Eskom

Ms Nompumelelo Simelane
Nkangala District Municipality
PO BOX 437
Middelburg
1050

Date:
01 April 2025

Enquiries:
Livhuwani Tshilate
017 615 2317

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

Dear Ms. Simelane

KRIEL POWER STATION'S MONTHLY STACK EMISSIONS REPORT FOR THE MONTH OF APRIL 2024

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 April 2024. Verified emissions of particulates matter, SO_2 and NO_x (as NO_2) are also included.

Raw Materials and Products

Table 1: Quantity of Raw Materials and Products used/produced for the month of April 2024

Raw Materials and Products used	**Raw Material Type**	**Units**	**Maximum Permitted Consumption / Rate (Quantity)**	**Consumption / Rate in Month of April 2024**
	Coal	Tons/month	1 227 600	517 470.00
	Fuel Oil	Tons/month	5 000	7 605.58
Production Rates	**Product/ By-Product Name**	**Unit**	**Maximum Production Capacity Permitted (Quantity)**	**Production Rate in Month of April 2024**
	Energy	GWh	3 000/2 232	856.00
	Ash	Tons/month	320 000	2 143.90
	RE PM	kg/MWh	not specified	2.291

1/…

Abatement Technology

Table 2: Abatement Equipment Control Technology for April 2024.

Associated Unit/Stack	Technology Type	Actual Efficiency (%)	Technology Type	SO_3 Utilisation (%)
Unit 1	ESP& SO3	99.60%	SO3 Plant	30.70
Unit 2	ESP& SO3	99.25%	SO3 Plant	97.62
Unit 3	ESP& SO3	99.06%	SO3 Plant	100.00
Unit 4	ESP& SO3	Off	SO3 Plant	Off
Unit 5	ESP& SO3	96.48%	SO3 Plant	100.00
Unit 6	ESP& SO3	97.39%	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 April 2024

Characteristic	Stipulated Range (Unit)	Monthly Average Content
Sulphur Content	0.6-1.2 (%)	0.83
Ash Content	27-32 (%)	24.02

Monthly Monitor Reliability

Associated Unit/Stack	PM (%)	SOx (%)	NOx (%)
North	91.42	99.59	99.59
South	37.75	95.60	100.00

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

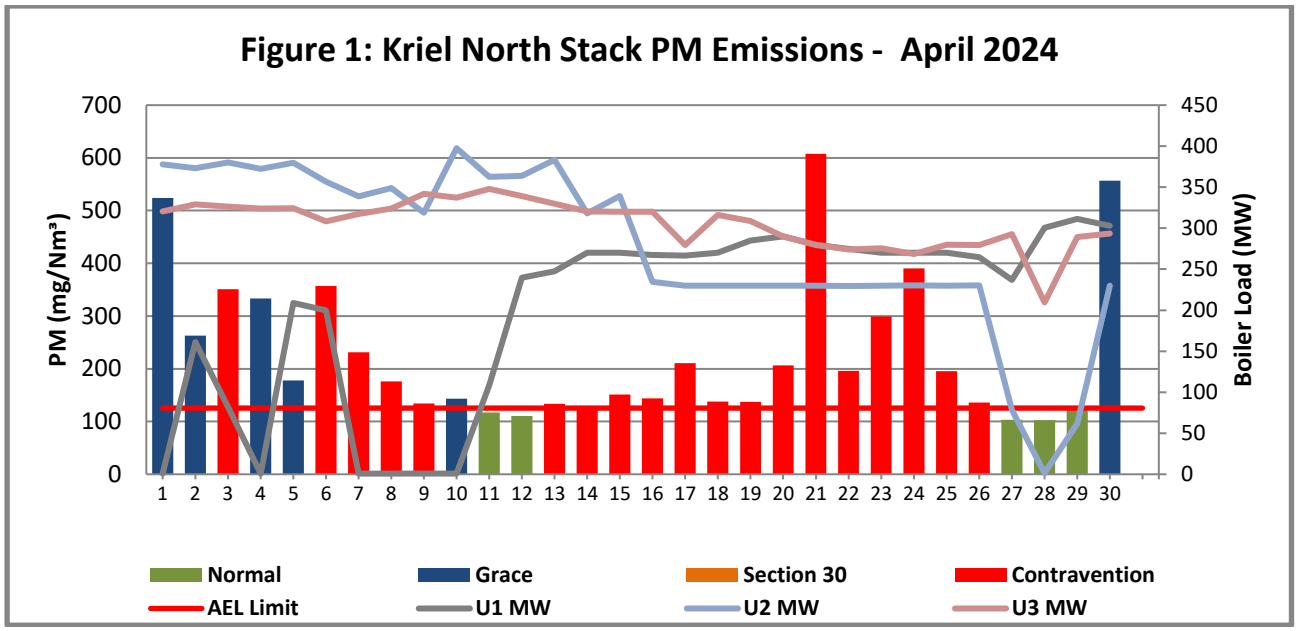

Figure 1: PM emissions for the month of April 2024 against monthly emission limit (125 mg/Nm3) for the North Stack.

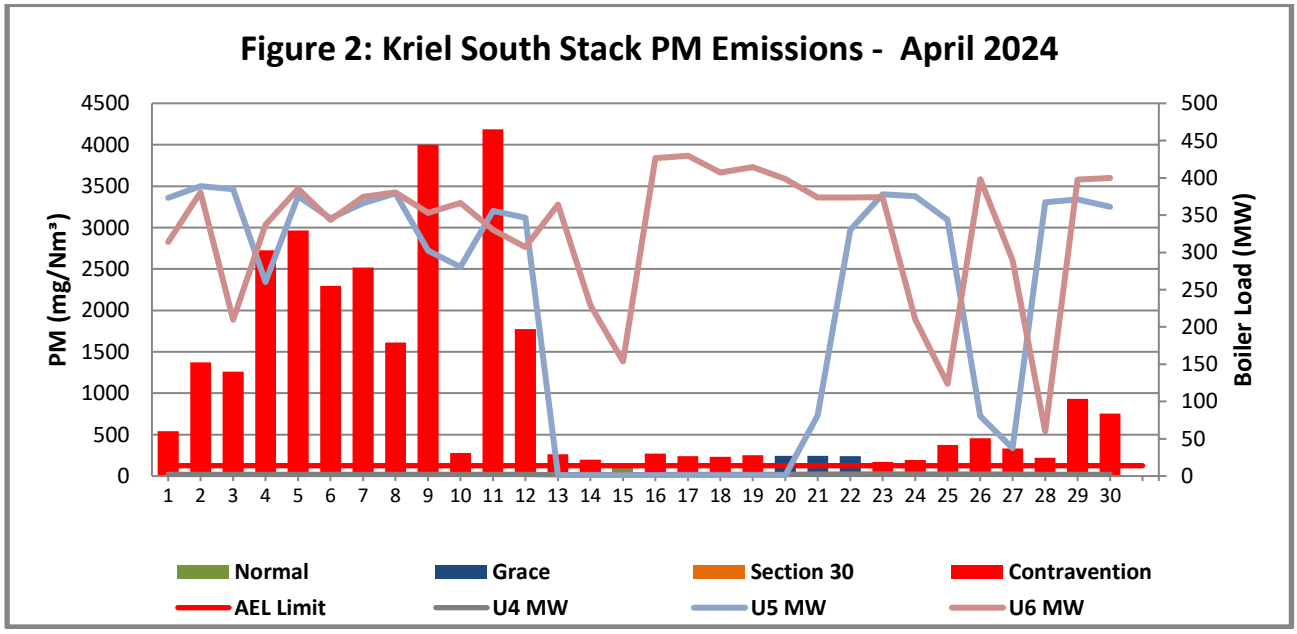

Figure 2: PM emissions for the month of April 2024 against monthly emission limit (125 mg/Nm3) for the South Stack.

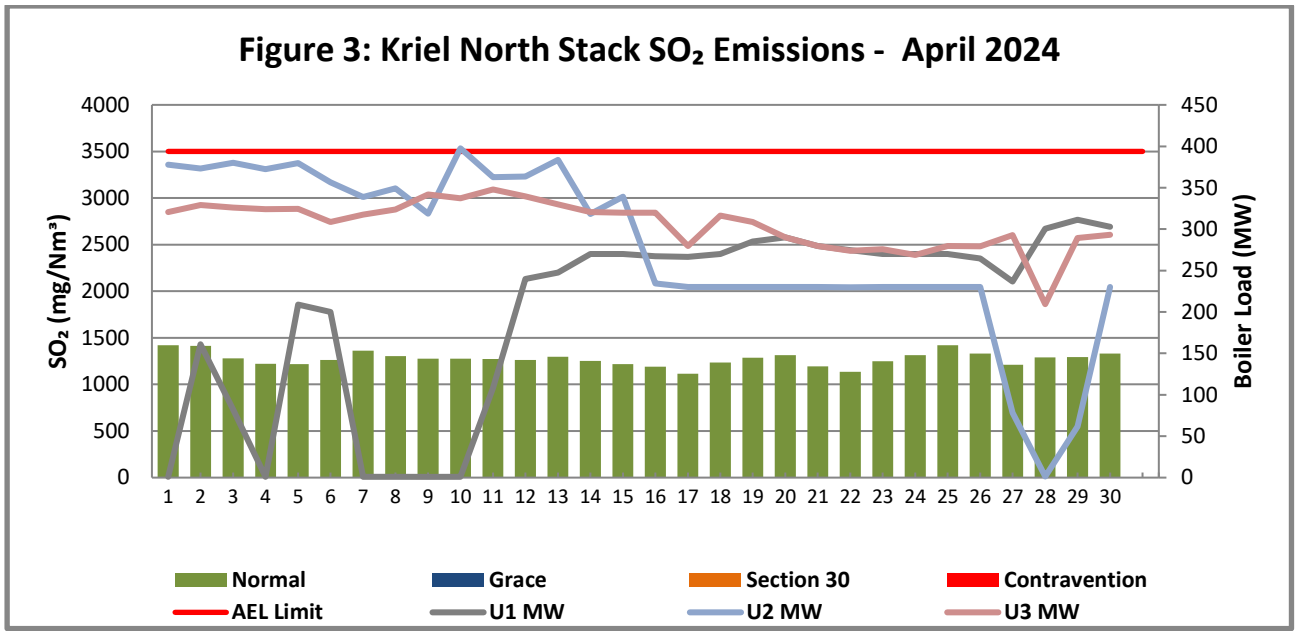

Figure 3. SO_2 emissions for the month of April 2024 against monthly emission limit (3500 mg/Nm3) for the North Stack.

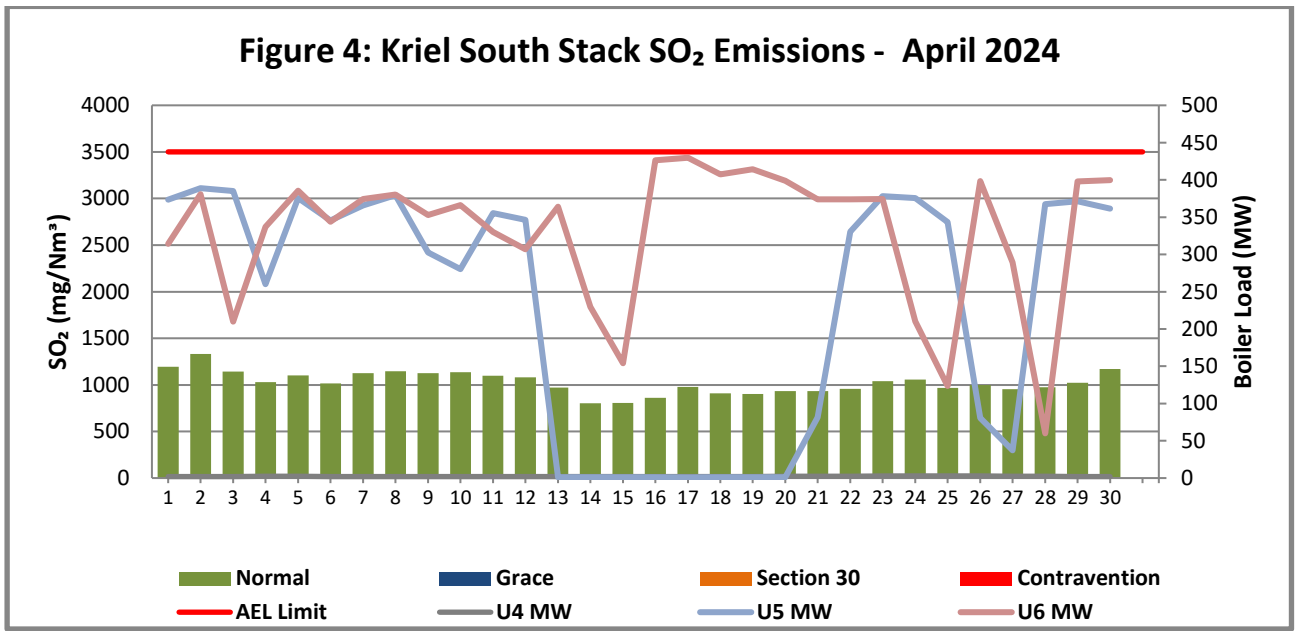

Figure 4. SO_2 emissions for the month of April 2024 against monthly emission limit (3500mg/Nm3) for the South Stack.

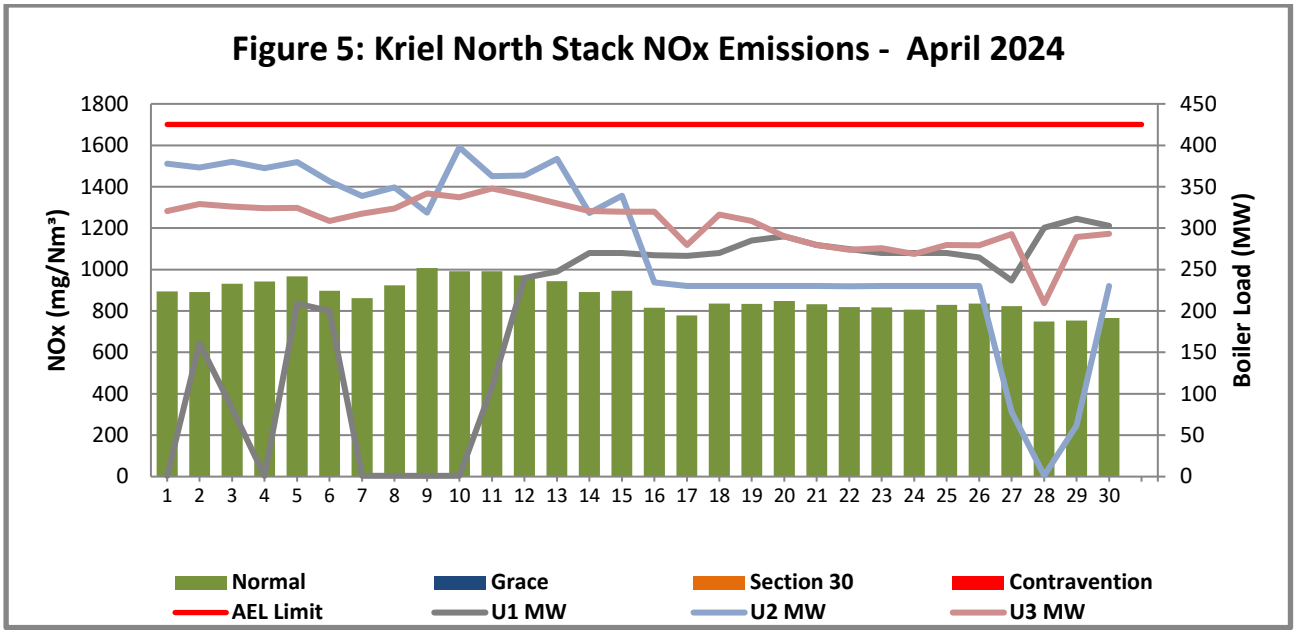

Figure 5. NO_2 emissions for the month of April 2024 against monthly emission limit (1700) for the North Stack.

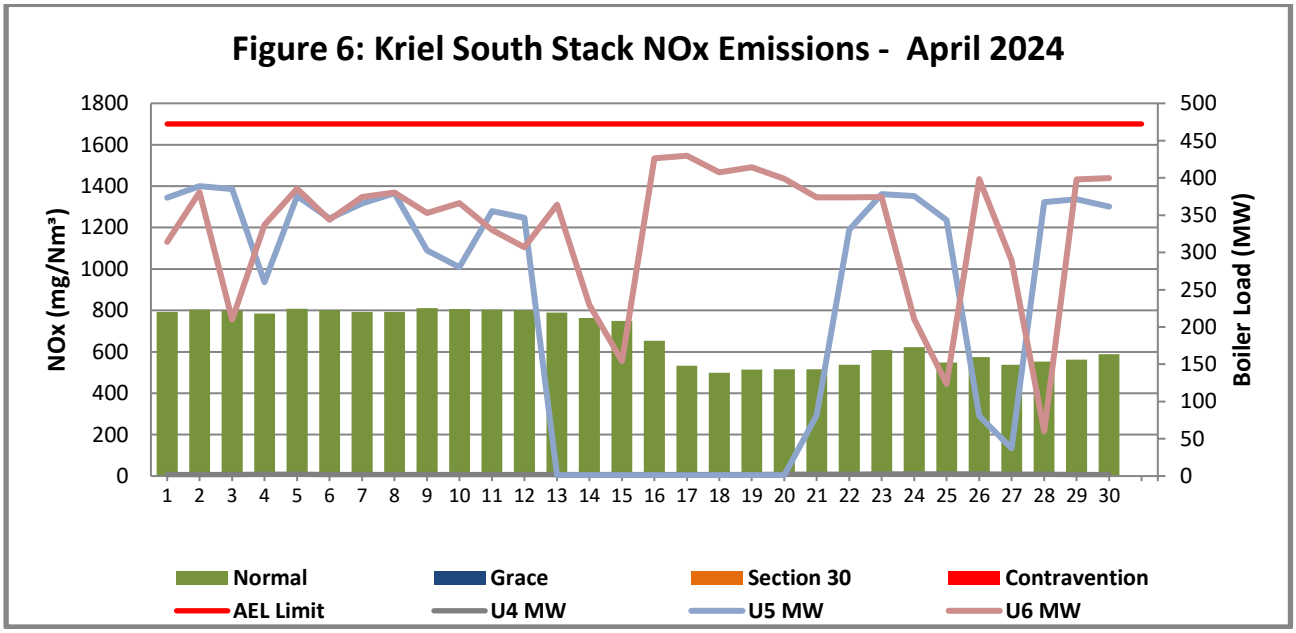

Figure 6. NO_2 emissions for the month of April 2024 against monthly emission limit (1100mg/Nm3) for the South Stack.

Table 4: Monthly tonnages for the month April 2024

Unit	PM (tons)	SO_2 (tons)	NO_2 (tons)
SUM	2 143.9	5 340.6	3 592.2

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 – April 2024

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Monthly Limit Exceedance	Average PM (mg/Nm³)
North	5	6	0	19	25	263.1
South	1	3	0	26	29	728.1

Table 5.2: Operating days in compliance to SOx AEL Limit - April 2024

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SOx (mg/Nm³)
North	30	0	0	0	0	**1 274.8**
South	30	0	0	0	0	**1 025.6**

Table 5.3: Operating days in compliance to NOx AEL Limit – April 2024

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm³)
North	30	0	0	0	0	**871.4**
South	30	0	0	0	0	**675.5**

Light up information

Table 6: PM Start-up information for the month of April 2024

North Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 1		Unit 1		Unit 1		Unit 2	
Breaker Open (BO)			8:35 am	2024/04/03	8:00 pm	2024/04/06	10:35 am	2024/04/09
Draught Group (DG) Shut Down (SD)			11:30 am	2024/04/03	9:35 am	2024/04/07	11:00 am	2024/04/09
BO to DG SD (duration)		DD:HH:MM	00:02:55	DD:HH:MM	00:13:35	DD:HH:MM	00:00:25	DD:HH:MM
Fires in time	7:55 pm	2024/04/01	10:30 pm	2024/04/04	10:40 pm	2024/04/10	12:00 pm	2024/04/09
Synch. to Grid (or BC)	6:20 am	2024/04/02	2:10 am	2024/04/05	1:30 pm	2024/04/11	3:30 pm	2024/04/09

Fires in to BC (duration)	00:10:25	DD:HH:MM	00:03:40	DD:HH:MM	00:14:50	DD:HH:MM	00:03:30	DD:HH:MM
Emissions below limit from BC (end date)	5:00 am	2024/04/18	5:00 am	2024/04/18	5:00 am	2024/04/18	5:00 am	2024/04/18
Emissions below limit from BC (duration)	15:22:40	DD:HH:MM	13:02:50	DD:HH:MM	06:15:30	DD:HH:MM	08:13:30	DD:HH:MM

North Stack …Cont.	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 2		Unit 3		No event		No event	
Breaker Open (BO)	8:15 am	2024/04/27	8:15 pm	2024/04/28				
Draught Group (DG) Shut Down (SD)	1:50 pm	2024/04/27	DG did not trip or SD	DG did not trip or SD				
BO to DG SD (duration)	00:05:35	DD:HH:MM	n/a	DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time	7:40 am	2024/04/29	8:15 pm	2024/04/28				
Synch. to Grid (or BC)	4:55 pm	2024/04/29	11:45 pm	2024/04/28				
Fires in to BC (duration)	00:09:15	DD:HH:MM	00:03:30	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

South Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 5		Unit 5		Unit 5		Unit 6	
Breaker Open (BO)	8:20 pm	2024/04/09	11:15 pm	2024/04/12	3:25 pm	2024/04/26	4:40 pm	2024/04/14
Draught Group (DG) Shut Down (SD)	DG did not trip or SD	DG did not trip or SD	12:50 pm	2024/04/13	1:25 am	2024/04/27	3:50 am	2024/04/15

BO to DG SD (duration)	n/a	DD:HH:MM	00:13:35	DD:HH:MM	00:10:00	DD:HH:MM	00:11:10	DD:HH:MM
Fires in time	8:20 pm	2024/04/09	6:45 pm	2024/04/19	3:35 pm	2024/04/27	9:15 am	2024/04/15
Synch. to Grid (or BC)	3:35 am	2024/04/10	4:40 pm	2024/04/21	8:30 pm	2024/04/27	2:15 pm	2024/04/15
Fires in to BC (duration)	00:07:15	DD:HH:MM	01:21:55	DD:HH:MM	00:04:55	DD:HH:MM	00:05:00	DD:HH:MM
Emissions below limit from BC (end date)	7:00 am	2024/04/15	9:00 pm	2024/05/03	9:00 pm	2024/05/03	not > limit	not > limit
Emissions below limit from BC (duration)	05:03:25	DD:HH:MM	12:04:20	DD:HH:MM	06:00:30	DD:HH:MM	n/a	DD:HH:MM

South Stack …Cont.	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 6		Unit 6		no event		no event	
Breaker Open (BO)	1:10 pm	2024/04/24	9:20 am	2024/04/27				
Draught Group (DG) Shut Down (SD)	10:45 pm	2024/04/24	DG did not trip or SD	DG did not trip or SD				
BO to DG SD (duration)	00:09:35	DD:HH:MM	n/a	DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time	9:20 am	2024/04/25	9:20 am	2024/04/27				
Synch. to Grid (or BC)	3:00 pm	2024/04/25	6:55 pm	2024/04/28				
Fires in to BC (duration)	00:05:40	DD:HH:MM	01:09:35	DD:HH:MM		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)	9:00 pm	2024/05/03	9:00 pm	2024/05/03				
Emissions below limit from BC (duration)	08:06:00	DD:HH:MM	05:02:05	DD:HH:MM		DD:HH:MM		DD:HH:MM

Complaints Register

Table 8: Complaint for the month of April 2024

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 April 2024.					

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.