

Mr. Chakane Sibaya Air Quality Officer Fezile Dabi District Municipality P.O Box 10 Sasolburg 1947

Ref: LRP03PLA000 \_0223/20210115

Date: 26 January 2021

**Enquiries:** W de Klerk

Tel +27 16 457 5308

Dear Mr. Sibaya

#### **LETHABO POWER STATION EMISSION MONTHLY REPORT FOR NOVEMBER 2020**

Please find attached Lethabo Power Station emission report for the month of November 2020.

Also attached ambient air quality monitoring report, complaints register and the fugitive dust fallout monitoring report for November 2020.

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

Yours sincerely

Karabo Rakgolela

**GENERAL MANAGER** 

<b>₩</b>	Eskom		Report			
Report name:	Lethabo Pow November 20		ation Reference number:			
	Emission Rep	port	Document T	ype:	Report	
			Area of Appl	icability:	Environment	
			Report Date	:	November 2020	
			Classification	n:	Controlled Disclosure	
Signature	es:					
Compile	ed by:	Verified by	:	Reviewed	by:	
P Parag System			W de Klerk Environmental Officer		o ager	
Date: 20	021/01/20	Date: 2021/0	01/20	<b>Date:</b> 21/0	1/2021	
Reviewe C Govino PE Mana	den	Reviewed b  L Nel  C&I Manage	pfh/	Reviewed M Hariram Environm	Tan baw	
Date:	2021/01/21	<b>Date:</b> 202	1-01-22	Date: 202	1-01-22	
H Sewsi	sulc.					

Date: .....2021/01/26



# LETHABO POWER STATION MONTHLY EMISSIONS REPORT

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



# 1. RAW MATERIALS AND PRODUCTS

Raw Materials and	Raw Material Type	Units	Maximum Permitted Consumption Rate	Consumption Rate Nov-2020
Products	Coal	Tons	2 000 000	1 187 811
	Fuel Oil	Tons	1 700	550.93
	Product / By-Product Name	Units	Maximum Production Capacity Permitted	Production Rate Nov- 2020
Production Rates	· ·	<b>Units</b> GWh		
Production Rates	Name		Capacity Permitted	2020

# 2. ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.55 (Standard)	0.610
Ash Content	%	36.89 (Standard)	40.380

<sup>\*</sup>Please note the "standard" is not necessary a limit, but merely a optimum indication, it will fluctuate as the coal quality changes.

# 3. EMISSION LIMITS (mg/Nm³)

Associated Unit/Stack	РМ	SOx	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. ABATEMET TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Nov-2020
Unit 1	Electrostatic Precipitator (ESP)	99.84%
Unit 2	Electrostatic Precipitator (ESP)	99.79%
Unit 3	Electrostatic Precipitator (ESP)	Unit Off-line
Unit 4	Electrostatic Precipitator (ESP)	99.83%
Unit 5	Electrostatic Precipitator (ESP)	99.87%
Unit 6	Electrostatic Precipitator (ESP)	99.82%

# 5. MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	PM SO₂		CO <sub>2</sub>	
Unit 1	94.0	97.7	97.7	97.7	
Unit 2	94.6	97.6	97.8	97.6	
Unit 3					
Unit 4	97.2	94.1	94.1	94.1	
Unit 5	97.3	94.5	94.5	94.5	
Unit 6	99.7	94.6	94.6	94.6	

# **6. EMISSION PERFORMANCE**

Table 6.1: Monthly tonnages for the month of November 2020

		0		
Associated Unit/Stack	PM (tons)	SO <sub>2</sub> (tons)	NO <sub>x</sub> (tons)	
Unit 1	161.1	3 462	1 578	
Unit 2	188.8	4 199	1 660	
Unit 3	0.0	0	0	
Unit 4	132.3	3 385	1 729	
Unit 5	111.2	2 965	1 480	
Unit 6	142.6	3 280	1 490	
SUM	736.0	17 291.2	7 936.8	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contraven tion	Total Exceedance	Average PM (mg/Nm³)
Unit 1	22	7	0	0	7	95.2
Unit 2	24	6	0	0	6	84.1
Unit 3	0	0	0	0	0	
Unit 4	21	4	0	0	4	79.9
Unit 5	26	1	0	0	1	70.8
Unit 6	25	2	0	0	2	88.2
SUM	67	17	0	0	17	

Table 6.3: Operating days in compliance to SOx AEL Limit - November 2020

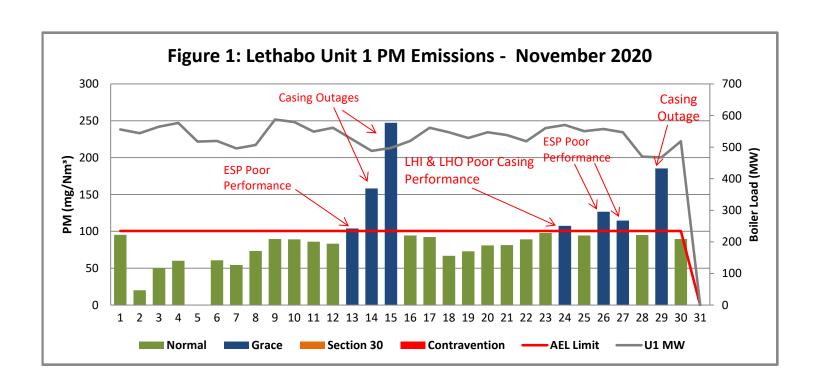
Associated Unit/Stack	Normal	Grace	Section 30	Contraven tion	Total Exceedance	Average SOx (mg/Nm³)
Unit 1	30	0	0	0	0	1 966.7
Unit 2	30	0	0	0	0	1 895.3
Unit 3	0	0	0	0	0	
Unit 4	26	0	0	0	0	1 811.0
Unit 5	28	0	0	0	0	1 825.8
Unit 6	28	0	0	0	0	1 962.6
SUM	86	0	0	0	0	

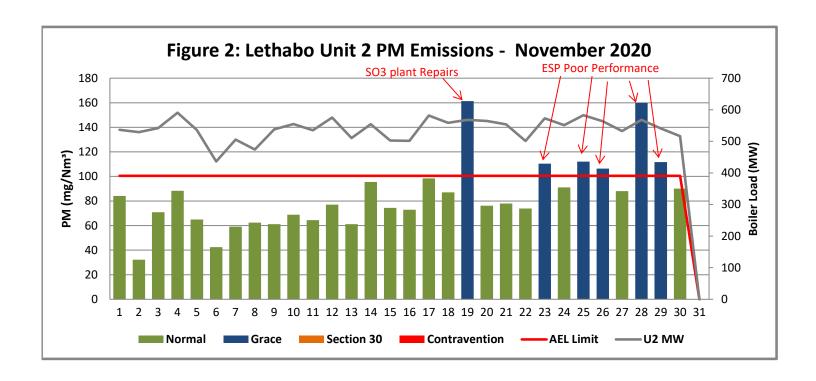
Table 6.4: Operating days in compliance to NOx AEL Limit - November 2020

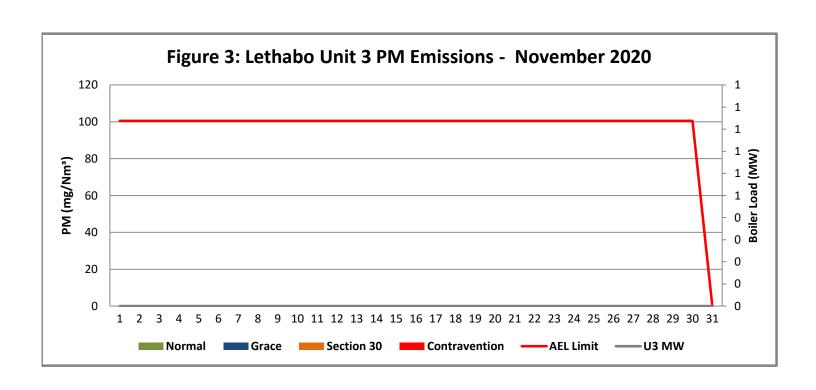
Associated Unit/Stack	Normal	Grace	Section 30	Contraven tion	Total Exceedance	Average NOx (mg/Nm³)
Unit 1	30	0	0	0	0	896.9
Unit 2	30	0	0	0	0	747.3
Unit 3	0	0	0	0	0	
Unit 4	26	0	0	0	0	919.6
Unit 5	28	0	0	0	0	907.3
Unit 6	28	0	0	0	0	882.4
SUM	86	0	0	0	0	

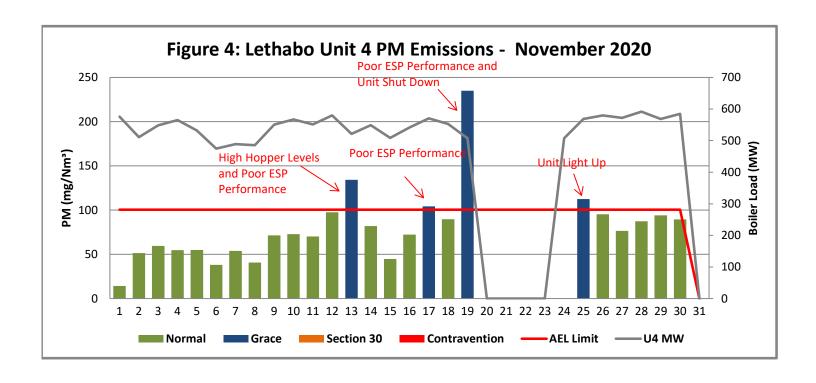
Table 6.5: Legend Description

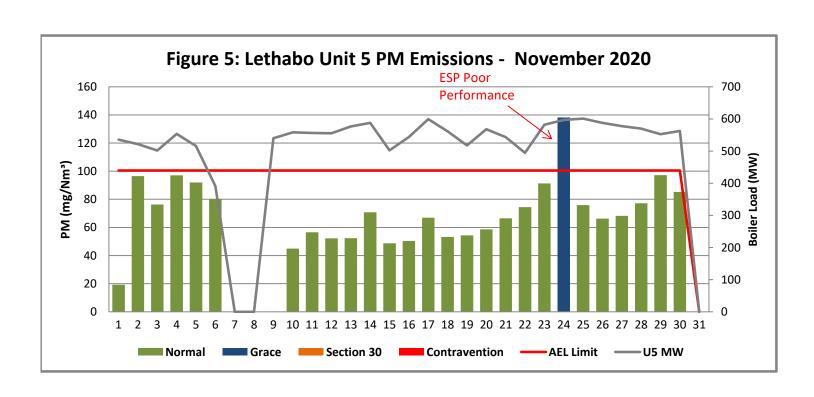
Condition	Colour	escription			
Normal		Emissions below Emission Limit Value (ELV)			
Grace		Emissions above the ELV during grace period			
Section 30		Emissions above ELV during a NEMA S30 incident			
Contravention		Emissions above ELV but outside grace or S30 incident conditions			

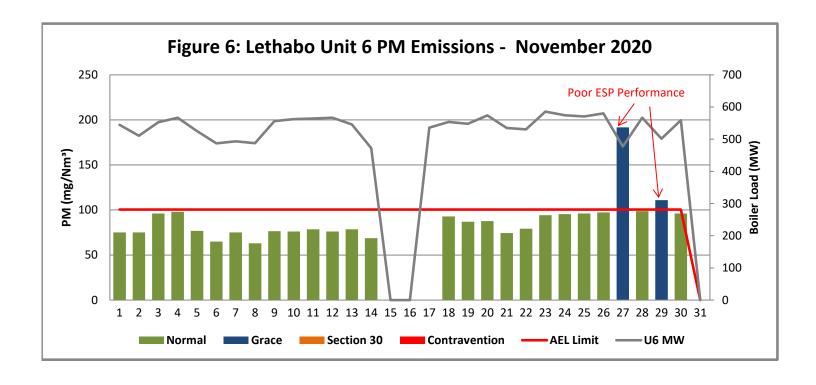


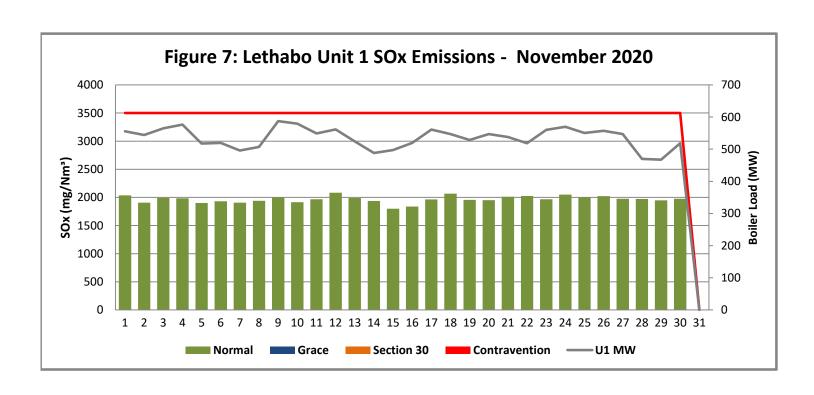


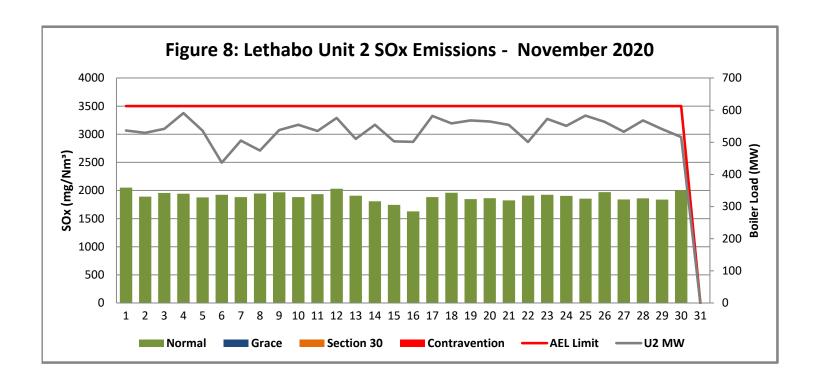


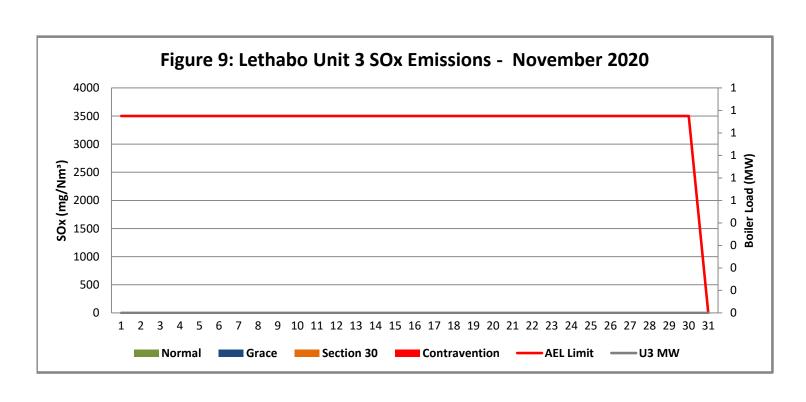


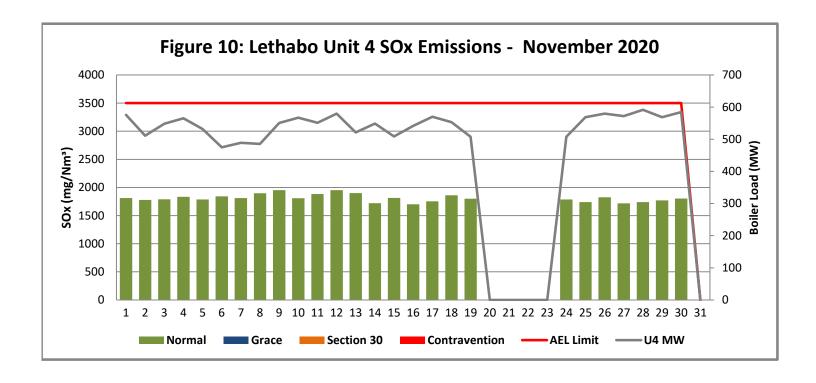


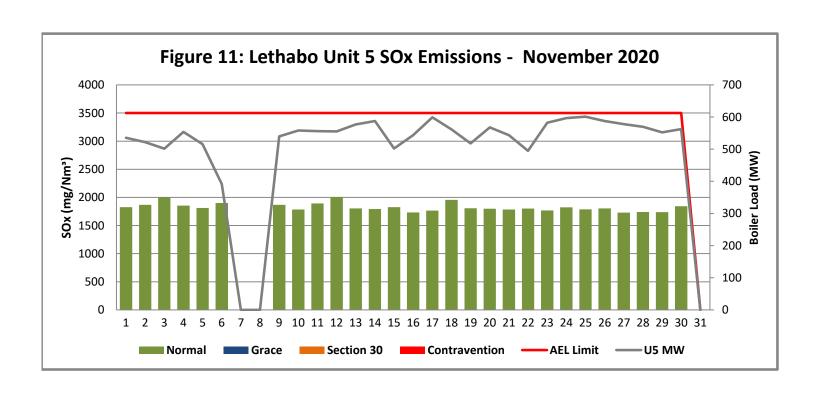


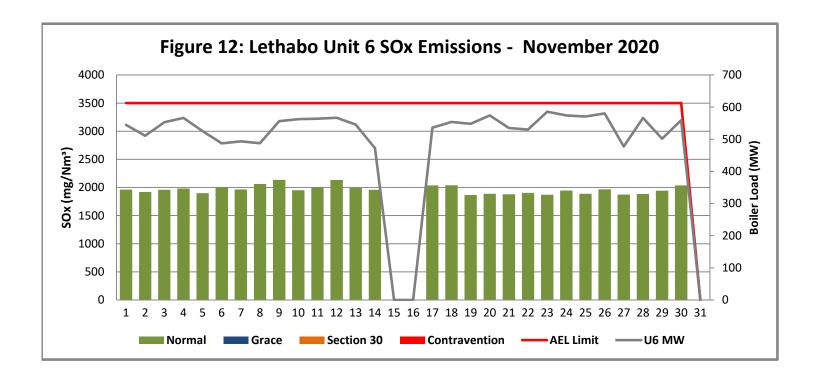


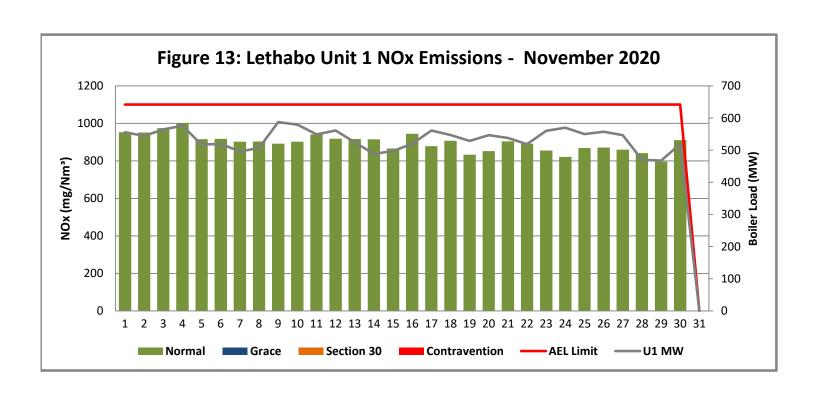


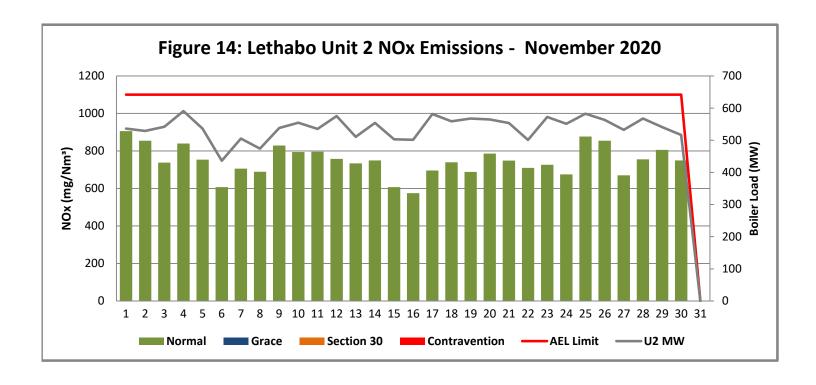


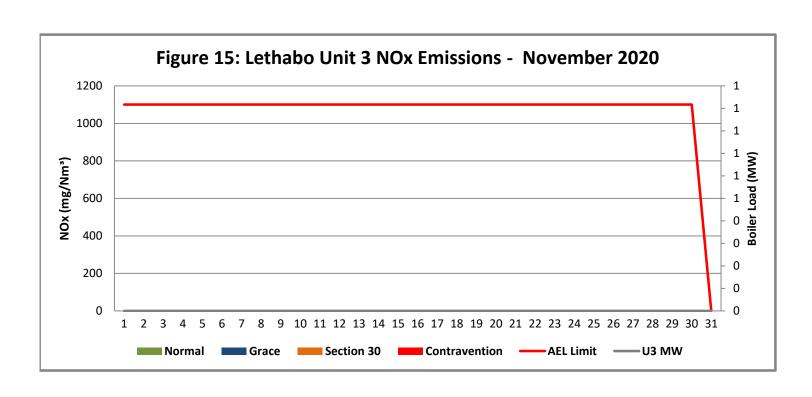


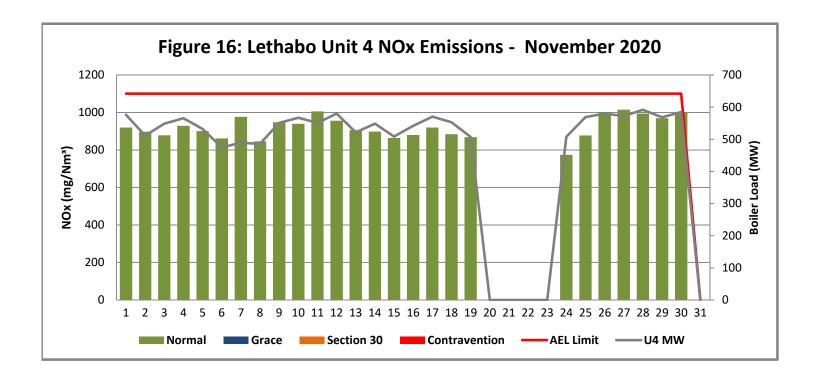


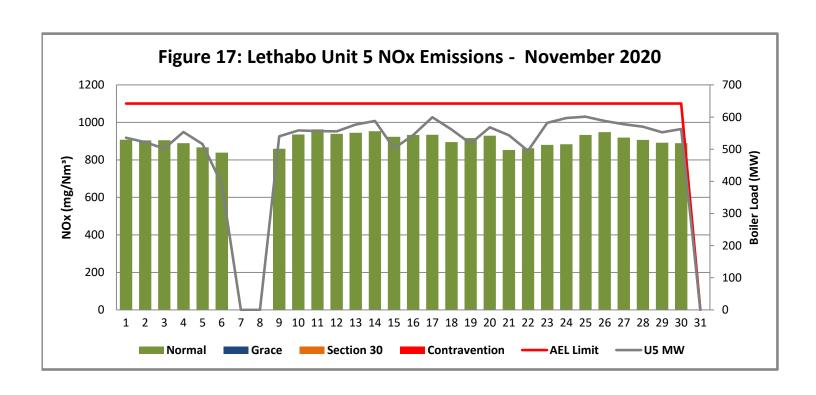


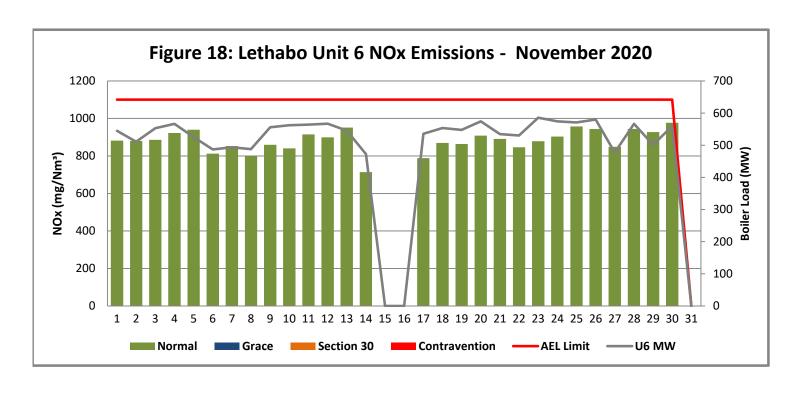












# 7. SHUT DOWN AND LIGHT UP INFORMATION

Table 7.1: PM Start-up information for the month of November 2020

Unit No.1	Unit trip due to boiler drum level low		•						
Breaker Open (BO)	9:25 PM	2020/11/04							
Draught Group (DG) Shut Down (SD)	DG did not trip or SD	DG did not trip or SD							
BO to DG SD (duration)	n/a	DD:HH:MM							
Fires in time									
Synch. to Grid (or BC)									
Fires in to BC (duration)		DD:HH:MM							
Emissions below limit from BC (end date)									
Emissions below limit from BC (duration)		DD:HH:MM							

Unit No.2						
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.3						
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.4	boiler l	ped due to evel low ection		harge valve d leak		
Breaker Open (BO)	4:20 PM	2020/11/13	3:40 PM	2020/11/19		
Draught Group (DG) Shut Down (SD)	DG did not trip or SD	DG did not trip or SD	4:10 PM	2020/11/19		
BO to DG SD (duration)	n/a	DD:HH:MM	00:00:30	DD:HH:MM		
Fires in time			11:05 PM	2020/11/23		
Synch. to Grid (or BC)			8:55 AM	2020/11/24		
Fires in to BC (duration)		DD:HH:MM	00:09:50	DD:HH:MM		

Emissions below limit from BC (end date)		1:00 PM	2020/11/26		
Emissions below limit from BC (duration)	DD:HH:MM	02:04:05	DD:HH:MM		

Unit No.5		AN Vane ault repairs			
Breaker Open (BO)	12:20 PM	2020/11/06			
Draught Group (DG) Shut Down (SD)	12:20 AM	2020/11/07			
BO to DG SD (duration)	00:12:00	DD:HH:MM			
Fires in time	3:00 AM	2020/11/09			
Synch. to Grid (or BC)	5:05 AM	2020/11/09			
Fires in to BC (duration)	00:02:05	DD:HH:MM			
Emissions below limit from BC (end date)	2:00 AM	2020/11/10			
Emissions below limit from BC (duration)	00:20:55	DD:HH:MM			

Unit No.6	Turbine manually tripped due to steam leak under IP turbine						
Breaker Open (BO)							
Draught Group (DG) Shut Down (SD)							
BO to DG SD (duration)		DD:HH:MM					
Fires in time	12:21 PM	2020/04/03					
Synch. to Grid (or BC)	12:21 PM	2020/04/03					
Fires in to BC (duration)		DD:HH:MM					
Emissions below limit from BC (end date)	12:00 AM	2020/04/05					
Emissions below limit from BC (duration)	01:11:39	DD:HH:MM					

<sup>7.2:</sup> Point Source emissions released during start-up (fires-in) and Shut-down (SD) for the month of November 2020 in mg/Nm³

# 8. MAINTENANCE

2020/11/14 00:02	2020/11/15 00:01	2020/11/20 00:27	
22.27.00	18.32.00	21.32.00	
T	T		
2020/11/06 11:59:00	2020/11/14 00:00:00		
2020/11/00 11.30.00	2020/11/14 00.00.00		
Casing Test	Casing Test		
2020/11/06 17:14:00	2020/11/14 04:00:00		
5:16:00	4:00:00		
2020/11/27 00:12:00			
LHO Casing Repairs			
2020/11/27 17:44:00			
17:32:00			
	2020/11/06 17:14:00 5:16:00 2020/11/27 00:12:00 LHO Casing Repairs 2020/11/27 17:44:00	RHO precip casing 2020/11/14 22:30 2020/11/15 18:33 22:27:00 18:32:00  2020/11/06 11:58:00 2020/11/14 00:00:00 Casing Test Casing Test 2020/11/06 17:14:00 2020/11/14 04:00:00 5:16:00 4:00:00  2020/11/27 00:12:00 LHO Casing Repairs 2020/11/27 17:44:00	RHO precip casing 2020/11/14 22:30 2020/11/15 18:33 2020/11/29 21:59 22:27:00 18:32:00 21:32:00 21:32:00 2020/11/06 11:58:00 2020/11/14 00:00:00 Casing Test Casing Test 2020/11/06 17:14:00 2020/11/14 04:00:00 5:16:00 4:00:00 2020/11/14 04:00:00 Casing Test 2020/11/06 17:14:00 2020/11/14 04:00:00 Casing Test 2020/11/06 17:14:00 2020/11/14 04:00:00 Casing Test 2020/11/27 00:12:00 Casing Test 2020/11/27 17:44:00 Casing Repairs 2020/11/27 17:44:00 Casing Repairs 2020/11/27 17:44:00

#### 9. GENERAL

#### Unit 5:

It is noted that the moisture curve was incorrect and inflated during the time of the correlation. It was determined that an average of 6.4% ( $H_2O$ ) be used from the point of curve expiry until the test is redone. The order has already been place to redo this correlation and we are awaiting completion of the Stack Lift Project in order to carry out the correlation test.

Power trip 31/10/2020 - 02/11/2020 affected the monitors Units 1-6. Data was deleted for the following periods Particulates:

Unit 1: 2020-10-31 19:54 to 2020-11-02 12:06

Unit 2: 2020-10-31 19:54 to 2020-11-02 12:06

Unit 3: Off load

Unit 4: 2020-10-31 19:54 to 2020-11-01 17:20 Unit 5: 2020-10-31 19:54 to 2020-11-01 17:20

Unit 6: Not affected

#### Gases:

Unit 1: Not affected Unit 2: Not affected

Unit 3: Not affected

Unit 4: 2020-10-31 19:54 to 2020-11-02 10:18 Unit 5: 2020-10-31 19:54 to 2020-11-02 10:18

Unit 6: 2020-10-31 19:54 to 2020-11-02 10:18

Gaseous Data for Unit 1-6 was lost between 08:06 2020-11-07 until 07:33 2020-11-09, the reason was due to the DCS (Distributed Control System) servers that failed and not a fault on the monitors.

Unit 1 and 2 Gaseous monitors was off for a couple of hours on Sunday 15 November due to air supply loss to stack 1, air supply was restored and monitors reading good again the same day. The data was deleted for this period.

Unit 1 and Unit 2 PM Monitors experienced three hours of data loss on Monday 16 November, under investigation.

# 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 Acknowledg- ment	Date DEA Acceptabe	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
DEC '19	0.58	0.48	0.51	OFF	OFF	0.77	0.59
JAN '20	0.42	0.52	0.62	0.25	OFF	0.73	0.49
FEB '20	0.56	0.46	0.67	0.29	0.27	OFF	0.47
MAR '20	0.37	0.58	0.72	0.26	0.33	OFF	0.45
APR '20	0.54	0.36	0.69	0.21	0.18	0.64	0.41
MAY '20	0.83	0.34	0.54	0.20	0.20	0.42	0.38
JUN '20	0.23	0.26	0.29	0.18	0.20	0.48	0.27
JUL '20	0.40	0.49	0.36	0.22	0.21	0.45	0.35
AUG '20	0.31	0.30	0.49	0.26	0.35	0.43	0.35
SEP '20	0.24	0.43	OFF	0.25	0.18	0.32	0.28
OCT '20	0.32	0.54	OFF	0.26	0.36	0.31	0.35
NOV '20	0.42	0.49	OFF	0.40	0.31	0.41	0.41

# 12. DAILY EMISSIONS FIGURES

Final Dust Concentration (mg/Nm³)

	Final Dust Concentration (mg/Nm²)											
	Date	U1	U2	U3	U4	U5	U6	Limit				
	01-Nov	95	84	OFF	14	19	75	100				
	02-Nov	20	32	OFF	51	96	75	100				
	03-Nov	50	71	OFF	60	76	96	100				
	04-Nov	60	88	OFF	55	97	98	100				
	05-Nov	OFF	65	OFF	55	92	77	100				
	06-Nov	61	43	OFF	38	80	65	100				
	07-Nov	54	59	OFF	54	OFF	75	100				
	08-Nov	73	62	OFF	41	OFF	63	100				
	09-Nov	89	61	OFF	71	OFF	77	100				
	10-Nov	89	69	OFF	73	45	76	100				
	11-Nov	86	64	OFF	70	57	79	100				
	12-Nov	83	77	OFF	98	52	76	100				
	13-Nov	104	61	OFF	134	52	79	100				
	14-Nov	158	95	OFF	82	71	69	100				
	15-Nov	247	74	OFF	45	49	OFF	100				
	16-Nov	94	73	OFF	72	50	OFF	100				
	17-Nov	92	98	OFF	104	67	OFF	100				
	18-Nov	67	87	OFF	90	53	93	100				
	19-Nov	73	161	OFF	235	54	87	100				
	20-Nov	81	76	OFF	OFF	59	88	100				
	21-Nov	81	78	OFF	OFF	67	74	100				
	22-Nov	89	74	OFF	OFF	74	79	100				
	23-Nov	98	110	OFF	OFF	91	94	100				
	24-Nov	108	91	OFF	OFF	138	96	100				
	25-Nov	94	112	OFF	112	76	96	100				
	26-Nov	127	106	OFF	95	66	97	100				
	27-Nov	115	88	OFF	77	68	192	100				
	28-Nov	95	160	OFF	87	77	99	100				
	29-Nov	185	112	OFF	94	97	111	100				
	30-Nov	90	90	OFF	90	85	96	100				
EXCEED	ENCES	7.0	6.0	0.0	4.0	1.0	2.0					

Final SOx Concentration (mg/Nm³)

	Date	U1	U2	U3	U4	U5	U6	Limit
	01-Nov	2037	2049	OFF	1811	1826	1963	3500
	02-Nov	1906	1891	OFF	1779	1868	1920	3500
	03-Nov	1991	1958	OFF	1791	2004	1960	3500
	04-Nov	1983	1943	OFF	1833	1854	1982	3500
	05-Nov	1900	1876	OFF	1786	1811	1898	3500
	06-Nov	1931	1922	OFF	1842	1902	2005	3500
	07-Nov	1906	1883	OFF	1811	OFF	1964	3500
	08-Nov	1940	1945	OFF	1896	OFF	2062	3500
	09-Nov	1998	1969	OFF	1954	1867	2136	3500
	10-Nov	1913	1883	OFF	1808	1786	1952	3500
	11-Nov	1968	1935	OFF	1884	1894	2001	3500
	12-Nov	2082	2031	OFF	1953	2007	2134	3500
	13-Nov	1988	1907	OFF	1900	1804	1994	3500
	14-Nov	1936	1807	OFF	1722	1794	1959	3500
	15-Nov	1799	1743	OFF	1813	1826	OFF	3500
	16-Nov	1837	1629	OFF	1700	1734	OFF	3500
	17-Nov	1964	1882	OFF	1753	1766	2038	3500
	18-Nov	2068	1960	OFF	1861	1956	2040	3500
	19-Nov	1956	1845	OFF	1801	1808	1866	3500
	20-Nov	1951	1864	OFF	OFF	1800	1887	3500
	21-Nov	2010	1825	OFF	OFF	1784	1878	3500
	22-Nov	2026	1911	OFF	OFF	1801	1904	3500
	23-Nov	1967	1924	OFF	OFF	1768	1870	3500
	24-Nov	2050	1904	OFF	1786	1825	1946	3500
	25-Nov	1998	1855	OFF	1740	1786	1888	3500
	26-Nov	2023	1971	OFF	1826	1804	1968	3500
	27-Nov	1975	1842	OFF	1719	1729	1872	3500
	28-Nov	1973	1860	OFF	1741	1740	1885	3500
	29-Nov	1949	1838	OFF	1772	1737	1942	3500
	30-Nov	1975	2004	OFF	1804	1842	2037	3500
AVER	AGE	1967	2832	1764	2154	1764	2730	
EXCEED	ENCES	0	0	0	0	0	0	

Final NOx Concentration (mg/Nm³)

	<del> </del>				entration (		110	
	Date	U1	U2	U3	U4	U5	U6	Limit
	01-Nov	953	906	OFF	920	907	882	1100
	02-Nov	952	855	OFF	897	904	880	1100
	03-Nov	974	738	OFF	878	905	886	1100
	04-Nov	1002	840	OFF	928	889	922	1100
	05-Nov	916	753	OFF	901	867	940	1100
	06-Nov	917	607	OFF	862	839	813	1100
	07-Nov	903	706	OFF	977	OFF	853	1100
	08-Nov	903	689	OFF	846	OFF	800	1100
	09-Nov	892	829	OFF	947	859	860	1100
	10-Nov	903	795	OFF	939	936	841	1100
	11-Nov	941	796	OFF	1006	963	915	1100
	12-Nov	918	758	OFF	956	939	900	1100
	13-Nov	917	734	OFF	906	945	951	1100
	14-Nov	915	750	OFF	898	953	714	1100
	15-Nov	866	607	OFF	864	924	OFF	1100
	16-Nov	945	575	OFF	880	933	OFF	1100
	17-Nov	879	696	OFF	919	934	788	1100
	18-Nov	908	740	OFF	884	895	869	1100
	19-Nov	833	688	OFF	869	917	864	1100
	20-Nov	852	786	OFF	OFF	929	909	1100
	21-Nov	904	749	OFF	OFF	853	891	1100
	22-Nov	891	710	OFF	OFF	862	846	1100
	23-Nov	856	726	OFF	OFF	880	879	1100
	24-Nov	821	675	OFF	774	883	904	1100
	25-Nov	869	877	OFF	878	933	958	1100
	26-Nov	871	855	OFF	1002	948	944	1100
	27-Nov	861	670	OFF	1015	919	849	1100
	28-Nov	841	756	OFF	994	907	944	1100
	29-Nov	795	806	OFF	969	891	928	1100
	30-Nov	911	749	OFF	1002	890	977	1100
AVER	AGE	897	747		920	907	882	
EXCEED	ENCES	0	0	0	0	0	0	
								·

# 13. AVAILABILITY

# **ESP** utilisation

						Availa	bility					
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
Dec-19	98.39%	2	100.00%	0	100.00%	0	OFF LOAD	0	OFF LOAD	0	99.19%	1
Jan-20	95.16%	6	99.19%	1	100.00%	0	100.00%	0	OFF LOAD	0	100.00%	0
Feb-20	94.17%	3	100.00%	0	93.33%	4	100.00%	0	100.00%	0	0.00%	OFF LOAD
Mar-20	99.19%	1	98.39%	2	97.58%	3	100.00%	0	100.00%	0	0.00%	OFF LOAD
Apr-20	98.33%	2	95.00%	6	100.00%	0	100.00%	0	100.00%	0	100.00%	0
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

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

						Availa	bility					
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
Dec-19	100.00%	0	100.00%	0	100.00%	0	OFF LOAD	0	OFF LOAD	0	96.77%	1
Jan-20	100.00%	0	100.00%	0	100.00%	0	100.00%	0	OFF LOAD	0	100.00%	0
Feb-20	100.00%	0	100.00%	0	93.33%	1	100.00%	0	83.33%	4	OFF LOAD	0
Mar-20	100.00%	0	93.55%	2	87.10%	4	100.00%	0	64.52%	11	OFF LOAD	0
Apr-20	100.00%	0	100.00%	0	100.00%	0	100.00%	0	100.00%	0	90.00%	3
May-20	93.55%	2	100.00%	0	100.00%	0	100.00%	0	100.00%	0	100.00%	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	OFF LOAD	0	100.00%	0	100.00%	0	100.00%	0
Oct-20	100.00%	0	100.00%	0	OFF LOAD	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

# Particulate Emission Monitors

Availability	Availability						
	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	
Dec-19	91.40%	100.00%	96.61%	OFF	OFF	68.55%	
Jan-20	91.53%	98.92%	98.73%	99.81%	OFF	63.53%	
Feb-20	75.98%	99.43%	98.42%	98.91%	99.68%	OFF	
Mar-20	86.67%	96.97%	96.20%	99.44%	96.84%	OFF	
Apr-20	91.26%	96.53%	98.53%	98.66%	96.22%	95.18%	
May-20	88.89%	99.19%	99.19%	100.00%	99.73%	98.25%	
Jun-20	89.86%	99.20%	99.17%	98.75%	97.78%	90.56%	
Jul-20	92.47%	98.48%	99.33%	99.35%	100.00%	99.19%	
Aug-20	100.00%	100.00%	99.85%	100.00%	97.99%	100.00%	
Sep-20	94.71%	99.63%	OFF	100.00%	100.00%	100.00%	
Oct-20	97.98%	99.19%	OFF	99.33%	99.19%	100.00%	
Nov-20	94.04%	94.58%	OFF	97.17%	97.28%	99.69%	

# Gaseous Emission Monitors

	Availability												
	Uni	it 1	Un	it 2	Unit 3		Uı	Unit 4		Unit 5		Unit 6	
Month	SO <sub>x</sub>	NO <sub>x</sub>											
Dec-19	99.33%	99.33%	99.13%	99.13%	99.23%	99.23%	OFF	OFF	OFF	OFF	92.61%	92.61%	
Jan-20	99.64%	99.64%	100.00%	100.00%	100.00%	99.90%	90.95%	90.79%	OFF	OFF	100.00%	99.20%	
Feb-20	99.84%	99.84%	96.55%	98.71%	98.85%	98.71%	99.95%	99.49%	85.71%	85.71%	OFF	OFF	
Mar-20	99.73%	99.73%	98.80%	98.80%	99.68%	99.68%	99.12%	98.45%	98.79%	98.92%	OFF	OFF	
Apr-20	100.00%	99.86%	100.00%	100.00%	96.68%	96.68%	99.83%	99.97%	99.96%	99.96%	99.94%	99.94%	
May-20	94.74%	94.74%	100.00%	100.00%	99.87%	100.00%	99.84%	99.84%	93.47%	93.61%	90.89%	90.89%	
Jun-20	99.44%	99.44%	99.33%	99.33%	99.33%	99.33%	100.00%	100.00%	100.00%	100.00%	93.30%	93.10%	
Jul-20	99.73%	99.73%	99.07%	99.07%	99.73%	99.87%	98.54%	98.85%	99.60%	99.87%	99.86%	99.87%	
Aug-20	99.91%	99.91%	100.00%	100.00%	99.85%	99.85%	100.00%	100.00%	100.00%	100.00%	96.67%	96.53%	
Sep-20	100.00%	100.00%	99.86%	99.86%	OFF	OFF	100.00%	100.00%	100.00%	100.00%	99.77%	99.77%	
Oct-20	99.87%	100.00%	99.87%	99.60%	OFF	OFF	99.46%	99.46%	99.46%	99.46%	99.46%	99.46%	
Nov-20	97.66%	97.66%	97.64%	97.78%	OFF	OFF	94.14%	94.14%	94.55%	94.55%	94.64%	94.64%	

Oxygen Mo	Oxygen Monitor Availabilty						
	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	
Dec-19	99.19%	98.94%	99.10%	OFF	OFF	100.00%	
Jan-20	99.64%	99.19%	100.00%	94.95%	OFF	99.20%	
Feb-20	99.84%	99.07%	98.85%	99.95%	67.86%	OFF	
Mar-20	100.00%	99.80%	97.24%	99.95%	99.19%	OFF	
Apr-20	51.08%	100.00%	97.35%	99.97%	99.96%	99.94%	
May-20	89.69%	100.00%	100.00%	99.84%	100.00%	99.95%	
Jun-20	99.31%	99.92%	99.33%	98.85%	100.00%	100.00%	
Jul-20	99.87%	99.30%	99.87%	99.02%	100.00%	99.87%	
Aug-20	99.86%	99.92%	99.85%	100.00%	100.00%	96.67%	
Sep-20	99.68%	99.86%	OFF	100.00%	100.00%	98.97%	
Oct-20	99.73%	99.87%	OFF	99.33%	99.33%	99.46%	
Nov-20	99.45%	99.72%	OFF	93.97%	94.55%	94.64%	

#### 14. EFFICIENCY

	ESP Efficiency (%)							
	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6		
Dec-19	99.767%	99.787%	99.782%	OFF	OFF	99.654%		
Jan-20	99.825%	99.768%	99.727%	99.086%	OFF	99.662%		
Feb-20	99.998%	99.999%	99.997%	99.999%	99.998%	OFF		
Mar-20	99.851%	99.749%	99.698%	99.892%	99.851%	OFF		
Apr-20	99.777%	99.838%	99.695%	99.909%	99.914%	99.707%		
May-20	99.652%	99.847%	99.757%	99.912%	99.909%	99.805%		
Jun-20	99.907%	99.883%	99.874%	99.922%	99.913%	99.783%		
Jul-20	99.835%	99.777%	99.837%	99.905%	99.903%	99.788%		
Aug-20	99.875%	99.872%	99.791%	99.892%	99.845%	99.809%		
Sep-20	99.892%	99.793%	OFF	99.882%	99.913%	99.848%		
Oct-20	99.860%	99.742%	OFF	99.876%	99.828%	99.850%		
Nov-20	99.835%	99.792%	OFF	99.833%	99.867%	99.822%		

# 15. REMARKS

UNIT	MWLOSS	REASON	ACTUALSTARTDATE	ACTUALENDDATE
1	593	Unit trip due to boiler drum level low protection operated	2020/11/04 21:19:00	2020/11/05 00:36:00
3	593	G/O	2020/11/01 00:00:00	2020/11/30 23:59:59
4	593	Unit tripped due to boiler level low protection	2020/11/13 16:12:00	2020/11/13 19:43:00
4	593	EFP B discharge valve gland leak	2020/11/19 15:36:00	2020/11/24 08:55:00
5	593	LH ID FAN Vane internal fault repairs	2020/11/06 12:12:00	2020/11/08 11:45:00
6	593	Turbine manually tripped due to steam leak under IP turbine	2020/11/14 06:46:00	2020/11/17 14:55:00
1	92	EF: High stack emissions.	2020/11/25 13:00:00	2020/11/25 16:12:00
1	89	EF:High stack emissions.	2020/11/25 20:46:00	2020/11/26 05:15:00
1	191	High stack emissions.	2020/11/28 10:20:00	2020/11/28 15:55:00
2	52	High stack emissions	2020/11/17 21:00:00	2020/11/18 00:02:00
2	178	High stack emissions.	2020/11/26 22:18:00	2020/11/27 05:09:00
6	119	High stack emissions	2020/11/26 20:58:00	2020/11/26 22:17:00
6	172	High stack emissions	2020/11/26 22:17:00	2020/11/26 23:11:00
6	222	High stack emissions.	2020/11/26 23:11:00	2020/11/27 00:12:00
6	217	EF:High stack emissions	2020/11/29 11:27:00	2020/11/29 16:38:00
6	118	High stack emissions	2020/11/29 16:38:00	2020/11/29 17:02:00
1	100	AM: RHO precip casing repairs	2020/11/14 00:03:00	2020/11/14 22:30:00
1	118	AM: LHO precip casing repairs	2020/11/15 00:01:00	2020/11/15 18:33:00
1	90	LHO precipitator casing repairs.	2020/11/29 00:27:00	2020/11/29 21:59:00
2	189	AM: Precip casing tests	2020/11/14 00:00:00	2020/11/14 04:00:00
6	118	LHO precip casing repairs.	2020/11/27 00:12:00	2020/11/27 17:44:00
2	189	Casing test	2020/11/06 11:58:00	2020/11/06 17:14:00
1	297	System Generated Ramp Event for Event id : 1494840	2020/11/05 00:36:00	2020/11/05 02:06:00
4	297	System Generated Ramp Event for Event id : 1497850	2020/11/13 19:43:00	2020/11/13 21:13:00
4	297	System Generated Ramp Event for Event id : 1499819	2020/11/24 08:55:00	2020/11/24 11:55:00
5	297	System Generated Ramp Event for Event id : 1495362	2020/11/09 05:05:00	2020/11/09 08:05:00
6	297	System Generated Ramp Event for Event id : 1498044	2020/11/17 14:55:00	2020/11/17 17:55:00
5	507	Over speed 2 test program	2020/11/22 00:36:00	2020/11/22 01:16:00

	PM Exceedances	
U1.	Power trip over the weekend affected the monitors. Data was deleted for the following periods Particulates:  Unit 1: 2020-10-31 19:54 to 2020-11-02 12:06  Unit 2: 2020-10-31 19:54 to 2020-11-02 12:06  Unit 3: Off load  Unit 4: 2020-10-31 19:54 to 2020-11-01 17:20  Unit 5: 2020-10-31 19:54 to 2020-11-01 17:20  Unit 6: Not affected	01-Nov
U1.	Power trip over the weekend affected the monitors. Data was deleted for the following periods Particulates:  Unit 1: 2020-10-31 19:54 to 2020-11-02 12:06 Unit 2: 2020-10-31 19:54 to 2020-11-02 12:06 Unit 3: Off load Unit 4: 2020-10-31 19:54 to 2020-11-01 17:20 Unit 5: 2020-10-31 19:54 to 2020-11-01 17:20 Unit 6: Not affected	02-Nov
U1.	ESP Poor Performance	13-Nov
U1.	RHO Casing Outage	14-Nov
U1.	LHO Casing Outages	15-Nov
U1.	PM: Unit 1 and Unit 2 three hours data loss on Monday 16 November , under investigation.	16-Nov
U1.	LHO and LHI have poor performance	24-Nov
U1.	ESP Poor Performace, LHO and LHI casings planned	26-Nov
U1.	ESP Poor Performace	27-Nov
U1.	LHO Casing Outage	29-Nov
U2.	Power trip over the weekend affected the monitors. Data was deleted for the following periods Particulates:  Unit 1: 2020-10-31 19:54 to 2020-11-02 12:06  Unit 2: 2020-10-31 19:54 to 2020-11-02 12:06  Unit 3: Off load  Unit 4: 2020-10-31 19:54 to 2020-11-01 17:20  Unit 5: 2020-10-31 19:54 to 2020-11-01 17:20  Unit 6: Not affected	01-Nov
U2.	Power trip over the weekend affected the monitors. Data was deleted for the following periods Particulates:  Unit 1: 2020-10-31 19:54 to 2020-11-02 12:06  Unit 2: 2020-10-31 19:54 to 2020-11-02 12:06  Unit 3: Off load  Unit 4: 2020-10-31 19:54 to 2020-11-01 17:20  Unit 5: 2020-10-31 19:54 to 2020-11-01 17:20  Unit 6: Not affected	02-Nov
U2.	PM: Unit 1 and Unit 2 three hours data loss on Monday 16 November , under investigation.	16-Nov
U2.	SO3 plant repairs took place yesterday, thus the excessive emissions.	19-Nov

		1
U2.	LHI and RHI field performance poor	23-Nov
	Unit was trending high suspected to high ambient temperatures	
U2.	ESP Poor Performance	25-Nov
U2.	Unit emissions was high from 14:00 to 22:00.	26-Nov
U2.	ESP Poor Performance	28-Nov
U2.	RHI and LHI Casings Under Performing	29-Nov
U4.	RHI and LHI Casings Under Performing  Power trip over the weekend affected the monitors. Data was deleted for the following periods Particulates:  Unit 1: 2020-10-31 19:54 to 2020-11-02 12:06 Unit 2: 2020-10-31 19:54 to 2020-11-02 12:06 Unit 3: Off load Unit 4: 2020-10-31 19:54 to 2020-11-01 17:20 Unit 5: 2020-10-31 19:54 to 2020-11-01 17:20 Unit 6: Not affected	01-Nov
U4.	Power trip over the weekend affected the monitors. Data was deleted for the following periods Particulates:  Unit 1: 2020-10-31 19:54 to 2020-11-02 12:06 Unit 2: 2020-10-31 19:54 to 2020-11-02 12:06 Unit 3: Off load Unit 4: 2020-10-31 19:54 to 2020-11-01 17:20 Unit 5: 2020-10-31 19:54 to 2020-11-01 17:20 Unit 6: Not affected	02-Nov
U4.	<ul> <li>High hopper levels, LHO F4,5,7. RHO F1,2,3.</li> <li>Ops confirmed that there was a break down 14WX21 keeps blowing fuses, EMS will address</li> <li>LHO F2 oil insulation trip.</li> <li>Manual rapping was done, both RHI and LHI.</li> <li>Emissions are high due to high hopper levels and manual rapping</li> </ul>	13-Nov
U4.	Spike emissions were observed from 14:00 yesterday.  ESP Poor Performance  LHO F7 CE rappers running continues.  LHI F1 CE rapping is not running.  RHO F6 Comms Fault  LHO: F1 poorly performing; F6 Poorly performing (Local); F3 Poorly performing  LHI: F2 - Poorly performing (Arcing & sparking); F1- Performing Poorly - Excessive Sparking; F5 - Poorly performing (Sparking & arcing); F6 - DE rapper faulty  RHI: F7 - Arcing and Sparking- poor Performing Controller to be replaced); F1- Performing Poorly (Sparking & arcing); F3 - Poorly performing / Arcing & sparking)	17-Nov
U4.	Esp Poor performance and Unit Shut Down	19-Nov
U4.	Unit Light Up, ESP Poor Performance and High Back End Temperatures	25-Nov

U5.	Power trip over the weekend affected the monitors. Data was deleted for the following periods Particulates:  Unit 1: 2020-10-31 19:54 to 2020-11-02 12:06  Unit 2: 2020-10-31 19:54 to 2020-11-02 12:06  Unit 3: Off load  Unit 4: 2020-10-31 19:54 to 2020-11-01 17:20  Unit 5: 2020-10-31 19:54 to 2020-11-01 17:20  Unit 6: Not affected	01-Nov
U5.	Power trip over the weekend affected the monitors. Data was deleted for the following periods Particulates:  Unit 1: 2020-10-31 19:54 to 2020-11-02 12:06 Unit 2: 2020-10-31 19:54 to 2020-11-02 12:06 Unit 3: Off load Unit 4: 2020-10-31 19:54 to 2020-11-01 17:20 Unit 5: 2020-10-31 19:54 to 2020-11-01 17:20 Unit 6: Not affected Gasses:  Unit 1: Not affected Unit 2: Not affected Unit 3: Not affected Unit 4: 2020-10-31 19:54 to 2020-11-02 10:18 Unit 5: 2020-10-31 19:54 to 2020-11-02 10:18 Unit 6: 2020-10-31 19:54 to 2020-11-02 10:18	02-Nov
U5.	LHO has a lot of casings that are not performing. LHI F2 poor performance RHO 2 x fields poor performance	24-Nov
U6.	Power trip over the weekend affected the monitors. Data was deleted for the following periods Particulates:  Unit 1: 2020-10-31 19:54 to 2020-11-02 12:06 Unit 2: 2020-10-31 19:54 to 2020-11-02 12:06 Unit 3: Off load Unit 4: 2020-10-31 19:54 to 2020-11-01 17:20 Unit 5: 2020-10-31 19:54 to 2020-11-01 17:20 Unit 6: Not affected	01-Nov
U6.	Power trip over the weekend affected the monitors. Data was deleted for the following periods Particulates:  Unit 1: 2020-10-31 19:54 to 2020-11-02 12:06 Unit 2: 2020-10-31 19:54 to 2020-11-02 12:06 Unit 3: Off load Unit 4: 2020-10-31 19:54 to 2020-11-01 17:20 Unit 5: 2020-10-31 19:54 to 2020-11-01 17:20 Unit 6: Not affected	02-Nov
U6.	LHO 4 fields are poorly performing.     RHO F1 and F2 poorly performing.	27-Nov
U6.	LHO 4 fields are poorly performing.     RHO F1 and F2 poorly performing.	29-Nov

	NOX & SOX Exceedances	
U1.	Power trip over the weekend affected the monitors. Data was deleted for the following periods: Gases:  Unit 1: Not affected Unit 2: Not affected Unit 3: Not affected Unit 4: 2020-10-31 19:54 to 2020-11-02 10:18 Unit 5: 2020-10-31 19:54 to 2020-11-02 10:18 Unit 6: 2020-10-31 19:54 to 2020-11-02 10:18	01-Nov
U1.	Power trip over the weekend affected the monitors. Data was deleted for the following periods: Gases:  Unit 1: Not affected Unit 2: Not affected Unit 3: Not affected Unit 4: 2020-10-31 19:54 to 2020-11-02 10:18 Unit 5: 2020-10-31 19:54 to 2020-11-02 10:18 Unit 6: 2020-10-31 19:54 to 2020-11-02 10:18	02-Nov
U2.	Power trip over the weekend affected the monitors. Data was deleted for the following periods: Gases:  Unit 1: Not affected Unit 2: Not affected Unit 3: Not affected Unit 3: Not affected Unit 4: 2020-10-31 19:54 to 2020-11-02 10:18 Unit 5: 2020-10-31 19:54 to 2020-11-02 10:18 Unit 6: 2020-10-31 19:54 to 2020-11-02 10:18	01-Nov
U2.	Power trip over the weekend affected the monitors. Data was deleted for the following periods: Gases:  Unit 1: Not affected Unit 2: Not affected Unit 3: Not affected Unit 3: Not affected Unit 4: 2020-10-31 19:54 to 2020-11-02 10:18 Unit 5: 2020-10-31 19:54 to 2020-11-02 10:18 Unit 6: 2020-10-31 19:54 to 2020-11-02 10:18	02-Nov
U4.	Power trip over the weekend affected the monitors. Data was deleted for the following periods: Gases:  Unit 1: Not affected Unit 2: Not affected Unit 3: Not affected Unit 3: Not affected Unit 4: 2020-10-31 19:54 to 2020-11-02 10:18 Unit 5: 2020-10-31 19:54 to 2020-11-02 10:18 Unit 6: 2020-10-31 19:54 to 2020-11-02 10:18	01-Nov
U4.	Power trip over the weekend affected the monitors. Data was deleted for the following periods: Gases:  Unit 1: Not affected Unit 2: Not affected Unit 3: Not affected Unit 4: 2020-10-31 19:54 to 2020-11-02 10:18 Unit 5: 2020-10-31 19:54 to 2020-11-02 10:18 Unit 6: 2020-10-31 19:54 to 2020-11-02 10:18	02-Nov

U5.	Power trip over the weekend affected the monitors. Data was deleted for the following periods: Gases:  Unit 1: Not affected Unit 2: Not affected Unit 3: Not affected Unit 4: 2020-10-31 19:54 to 2020-11-02 10:18 Unit 5: 2020-10-31 19:54 to 2020-11-02 10:18 Unit 6: 2020-10-31 19:54 to 2020-11-02 10:18	01-Nov
U5.	Power trip over the weekend affected the monitors. Data was deleted for the following periods: Gases:  Unit 1: Not affected Unit 2: Not affected Unit 3: Not affected Unit 4: 2020-10-31 19:54 to 2020-11-02 10:18 Unit 5: 2020-10-31 19:54 to 2020-11-02 10:18 Unit 6: 2020-10-31 19:54 to 2020-11-02 10:18	02-Nov
U6.	Power trip over the weekend affected the monitors. Data was deleted for the following periods: Gases:  Unit 1: Not affected Unit 2: Not affected Unit 3: Not affected Unit 4: 2020-10-31 19:54 to 2020-11-02 10:18 Unit 5: 2020-10-31 19:54 to 2020-11-02 10:18 Unit 6: 2020-10-31 19:54 to 2020-11-02 10:18	01-Nov
U6.	Power trip over the weekend affected the monitors. Data was deleted for the following periods: Gases:  Unit 1: Not affected Unit 2: Not affected Unit 3: Not affected Unit 4: 2020-10-31 19:54 to 2020-11-02 10:18 Unit 5: 2020-10-31 19:54 to 2020-11-02 10:18 Unit 6: 2020-10-31 19:54 to 2020-11-02 10:18	02-Nov