



Ms Mpho Nembilwi
Nkangala District Municipality
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Date
June 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 MAY 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 May 2022.

Hoping the above will meet your satisfaction

Yours sincerely

Bongumusa A Mashazi
GENERAL MANAGER
DATE: *30/06/2022*

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 May-2022
	Coal	Tons	1 818 083	405 918
	Fuel Oil	Tons	5 533	3827,01
	Limestone	Tons	72 917	16557

Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate May-2022
	Energy	GWh	3321,216	522,78
	Ash	Tons	663 583	123 439,6
	Gypsum	Tons	129 250	9 271,9
	RE PM	kg/MWh	<i>not specified</i>	0,030
	RE SO ₂	kg/MWh	<i>not specified</i>	2,913

3 Energy source characteristics

Fuel Characteristic	Units	Stipulated Range	Monthly Average Content
Coal CV	MJ/kg	<i>not specified</i>	20,790
Coal Sulphur	%	1,3	1,040
Ash in Coal	%	38	30,410

4 Emissions Limits (mg/Nm³)

Associated Unit/Stack	PM	SO ₂	NOx
North	50	500	750
South	50	500	750

5 Abatement Technology (%)

Associated Unit/Stack	Technology Type	Efficiency May-2022	Technology Type	Efficiency May-2022
Unit 1	FFP	99,993%	FGD	68,246%
Unit 2	FFP	99,984%	FGD	84,731%
Unit 3	FFP	100,000%	FGD	82,726%
Unit 4	FFP		FGD	
Unit 5	FFP		FGD	
Unit 6	FFP		FGD	

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	CO ₂	O ₂
Unit 1	10,6	90,2	55,7	87,7	89,1
Unit 2	0,1	89,0	85,0	99,5	86,4
Unit 3	0,0	24,5	24,5	0,0	24,5

Actions to improve PM reliability		
Root Cause	Actions	Target date
Blockages that caused by slurry carry over	RFI for alternative particulate emission analyzer	Completed
	Continuous washing/soaking of the particulate emission probe	Continuous
	Procurement and installation of different PM monitor brand	30 Sep 2022
	Install a longer probe at Unit 2,3 and 4	Completed

7. Emissions Performance

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

Associated Unit/Stack	PM	SO ₂	NO _x	CO ₂
Unit 1	1,7	543	487	220 659
Unit 2	13,9	879	1 026	414 507
Unit 3	0,0	101	12	0
Unit 4	0,0	0	0	0
Unit 5	0,0	0	0	0
Unit 6	0,0	0	0	0
SUM	15,6	1 523	1 525	635 166

Table 7 2 Operating days in compliance to PM AEL Limit - May 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
Unit 1	9	0	0	0	0	3,2
Unit 2	31	0	0	0	0	5,5
Unit 3	0	0	0	0	0	
Unit 4	0	0	0	0	0	
Unit 5	0	0	0	0	0	
Unit 6	0	0	0	0	0	
SUM	40	0	0	0	0	

Table 7 3 Operating days in compliance to SO₂ AEL Limit - May 2022

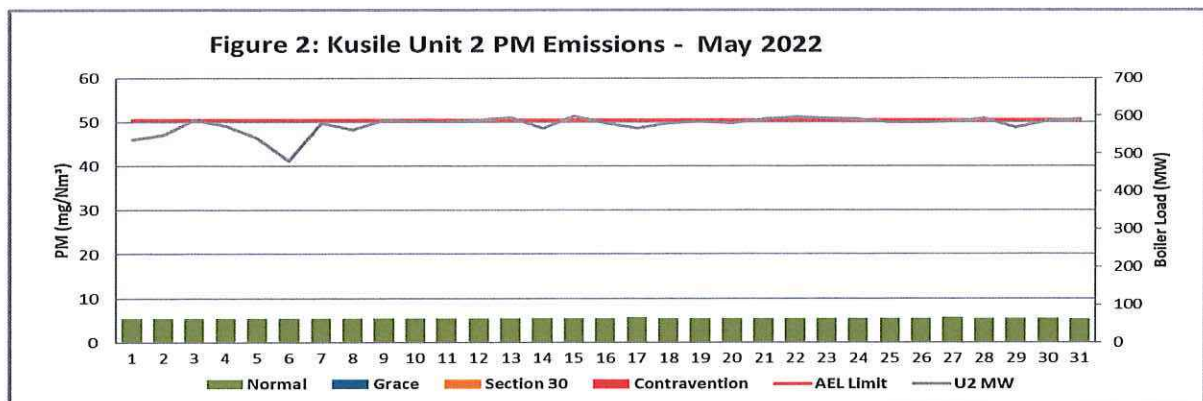
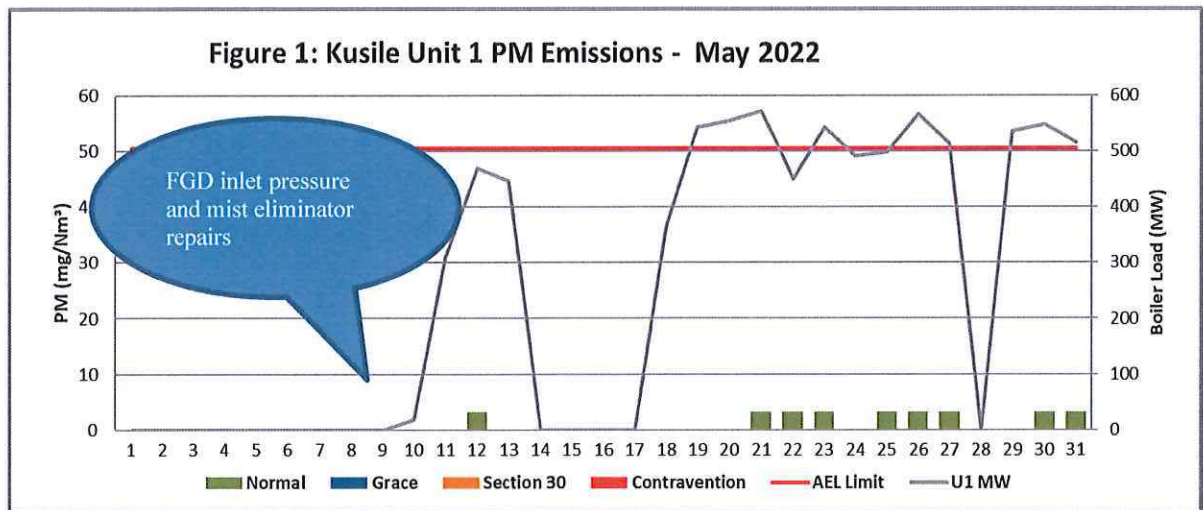
Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO _x (mg/Nm ³)
Unit 1	13	4	0	0	4	448,3
Unit 2	26	5	0	0	5	340,7
Unit 3	0	2	0	0	2	1 783,5
Unit 4	0	0	0	0	0	
Unit 5	0	0	0	0	0	
Unit 6	0	0	0	0	0	
SUM	39	11	0	0	11	

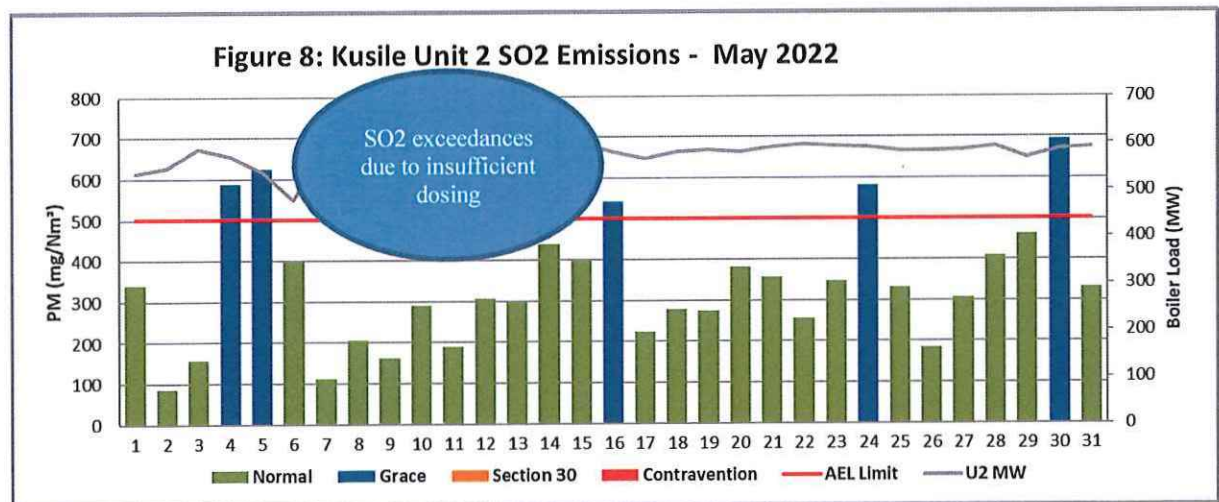
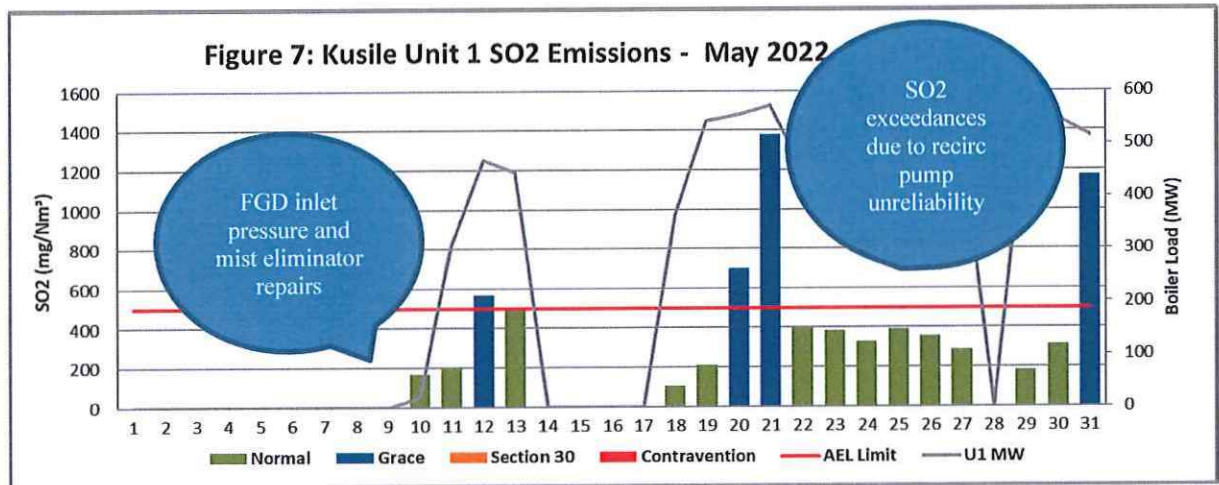
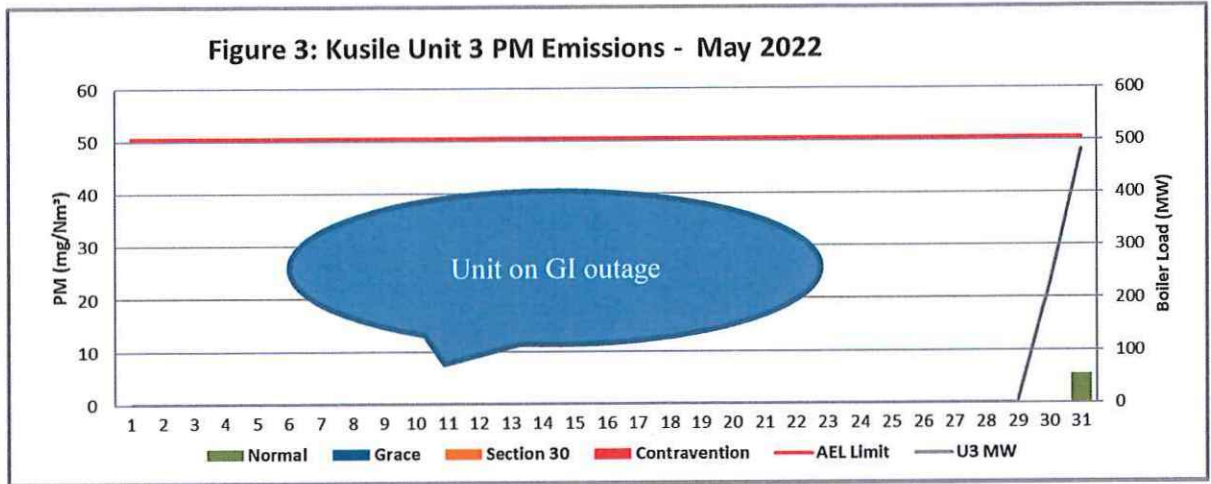
Table 7.4: Operating days in compliance to NOx AEL Limit - May 2022

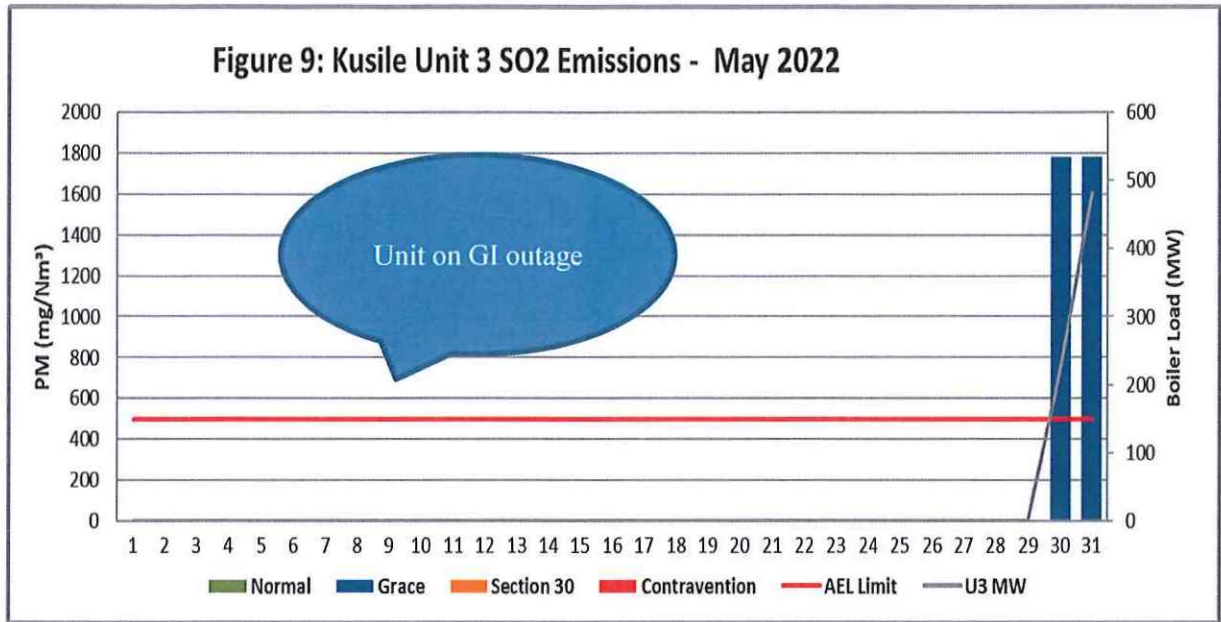
Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm ³)
Unit 1	17	0	0	0	0	461,6
Unit 2	31	0	0	0	0	396,3
Unit 3	2	0	0	0	0	219,1
Unit 4	0	0	0	0	0	
Unit 5	0	0	0	0	0	
Unit 6	0	0	0	0	0	
SUM	50	0	0	0	0	

Table 7.5: Legend Description

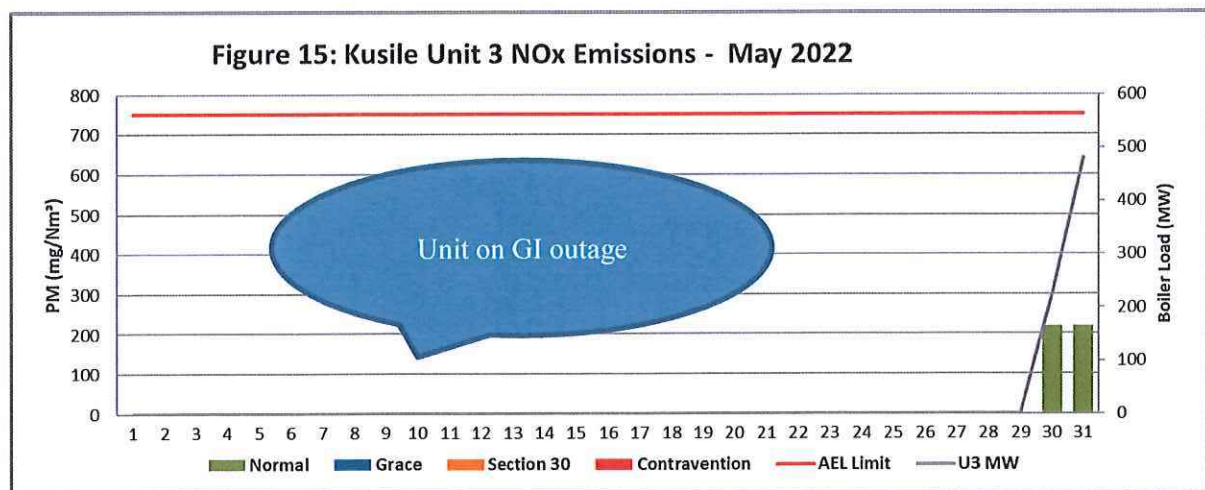
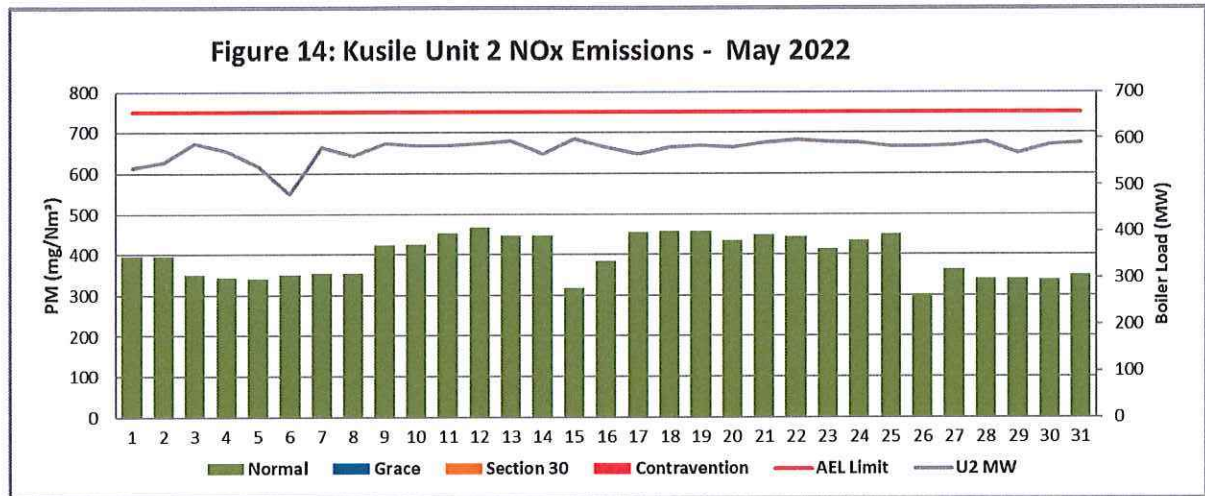
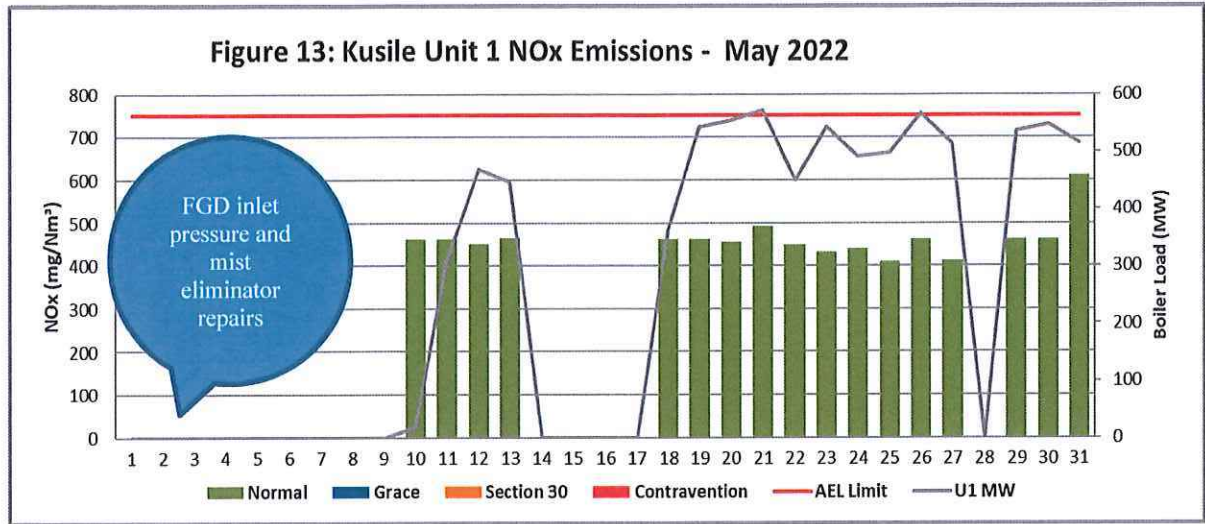
Condition	Colour	Description
Normal	Green	Emissions below Emission Limit Value (ELV)
Grace	Blue	Emissions above the ELV during grace period
Section 30	Orange	Emissions above ELV during a NEMA S30 incident
Contravention	Red	Emissions above ELV but outside grace or S30 incident conditions







Actions for SO2 exceedances		
Root Cause	Actions	Target date
Unreliability of Unit 1 recycle pumps	Ensure 2 recirculation pump trains are always available (minimum) and in-service at Unit 1 absorber.	Completed
	Ensure 4 recirculation pump trains are always available (design) and in-service at Unit 1 absorber.	30 June 2022
Ball mill unreliability – insufficient slurry	Ball mill 33 return to service	Completed
	Bal mill 13 return to service	Completed
	Sole source for ball mills, hydrocycles, liners & clarifier spares	31 July 2022
	Ball mill 23 return to service scope execution	30 June 2023



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8. Shut down and Light up information

Unit No. 1	Event 1		Event 2		Event 3	
Breaker Open (BO)	8 00 pm	2022/05/12	12 25 am	2022/05/24	3 30 pm	2022/05/26
Draught Group (DG) Shut Down (SD)	8 35 pm	2022/05/12	4 10 am	2022/05/24	6 55 pm	2022/05/29
BO to DG SD (duration)	00 00 35	DD HH MM	00 03 45	DD HH MM	29 18 55	DD HH MM
Fires in time	5 55 pm	2022/05/19	5 45 am	2022/05/24	6 35 pm	2022/05/29
Synch. to Grid (or BC)	4 05 am	2022/05/20	9 30 am	2022/05/24	7 15 am	2022/05/30
Fires in to BC (duration)	00 10 10	DD HH MM	00 03 45	DD HH MM	00 12 40	DD HH MM
Emissions below limit from BC (end date)	not > limit	not > limit	not > limit	not > limit	not > limit	not > limit
Emissions below limit from BC (duration)	n/a	DD HH MM	n/a	DD HH MM	n/a	DD HH MM

Unit No. 2	Event 1	
Breaker Open (BO)	11 50 am	2022/05/01
Draught Group (DG) Shut Down (SD)	4 20 pm	2022/05/01
BO to DG SD (duration)	00 04 30	DD HH MM
Fires in time	3 55 am	2022/05/02
Synch. to Grid (or BC)	11 20 pm	2022/05/02
Fires in to BC (duration)	00 19 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

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Unit No. 3	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	6 50 am	2022/05/30
Synch. to Grid (or BC)	10 55 pm	2022/05/30
Fires in to BC (duration)	00 16 05	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

9. Complaints

No complaints received during the month of May 2022 Attached is the complaint register.



Atmospheric Emission License Complaint Register

Template Identifier	240-43921898	Rev	6
Document Identifier	240-103325540	Rev	02
Effective Date	10 July 2017		
Review Date	31 July 2023		

Complaint Advice

Date and Time Received No complaints received in May 2022		1. Complaint Received				
2. Site		3. Complainant		4. Feedback to complainant		
4. No. of Complaints received	5. Nature of the complaint (noise, dust, offensive odour or other)	6. Legislation Related to the Complaint	Root Cause	Immediate Cause	Action taken to mitigate	Date of mitigation action
7. Calculation of impacts/emissions associated with incidents and dispersion modelling of pollutants where applicable.						
9. RECEIVER'S SIGNATURE		NAME				
.....					
DESIGNATION		DATE				
.....					

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