



Ms Mpho Nembilwi
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Date

Oct 2022

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Ref *Kusile Power Station AEL (17/4/AEL/MP311/12/01)*

Dear Ms Nembilwi

KUSILE POWER STATION'S MONTHLY EMISSIONS REPORT FOR SEP 2022

This serves as the monthly report required in terms of Section 7.6 in Kusile Power Station's Atmospheric Emission License 17/4/AEL/MP311/12/01. The emissions are for the month of Sep 2022.

Hoping the above will meet your satisfaction

Yours sincerely

Bongumusa A. Mashazi

GENERAL MANAGER

DATE: 28/10/2022

1. KUSILE POWER STATION MONTHLY EMISSIONS REPORT: Atmospheric Emission License 17/4/AEL/MP311/12/01



2 Raw Materials and Products

Raw Materials and Products	Raw Material Type	Units	Maximum Permitted Consumption Rate	Consumption Rate Sep-2022
	Coal	Tons	1 818 083	525 597
	Fuel Oil	Tons	5 533	2260,217
	Limestone	Tons	72 917	20273

Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Sep-2022
	Energy	GWh	3214,08	961,50
	Ash	Tons	663 583	155 051,2
	Gypsum	Tons	129 250	11 352,9
	RE PM	kg/MWh	not specified	0,048
	RE SOx	kg/MWh	not specified	1,425

3 Energy source characteristics

Fuel Characteristic	Units	Stipulated Range	Monthly Average Content
Coal CV	MJ/kg	not specified	20,810
Coal Sulphur	%	1,3	1,180
Ash in Coal	%	38	29,500

4 Emissions Limits (mg/Nm³)

Associated Unit/Stack	PM	SO ₂	NO _x
North	50	500	750
South	50	500	750

5 Abatement Technology (%)

Associated Unit/Stack	Technology Type	Efficiency Sep-2022	Technology Type	Efficiency Sep-2022
Unit 1	FFP	99,987%	FGD	79,701%
Unit 2	FFP	99,992%	FGD	95,783%
Unit 3	FFP	99,797%	FGD	82,777%
Unit 4	FFP	99,991%	FGD	92,238%

Note Both the FFP and FGD does not have bypass mode operation, hence plant 100% Utilised

6. Monitoring reliability (%)

Associated Unit/Stack	PM	SO ₂	NO	O ₂
Unit 1	100,0	79,5	79,5	78,5
Unit 2	93,9	67,9	81,2	83,8
Unit 3	96,9	90,9	74,4	85,7
Unit 4	100,0	92,9	90,7	90,5

7. Emissions Performance

Table 7 1 Monthly tonnages for the month of Sep-2022

Associated Unit/Stack	PM	SO ₂	NO _x
Unit 1	1,98	243	219
Unit 2	3,8	157	102
Unit 3	34,8	592	236
Unit 4	5,5	379	513
Unit 5	0,0	0	0
Unit 6	0,0	0	0
SUM	46,0	1 370	1 070

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Table 7.2: Operating days in compliance to PM AEL Limit - September 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
Unit 1	8	0	0	0	0	3,5
Unit 2	24	0	0	0	0	11,0
Unit 3	22	1	0	0	1	39,5
Unit 4	29	0	0	0	0	5,0
Unit 5	0	0	0	0	0	
Unit 6	0	0	0	0	0	
SUM	83	1	0	0	1	





Table 7.3: Operating days in compliance to SO₂ AEL Limit - September 2022

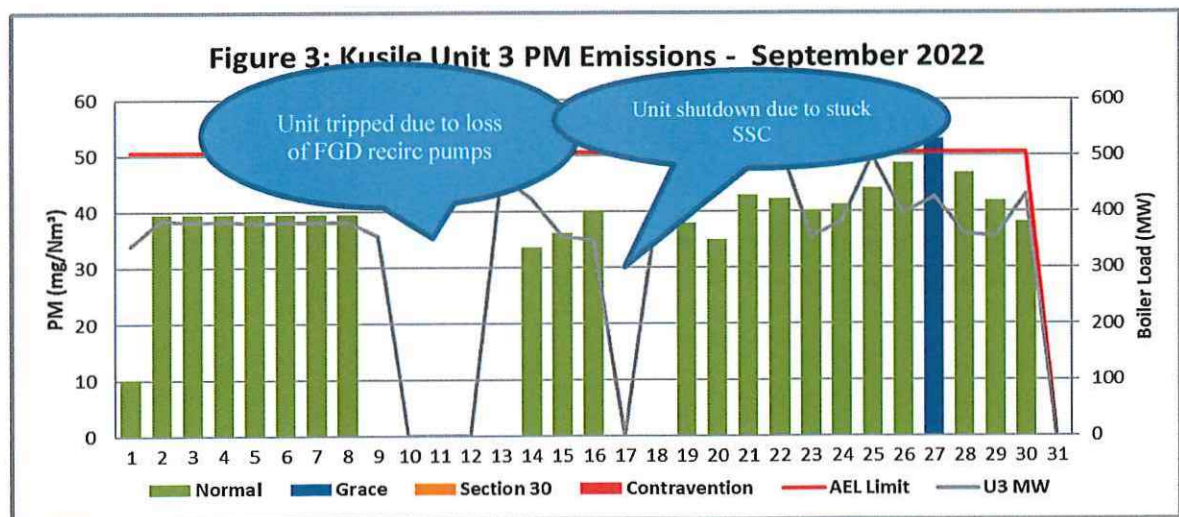
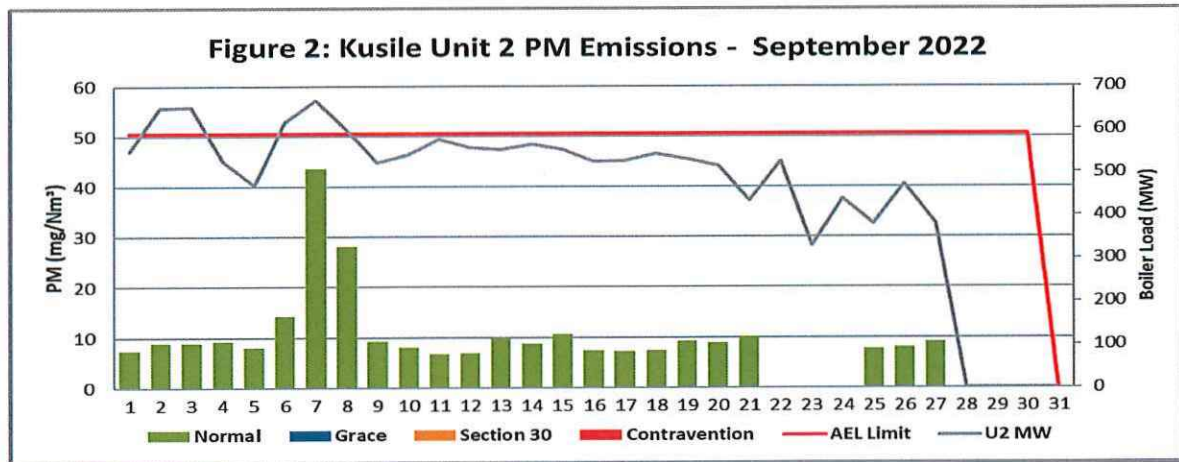
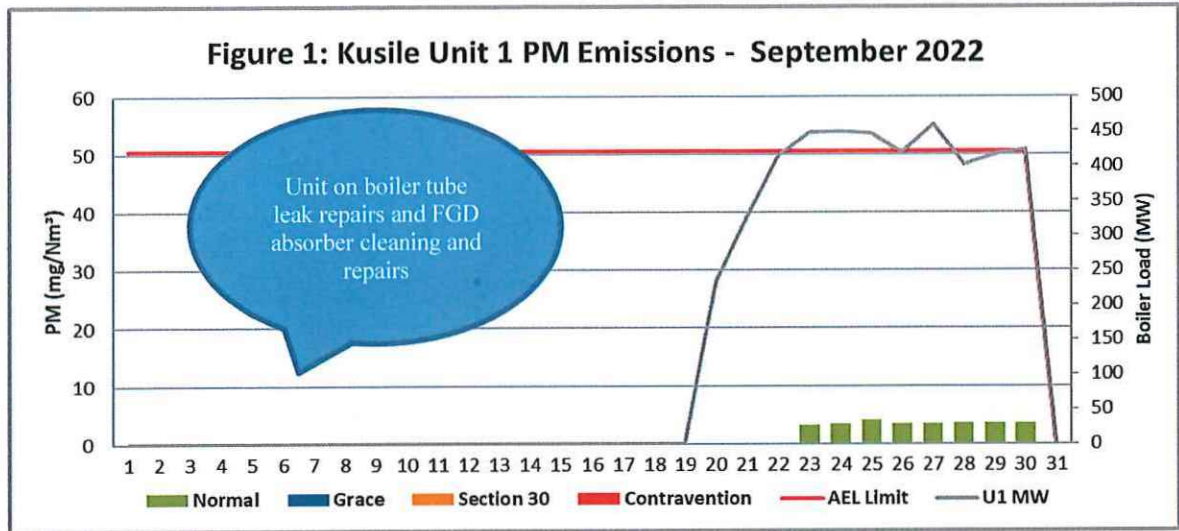
Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO _x (mg/Nm ³)
Unit 1	9	2	0	0	2	340,5
Unit 2	17	10	0	0	10	487,2
Unit 3	16	10	0	0	10	605,4
Unit 4	25	5	0	0	5	273,3
Unit 5	0	0	0	0	0	
Unit 6	0	0	0	0	0	
SUM	67	27	0	0	27	

Table 7.4: Operating days in compliance to NO_x AEL Limit - September 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NO _x (mg/Nm ³)
Unit 1	11	0	0	0	0	324,6
Unit 2	27	0	0	0	0	302,8
Unit 3	26	0	0	0	0	244,0
Unit 4	30	0	0	0	0	385,9
Unit 5	0	0	0	0	0	
Unit 6	0	0	0	0	0	
SUM	94	0	0	0	0	

Table 7.5: 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



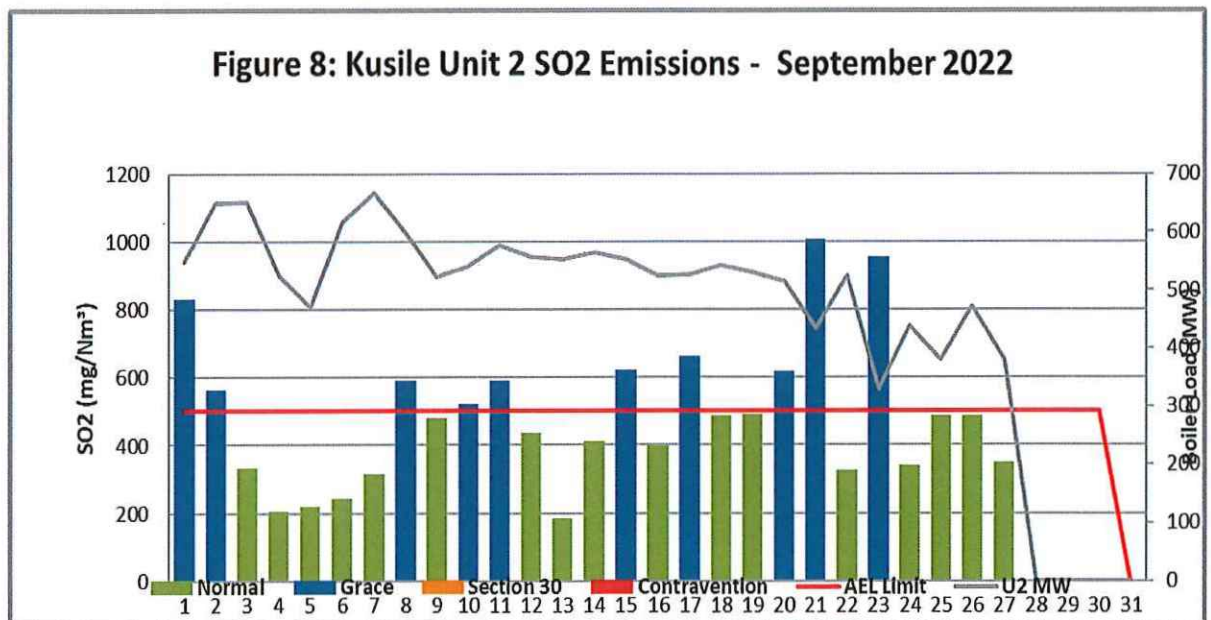
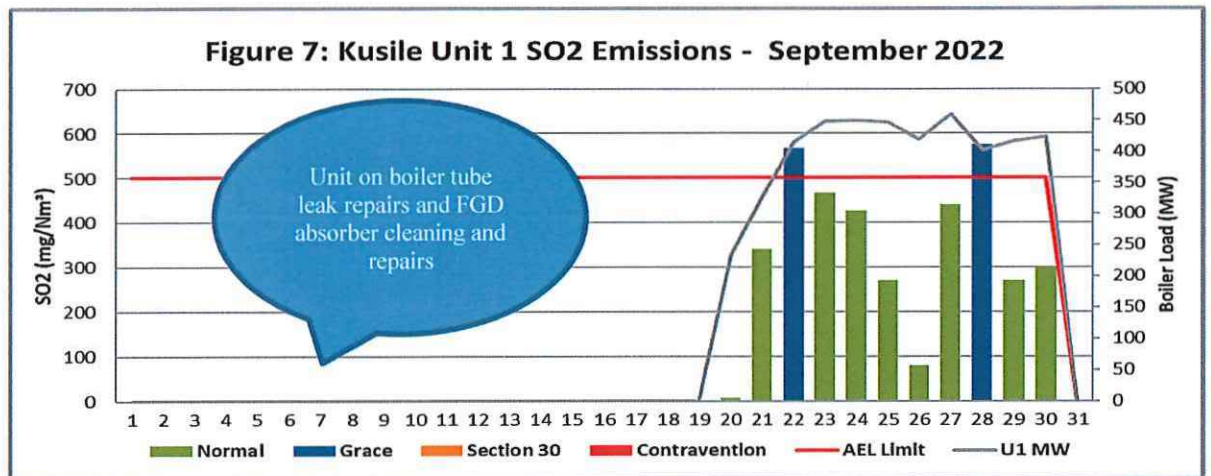
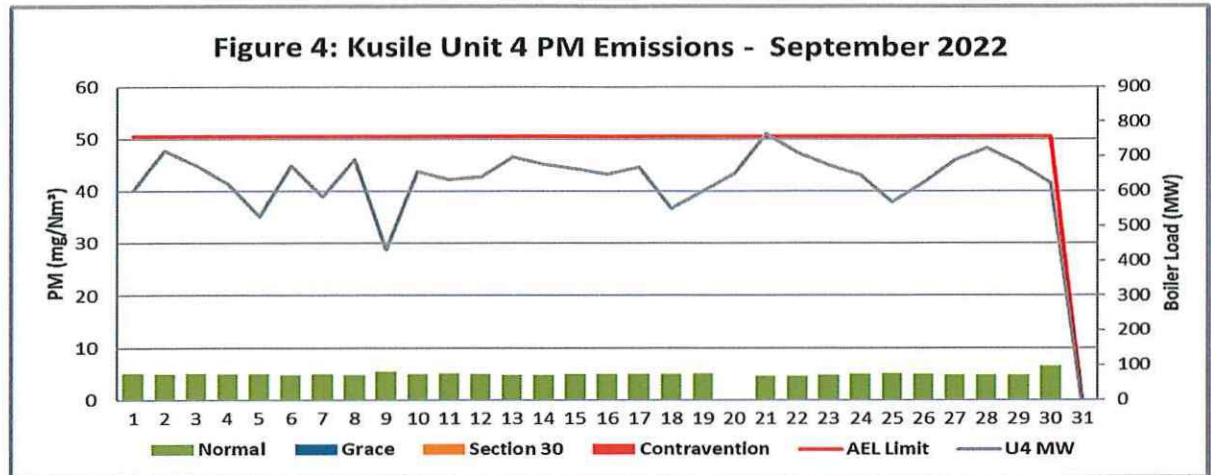


Figure 9: Kusile Unit 3 SO2 Emissions - September 2022

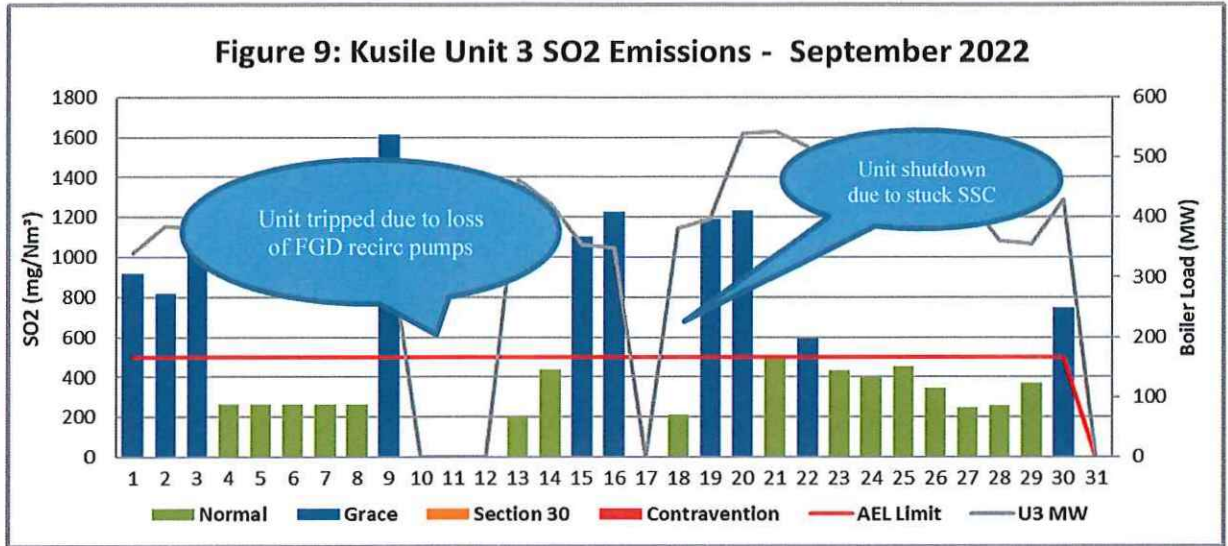


Figure 10: Kusile Unit 4 SO2 Emissions - September 2022

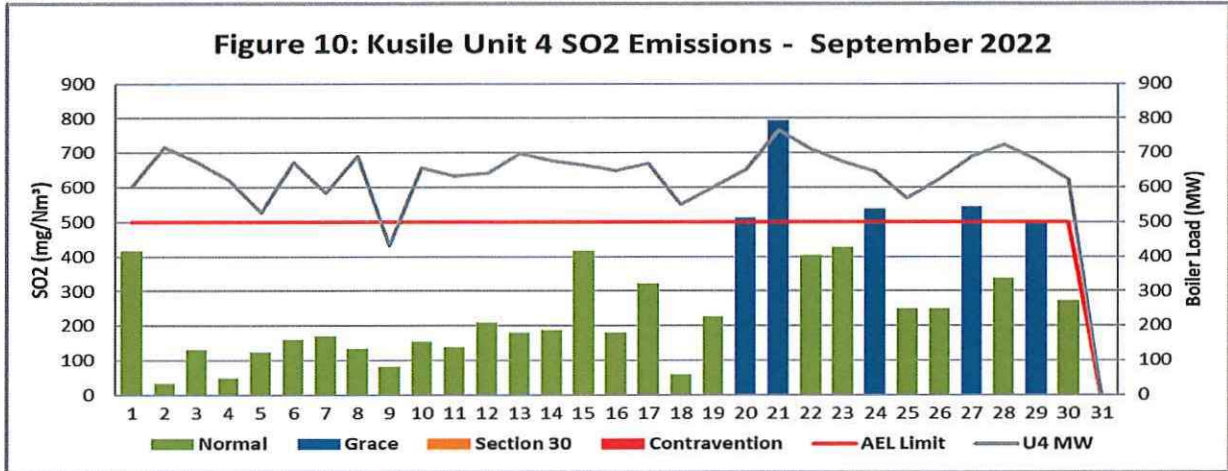
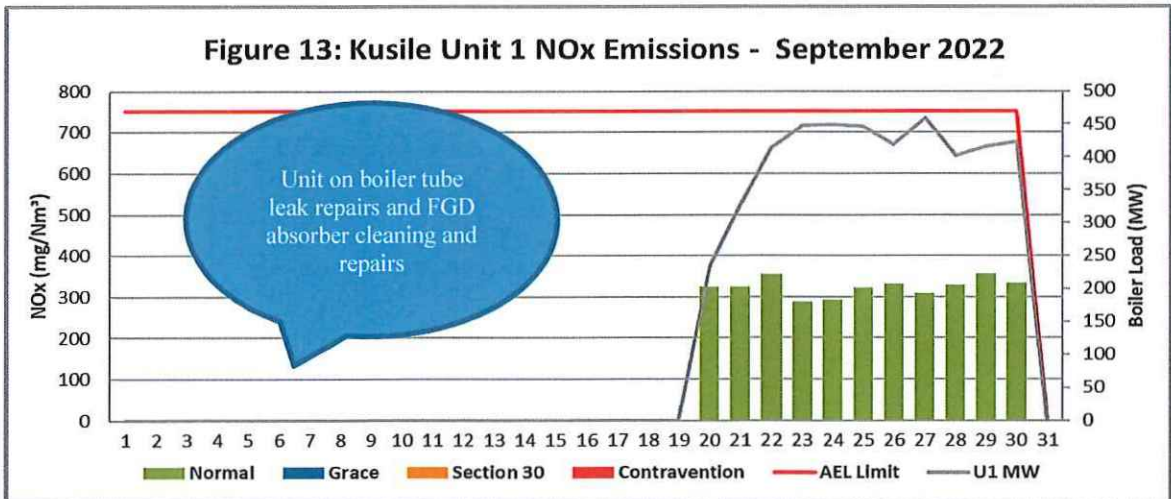
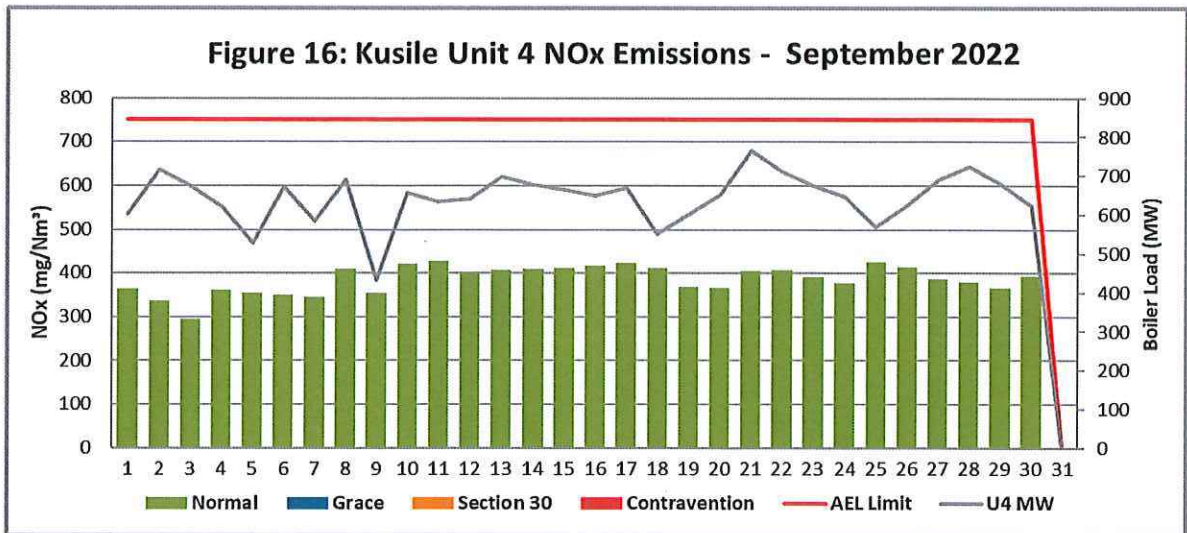
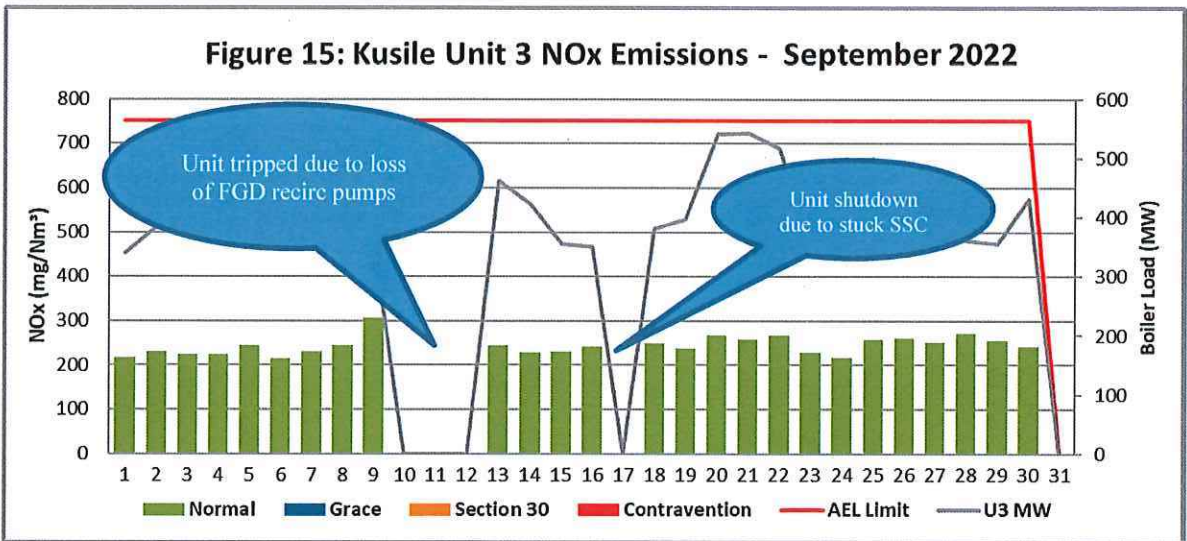
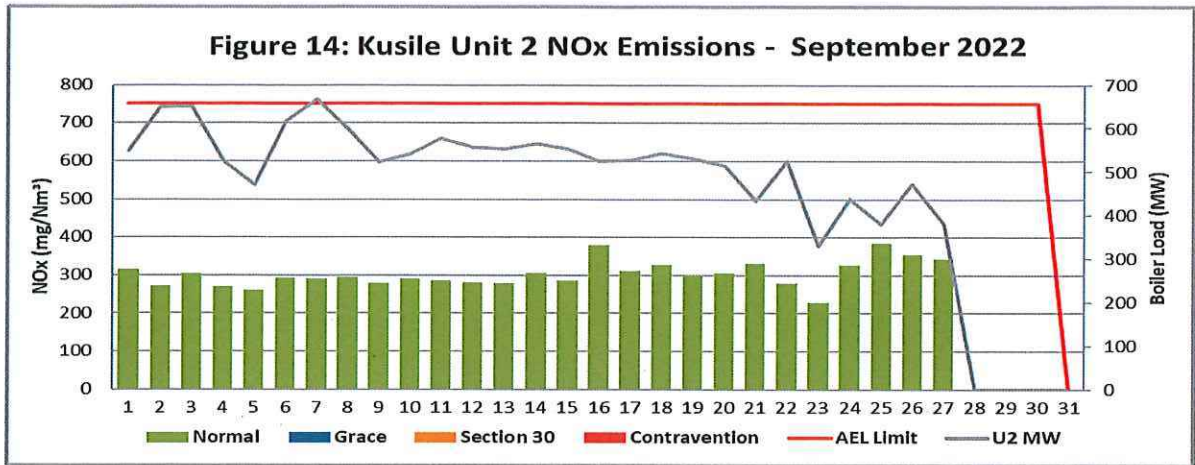


Figure 13: Kusile Unit 1 NOx Emissions - September 2022





8. Shut down and Light up information

Table 7 6 PM Start-up information for the month of September-2022

Unit No. 1	Event 1	
Breaker Open (BO)	BO previously	BO previously
Draught Group (DG) Shut Down (SD)	n/a	n/a
BO to DG SD (duration)	n/a	DD HH MM
Fires in time	8 55 am	2022/09/19
Synch. to Grid (or BC)	5 20 pm	2022/09/22
Fires in to BC (duration)	03 08 25	DD HH MM
Emissions below limit from BC (end date)	not > limit	not > limit
Emissions below limit from BC (duration)	n/a	DD HH MM

Unit No. 2	Event 1		Event 2	
Breaker Open (BO)	3 30 am	2022/09/21	3 10 am	2022/09/27
Draught Group (DG) Shut Down (SD)	12 10 am	2022/09/24	11 10 pm	2022/09/27
BO to DG SD (duration)	02 20 40	DD HH MM	00 20 00	DD HH MM
Fires in time	5 05 am	2022/09/24	4 45 pm	2022/09/27
Synch. to Grid (or BC)	10 05 am	2022/09/24	4 00 am	2022/09/30
Fires in to BC (duration)	00 05 00	DD HH MM	02 11 15	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

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Unit No. 3	Event 1		Event 2	
Breaker Open (BO)	4 50 pm	2022/09/08	10 55 pm	2022/09/16
Draught Group (DG) Shut Down (SD)	10 50 am	2022/09/09	8 45 am	2022/09/17
BO to DG SD (duration)	00 18 00	DD HH MM	00 09 50	DD HH MM
Fires in time	10 15 am	2022/09/13	3 25 am	2022/09/18
Synch. to Grid (or BC)	2 45 pm	2022/09/13	9 30 am	2022/09/18
Fires in to BC (duration)	00 04 30	DD HH MM	00 06 05	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

9. Complaints

No complaints reported for the month of Sep 2022

Date and time complaint was received	Complaint received	Source code name	Root cause analysis	Calculation of impact/emissions associated with incidents and dispersion modelling of pollutants where applicable.	Measures implemented or to be implemented to prevent recurrence	Date by which measures will be implemented
N/A						