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Date:
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Ref: 17/AEL/MP312/11/09

Dear Ms. Simelane

KRIEL POWER STATION'S MONTHLY STACK EMISSIONS REPORT FOR THE MONTH OF AUGUST 2025

This serves as the monthly report required in terms of Section 7.4 in Kriel Power Station's Atmospheric Emission License 17/AEL/MP312/11/09. The emissions are for the month of August 2025. Verified emissions of particulates matter, SO_2 and NOx (as NO_2) are also included.

Raw Materials and Products

Table 1: Quantity of Raw Materials and Products used/produced for the month of August 2025

Raw Materials and Products used	Raw Material Type	Units	Maximum Permitted Consumption / Rate (Quantity)	Consumption / Rate in Month of August 2025
	Coal	Tons/month	1 227 600	447 904.62
	Fuel Oil	Tons/month	8 000	4 356.81
Production Rates	**Product/ By-Product Name**	**Unit**	**Maximum Production Capacity Permitted (Quantity)**	**Production Rate in Month of August 2025**
	Energy	GWh	3 000/2 232	801.451
	Ash	Tons/month	320 000	108 975.194
	RE PM	kg/MWh	not specified	3.478

Abatement Technology

Table 2: Abatement Equipment Control Technology for August 2025.

Associated Unit/Stack	Technology Type	Actual Efficiency (%)	Technology Type	SO_3 Utilisation (%)
Unit 1	ESP& SO3	97.74%	SO3 Plant	100.00
Unit 2	ESP& SO3	98.18%	SO3 Plant	100.00
Unit 3	ESP& SO3	98.17%	SO3 Plant	100.00
Unit 4	ESP& SO3	Exempt	SO3 Plant	Exempt
Unit 5	ESP& SO3	94.89%	SO3 Plant	100.00
Unit 6	ESP& SO3	96.09%	SO3 Plant	100.00

Note: ESP plant does not contain bypass mode operation; hence plant 100% Utilised.

Energy Source Characteristics

Table 3: Energy Source Material Characteristics for the month of August 2025.

Characteristic	Stipulated Range (Unit)	Monthly Average Content
Sulphur Content	0.6-1.2 (%)	0.60
Ash Content	27-32 (%)	24.34

Monthly Monitor Reliability

Associated Unit/Stack	PM (%)	SOx (%)	NOx (%)
North	71.87	4.53	4.53
South	72.77	0.37	0.37

Emissions Reporting
Graph 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

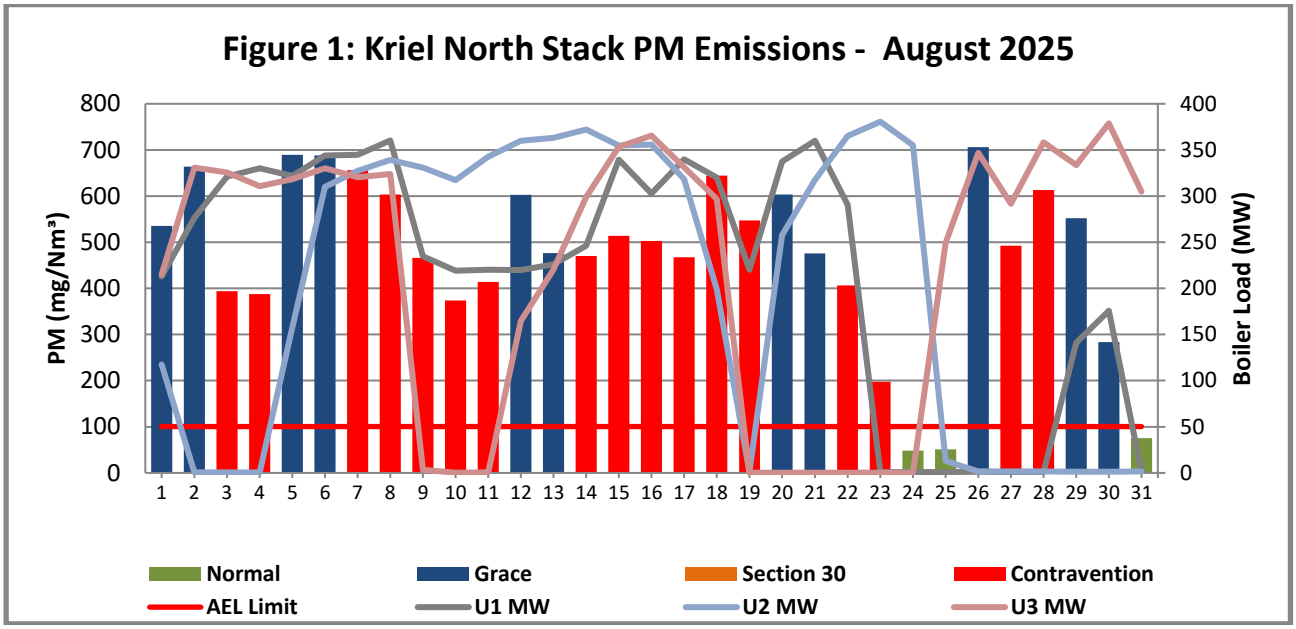

Figure 1: PM emissions for the month of August 2025 against daily emission limit (100 mg/Nm^3) for the North Stack. Reasons for exceedances are indicated on Table 7 below.

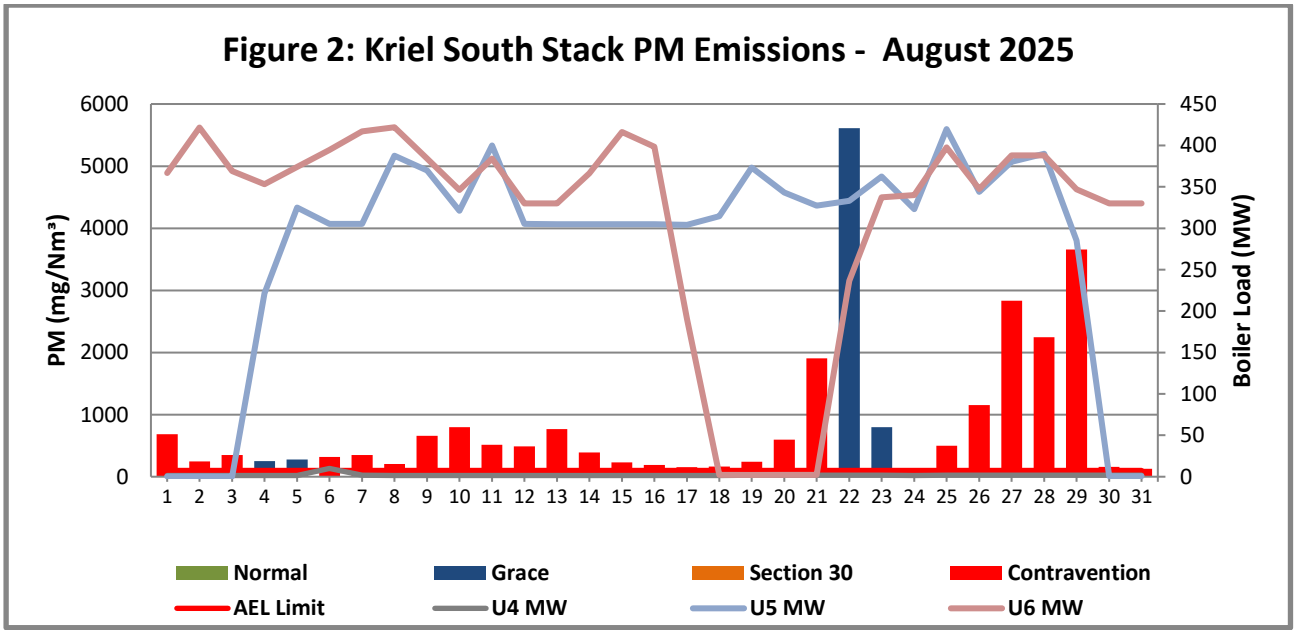

Figure 2: PM emissions for the month of August 2025 against daily emission limit (100 mg/Nm^3) for the South Stack. Reasons for exceedances are indicated on Table 7 below.

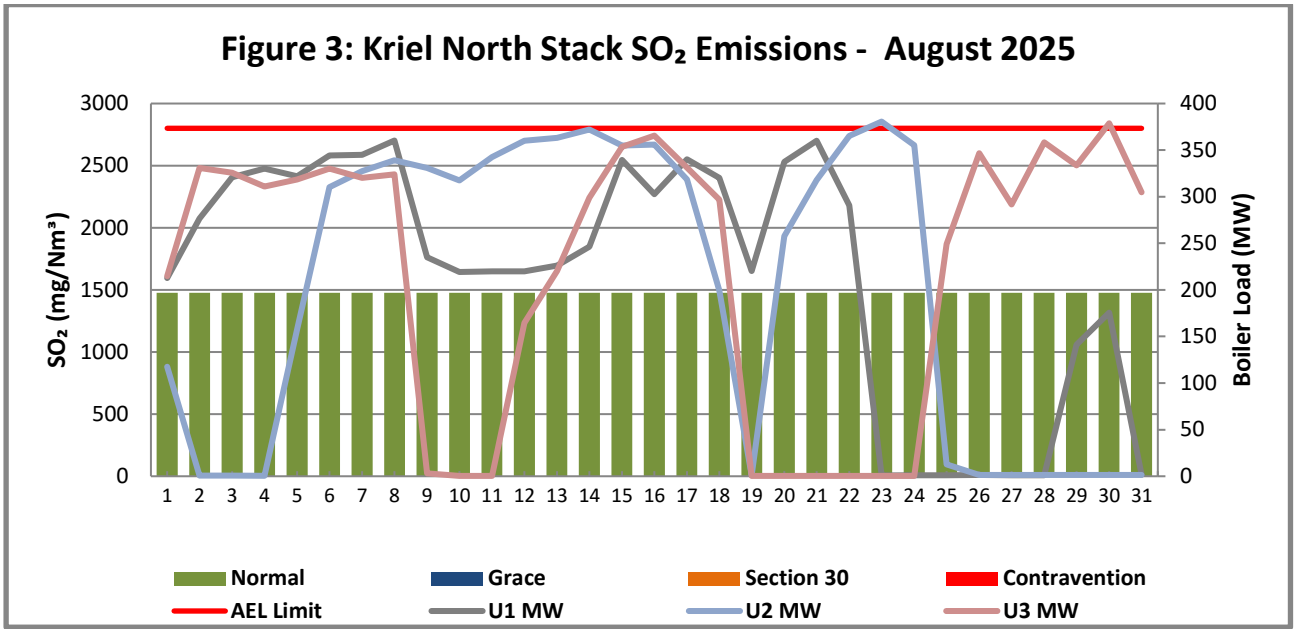

Figure 3. SO_2 emissions for the month of August 2025 against daily emission limit (2800 mg/Nm^3) for the North Stack. Moreover, reason for constant reading is attributed to the fact that all gaseous readings are faulty due to possible monitor malfunctioning.

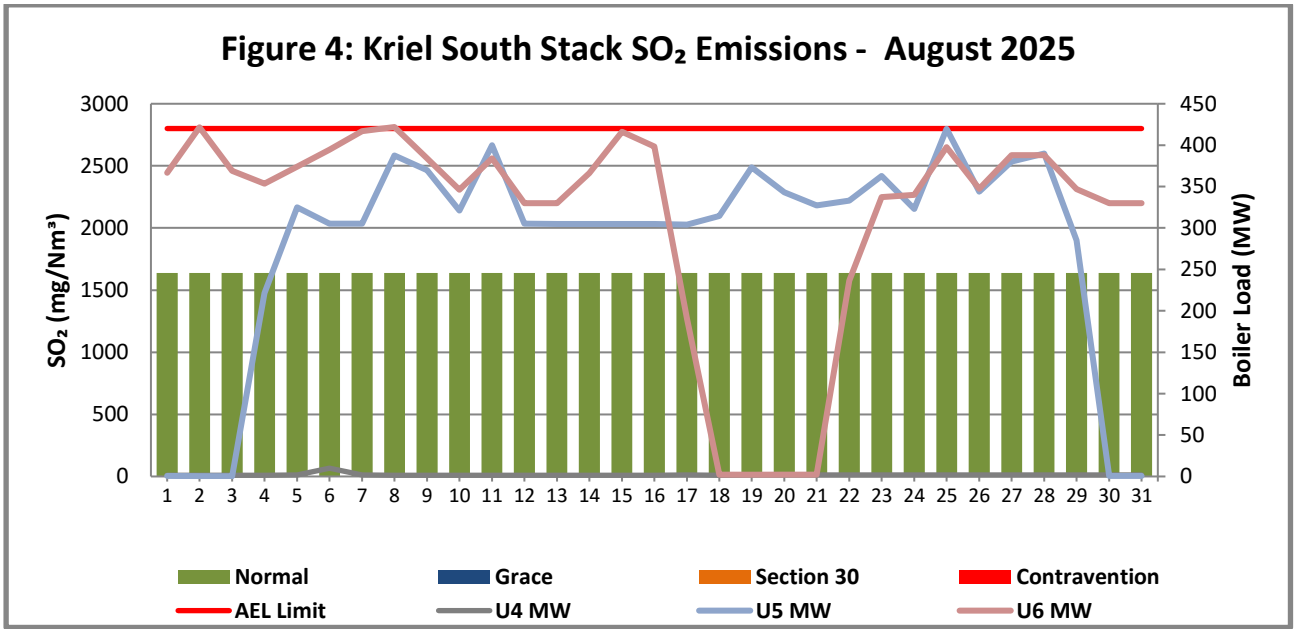

Figure 4. SO_2 emissions for the month of August 2025 against daily emission limit (2800mg/Nm^3) for the South Stack. Moreover, reason for constant reading is attributed to the fact that all gaseous readings are faulty due to possible monitor malfunctioning.

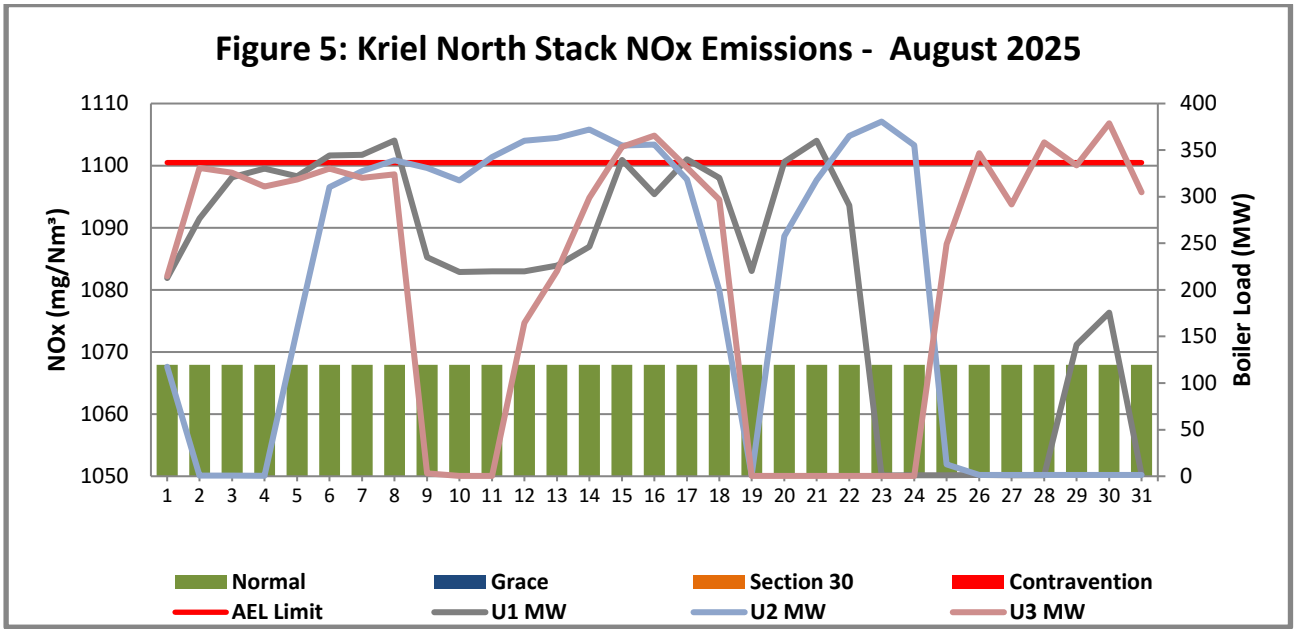

Figure 5. NO_x emissions for the month of August 2025 against daily emission limit (1100mg/Nm³) for the North Stack. Moreover, reason for constant reading is attributed to the fact that all gaseous readings are faulty due to possible monitor malfunctioning.

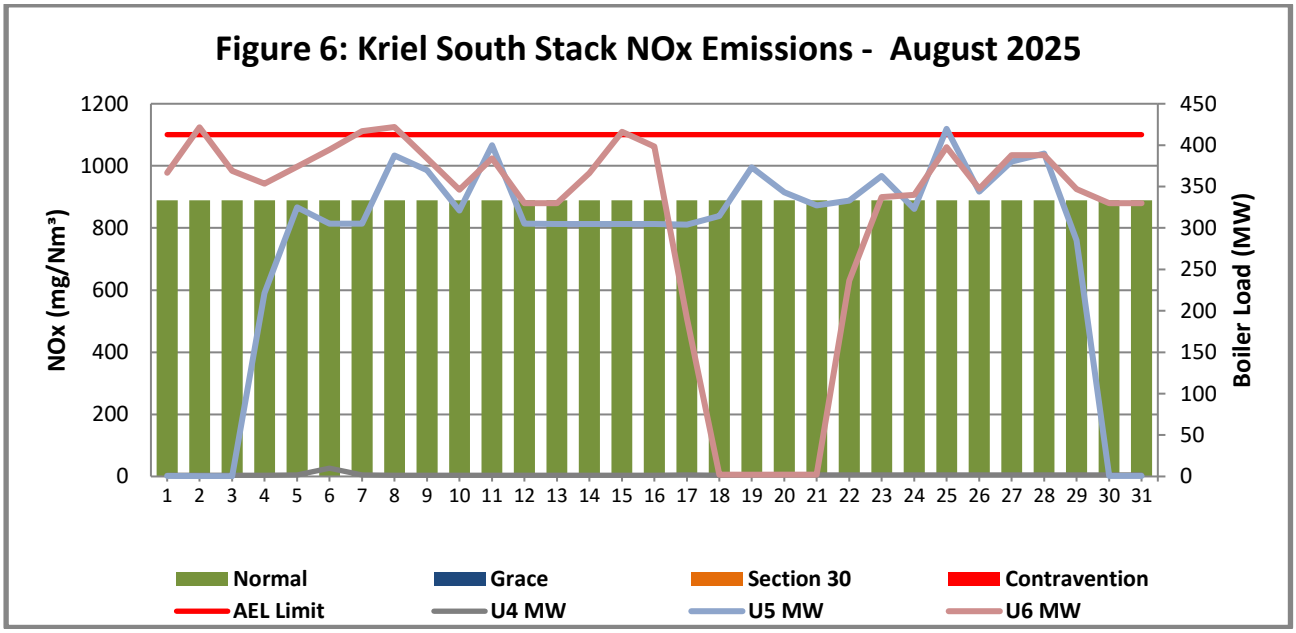

Figure 6. NO_x emissions for the month of August 2025 against daily emission limit (1100mg/Nm³) for the South Stack. Moreover, reason for constant reading is attributed to the fact that all gaseous readings are faulty due to possible monitor malfunctioning.

Table 4: Monthly tonnages for the month August 2025

Unit	PM (tons)	SO_2 (tons)	NO_2 (tons)
SUM	3 118.3	7 490.8	4 637.4

Table 5: Each unit and respective days operating under normal operation and section 30 days respectively.

Table 5.1: Operating days in non-compliance to PM AEL Limit – August 2025

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Monthly Limit Exceedance	Average PM (mg/Nm³)
North	3	11	0	17	28	488.2
South	0	4	0	27	31	870.3

Table 5.2: Operating days in compliance to SOx AEL Limit - August 2025

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SOx (mg/Nm³)
North	31	0	0	0	0	1 475.4
South	31	0	0	0	0	1 638.0

Table 5.3: Operating days in compliance to NOx AEL Limit – August 2025

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm³)
North	31	0	0	0	0	1 067.9
South	31	0	0	0	0	889.1

Light up information

Table 6: PM Start-up information for the month of August 2025

North Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 1		Unit 2		Unit 3		Unit 3	
Breaker Open (BO)	BO previously	BO previously	8:05 am	2025/08/01	8:10 am	2025/08/01	12:30 am	2025/08/09
Draught Group (DG) Shut Down (SD)	n/a	n/a	9:05 pm	2025/08/01	DG did not trip or SD	DG did not trip or SD	4:30 pm	2025/08/09
BO to DG SD (duration)	n/a	DD:HH:MM	00:13:00	DD:HH:MM	n/a	DD:HH:MM	00:16:00	DD:HH:MM
Fires in time			1:35 am	2025/08/05	8:10 am	2025/08/01	9:25 pm	2025/08/11
Synch. to Grid (or BC)			10:20 am	2025/08/05	1:00 pm	2025/08/01	4:35 am	2025/08/12
Fires in to BC (duration)		DD:HH:MM	00:08:45	DD:HH:MM	00:04:50	DD:HH:MM	00:07:10	DD:HH:MM
Emissions below limit from BC (end date)			12:00 am	2025/08/24	12:00 am	2025/08/24	12:00 am	2025/08/24
Emissions below limit from BC (duration)		DD:HH:MM	18:13:40	DD:HH:MM	22:11:00	DD:HH:MM	11:19:25	DD:HH:MM

North Stack …Cont.	Event 1	Event 2	Event 3	Event 4
Unit No.	Unit 1	Unit 2	Unit 3	Unit 1

Breaker Open (BO)	11:55 am	2025/08/14	3:35 pm	2025/08/18	9:15 pm	2025/08/18	7:40 pm	2025/08/22
Draught Group (DG) Shut Down (SD)	DG did not trip or SD	DG did not trip or SD	4:50 pm	2025/08/18	11:35 am	2025/08/19	8:55 am	2025/08/23
BO to DG SD (duration)	n/a	DD:HH:MM	00:01:15	DD:HH:MM	00:14:20	DD:HH:MM	00:13:15	DD:HH:MM
Fires in time	11:55 am	2025/08/14	7:50 pm	2025/08/19	9:15 pm	2025/08/24	6:30 pm	2025/08/28
Synch. to Grid (or BC)	3:50 pm	2025/08/14	3:10 am	2025/08/20	5:25 am	2025/08/25	7:45 am	2025/08/29
Fires in to BC (duration)	00:03:55	DD:HH:MM	00:07:20	DD:HH:MM	00:08:10	DD:HH:MM	00:13:15	DD:HH:MM
Emissions below limit from BC (end date)	12:00 am	2025/08/24	12:00 am	2025/08/24	12:00 am	2025/08/31	7:10 pm	2025/08/30
Emissions below limit from BC (duration)	09:08:10	DD:HH:MM	03:20:50	DD:HH:MM	05:18:35	DD:HH:MM	01:11:25	DD:HH:MM

South Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 5		Unit 6		no event		no event	
Breaker Open (BO)	BO previously	BO previously	3:50 pm	2025/08/17				
Draught Group (DG) Shut Down (SD)	n/a	n/a	6:05 pm	2025/08/18				
BO to DG SD (duration)	n/a	DD:HH:MM	01:02:15	DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time	7:50 pm	2025/08/03	4:40 pm	2025/08/21				
Synch. to Grid (or BC)	5:00 am	2025/08/04	2:20 am	2025/08/22				
Fires in to BC (duration)	00:09:10	DD:HH:MM	00:09:40	DD:HH:MM		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)	12:00 am	2025/09/01	12:00 am	2025/09/01				
Emissions below limit from BC (duration)	27:19:00	DD:HH:MM	09:21:40	DD:HH:MM		DD:HH:MM		DD:HH:MM

Reasons for emissions poor performance for both stacks in August 2025

Table 7: Reasons for emissions poor performance for August 2025

Start Date	Plant	Reason	Impact on Emissions	Actions	Feedback	Completion Date
<u>Continous Emission Monitoring Systems</u>						
2025/03/01	South stack	Gaseous monitor for O2 and NOx malfunction	No readings available	OEM(SICK) to come on site and repair	CIE and CID requested OEM to come on site. Station awaiting SICK Automation technician.	TBC
2025/06/29	North stack	All gaseous readings are faulty. Possible monitor malfunction	No readings available	CID and CIE to inspect	No feedback	TBC
2025/06/29	South stack	All gaseous readings are faulty. Possible monitor malfunction	No readings available	CID and CIE to inspect	No feedback	TBC
<u>Plant Failures</u>						

19/07/2025 - 08/08/2025	North Stack	Ash backlog that resulted from Unit 3 Dust handling plant blow tanks failures	Accumulation of ash inside the fields resulting in poor performance of ESP and high PM emissions as a results. All plate rappers tripping on thermal overload due to high hopper levels.	Maintenance attending to defects & operating continously monitoring transportation of fly ash	Unit 3 shutdown on the 08/08/2025 ESP and dust handling plant repairs	08/08/2025
09/08/2025 - 11/08/2025	North stack	Unit 1 Half load condition	High PM Emission due to tripping of the SO3 plant from time to time due to load dropping below 220 MW.	1A EFP on permit	BFPT in service and load increased above 300 MW and unit off oil burner support	14/08/2025
14/08/2025 - 23/08/2025	North stack	Unit 1 RHS ESP underperforming .	High PM Emissions & 4 plate rappers not running	An opportunity outage is required for Unit 1 for ESP Inspection & repair	Unit 1 shutdown on the 23/08/2025 ESP and dust handling plant repairs.	23/08/2025
27/08/2025- 28/08/2025	North Stack	North steam leak repairs & Unit 3 ESP Fields rapping not running on auto.	High Emissions due to no SO3 injection and ESP reduced performance due to no rapping.	Maintenance attending to the steam leak repairs and contractor contacted for Unit 3 rappers that are not running on auto	Steam leak reapirs complted & ESP rappers rapping on auto	29/08/2025
30/07/2025- 01/08/2025	South Stack	Unit 6 SO3 off due blocked steam jumpers at sulphur pump house sulphur line due to erroded connection	High PM Emission due to no SO3 injection to reduce the fly ash resistivity.	Sulphur supply line removed for repairs and unblocking of the line.	Repairs completed	01/08/2025
03/08/2025- 04/08/2025	South Stack	Unit 6 SO3 Sulphur dosing pump trip due to low steam pressure due to one unit operating on the South side.	High PM Emission due to no SO3 injection to reduce the fly ash resistivity.	Continous bleeding of the steam lines.		04/08/2025
07/08/2025	South Stack	Unit 5 & 6 SO3 plant tripped , unit 5 sulphur supply flow sensor damaged	High PM Emission due to no SO3 injection to reduce the fly ash resistivity.	Damaged cables replaced	Repairs completed	07/08/2025
08/08/2025 - 14/08/2025	South Stack	Unit 5 & 6 Poor ESP performance due accumulation of ash inside the fields.	High PM emissions & Plate rappers tripping on thermal overload due to high hopper levels	Maintenance attending to defects & operating continously monitoring transportation of fly ash	Continously monitoring of transportation of fly ash in progress	
14/08/2025- 29/08/2025	South Stack	Unit 5 Poor ESP performance due accumulation of ash inside the fields due to blow tank failures and unavailability of the 18B overland converyor	High PM emissions & Plate rappers tripping on thermal overload due to high hopper levels	An opportunity outage is required for Unit 5 for ESP Inspection & repair	Unit 5 shutdown on the 29/08/2025 ESP and dust handling plant repairs	29/08/2025
30/08/2025- 31/08/2025	South Stack	Unit 6 ESP fields underperforming due to ash backlog that resulted to unavailability of the 18B	High PM emissions & Plate rappers tripping on thermal overload due to high hopper levels	Maintenance attending to defects & operating continously monitoring transportation of fly as	Continously monitoring of transportation of fly ash in progres	

Complaints Register

Table 8: Complaint for the month of August 2025

Source Code/ Name	Root Cause Analysis	Calculation of Impacts/ emissions associated with the incident	Dispersion modeling of pollutants where applicable	Measures implemented to prevent reoccurrence	Date by which measure will be implemented
There was no complaint related to air quality received during the month of August 2025.					

General

NB: The rest of the information demonstrating compliance with the emissions license conditions is supplied in the annual emission reports sent to your office.