MARCH 2022

KOMATI POWER STATION MONTHLY EMISSIONS REPORT

Atmospheric Emission License 17/4/AEL/MP313/12/12

1 RAW MATERIALS AND PRODUCTS

Raw Materials and Products	Raw Material Type	Units	Maximum Permitted Consumption Rate	Consumption Rate Mar-2022
	Coal	Tons	*460 000*	*43 794*
	Fuel Oil	Tons	*5 000*	*101*
Production Rates	**Product / By-Product Name**	**Units**	**Maximum Production Capacity Permitted**	**Production Rate Mar-2022**
	Energy	GWh	*707*	*69*
	Ash	Tons	*160 000*	*17*
	RE PM	kg/MWh	*0.29*	*0.24*

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
CV Content	MJ/kg	*16-24*	*22.990*
Sulphur Content	%	*<= 1.2*	*0.600*
Ash Content	%	*<= 33*	*20.841*

3 EMISSION LIMITS (mg/Nm³)

Associated Unit/Stack	PM	SOx	NOx
East	*100*	*3500*	*1300*
West	*100*	*3500*	*1300*

4 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Mar-2022	Technology Type	Utilisation Mar-2022
Unit 1	*Electro Static Prepicipators (ESP)*	*Unit Off-line*	*SO_3 Plant Utilisation*	*Unit Off-line*
Unit 2	*Electro Static Prepicipators (ESP)*	*Unit Off-line*	*SO_3 Plant Utilisation*	*Unit Off-line*
Unit 3	*Electro Static Prepicipators (ESP)*	*Unit Off-line*	*SO_3 Plant Utilisation*	*Unit Off-line*
Unit 4	*Electro Static Prepicipators (ESP)*	*Unit Off-line*	*SO_3 Plant Utilisation*	*Unit Off-line*
Unit 5	*Electro Static Prepicipators (ESP)*	*Unit Off-line*	*SO_3 Plant Utilisation*	*Unit Off-line*
Unit 6	*Electro Static Prepicipators (ESP)*	*Unit Off-line*	*SO_3 Plant Utilisation*	*Unit Off-line*
Unit 7	*Electro Static Prepicipators (ESP)*	*Unit Off-line*	*SO_3 Plant Utilisation*	*Unit Off-line*
Unit 8	*Electro Static Prepicipators (ESP)*	*Unit Off-line*	*SO_3 Plant Utilisation*	*Unit Off-line*
Unit 9	*Electro Static Prepicipators (ESP)*	*99.8%*	*SO_3 Plant Utilisation*	*0.0*

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

5 MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO_2	NO	CO_2	O_2	Temp
East						
West	*100.0*	*93.6*	*97.4*	*93.4*	*93.6*	*99.9*

6 EMISSION PERFORMANCE

Table 4: Monthly tonnages for the month of March-2022

Associated Unit/Stack	PM (tons)	SO_2 (tons)	NO_2 (tons)	CO_2 (tons)
1	0.0	0.0	0.0	0
2	0.0	0.0	0.0	0
3	0.0	0.0	0.0	0
4	0.0	0.0	0.0	0
5	0.0	0.0	0.0	0
6	0.0	0.0	0.0	0
7	0.0	0.0	0.0	0
8	0.0	0.0	0.0	0
9	16.7	440.1	616.5	88 719
SUM	**16.7**	**440.1**	**616.5**	**88 719**

Table 6.2: Operating days in compliance to PM AEL Limit - March 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm³)
East	0	0	0	0	0	
West	26	1	0	0	1	36.8
SUM	**26**	**1**	**0**	**0**	**1**	

Table 6.3: Operating days in compliance to SOx AEL Limit - March 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SOx (mg/Nm³)
East	0	0	0	0	0	
West	30	0	0	0	0	888.4
SUM	**30**	**0**	**0**	**0**	**0**	

Table 6.4: Operating days in compliance to NOx AEL Limit - March 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm³)
East	0	0	0	0	0	
West	28	0	0	2	2	1 209.7
SUM	**28**	**0**	**0**	**2**	**2**	

Table 6.5: Legend Description

Condition	Colour	Description
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

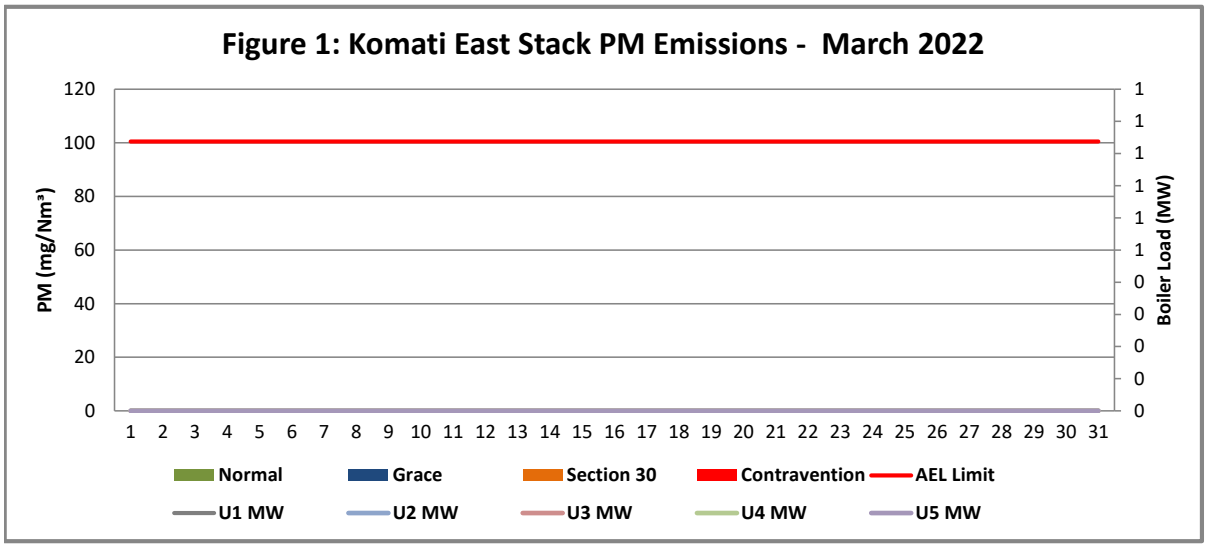
Figure 1: Komati East Stack PM Emissions - March 2022
PM (mg/Nm³)
Boiler Load (MW)
Normal
Grace
Section 30
Contravention
AEL Limit
U1 MW
U2 MW
U3 MW
U4 MW
U5 MW

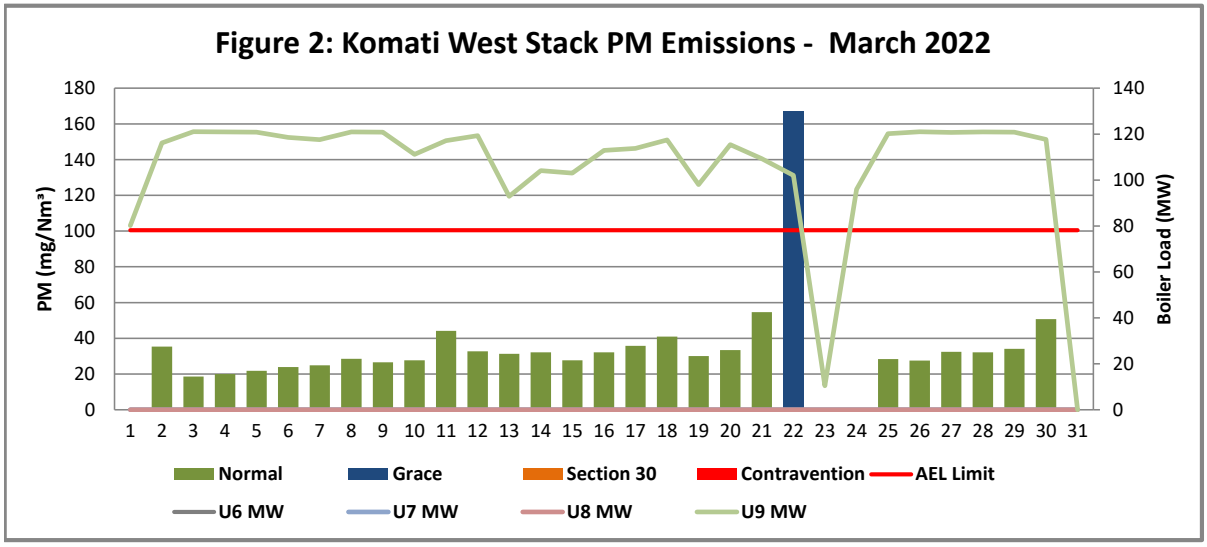
Figure 2: Komati West Stack PM Emissions - March 2022
PM (mg/Nm³)
Boiler Load (MW)
Normal
Grace
Section 30
Contravention
AEL Limit
U6 MW
U7 MW
U8 MW
U9 MW

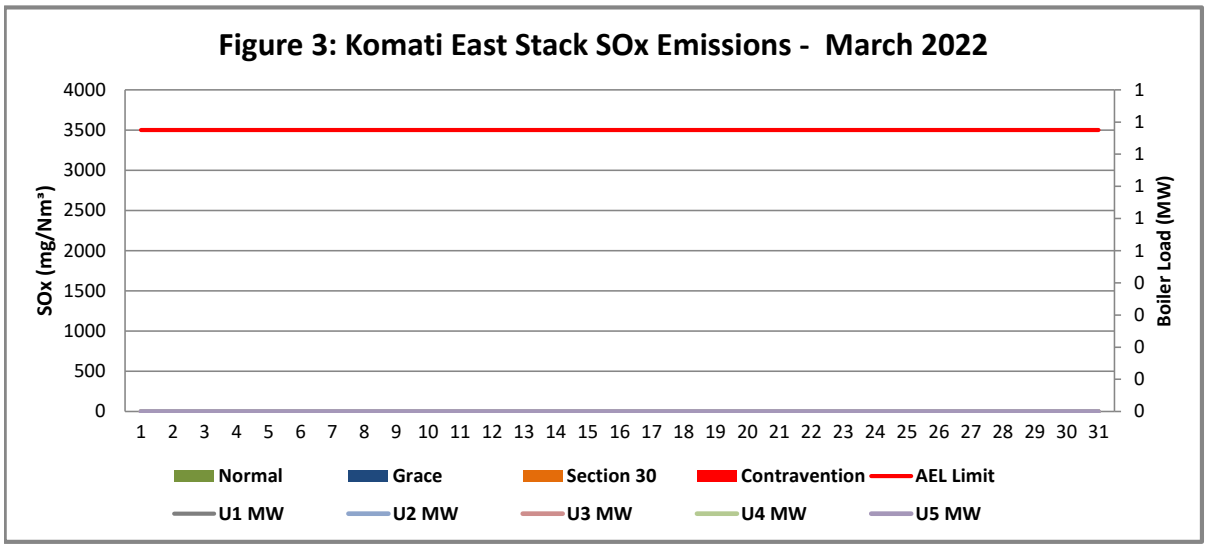
Figure 3: Komati East Stack SOx Emissions - March 2022
SOx (mg/Nm³)
Boiler Load (MW)
4000
3500
3000
2500
2000
1500
1000
500
0
1
1
1
1
1
1
0
0
0
0
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Normal
Grace
Section 30
Contravention
AEL Limit
U1 MW
U2 MW
U3 MW
U4 MW
U5 MW

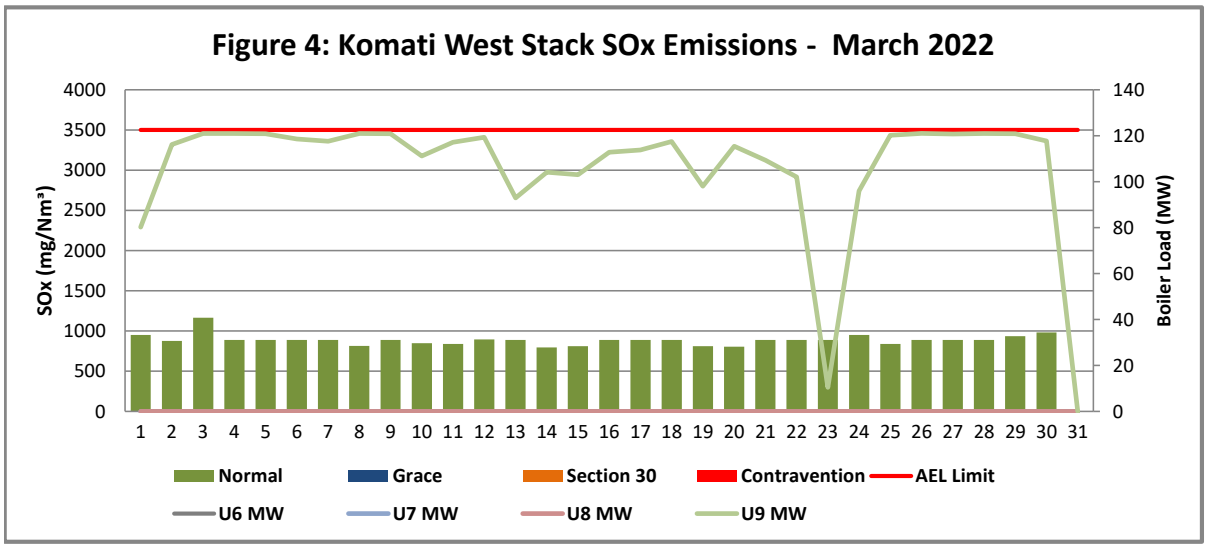
Figure 4: Komati West Stack SOx Emissions - March 2022
SOx (mg/Nm³)
Boiler Load (MW)
4000
3500
3000
2500
2000
1500
1000
500
0
140
120
100
80
60
40
20
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Normal
Grace
Section 30
Contravention
AEL Limit
U6 MW
U7 MW
U8 MW
U9 MW

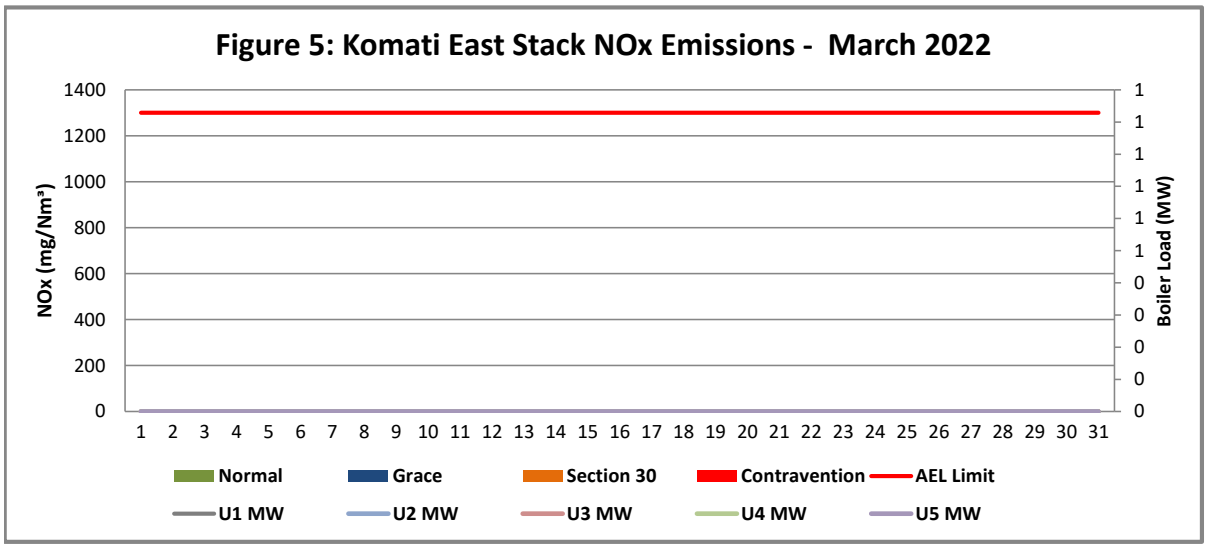
Figure 5: Komati East Stack NOx Emissions - March 2022
NOx (mg/Nm³)
Boiler Load (MW)
1400
1200
1000
800
600
400
200
0
1 1 1 1 1 1 0 0 0 0 0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Normal
Grace
Section 30
Contravention
AEL Limit
U1 MW
U2 MW
U3 MW
U4 MW
U5 MW

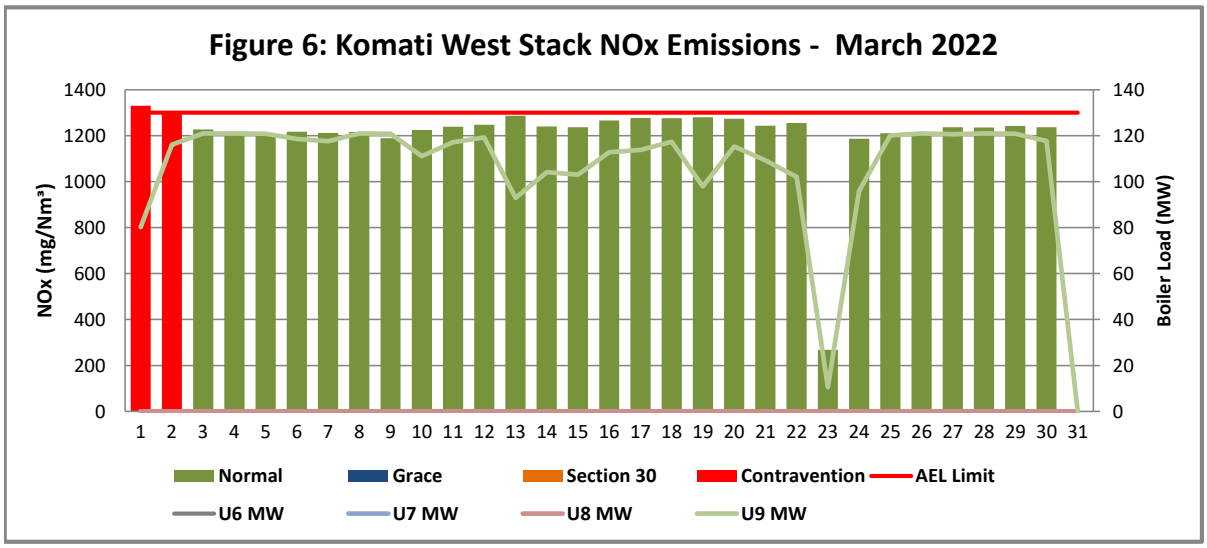
Figure 6: Komati West Stack NOx Emissions - March 2022
NOx (mg/Nm³)
Boiler Load (MW)
1400
1200
1000
800
600
400
200
0
140
120
100
80
60
40
20
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Normal
Grace
Section 30
Contravention
AEL Limit
U6 MW
U7 MW
U8 MW
U9 MW

7 SHUT DOWN AND LIGHT UP INFORMATION

Table 6.1. PM Start-up information for the month of March-2022

East Stack	*Event 1*		*Event 2*		*Event 3*		*Event 4*	
Unit No.	*no event*		*no event*		*no event*		*no event*	
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

East Stack …continued	*Event 5*		*Event 6*		*Event 7*		*Event 8*	
Unit No.	*no event*		*no event*		*no event*		*no event*	
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

West Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 9		Unit 9		no event		no event	
Breaker Open (BO)	11:45 PM	2022/03/22	5:55 AM	2022/03/30	12:35 AM	2022/03/23		
Draught Group (DG) Shut Down (SD)	12:05 AM	2022/03/23	9:25 PM	2022/03/30	2:05 AM	2022/03/23		
BO to DG SD (duration)	00:00:20	DD:HH:MM	00:15:30	DD:HH:MM	00:01:30	DD:HH:MM		DD:HH:MM
Fires in time	12:50 PM	2022/02/27	2:10 AM	2022/03/23				
Synch. to Grid (or BC)	3:15 AM	2022/03/01	5:40 AM	2022/03/24				
Fires in to BC (duration)	01:14:25	DD:HH:MM	01:03:30	DD:HH:MM		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)	not > limit	not > limit	not > limit	not > limit				
Emissions below limit from BC (duration)	n/a	DD:HH:MM	n/a	DD:HH:MM		DD:HH:MM		DD:HH:MM

West Stack …continued	Event 5		Event 6		Event 7		Event 8	
Unit No.	no event		no event		no event		no event	
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

7.2: Point Source emissions released during start-up (fires-in) and Shut-down (SD) for the month of March-2022 in mg/Nm³

[Include reference to once off test showing typical emissions rates during fires in and SD]

Remember to add attachments here; see ReportAddendum Tab

Reserved for Addendum XXXX

11 General

01-02/03/2022 - NOx exceedance as a result of light-up. No abatement technology.

2022/05/26

Boiler Plant Engineering Date

26/05/2022

Environmental Manager Date

27/05/2022

General Manager Date

Compiled by:	Boiler Engineering Department	Adhir Debising	ESP & SO3 Engineer
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		Marcus Nemadodzi	General Manager
		Goitsemang Nkomo	Boiler Engineering Manager
		Mokgadi Mvambo	Environmental Manager
		Falakhe Mdluli	Performance and TestManager
		Jurie Pieterse	Production Manager