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 MIDDLEBURG  
 1050

Date:  
 03 October 2018

Enquiries:

Ref: 17/4/AEL/MP312/11/09

Dear Mr Mahlangu

### KRIEL POWER STATION'S MONTHLY STACK EMISSIONS REPORT FOR THE MONTH OF August 2018

This serves as the monthly report required in terms of Section 7.2.1 in Kriel Power Station's Atmospheric Emission License 17/4/AEL/MP312/11/09. The emissions are for the month of August 2018. Verified emissions of particulates matter, SO<sub>2</sub> and NO<sub>x</sub> (as NO<sub>2</sub>) are also included.

#### Raw Materials and Products

**Table 1:** Quantity of Raw Materials and Products used/produced for the month of August 2018

Raw Materials and Products used	Raw Material Type	Units	Maximum Permitted Consumption/ Rate (Quantity)	Consumption/ Rate in Month of August 2018
	Coal	Tons/month	1 227 600	765 901.00
	Fuel Oil	Tons/month	5 000	1353.62
Production Rates	Product/ By-Product Name	Unit	Maximum Production Capacity Permitted (Quantity)	Production Rate in Month of August 2018
	Ash	Tons/month	not specified	501.35
	RE PM	kg/MWh	not specified	0.41

1/...

## Abatement Technology

**Table 2:** Abatement Equipment Control Technology for August 2018

Associated Unit/Stack	Technology Type	Actual Utilisation (%)
		August 2018
Unit 1	ESP	98.3%
Unit 2	ESP	Outage
Unit 3	ESP	100%
Unit 4	ESP	100%
Unit 5	ESP	100%
Unit 6	ESP	100%

## Energy Source Characteristics



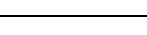
**Table 3:** Energy Source Material Characteristics for the month of August 2018

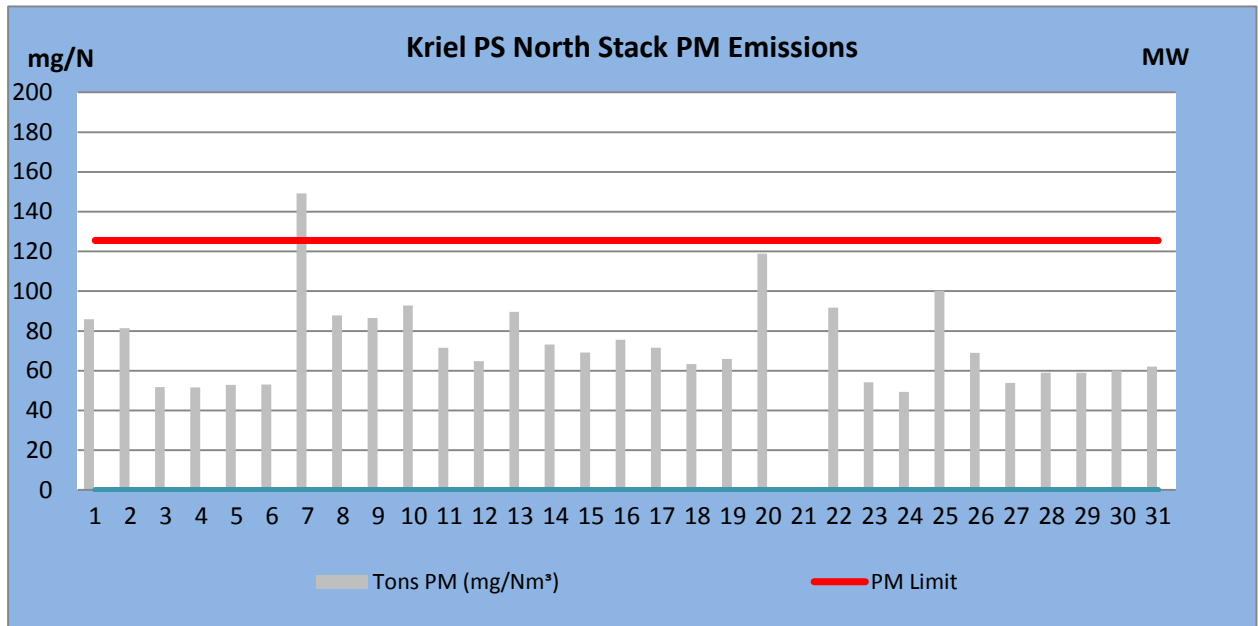
Characteristic	Stipulated Range (Unit)	Monthly Average Content
CV Content	18-24 (MJ/kg)	
Sulphur Content	0.6-1.2 (%)	0.91
Ash Content	27-32 (%)	26.42

## Monthly Monitor Reliability

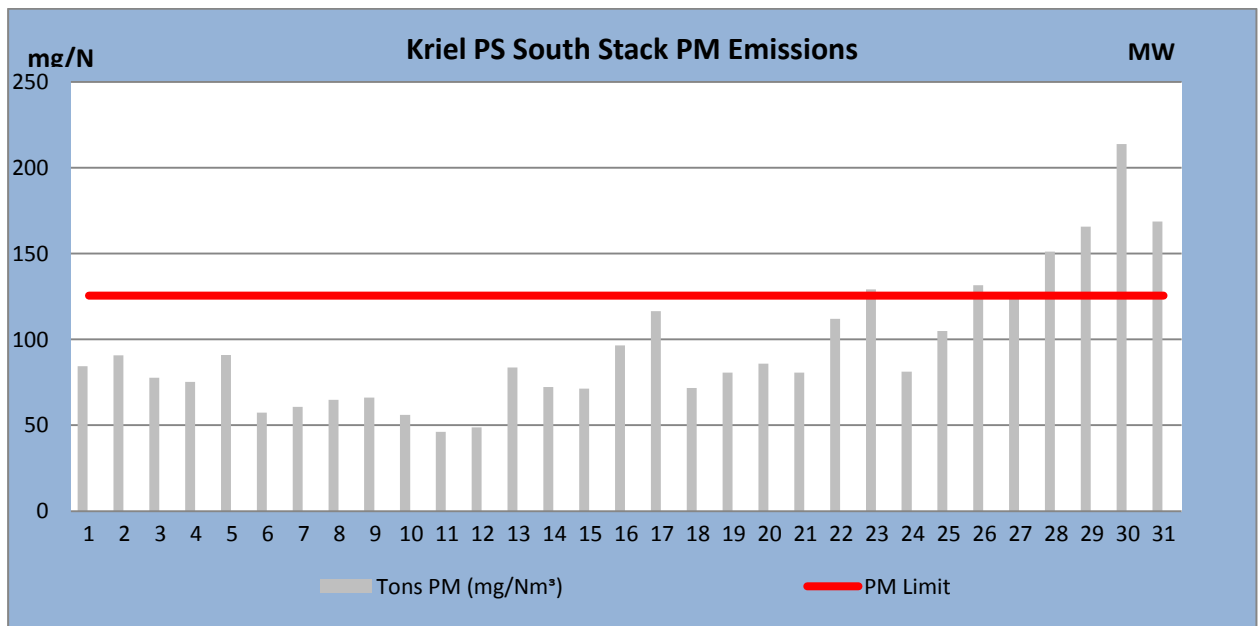
Associated Unit/Stack	PM (%)	SOx (%)	NOx (%)
North	98.2%	94.0%	94.0%
South	100%	98.9%	98.9%

## Emissions Reporting

GRAPH LEGEND	
	Final daily emissions average in mg/Nm3 released within a particular day
	Final monthly emissions average in mg/Nm3 released within the whole month
	Emissions limit as per the AEL



**Figure 1: PM emissions (daily averages) for the month of August 2018 against emission limit for the North Stack**



**Figure 2: PM emissions (daily averages) for the month of August 2018 against emission limit for the South Stack**

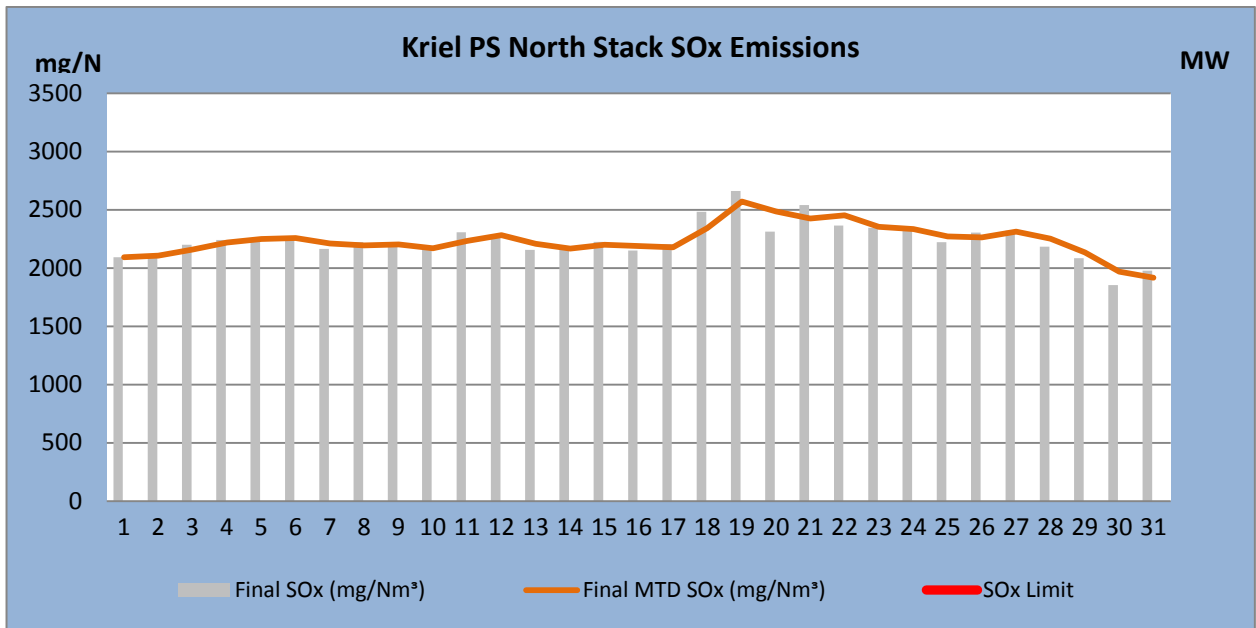
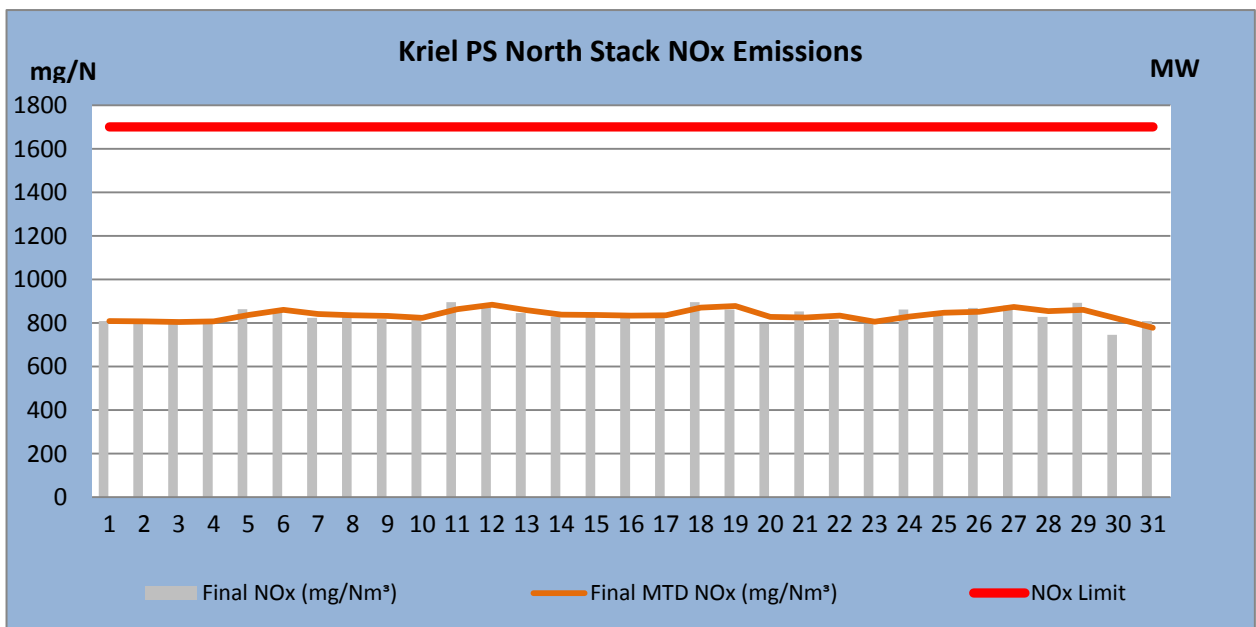
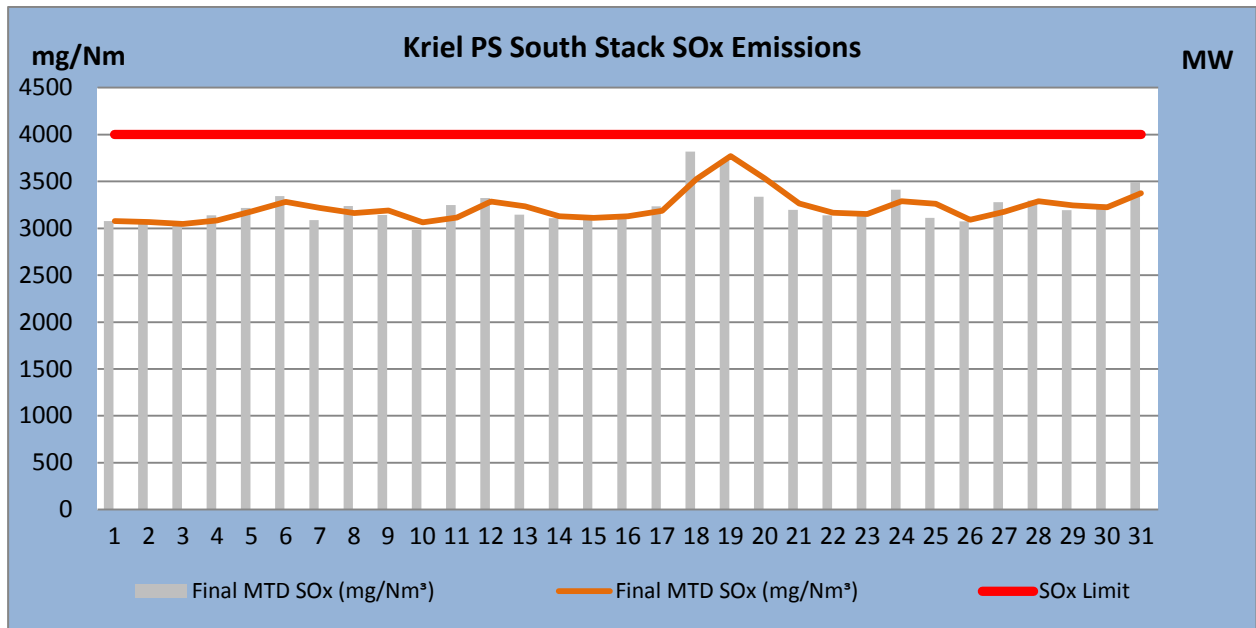


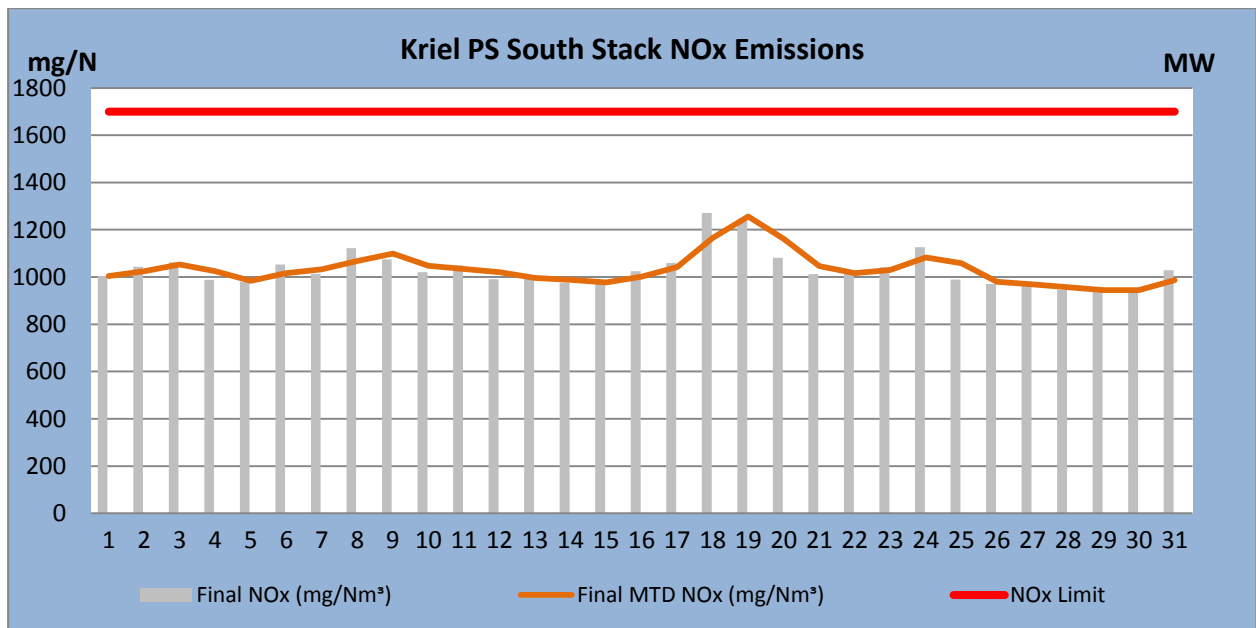
Figure 3. SO<sub>2</sub> emissions (daily averages) for the month of August 2018 against emission limit for the North Stack. SO<sub>x</sub> permitted maximum release rate is 3 500mg/Nm<sup>3</sup>



4. NO<sub>2</sub> emissions (daily averages) for the month of August 2018 against emission limit for the North Stack. NO<sub>x</sub> permitted maximum release rate is 1 600mg/Nm<sup>3</sup>



**Figure 5. SO<sub>2</sub> emissions (daily averages) for the month of August 2018 against emission limit for the South Stack. SO<sub>x</sub> permitted maximum release rate is 3 500mg/Nm<sup>3</sup>**



**Figure 6. NO<sub>2</sub> emissions (daily averages) for the month of August 2018 against emission limit for the South Stack. NO<sub>x</sub> permitted maximum release rate is 1 600mg/Nm<sup>3</sup>**

**Table 4: Monthly tonnages for the month August 2018**

Unit	PM (tons)	SO <sub>2</sub> (tons)	NO <sub>2</sub> (tons)	CO <sub>2</sub> (tons)
1	62.7	1 970.9	746.3	
2	0.0	0.0	0.0	
3	75.7	2 525.9	945.0	
4	142.6	4 896.2	1 568.8	
5	86.3	2 947.3	939.5	
6	134.1	4 778.2	1 536.5	
SUM	501.3	17 118.6	5 736.2	

Operating Days (DD:HH:MM)				
Unit	Normal operation	In grace period	Under S 30	Unit off load
1	22:11:45	00:00:00	00:00:00	08:12:15
2	00:00:00	00:00:00	00:00:00	31:00:00
3	25:22:30	00:00:00	00:00:00	05:01:30
4	30:09:20	00:00:00	00:00:00	00:14:40
5	24:03:10	00:00:00	00:00:00	06:20:50
6	29:07:15	00:00:00	00:00:00	01:16:45

**Light up information**

**Table 6: PM Start-up information for the month of August 2018**

North Stack	Event 2		Event 3		Event 4		Event 6	
Unit No.	Unit 3		Unit 3		Unit 1		Unit 3	
Fires in	8:55 PM	30/07/2018	10:25 PM	05/08/2018	8:45 AM	25/08/2018	8:50 PM	20/08/2018
Synchronisation with Grid	3:40 PM	01/08/2018	3:45 AM	06/08/2018	12:20 PM	25/08/2018		
Emissions below limit from Sync (Date and Time)								
Fires in to synchronization	01:18:45		00:05:20		00:03:35			
Synchronization to < limit (Duration	did not go above limit		did not go above limit		did not go above limit		did not go above limit	

South Stack	Event 1		Event 2	
Unit No.	Unit 5		Unit 5	
Fires in	4:30 PM	08/08/2018	1:10 AM	19/08/2018
Synchronisation with Grid	11:15 PM	08/08/2018	7:35 AM	19/08/2018
Emissions below limit from Sync				
Fires in to synchronization	00:06:45		00:06:25	
Synchronization to < limit	did not go above limit		did not go above limit	

Table 7. Point Source emissions released during start-up (fires-in) for the month of August 2018 in mg/Nm<sup>3</sup>

North Stack Emission Average from Fires-in to Synchronisation (Date and Time)						
Unit	Fires-In		Synchronisation	PM	SO <sub>2</sub>	NO <sub>x</sub>
Unit 3	30/07/2018		8:55 PM	01/08/2018	3:40 PM	85.8
Unit 3	05/08/2018		10:25 PM	06/08/2018	3:45 AM	302.6
Unit 1	25/08/2018		8:45 AM	25/08/2018	12:20 PM	408.2
Unit 3	20/08/2018		8:50 PM	21/08/2018	5:00 AM	220.5

South Stack Emission Average from Fires-in to Synchronisation (Date and Time)							
Unit	Fires-In		Synchronisation		PM	SO <sub>2</sub>	NO <sub>x</sub>
Unit 5	08/08/2018	4:30 PM	08/08/2018	11:15 PM	281.0	2570.6	888.8
Unit 5	19/08/2018	1:10 AM	19/08/2018	7:35 AM	304.5	2887.6	944.2

Table 8. Point Source emissions released during Shut-down (SD) for the month of August 2018 in mg/Nm<sup>3</sup>

North Stack Emission Average Breaker Open (BO) to Draft Group Shut Down (SD) (Date & Time)					
Unit	Breaker Open	DG SD	PM	SO <sub>2</sub>	NO <sub>x</sub>
Unit 3	02/08/2018	5:00 PM	02/08/2018	7:55 PM	82.2
Unit 1	19/08/2018	11:20 AM	20/08/2018	12:45 AM	111.2
Unit 1	29/08/2018	12:50 PM	30/08/2018	1:05 AM	80.9

South Stack Emission Average Breaker Open (BO) to Draft Group Shut Down (SD) (Date & Time)							
Unit	Breaker Open		DG SD		PM	SO <sub>2</sub>	NO <sub>x</sub>
Unit 5	05/08/2018	12:25 AM	05/08/2018	1:00 PM	131.0	2142.1	651.3
Unit 5	17/08/2018	12:25 AM	17/08/2018	1:00 PM	236.6	2181.7	700.6

### Complaints Register

**Table 9:** Complaints for the month of August 2018

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 2018					

#### General

The particulate matter emissions for both North and South Common Stacks were within the limit for the month of August 2018. The daily averages for gaseous emissions (NOx & SOx) were also within the limit for both stacks in August 2018.

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



