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 ERMELO  
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Date:  
 01 January 2018

Enquiries:

### TUTUKA POWER STATION MONTHLY EMISSIONS REPORT – JANUARY 2018

#### 1. Raw Materials and Products

Raw Materials and Products used	Raw Material Type	Unit	Maximum Permitted Consumption/ Rate (Quantity)	Consumption/ Rate in Month of January 2018
	Coal	Tons/month	850 000	841 071
	Fuel Oil	Tons/month	5 500	2407.54
Production Rates	Product/ By-Product Name	Unit	Maximum Production Capacity Permitted (Quantity)	Production Rate in Month of January 2018
	Energy	GW	1 589 GW (based on annual permitted production capacity)	1 330.7
	Ash	kT/month	N/A	235 079.3

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

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### 2. Abatement Technology

Associated Unit/Stack	Technology Type	*Minimum Control Efficiency (%)	Actual Utilisation (%)
Unit 1	Electrostatic precipitator	99.38%	100
Unit 2	Electrostatic precipitator	99.63%	100
Unit 3	Electrostatic precipitator	99.33%	100
Unit 4	Electrostatic precipitator	99.30%	100
Unit 5	Electrostatic precipitator	99.21%	100
Unit 6	Electrostatic precipitator	Unit Off-line	Unit Off-line

Table 2: Abatement Equipment Control Technology for month of January 2018

\*Calculated from the assumption of 90% fly ash to 10% bottom ash and percentage ash as measured in coal (Alstom, Tutuka Power Station Capacity Increase Study).

### 3. Energy Source Characteristics

Characteristic	Stipulated Range (Unit)	Monthly Average Content
CV Content	N/A	
Sulphur Content	0.6 - > 2.6%	0.880
Ash Content	21-33%	27.950

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

### 4. Emissions Reporting

Unit	PM (tons)	*SO <sub>2</sub> (tons)	*NO <sub>2</sub> (tons)	*CO <sub>2</sub> (tons)
1	291.8	19 478	6 639	
2	126.1			
3	253.7			
4	313.1			
5	374.0			
6	Unit off-line			

Table 4: Monthly tonnages for the month of January 2018

\*Based on coal burnt as per Emissions Summary

Unit	PM	*NO <sub>2</sub>	*SO <sub>2</sub>	*CO <sub>2</sub>
1	178.7	786	2369	
2	84.4	736	1964	
3	163.0	645	2105	
4	198.4	744	2281	
5	156.8	898	2469	
6	Unit off-line	Unit off-line	Unit off-line	

Table 5: Monthly average Emissions Concentration (mg/Nm<sup>3</sup>)

\*Based on unverified gaseous emission data - QAL2 tests in progress

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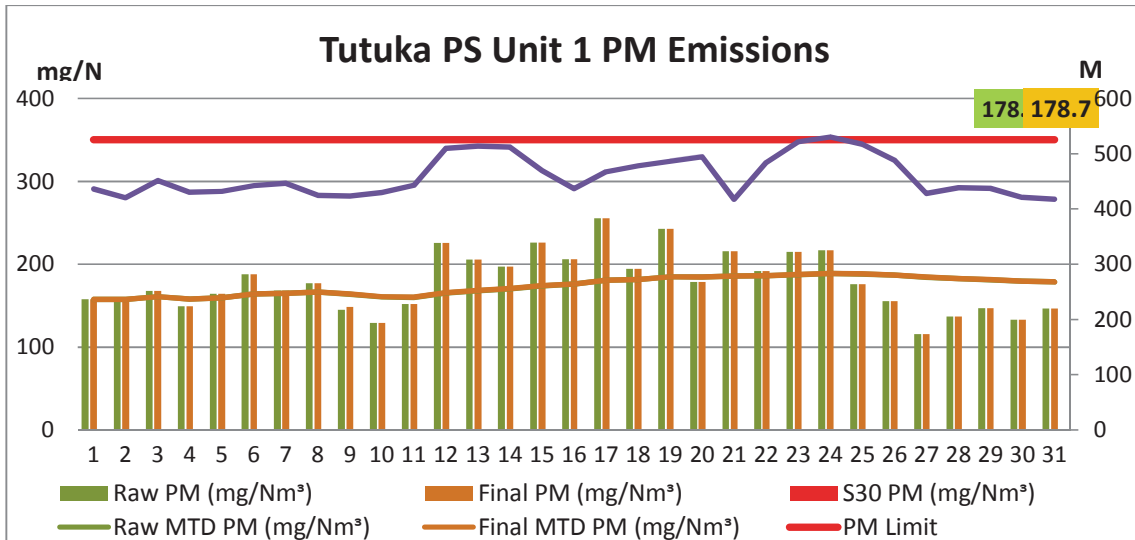


Figure 1: Unit 1 Daily Average Particulate Matter Emissions for the month of January 2018 (against the emissions limit and load generated)

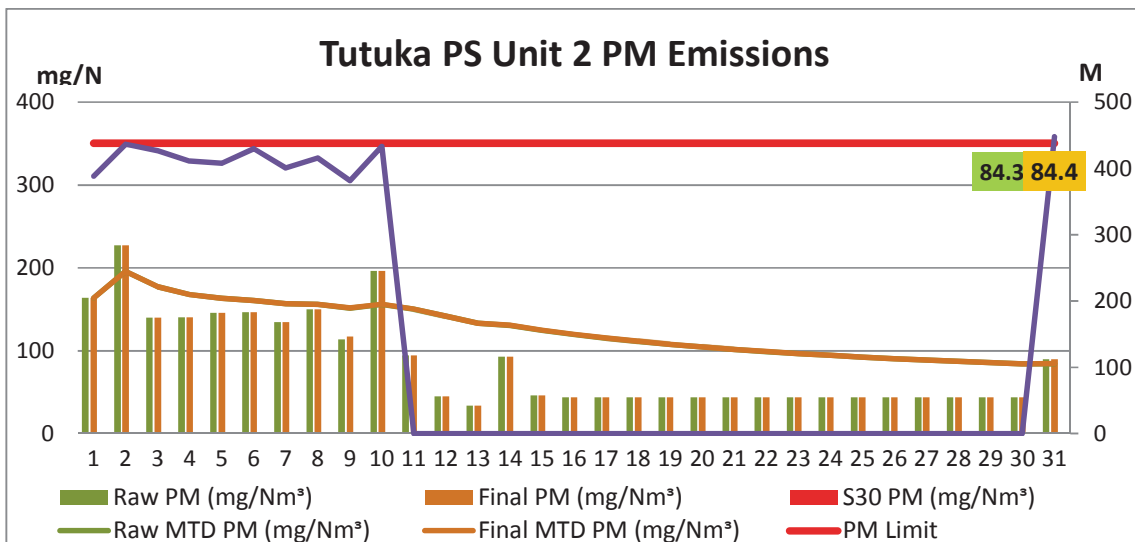


Figure 2: Unit 2 Daily Average emissions for the month of January 2018 (against the emission limits and load generated)

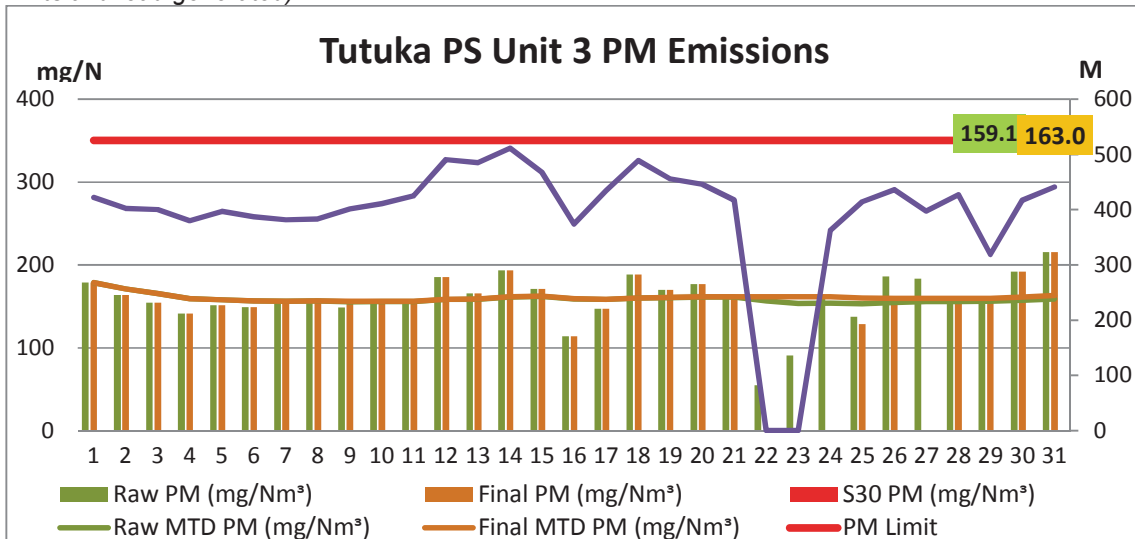


Figure 3: Unit 3 Daily Average Particulate Matter Emissions for the month of January 2018 (against the emissions limit and load generated)

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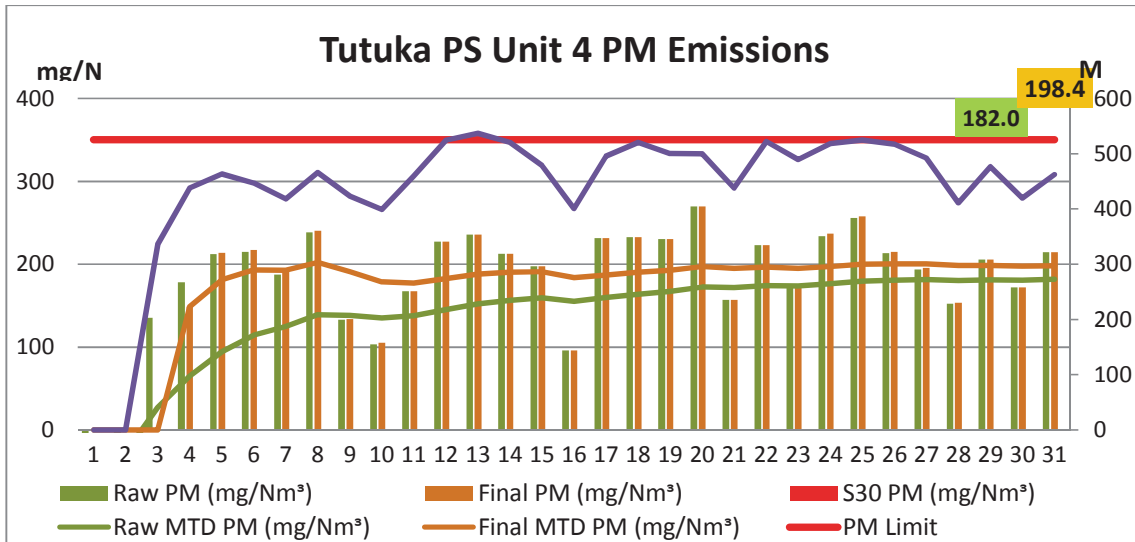


Figure 4: Unit 4 Daily Average PM emissions for the month of January 2018 (against the emission limits and load generated)

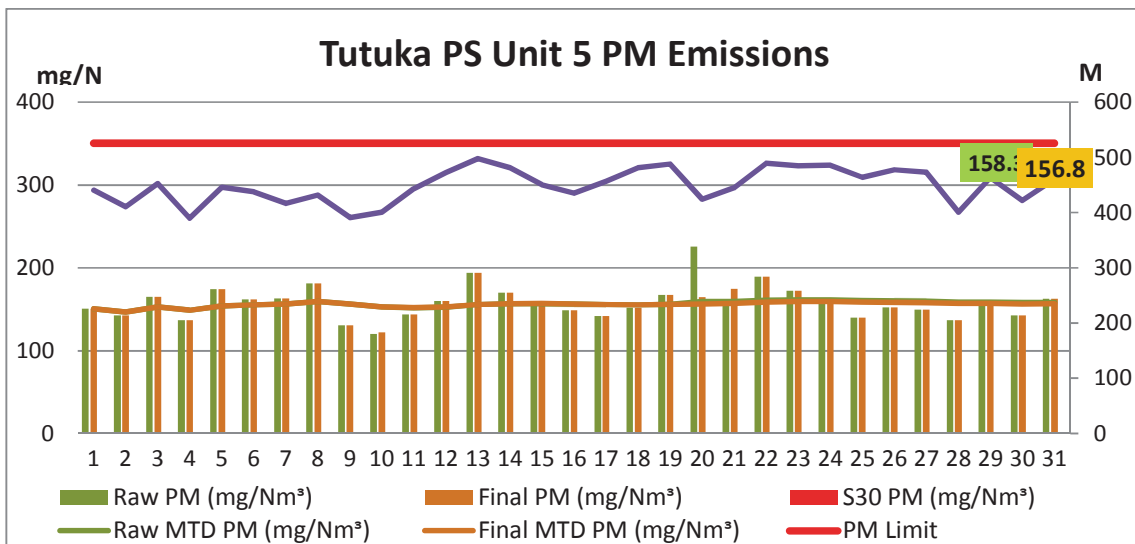


Figure 5: Unit 5 Daily Average Particulate Matter Emissions for the month of January 2018 (against the emissions limit and load generated)

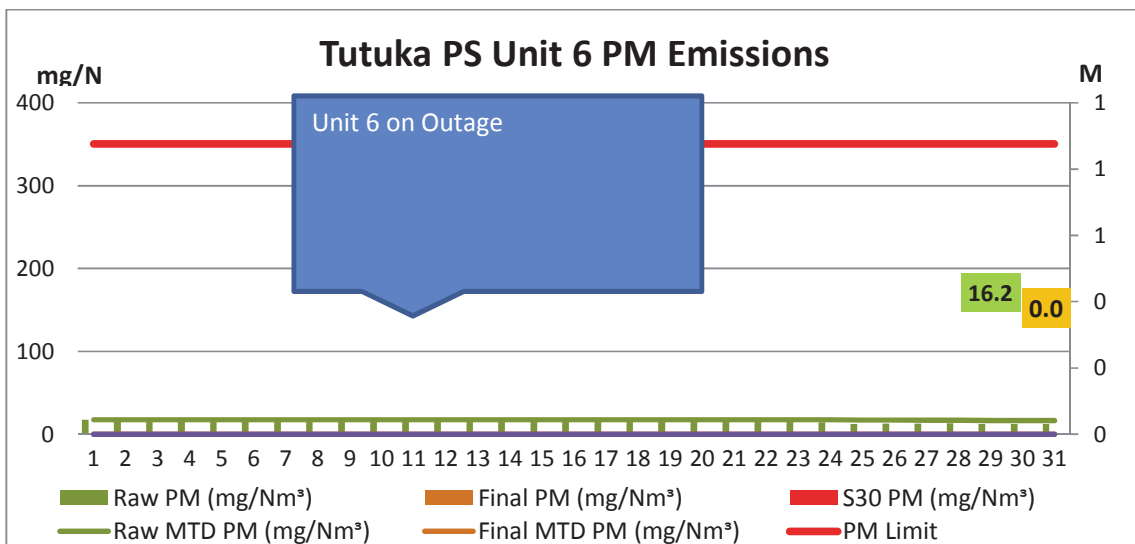


Figure 6: Unit 6 Daily Average PM emissions for the month of January 2018 (against the emission limits and load generated)

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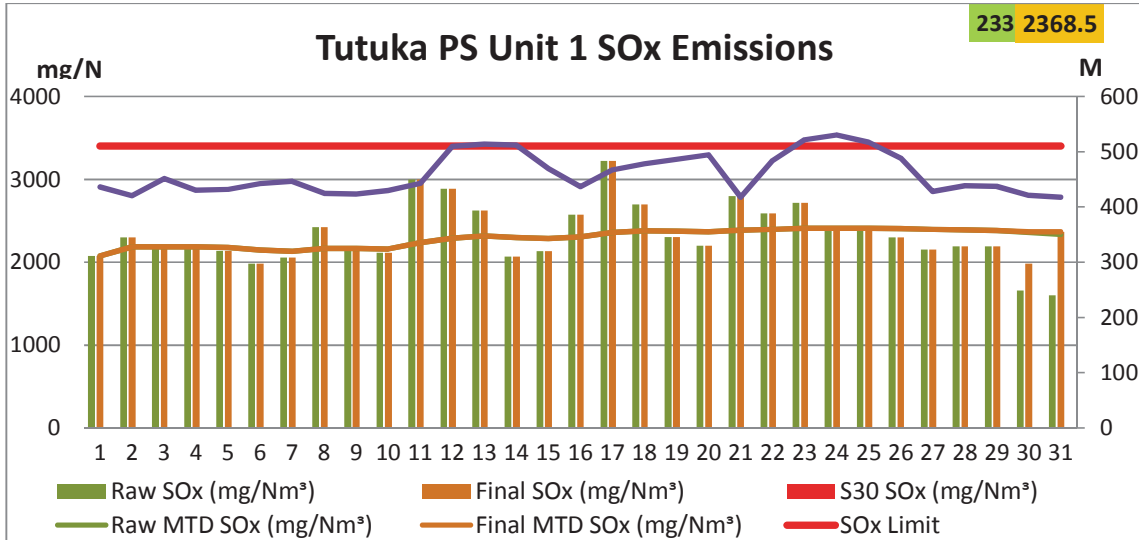


Figure 7: Unit 1 Daily Average SOx Emissions for the month of January 2018 (against the emissions limit and load generated)

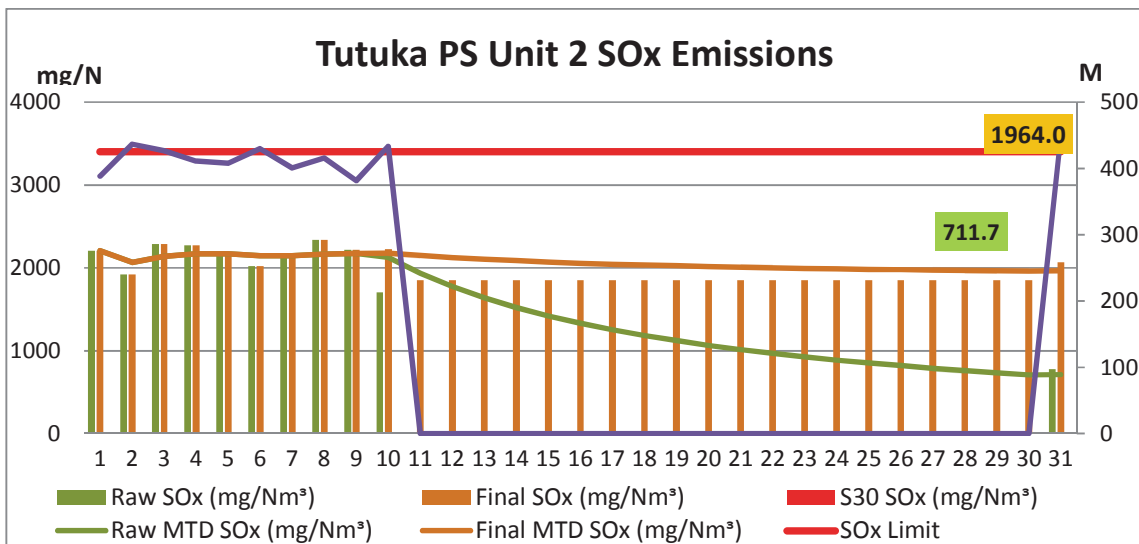


Figure 8: Unit 2 Daily Average SOx emissions for the month of January 2018 (against the emission limits and load generated)

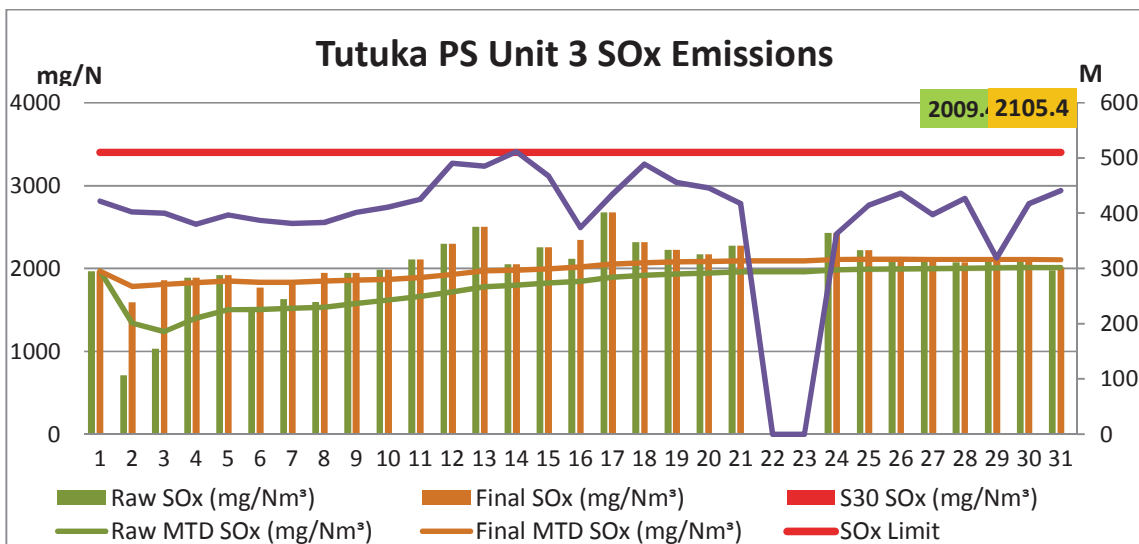


Figure 8: Unit 2 Daily Average SOx emissions for the month of January 2018 (against the emission limits and load generated)

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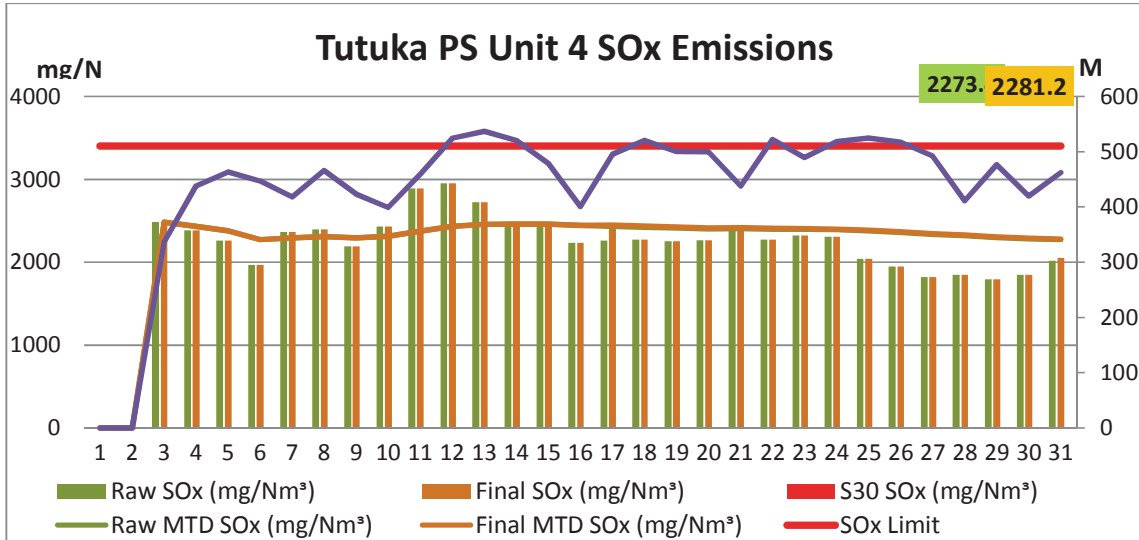


Figure 9: Unit 4 Daily Average SOx Emissions for the month of January 2018 (against the emissions limit and load generated)

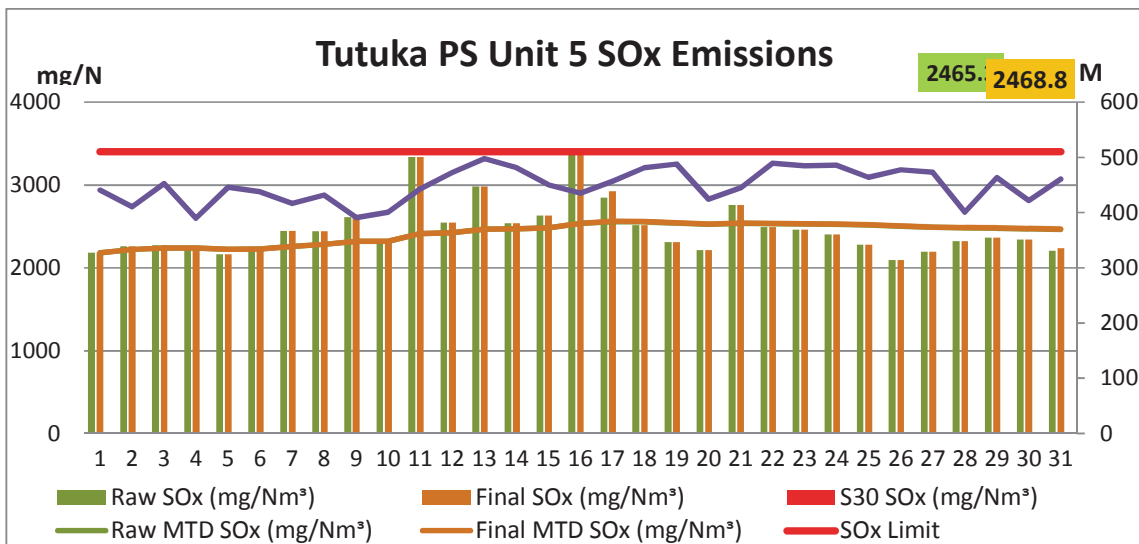


Figure 10: Unit 5 Daily SOx emissions for the month of January 2018 (against the emission limits and load generated)

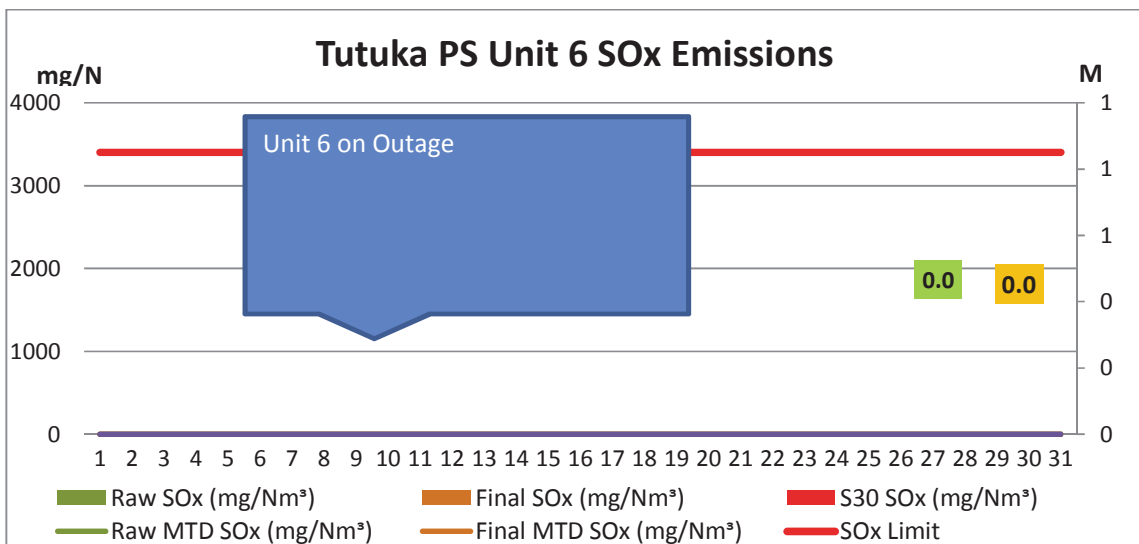


Figure 11: Unit 6 Daily Average SOx Emissions for the month of January 2018 (against the emissions limit and load generated)

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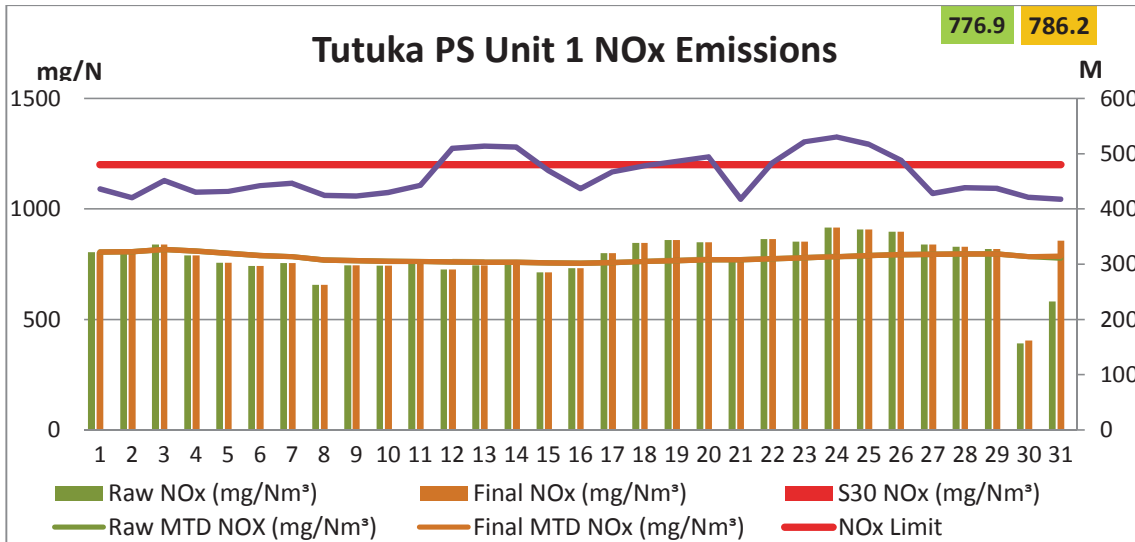


Figure 12: Unit 1 Daily Average NOx emissions for the month of January 2018 (against the emission limits and load generated)

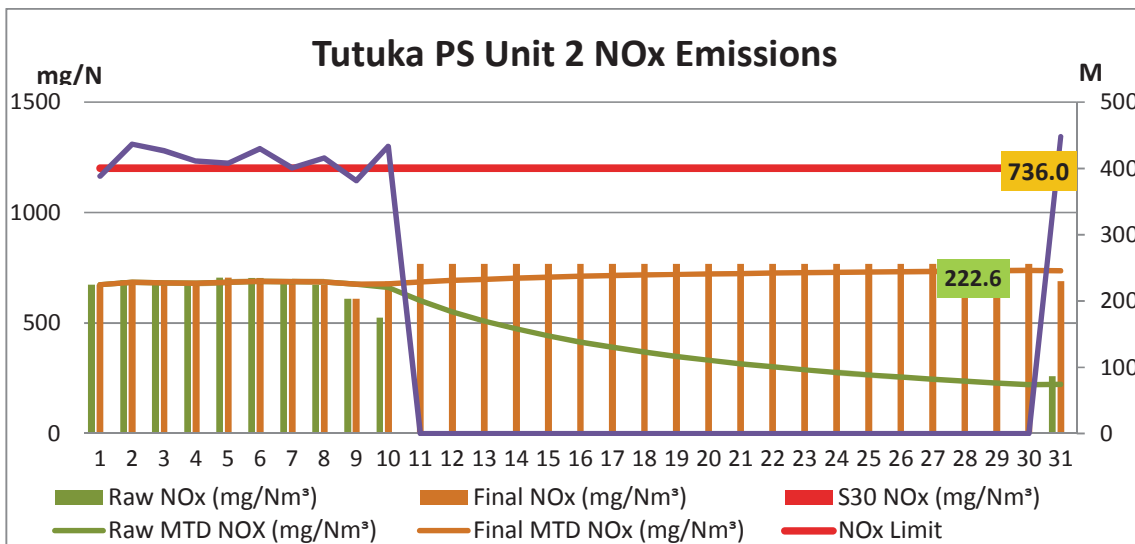


Figure 12: Unit 2 Daily Average NOx emissions for the month of January 2018 (against the emission limits and load generated)

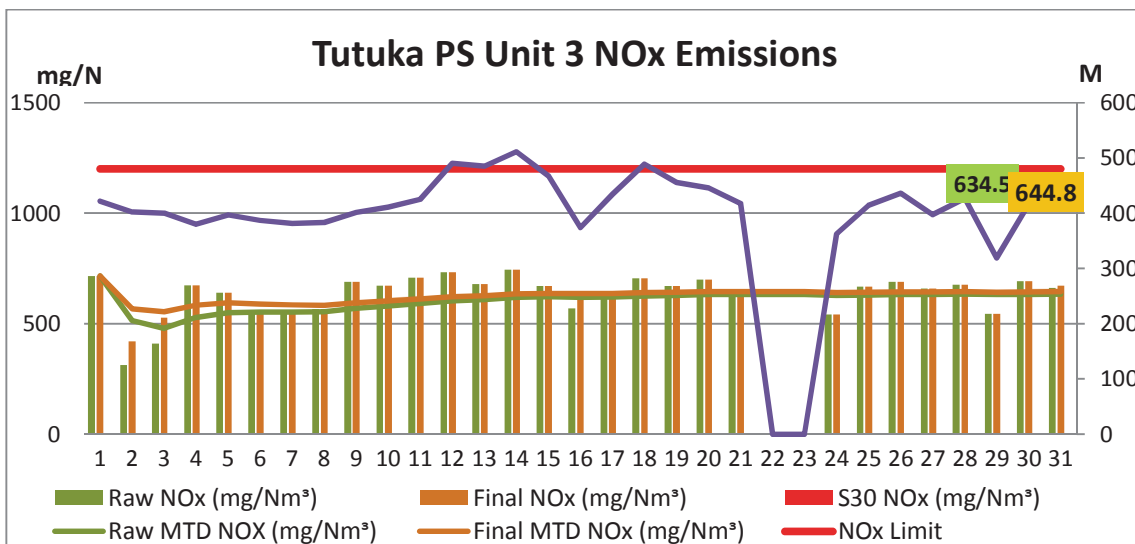


Figure 12: Unit 3 Daily Average NOx emissions for the month of January 2018 (against the emission limits and load generated)

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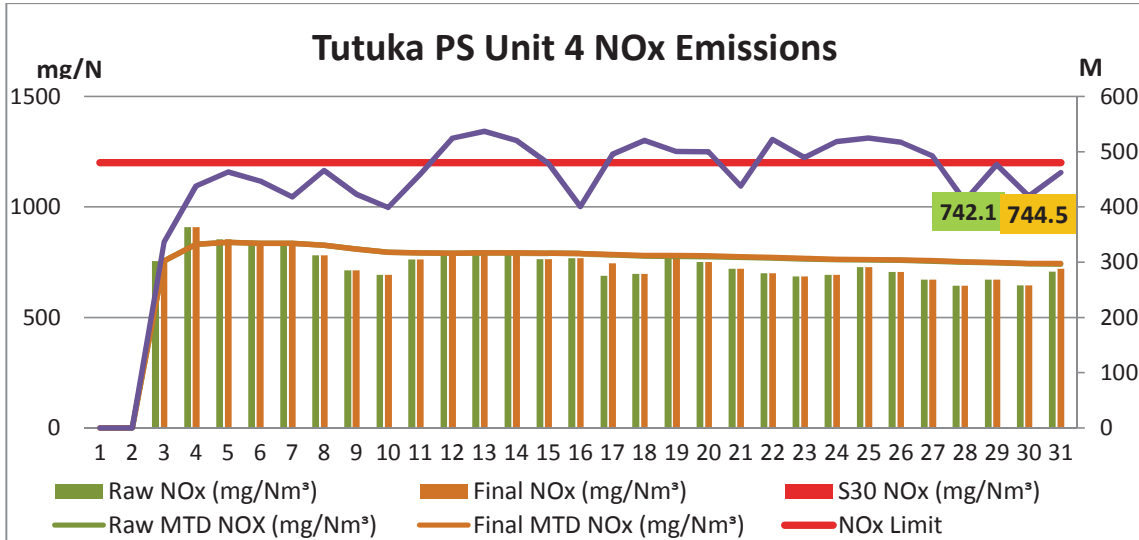


Figure 12: Unit 3 Daily Average NOx emissions for the month of January 2018 (against the emission limits and load generated)

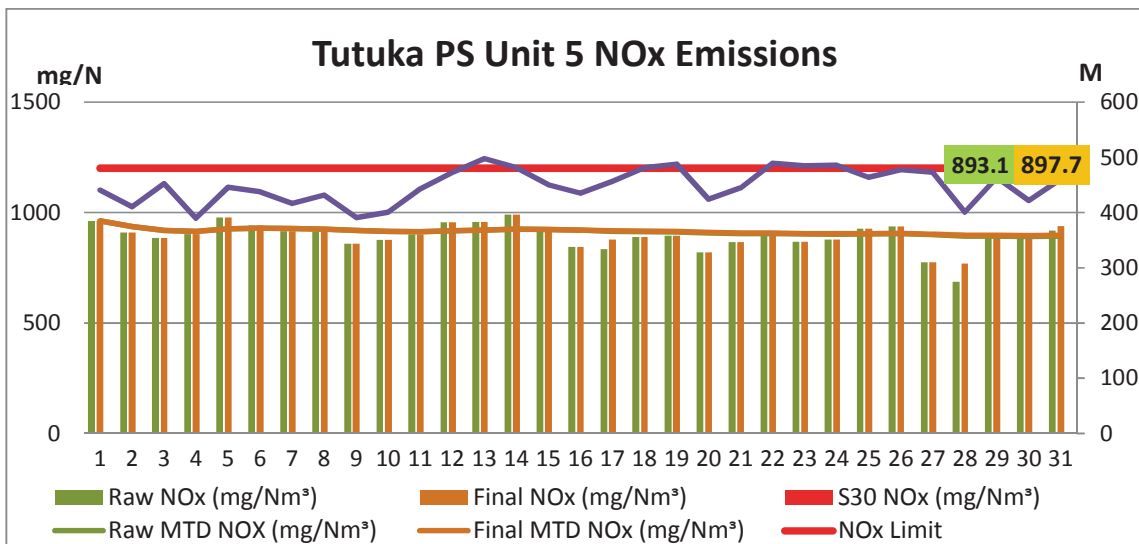


Figure 12: Unit 3 Daily Average NOx emissions for the month of January 2018 (against the emission limits and load generated)

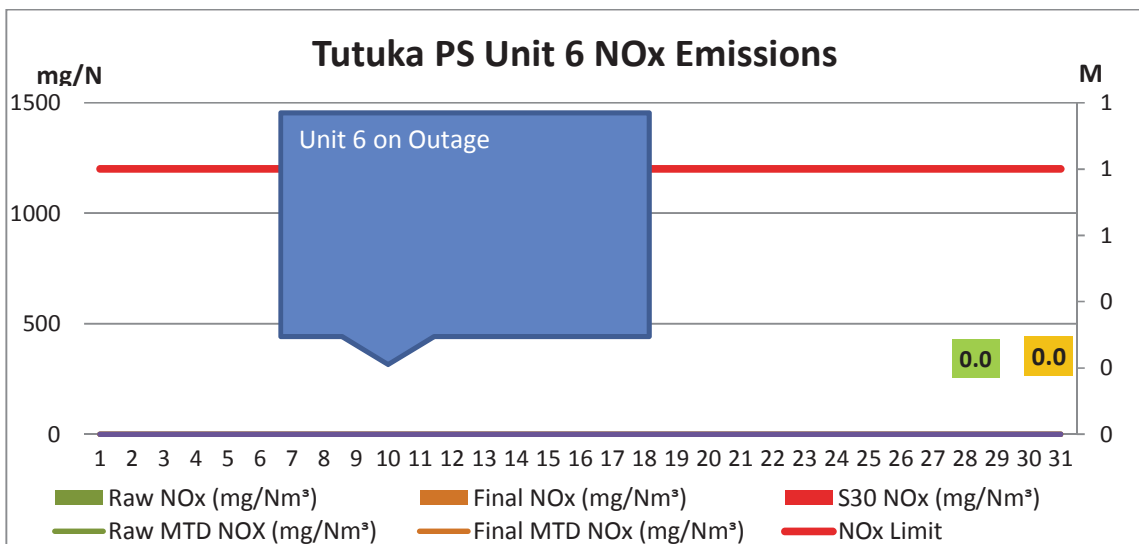


Figure 12: Unit 3 Daily Average NOx emissions for the month of January 2018 (against the emission limits and load generated)



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### 5. Comments on the Performance and Availability of Each Unit

Unit	Days operating under normal operation	Days operating in grace period	Days operating under S 30	Days Unit offline
1	31:00:00	00:00:00	00:00:00	00:00:00
2	31:00:00	00:00:00	00:00:00	00:00:00
3	27:18:40	00:00:00	00:00:00	03:05:20
4	28:07:35	00:00:00	00:00:00	02:16:25
5	30:19:45	00:00:00	00:00:00	00:04:15
6	00:00:00	00:00:00	00:00:00	31:00:00

Table 6: Each unit and respective days operating under normal operation, days in grace period, and section 30 days respectively for the month of January 2018

\*Values rounded to the nearest day

Number & Type of Starts	U1	U2	U3	U4	U5	U6
Number Of Hot Starts (Off-Load < 30 Hrs)	0	2	3	1	0	0
Number Of Cold Starts (Off-Load > 30 hrs)	0	2	1	1	0	0

Table 7: Number and type of Unit start-ups for each unit respectively for the month of January 2018

### 6. Complaints

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
N/A	N/A	N/A	N/A	N/A	N/A

Table 8: Complaints for the month of January 2018

### 7. General

Additional information demonstrating compliance with conditions of the Air Emissions License is included in weekly, monthly and annual emission reports submitted to the Eskom Sustainability Division: Air Quality Center of Excellence and the Authorities.

Compiled by:

**Environmental Officer**

Reviewed by:

**Emissions Control Officer**

Approved by:

**Tutuka Environmental Manager**

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