unit 5	31	0	0	0	0	759.6
Unit 6	28	0	0	0	0	863.3
SUM	183	0	0	0	0	

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 1: Lethabo Unit 1 PM Emissions - October 2023

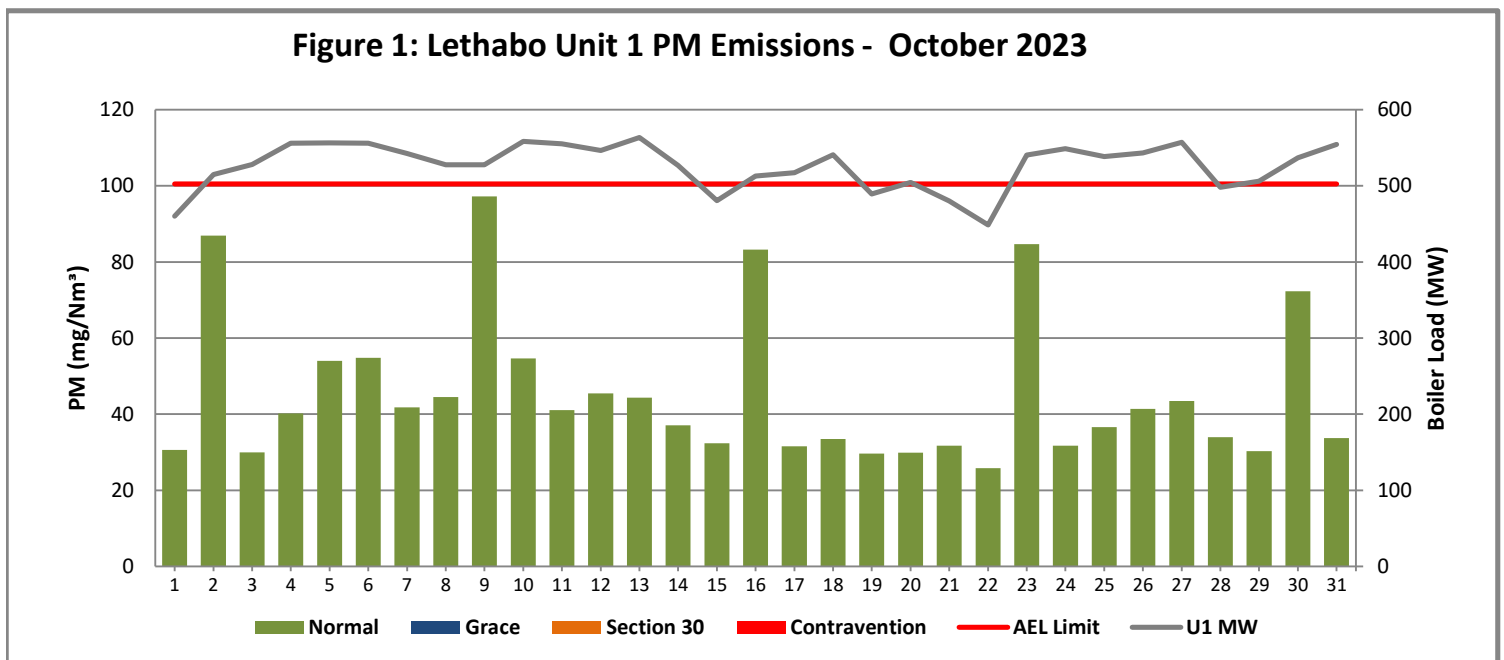


Figure 2: Lethabo Unit 2 PM Emissions - October 2023

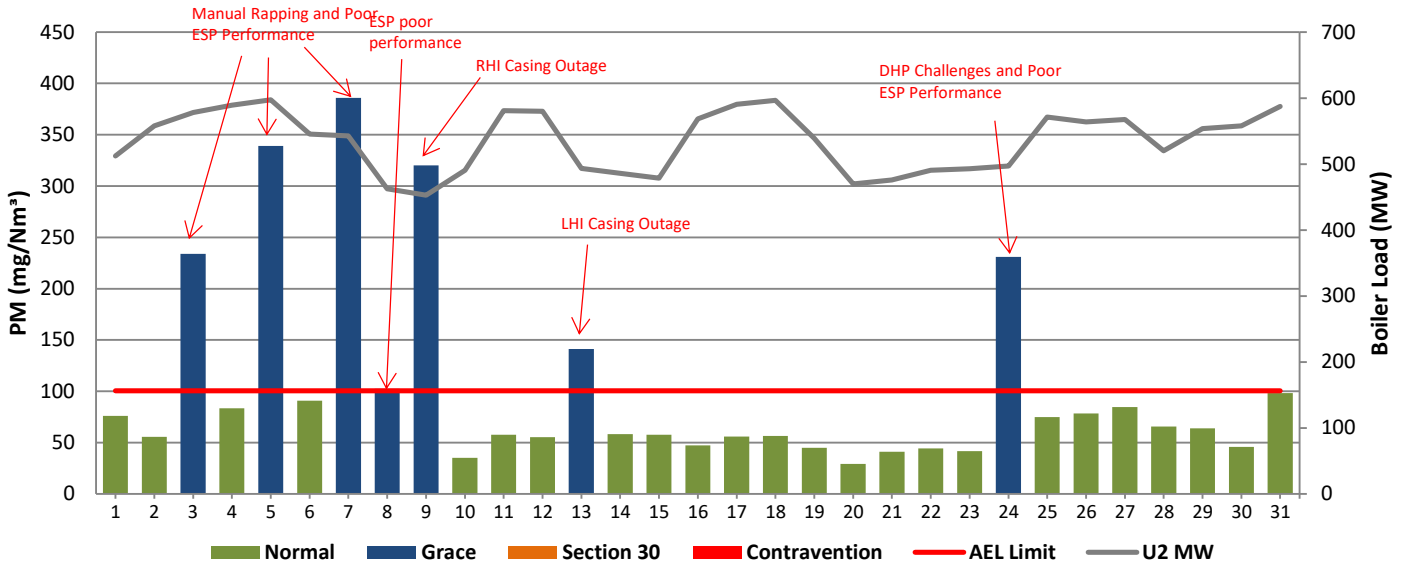


Figure 3: Lethabo Unit 3 PM Emissions - October 2023

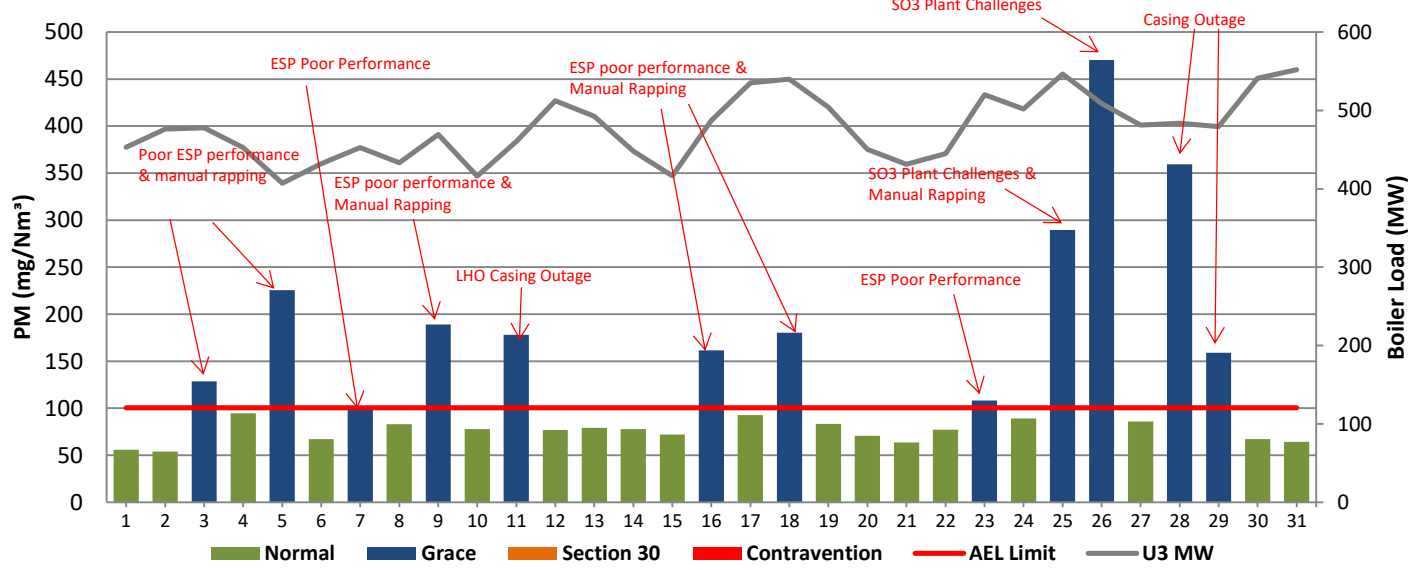


Figure 4: Lethabo Unit 4 PM Emissions - October 2023

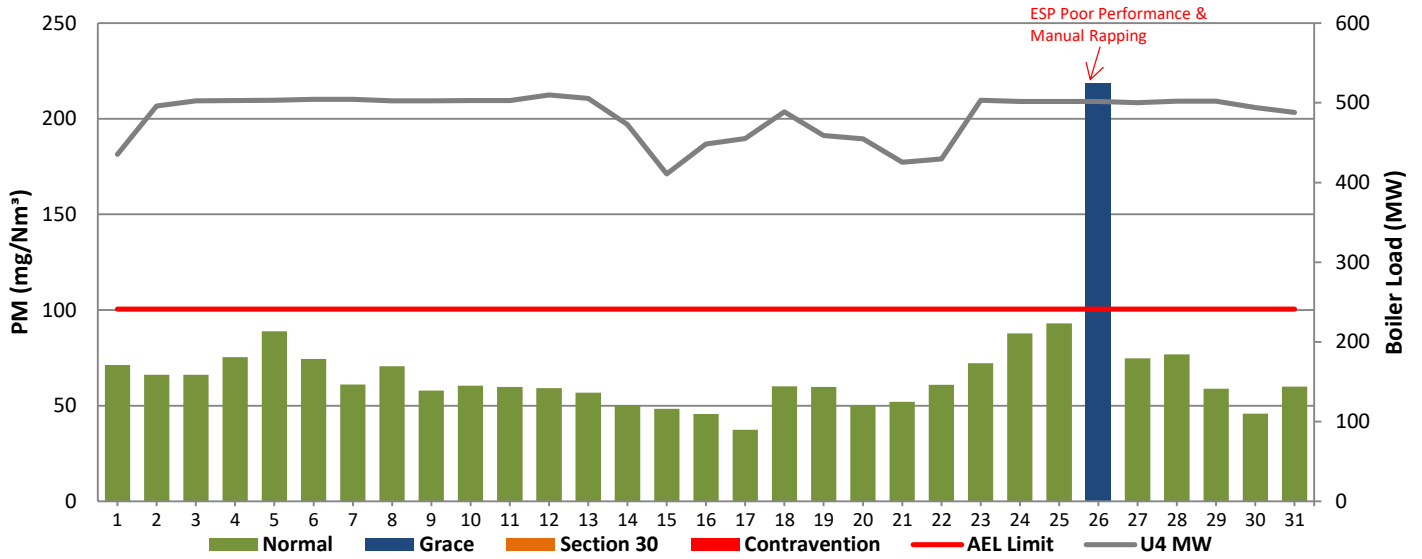


Figure 5: Lethabo Unit 5 PM Emissions - October 2023

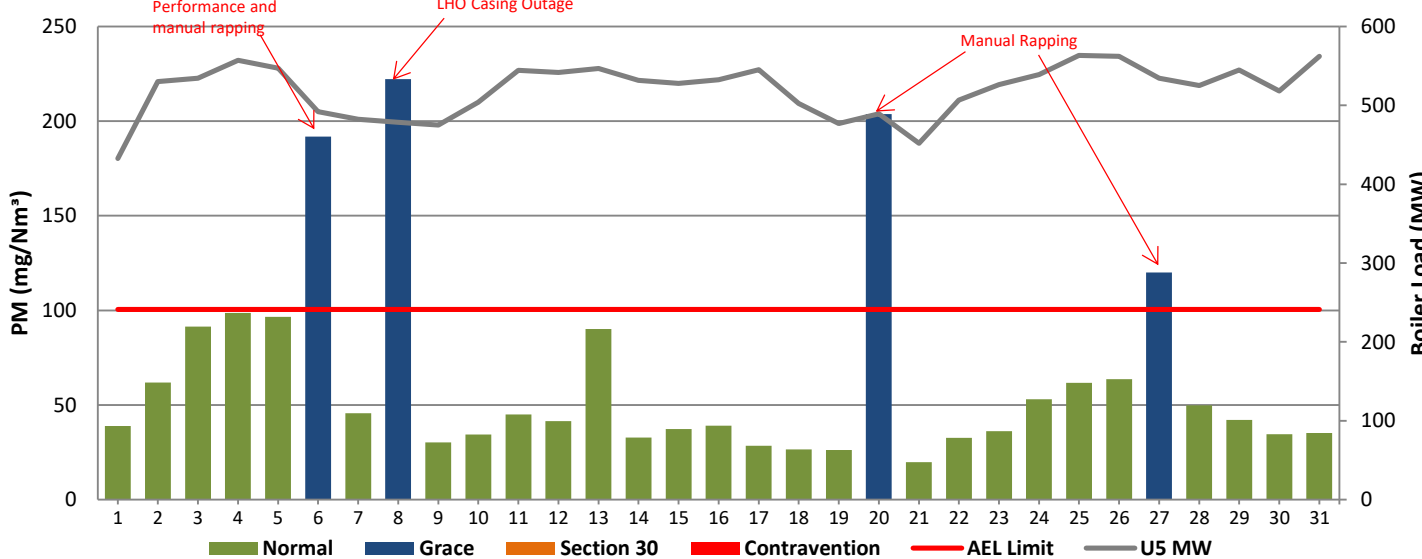


Figure 6: Lethabo Unit 6 PM Emissions - October 2023

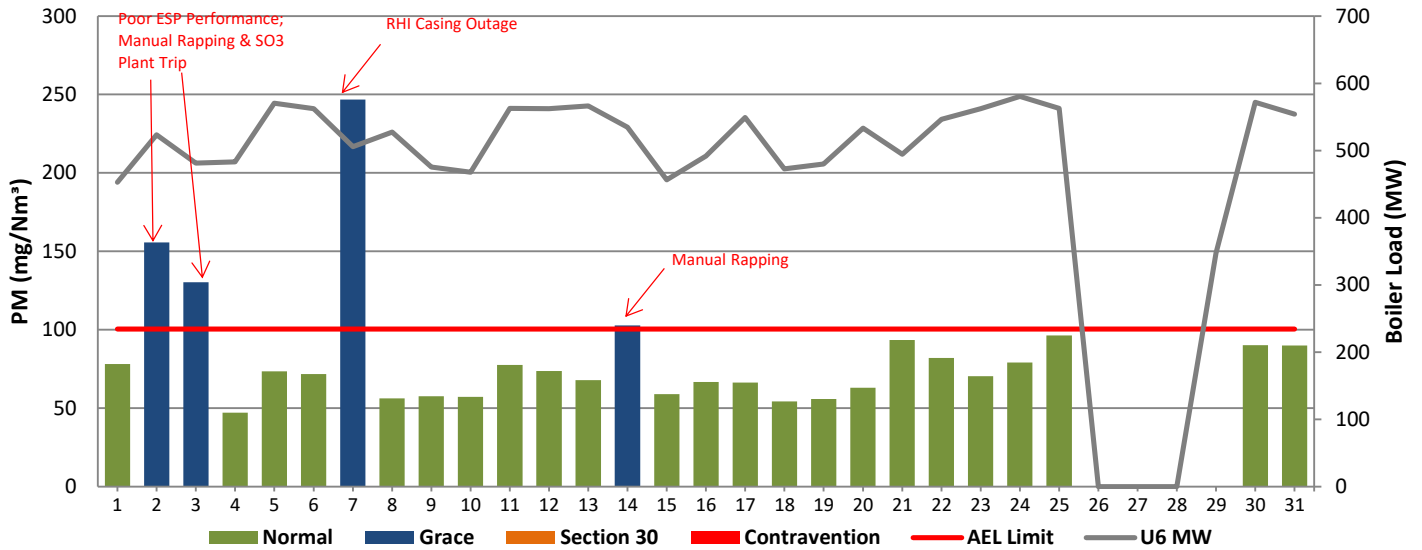


Figure 7: Lethabo Unit 1 SO₂ Emissions - October 2023

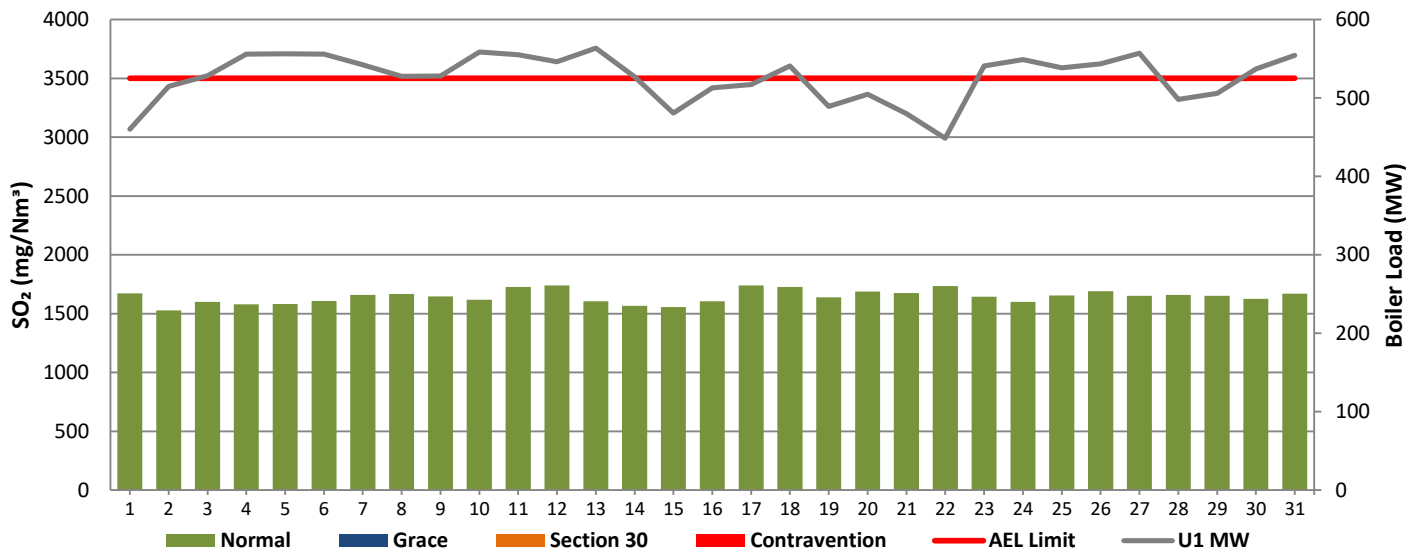


Figure 8: Lethabo Unit 2 SO₂ Emissions - October 2023

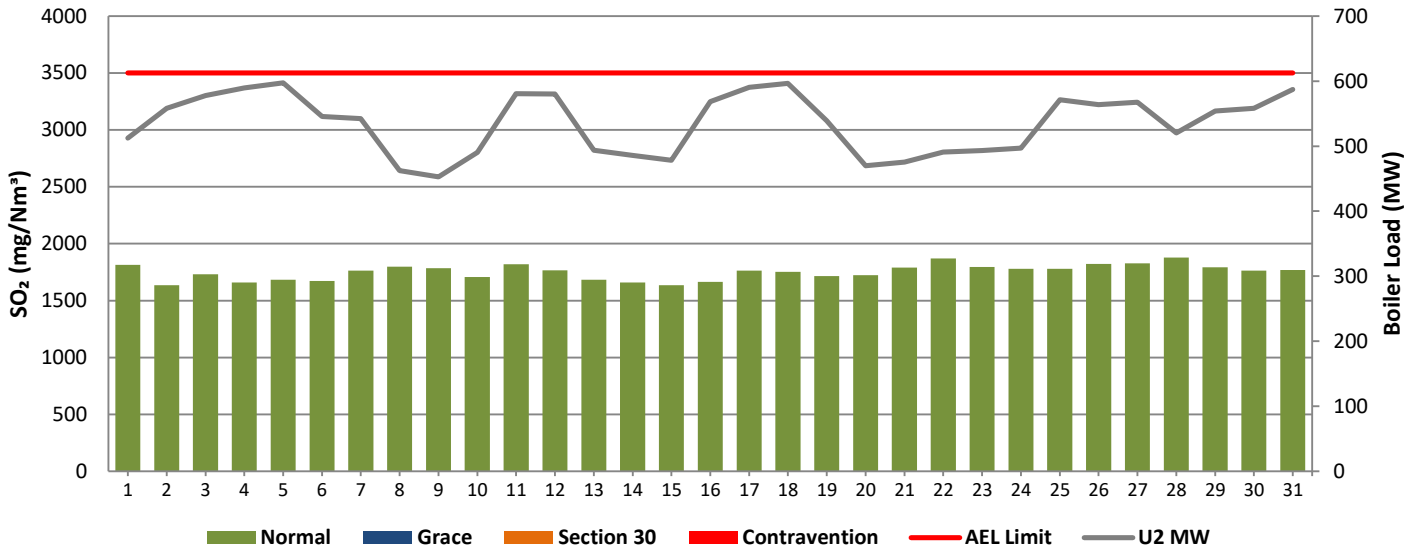


Figure 9: Lethabo Unit 3 SO₂ Emissions - October 2023

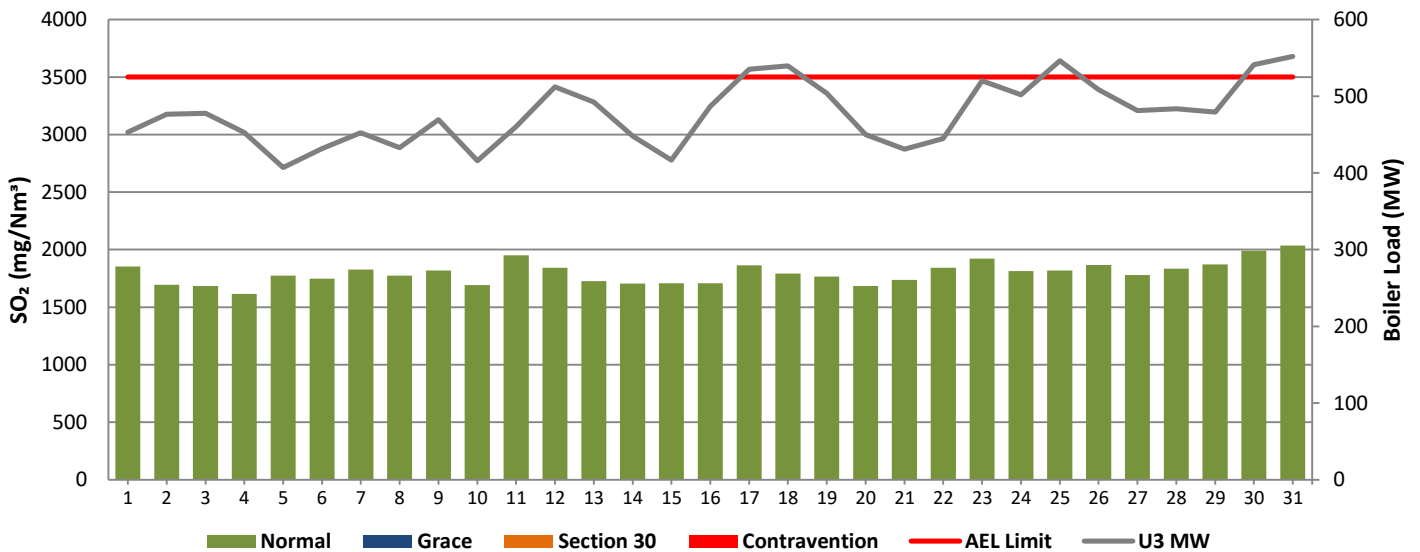


Figure 10: Lethabo Unit 4 SO₂ Emissions - October 2023

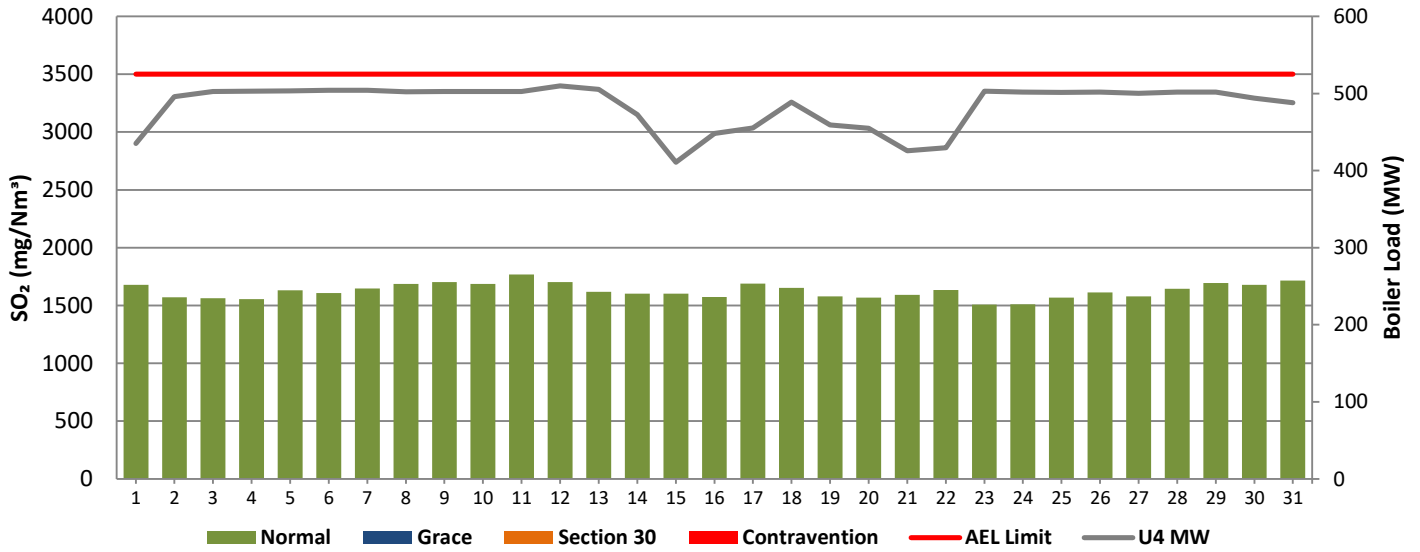


Figure 11: Lethabo Unit 5 SO₂ Emissions - October 2023

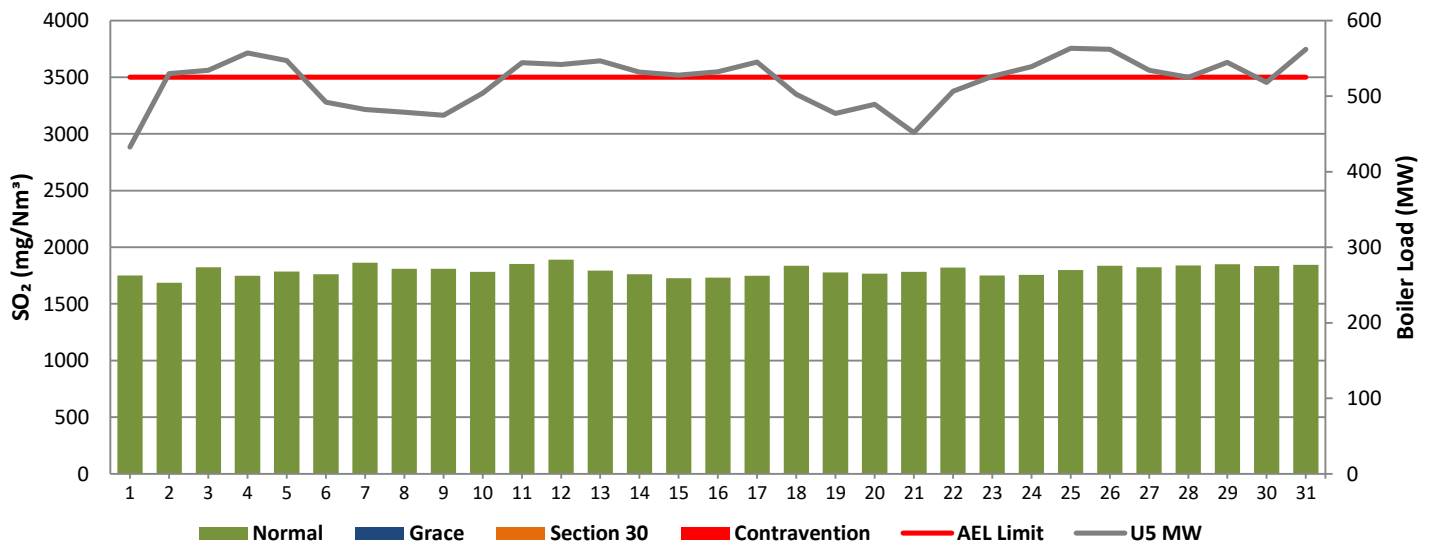


Figure 12: Lethabo Unit 6 SO₂ Emissions - October 2023

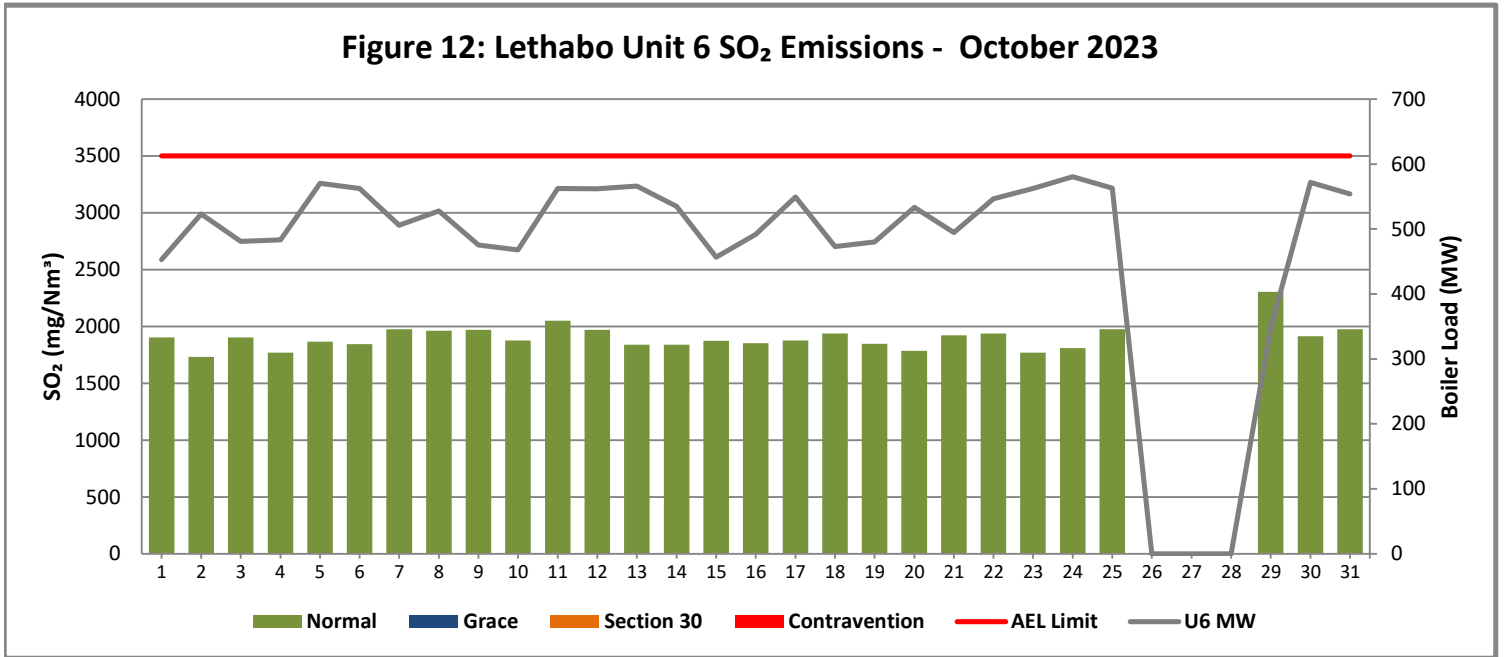


Figure 13: Lethabo Unit 1 NO_x Emissions - October 2023

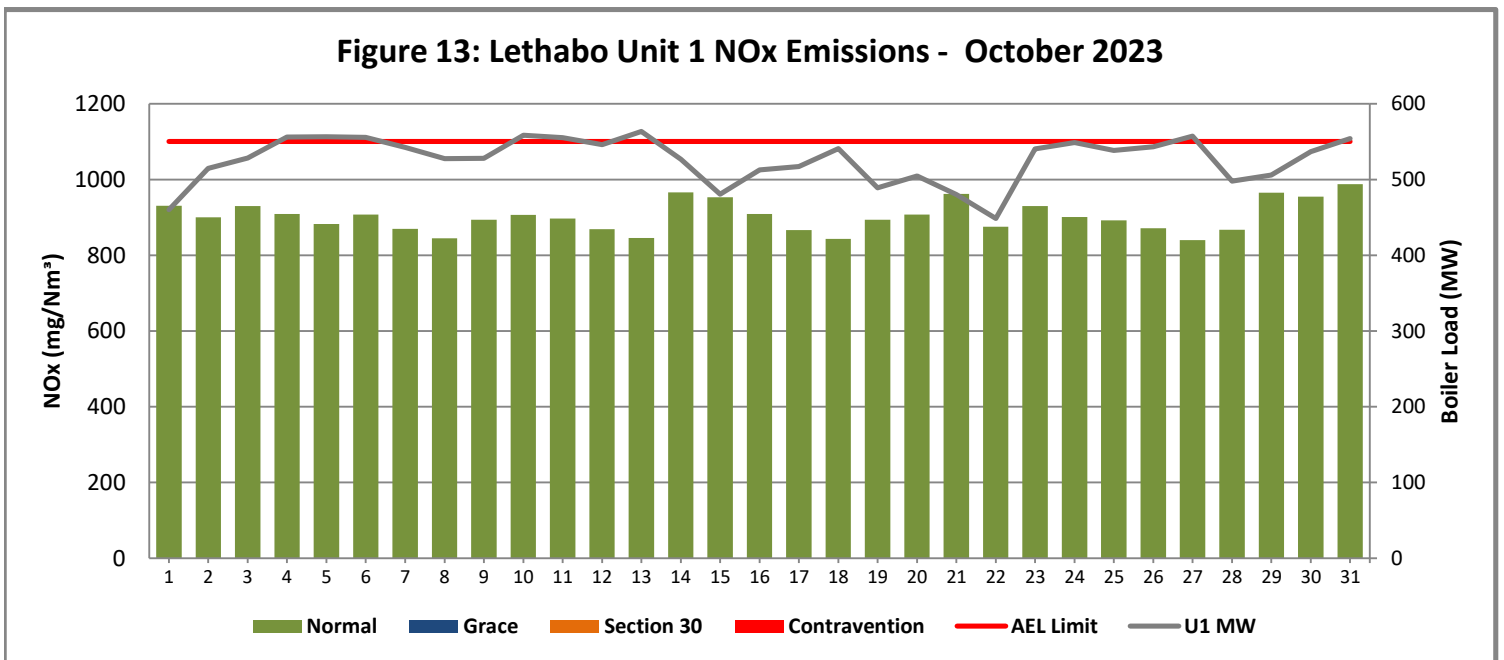


Figure 14: Lethabo Unit 2 NOx Emissions - October 2023

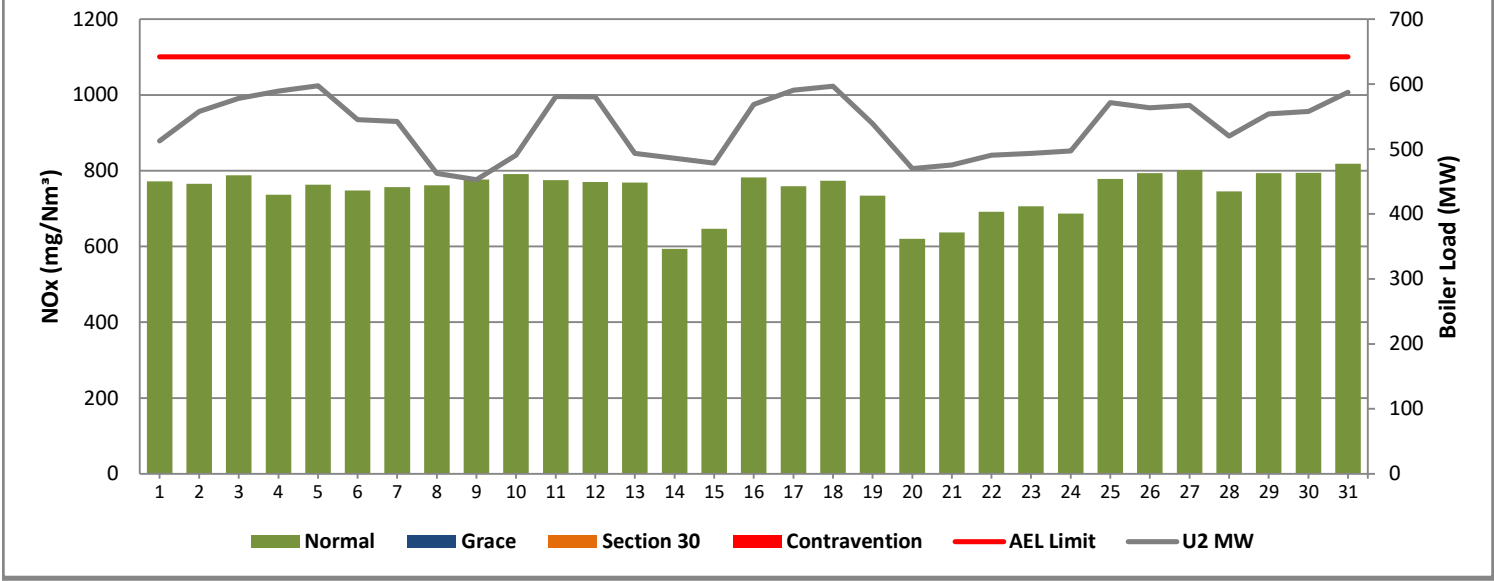


Figure 15: Lethabo Unit 3 NOx Emissions - October 2023

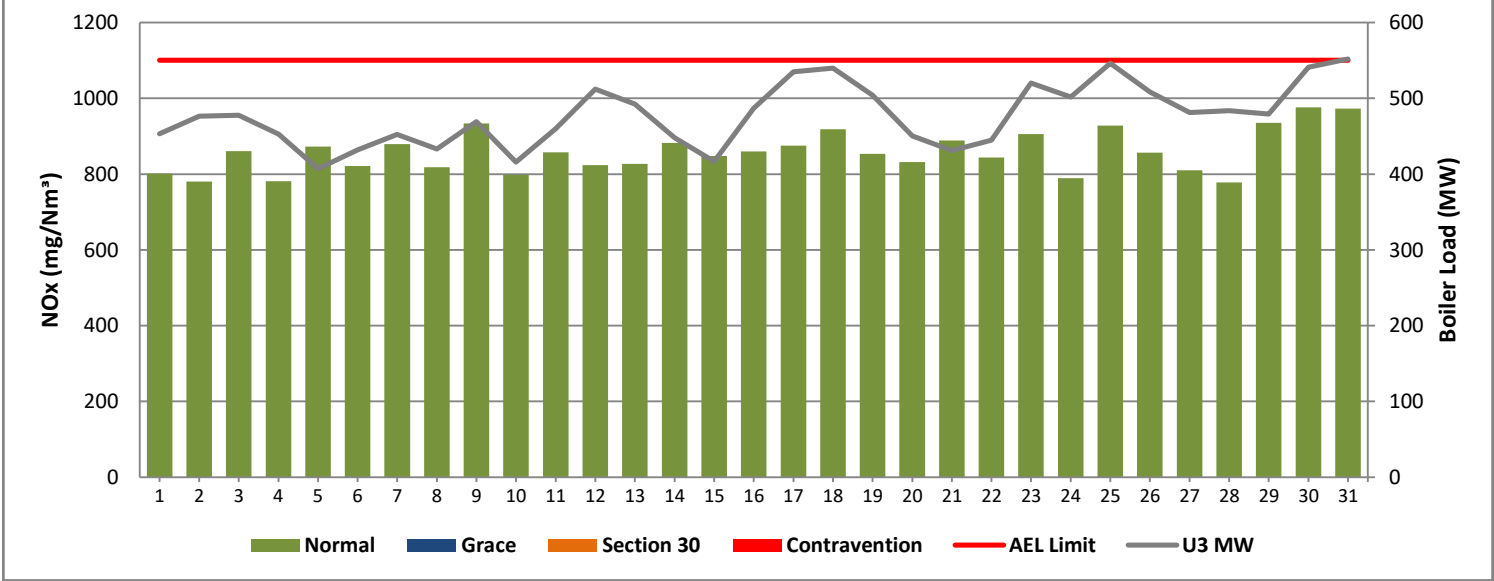


Figure 16: Lethabo Unit 4 NOx Emissions - October 2023

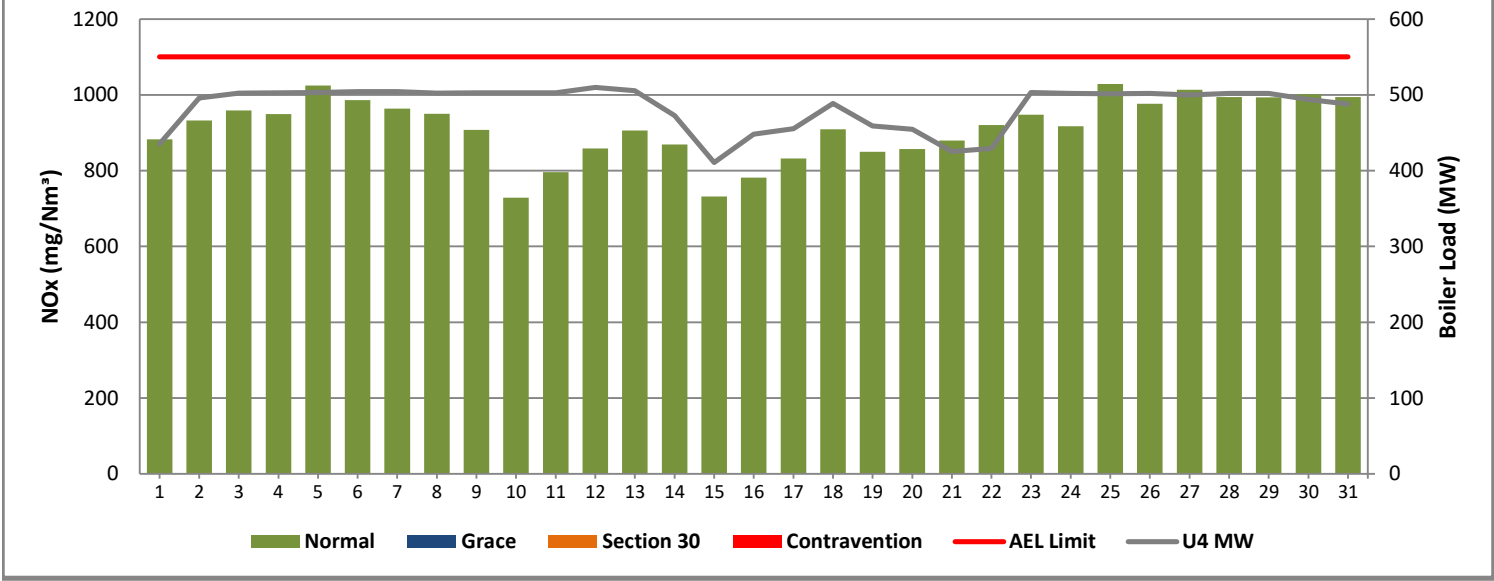


Figure 17: Lethabo Unit 5 NOx Emissions - October 2023

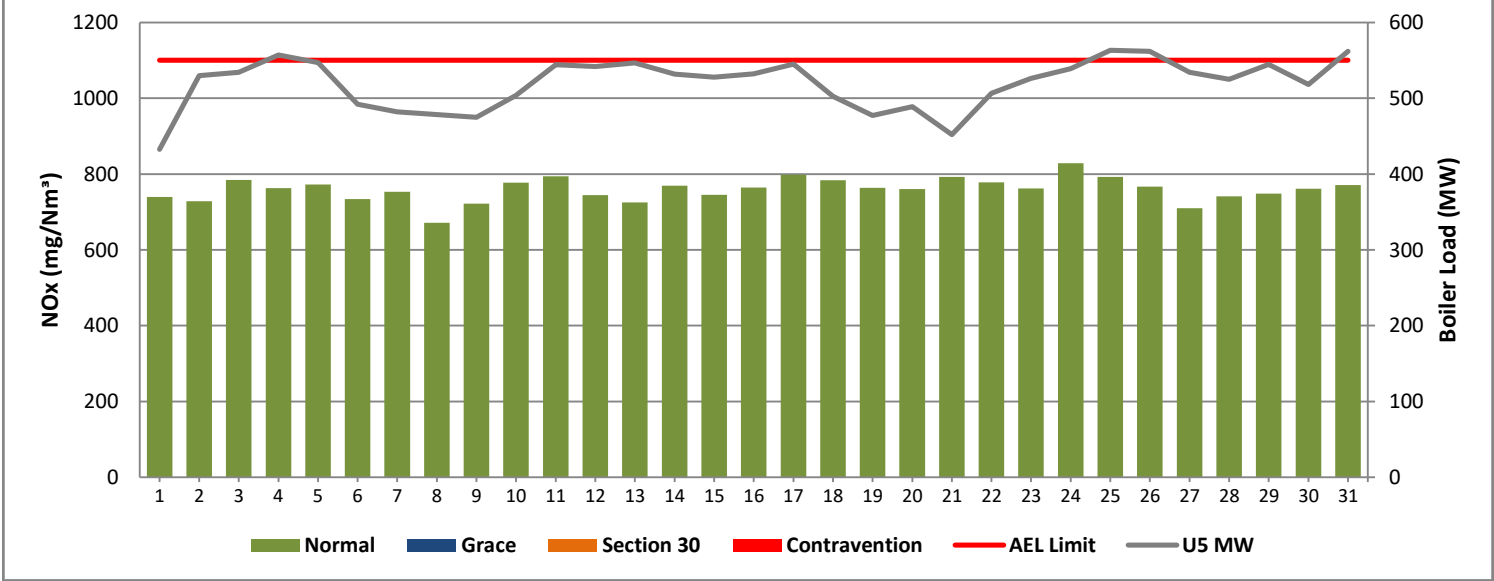
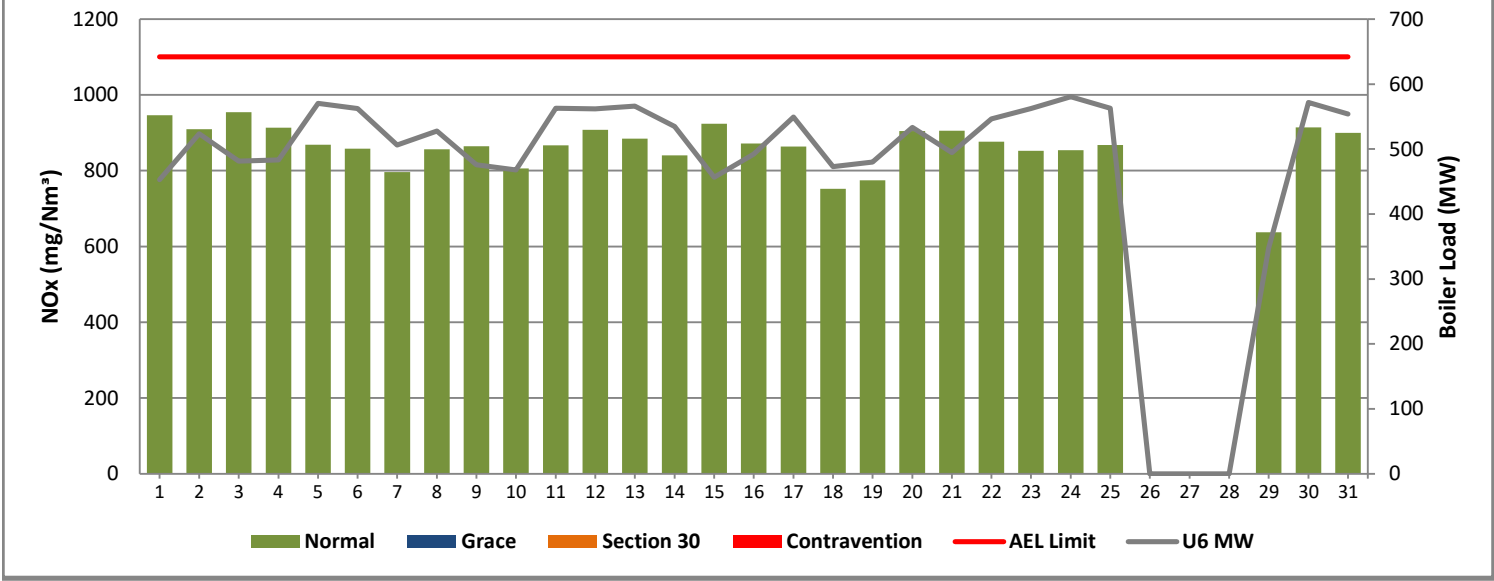


Figure 18: Lethabo Unit 6 NOx Emissions - October 2023



7 SHUT DOWN AND LIGHT UP INFORMATION

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

Unit No.1								
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.2								
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.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								
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.6	<i>Boiler tube leak repairs</i>							
Breaker Open (BO)	10:31 PM	2023/10/25						
Draught Group (DG) Shut Down (SD)	12:16 PM	2023/10/26						
BO to DG SD (duration)	00:13:45	DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time	12:16 PM	2023/10/29						
Synch. to Grid (or BC)	9:24 PM	2023/10/29						
Fires in to BC (duration)	00:09:08	DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)	8:00 AM	2023/11/01						
Emissions below limit from BC (duration)	02:10:36	DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM

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

8. MAINTENANCE

Unit 1				
Beginning of	2023/10/15 00:00			
Reason for Maintenance	LHI Precip casing repairs			
End (Time):	2023/10/15 00:29			
Duration	0:29:00			

Unit 2				
Beginning of	2023/10/09 00:00:00	2023/10/13 01:00:00		
Reason for Maintenance	RHI Precip casing repairs	LHI Precip casing repairs		
End (Time):	2023/10/09 23:50:00	2023/10/16 00:00:00		
Duration	23:50:00	71:00:00		

Unit 3				
Beginning of	2023/10/28 15:31:00	2023/10/29 02:36	2023/10/11 01:00	
Reason for Maintenance	LHO Precip casing repairs	LHI Precip casing repairs	LHO Precip casing	
End (Time):	2023/10/28 21:40:00	2023/10/30 00:39	2023/10/11 23:10	
Duration	6:09:00	22:03:00	22:10:00	

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

Unit 5				
Beginning of	2023/10/08 00:05			
Reason for Maintenance	LHO Precip casing repairs			
End (Time):	2023/10/08 19:40			
Duration	19:35:00			

Unit 6				
Beginning of	2023/10/07 00:20:00			
Reason for Maintenance	RHI Precip casing repairs			
End (Time):	2023/10/07 21:18:00			
Duration	20:58:00			

9. GENERAL

Unit 2 Monitor Reliability

07/10/2023: PM Monitor Reliability low (79.2%) due to monitors reading maximum.

Unit 2 Velocity Monitor Reliability

31/10/2023: Velocity Monitor Reliability low (75%) due to Monitor Offline for a period

CO2 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 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.

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
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
Aug-23	0.21	0.60	0.63	0.42	0.42	0.50	0.46
Sep-23	0.26	0.28	0.46	0.41	0.33	0.51	0.37
Oct-23	0.27	0.67	0.68	0.44	0.37	0.42	0.47

ADDENDUM TO MONTHLY EMISSIONS REPORT

12. DAILY EMISSIONS FIGURES

Final Dust Concentration (mg/Nm³)

Date	U1	U2	U3	U4	U5	U6	Limit
01-Oct	31	76	56	71	39	78	100
02-Oct	87	55	54	66	62	156	100
03-Oct	30	234	129	66	91	130	100
04-Oct	40	83	95	75	99	47	100
05-Oct	54	339	226	89	97	73	100
06-Oct	55	91	67	74	192	72	100
07-Oct	42	386	101	61	46	247	100
08-Oct	44	102	83	71	222	56	100
09-Oct	97	320	189	58	30	58	100
10-Oct	55	35	78	60	34	57	100
11-Oct	41	58	178	60	45	78	100
12-Oct	45	55	77	59	42	74	100
13-Oct	44	141	79	57	90	68	100
14-Oct	37	58	78	50	33	103	100
15-Oct	32	58	72	48	37	59	100
16-Oct	83	47	162	46	39	67	100
17-Oct	32	56	93	37	29	66	100
18-Oct	33	57	180	60	27	54	100
19-Oct	30	45	83	60	26	56	100
20-Oct	30	29	71	50	204	63	100
21-Oct	32	41	64	52	20	94	100
22-Oct	26	44	77	61	33	82	100
23-Oct	85	42	108	72	36	70	100
24-Oct	32	231	89	88	53	79	100
25-Oct	37	75	290	93	62	96	100
26-Oct	41	78	470	219	64	OFF	100
27-Oct	43	85	86	75	120	OFF	100
28-Oct	34	66	359	77	50	OFF	100
29-Oct	30	64	159	59	42	OFF	100
30-Oct	72	46	67	46	35	90	100
31-Oct	34	98	64	60	35	90	100

ADDENDUM TO MONTHLY EMISSIONS REPORT

Final SOx Concentration (mg/Nm³)

Date	U1	U2	U3	U4	U5	U6	Limit
01-Oct	1671	1814	1853	1680	1751	1902	3500
02-Oct	1527	1634	1694	1572	1686	1733	3500
03-Oct	1599	1732	1685	1563	1822	1903	3500
04-Oct	1579	1660	1615	1555	1748	1770	3500
05-Oct	1582	1684	1773	1631	1785	1867	3500
06-Oct	1606	1673	1748	1608	1761	1846	3500
07-Oct	1660	1763	1826	1648	1864	1977	3500
08-Oct	1666	1798	1773	1687	1809	1963	3500
09-Oct	1645	1784	1819	1702	1810	1970	3500
10-Oct	1617	1708	1691	1687	1783	1876	3500
11-Oct	1725	1820	1950	1767	1853	2050	3500
12-Oct	1740	1767	1843	1701	1890	1970	3500
13-Oct	1605	1684	1725	1619	1795	1839	3500
14-Oct	1565	1660	1705	1602	1762	1839	3500
15-Oct	1556	1635	1709	1603	1726	1875	3500
16-Oct	1605	1666	1707	1574	1732	1851	3500
17-Oct	1740	1765	1864	1688	1748	1876	3500
18-Oct	1726	1752	1793	1654	1836	1940	3500
19-Oct	1638	1715	1766	1580	1779	1846	3500
20-Oct	1686	1722	1683	1568	1768	1786	3500
21-Oct	1674	1790	1736	1593	1784	1922	3500
22-Oct	1733	1870	1843	1634	1820	1937	3500
23-Oct	1645	1795	1921	1507	1750	1771	3500
24-Oct	1600	1781	1814	1510	1756	1810	3500
25-Oct	1653	1778	1819	1569	1799	1976	3500
26-Oct	1690	1821	1867	1614	1837	OFF	3500
27-Oct	1652	1826	1779	1578	1822	OFF	3500
28-Oct	1659	1879	1836	1645	1839	OFF	3500
29-Oct	1651	1792	1873	1695	1849	2304	3500
30-Oct	1626	1765	1990	1679	1834	1914	3500
31-Oct	1670	1768	2036	1715	1846	1977	3500

ADDENDUM TO MONTHLY EMISSIONS REPORT

Final NOx Concentration (mg/Nm³)

Date	U1	U2	U3	U4	U5	U6	Limit
01-Oct	931	772	801	883	740	946	1100
02-Oct	900	765	780	932	728	909	1100
03-Oct	930	788	861	959	785	954	1100
04-Oct	909	737	781	949	763	914	1100
05-Oct	882	763	873	1025	773	868	1100
06-Oct	907	748	821	986	734	858	1100
07-Oct	869	757	879	963	754	796	1100
08-Oct	845	761	818	950	671	856	1100
09-Oct	894	776	933	908	722	864	1100
10-Oct	907	791	798	729	777	806	1100
11-Oct	897	775	858	796	794	867	1100
12-Oct	869	770	824	859	744	908	1100
13-Oct	845	769	827	906	725	885	1100
14-Oct	966	594	882	869	769	841	1100
15-Oct	953	646	848	732	745	924	1100
16-Oct	909	783	860	782	764	872	1100
17-Oct	867	759	875	832	798	864	1100
18-Oct	843	773	918	910	784	752	1100
19-Oct	894	734	853	850	764	775	1100
20-Oct	908	620	831	857	761	904	1100
21-Oct	962	637	889	879	793	905	1100
22-Oct	875	692	844	921	778	877	1100
23-Oct	930	706	906	948	762	853	1100
24-Oct	901	687	789	918	828	854	1100
25-Oct	893	778	928	1029	792	867	1100
26-Oct	871	794	857	977	767	OFF	1100
27-Oct	840	802	810	1014	710	OFF	1100
28-Oct	868	745	778	995	741	OFF	1100
29-Oct	966	793	935	993	748	638	1100
30-Oct	955	794	976	1001	761	915	1100
31-Oct	988	819	973	995	771	900	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
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
Aug-23	100.00%	0.0	100.00%	0.0	98.46%	1.9	100.00%	0.0	99.23%	1.0	99.12%	1.1
Sep-23	99.17%	1.0	100.00%	0.0	98.51%	1.8	100.00%	0.0	98.34%	2.0	99.17%	1.0
Oct-23	99.98%	0.0	96.81%	4.0	98.31%	2.1	100.00%	0.0	99.34%	0.8	99.30%	0.9

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
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
Aug-23	90.05%	3.1	93.82%	1.9	100.00%	0.0	0.00%	31.0	91.52%	2.6	100.00%	0.0
Sep-23	100.00%	0.0	98.19%	0.5	98.75%	0.4	99.72%	0.1	99.58%	0.1	95.83%	1.3
Oct-23	99.73%	0.1	100.00%	0.0	96.91%	1.0	100.00%	0.0	100.00%	0.0	97.27%	0.8

ADDENDUM TO MONTHLY EMISSIONS REPORT

Particulate Emission Monitors

Availability						
	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
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%
Aug-23	99.73%	92.28%	99.22%	98.85%	97.85%	98.79%
Sep-23	99.44%	98.61%	98.89%	99.03%	97.99%	97.98%
Oct-23	100.00%	96.51%	99.33%	99.73%	98.66%	99.69%

Gaseous Emission Monitors

Availability												
	Unit 1		Unit 2		Unit 3		Unit 4		Unit 5		Unit 6	
Month	SO _x	NO _x	SO _x	NO _x	SO _x	NO _x	SO _x	NO _x	SO _x	NO _x	SO _x	NO _x
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%
Aug-23	100.00%	100.00%	99.83%	99.83%	100.00%	100.00%	99.86%	100.00%	100.00%	100.00%	100.00%	100.00%
Sep-23	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	99.85%	99.85%
Oct-23	99.46%	99.46%	99.33%	99.46%	99.19%	99.19%	99.46%	99.46%	99.33%	99.46%	99.40%	99.40%

Oxygen Monitor Availability						
	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
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%
Aug-23	100.00%	99.83%	99.87%	100.00%	100.00%	99.60%
Sep-23	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Oct-23	99.33%	99.06%	99.19%	99.33%	99.33%	99.40%

ADDENDUM TO MONTHLY EMISSIONS REPORT

14. EFFICIENCY

ESP Efficiency (%)						
	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
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%
Aug-23	99.912%	99.715%	99.715%	99.816%	99.818%	99.770%
Sep-23	99.895%	99.867%	99.793%	99.825%	99.860%	99.766%
Oct-23	99.904%	99.728%	99.730%	99.825%	99.855%	99.829%

15. REMARKS

UNIT	MWLOSS	REASON	ACTUALSTARTDATE	ACTUALENDDATE
1	70	LH Inner precip casing repairs	2023/10/15 00:00:00	2023/10/15 00:29:00
2	48	EF: High stack emissions	2023/10/06 08:33:00	2023/10/06 13:43:00
2	150	high stack emissions	2023/10/06 13:43:00	2023/10/06 16:46:00
2	48	high stack emissions	2023/10/06 16:46:00	2023/10/06 19:32:00
2	93	High stack emissions	2023/10/06 19:32:00	2023/10/07 05:24:00
2	100	EF: High stack emissions	2023/10/07 09:20:00	2023/10/07 14:50:00
2	148	High stack emissions.	2023/10/07 14:50:00	2023/10/07 16:55:00
2	93	High stack emissions.	2023/10/08 03:32:00	2023/10/08 10:36:00
2	178	EF: High stack emissions	2023/10/08 10:36:00	2023/10/09 04:26:00
2	95	High stack emissions.	2023/10/09 04:26:00	2023/10/09 08:52:00
2	195	High stack emissions	2023/10/09 08:52:00	2023/10/09 16:35:00
2	100	High stack emissions	2023/10/09 16:35:00	2023/10/09 23:24:00
2	193	High stack emissions	2023/10/09 23:24:00	2023/10/10 09:03:00
2	100	High stack emissions	2023/10/10 09:03:00	2023/10/10 16:59:00
3	34	EF: High stack emissions	2023/10/04 12:25:00	2023/10/04 19:25:00
3	82	High stack emissions	2023/10/04 19:25:00	2023/10/05 01:35:00
3	81	High stack emissions	2023/10/05 02:40:00	2023/10/06 16:51:00
3	94	High stack emissions.	2023/10/07 09:09:00	2023/10/07 16:49:00
3	97	High stack emissions.	2023/10/07 19:57:00	2023/10/08 17:00:00
3	95	High stack emissions.	2023/10/09 09:06:00	2023/10/09 16:41:00
3	99	AM: High stack emissions.	2023/10/09 23:28:00	2023/10/10 16:59:00
3	50	High stack emissions.	2023/10/10 16:59:00	2023/10/11 04:47:00
3	145	AM: High stack emissions	2023/10/23 21:01:00	2023/10/24 04:16:00
3	54	EF: High stack emissions	2023/10/24 11:37:00	2023/10/24 13:34:00
3	102	EF: High stack emissions	2023/10/24 13:34:00	2023/10/24 16:31:00
3	60	EF: High stack emissions	2023/10/24 16:31:00	2023/10/25 02:49:00
3	110	High stack emissions.	2023/10/26 09:44:00	2023/10/26 10:52:00
3	61	High emissions.	2023/10/26 10:52:00	2023/10/26 12:05:00
3	100	High stack emissions	2023/10/26 21:55:00	2023/10/27 04:18:00
3	27	EF: High stack emissions	2023/10/27 21:31:00	2023/10/27 22:54:00
3	48	Boiler Furnace pressure high due to LHO casing on PTW	2023/10/28 15:31:00	2023/10/28 21:40:00
3	20	Boiler Furnace pressure high due to LHI casing on PTW	2023/10/29 02:36:00	2023/10/30 00:39:00
5	88	High stack emissions	2023/10/03 19:34:00	2023/10/04 00:17:00
5	69	High stack emissions	2023/10/05 13:22:00	2023/10/05 16:42:00
5	68	High stack emissions	2023/10/05 19:41:00	2023/10/06 00:00:00
6	200	AM: SO3 plant standing	2023/10/01 22:18:00	2023/10/02 04:53:00
6	200	EF: High stack emissions	2023/10/03 09:35:00	2023/10/03 10:50:00
6	100	EF: High stack emissions	2023/10/04 08:28:00	2023/10/04 17:15:00
6	100	RHI precip casing repairs.	2023/10/07 00:20:00	2023/10/07 21:18:00
6	593	Boiler tube leak repairs	2023/10/25 22:31:00	2023/10/29 21:24:00
6	297	System Generated Ramp Event for Event id : 1870455	2023/10/29 21:24:00	2023/10/30 00:24:00
6	110	High stack emissions	2023/10/31 00:11:00	2023/10/31 04:57:00
6	110	High stack emissions	2023/10/31 15:04:00	2023/10/31 17:12:00
6	60	High stack emissions	2023/10/31 20:42:00	2023/10/31 23:59:59

PM Exceedances		
U2.	ESP Poor Performance and Manual Rapping	03-Oct
U2.	ESP Poor Performance and manual rapping	05-Oct
U2.	ESP Poor Performance and Manual Rapping	07-Oct
U2.	ESP Poor Performance	08-Oct
U2.	RHI Casing Repair	09-Oct
U2.	LHI casings on permit	13-Oct
U2.	DHP challenges Manual Rapping on 3 casings	24-Oct
U3.	ESP Poor Performance and Manual Rapping	03-Oct
U3.	ESP Poor Performance and Manual Rapping	05-Oct
U3.	ESP Poor Performance	07-Oct
U3.	ESP Poor Performance and Manual Rapping	09-Oct
U3.	LHO Casing Outage	11-Oct
U3.	Manual Rapping and Poor ESP performance	16-Oct
U3.	Manual Rapping	18-Oct
U3.	ESP Poor Performance LHI casing is not performing	23-Oct
U3.	Manual rapping was done yesterday SO3 plant: BPE and C&I/BAUX assisted and the purge valve actuator was removed and the plant was reinstated, however it tripped this morning around 01:00 and is ramping up to temperatures again	25-Oct
U3.	SO3 plant is back on line and dosing since last night @ 18:00	26-Oct
U3.	ESP Casing Outage	28-Oct
U3.	ESP Casing Outage	29-Oct
U4.	ESP Manual Rapping	26-Oct
U5.	ESP Poor Performance and Manual Rapping	06-Oct
U5.	LHO Casing Outage	08-Oct
U5.	Manual Rapping	20-Oct
U5.	ESP Manual Rapping	27-Oct
U6.	ESP Poor Performance and Manual Rapping	02-Oct
U6.	ESP Poor Performance and Manual Rapping SO3 plant tripped multiple times due to comms fault.	03-Oct
U6.	RHI Casing Outage	07-Oct
U6.	Manual Rapping	14-Oct
U6.	Unit Shut Down for Boiler Tube Leak	26-Oct
U6.	Unit Light Up The unit synchronised on 2023/10/29 @ 21:24, therefore the emissions need to be below the limit on 2023/11/01 @ 21:24 and remain below the limit until 2023/11/02 @23:59	29-Oct