

Mr. TD Hlanyane

Air Quality Officer

Gert Sibande District Municipality

C/o Joubert and Oosthuise Streets

ERMELO

2430

Date: 31 May 2016

Enquiries: I Coop

Tel: +27 17 749 9410

Dear Mr Hlanyane:

TUTUKA POWER STATION ANNUAL EMISSIONS REPORT – 2015/16 FY

Herewith the Annual Emissions Report required in terms of Section 7.6 in Tutuka Power Station's Atmospheric Emission License (Ref no: Lekwa/Eskom H SOC Ltd/TPS/0013/2015F0231March 2015), for the period 1 April 2015 to 31 March 2016. Verified emissions of particulates, SO₂ and NO_x (as NO₂) are also included.

1. Pollutant Emissions Trends and Greenhouse Gas Emissions

Pollutant	T/A	
	T/A	(Fuel Oil Greenhouse Gases)
PM	19 181	
NO _x	99 366	
SO ₂	167 191	1 661.46
N ₂ O	339	
CO ₂	212 247 711	87319

Table 1: General Oversight of Emissions

TUTUKA POWER STATION ANNUAL EMISSIONS REPORT – 2015/16 FY

MONTH	PM (T)	SO ₂ (T)	NO _x (T)	CO ₂ (T)	N ₂ O (T)
April 2015	1954.00	15857	8913	1944274	31.363
May 2015	1944.00	17054	9586	2086911	33.694
June 2015	1650.00	15396	8654	1888206	30.527
July 2015	1297.00	14756	7465	1627081	26.310
August 2015	1578.00	13993	7865	1708506	27.676
September 2015	1332.00	11434	7230	1522065	24.018
October 2015	1350.00	13431	7550	1665172	26.782
November 2015	1769.00	13374	8457	1834430	29.669
December 2015	1704.00	15837	8902	1906096	30.975
January 2016	1828.00	14553	9202	1889930	29.970
February 2016	1217.00	8869	6409	1318930	20.481
March 2016	1558.00	12637	9133	1833110	27.914

Table 2: Pollutant Emission Trends for 2015/2016

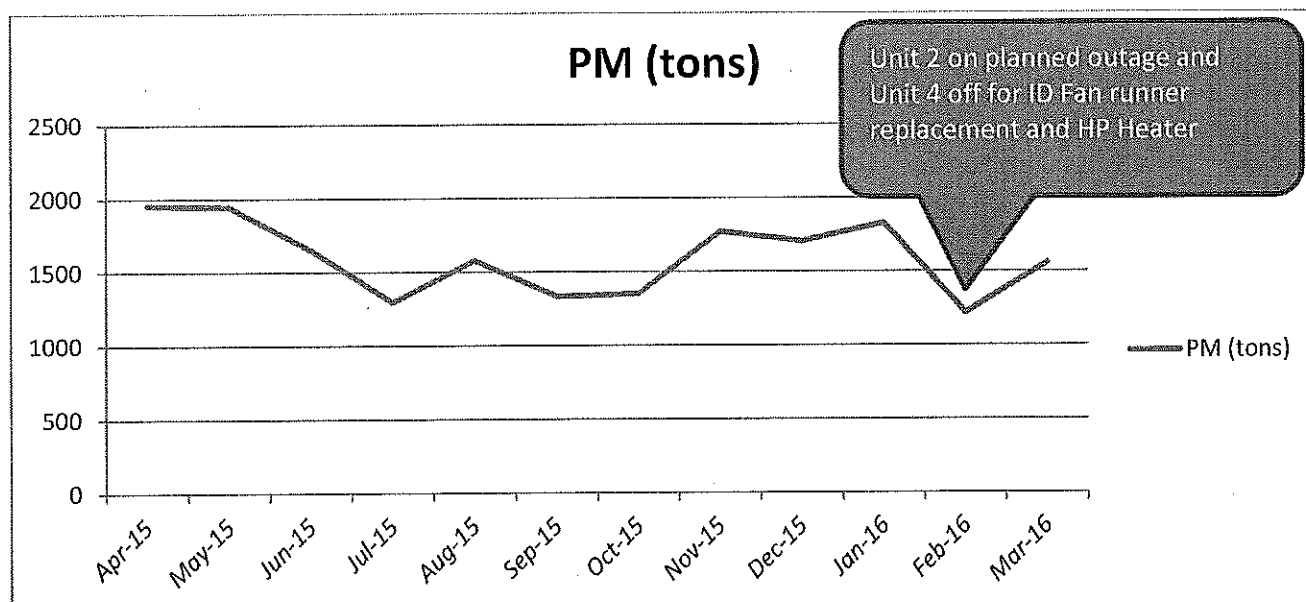


Figure 1: Monthly Particulate Emissions for Tutuka Power Station 2015/2016

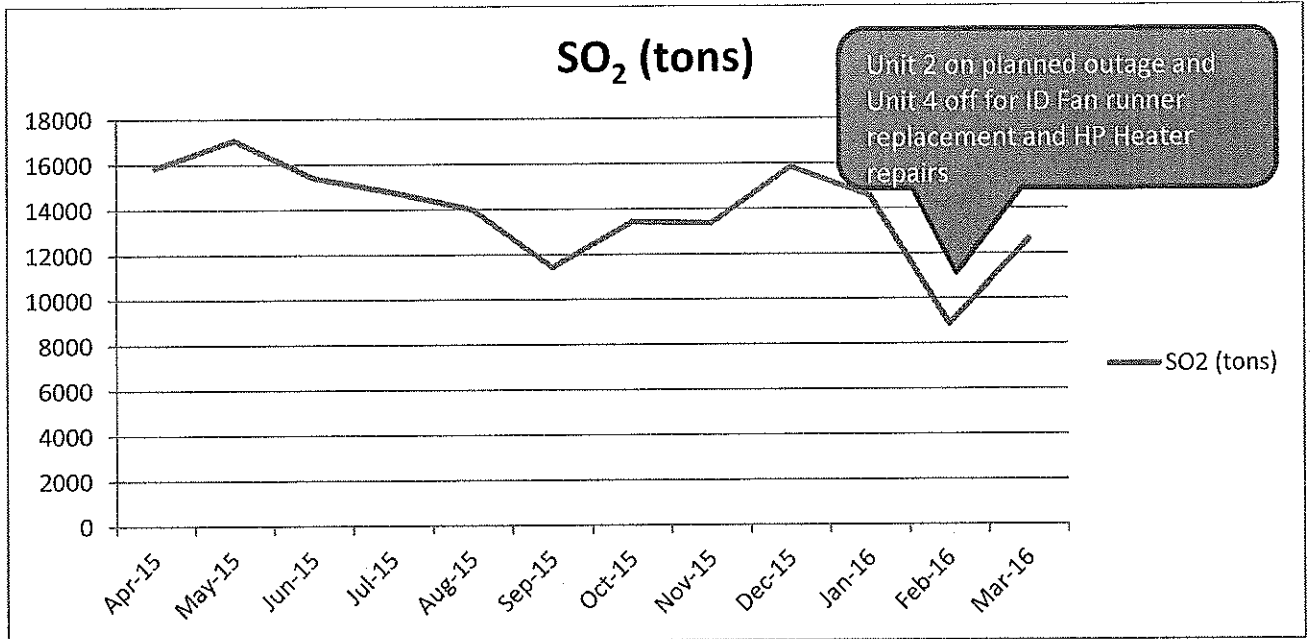


Figure 2: Monthly SO₂ Emissions for Tutuka Power Station 2015/2016

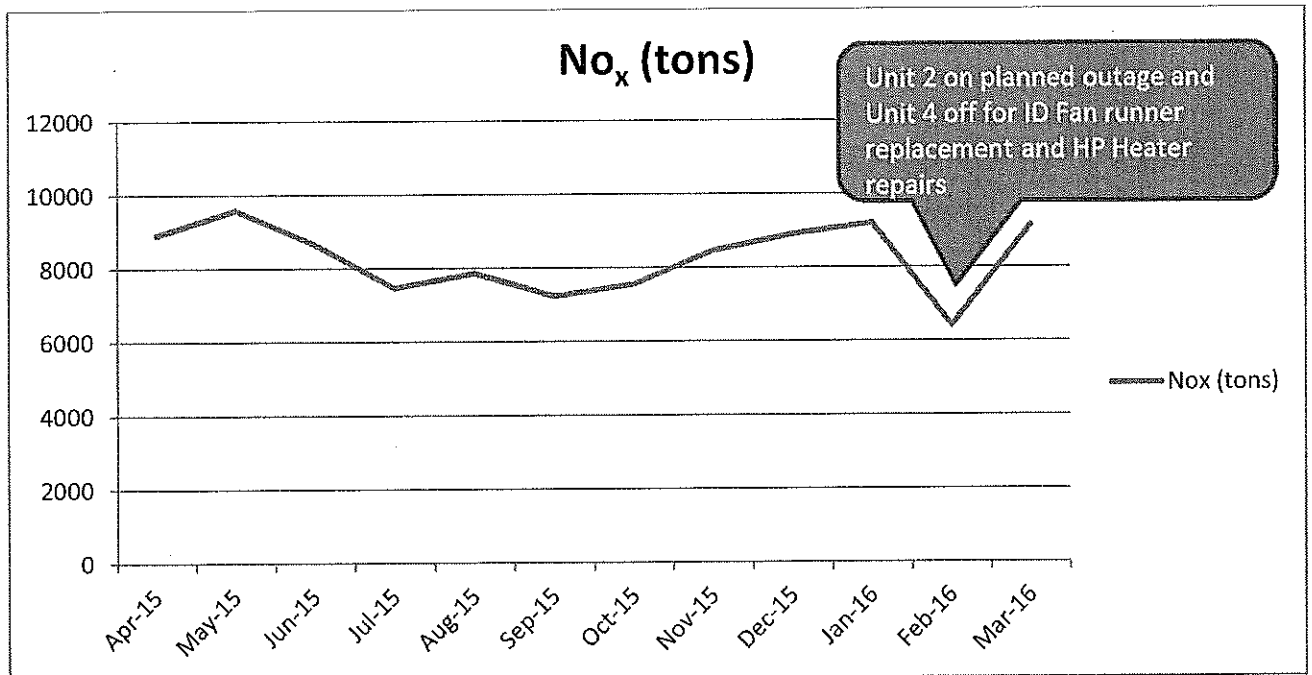


Figure 3: Monthly NO₂ Emissions for Tutuka Power Station 2015/2016

TUTUKA POWER STATION ANNUAL EMISSIONS REPORT – 2015/16 FY

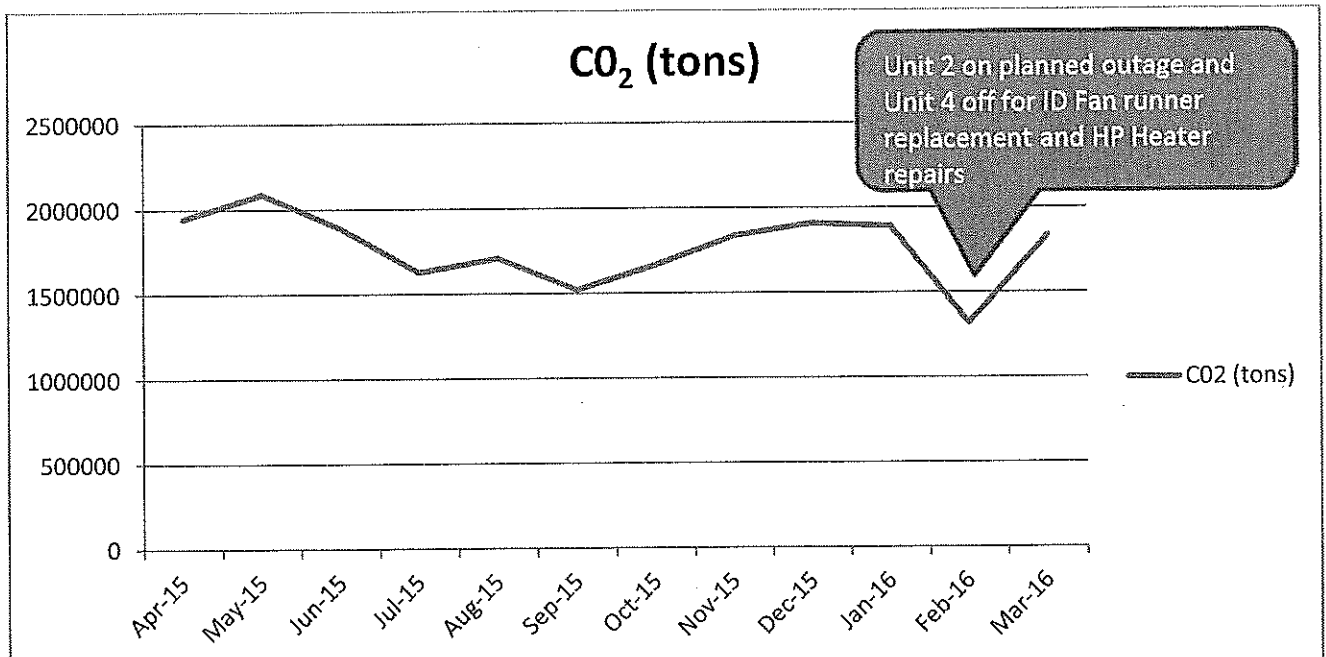


Figure 4: Monthly CO₂ Emissions for Tutuka Power Station 2015/2016

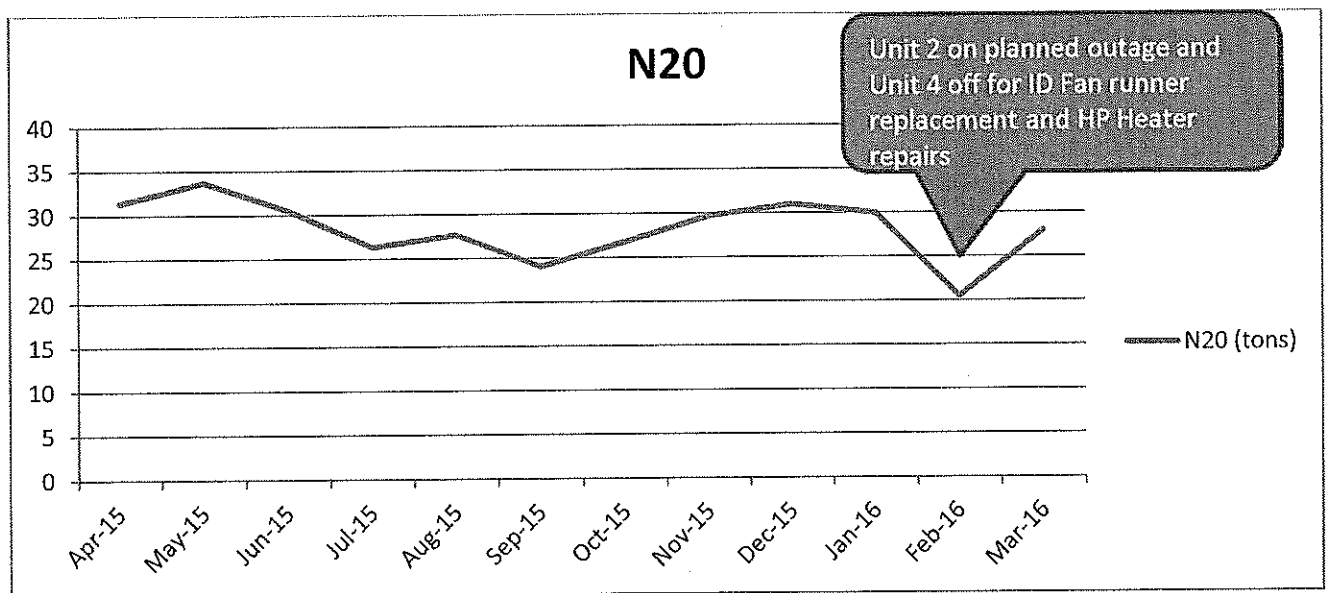


Figure 5: Monthly N₂O Emissions for Tutuka Power Station 2015/2016

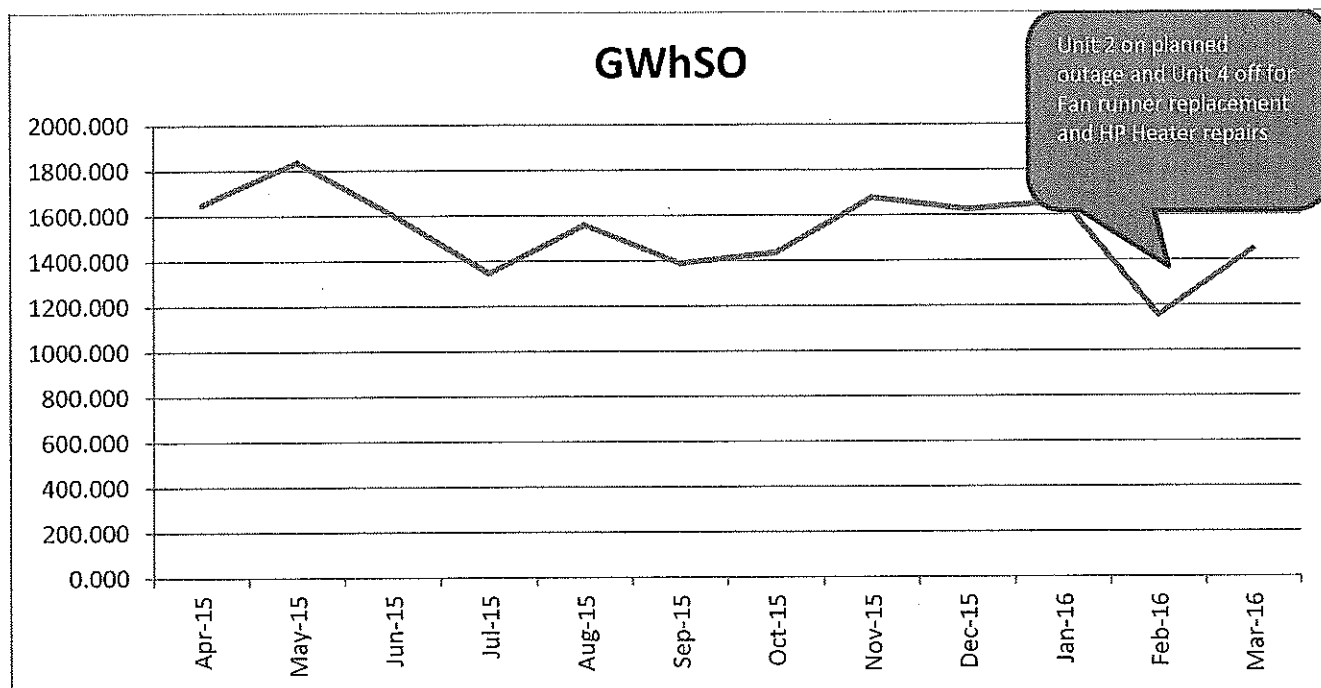


Figure 6: Monthly Energy per GWh sent out for Tutuka Power Station 2015/2016

2. Monitoring Data Availability Per Unit

	U1	U2	U3	U4	U5	U6
PM	92,7%	83,3%	100%	84,6%	99,4%	91,5%
SO ₂	99%	77%	95%	91%	57%	98%
NOx	87%	82%	92,7%	92,5%	57,1%	87,2%

Table 3: Monitoring Data Availability for 2015/2016

3. Compliance Audit Report(s):

The Departmental of Environmental Affairs Environmental Management Inspectorate conducted a Compliance Audit on 17 & 18 November 2015 – feedback is awaited.

The North West University Centre of Environmental Management conducted an Environmental Legal Compliance Audit on 26 & 27 January 2016 – no findings related to the Tutuka PS Air Emissions License were raised – the final audit report was submitted to Gert Sibande District Municipality on 16/05/2016

4. Major Upgrade Projects:

Tutuka Power Station received Environmental Authorization for the following upgrade projects which are currently in the planning phase for execution:

- Fabric Filter Plant (FFP) Retrofit and Dust Handling Plant (DHP)
- Expansion of the Ash Disposal Facility

All Impact Studies are available via the link:
http://www.eskom.co.za/OurCompany/SustainableDevelopment/EnvironmentallImpactAssessments/Pages/Environment_Impact_Assessments.aspx

5. Complaints

- A detailed clarification letter regarding the complaint was submitted to the Gert Sibande District Municipality on 23/05/2016.

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
Neighboring Farmers claiming that excessive dust from the Ash Disposal Facility (ADF) are impacting negatively on crop yields	Independent third party contractor appointed to conduct soil studies to determine if the alleged negative impact can be attributed to Tutuka ADF operations	Once soil studies have been concluded and report containing recommendations have been received	N/A	<ul style="list-style-type: none"> - Weather monitoring station commissioned to pre-empt extreme windy conditions - Additional dust suppression during extreme windy conditions 	<ul style="list-style-type: none"> - Completed - Ongoing based on weather conditions

Table 4: Complaints received

6. ANNUAL REPORT ON THE IMPLEMENTATION OF THE HIGHVELD AIR QUALITY PLAN AND OFF-SETS PROGRAM

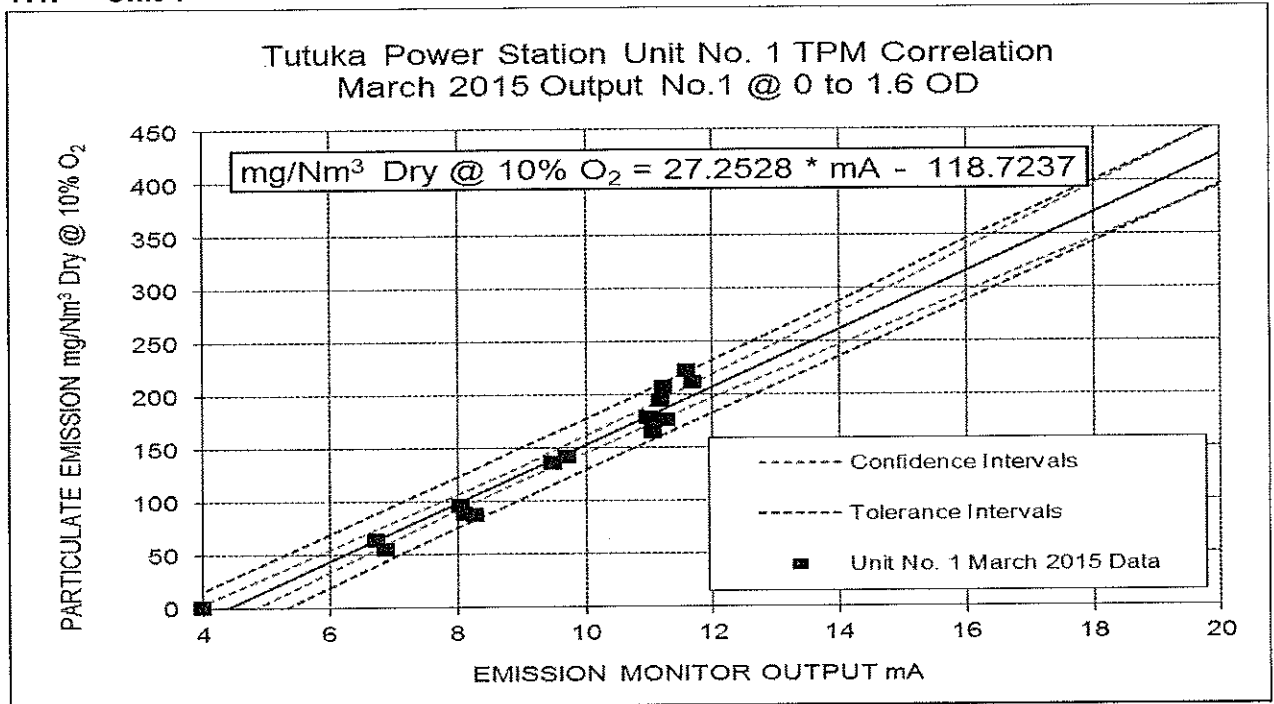
Tutuka Power Station falls within Gert Sibande District Municipality (GSDM), and GSDM Air Quality Control Officer indicated that they are currently busy generating an annual report with regard to the implementation of the Highveld Priority Air Quality Management Plan for all the stakeholders which falls within the GSDM Highveld priority area.

The Eskom Sustainability Air Quality Center of Excellence has submitted an off-sets program for all Eskom Power Stations including Tutuka.

7. Correlation Tests:

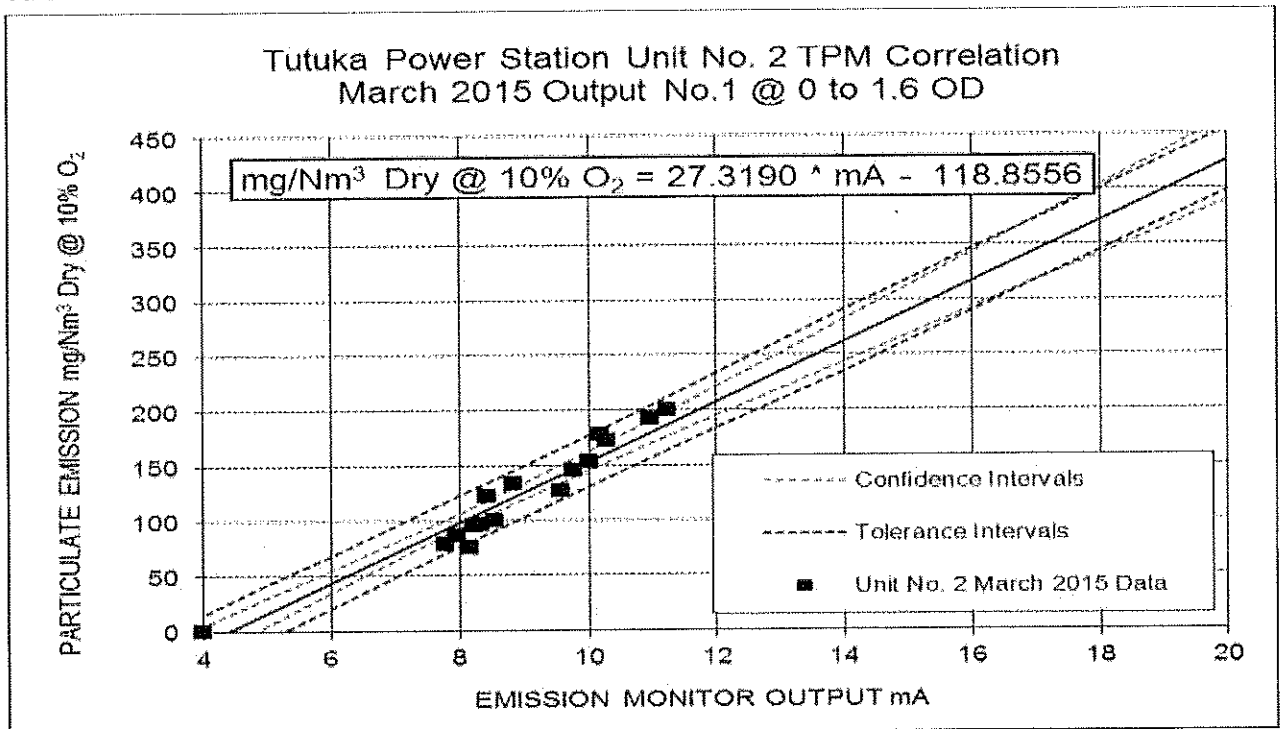
- Correlation tests were conducted on all Units between March 2015 and February 2016 and the new correlation curves implemented.

7.1. Unit 1



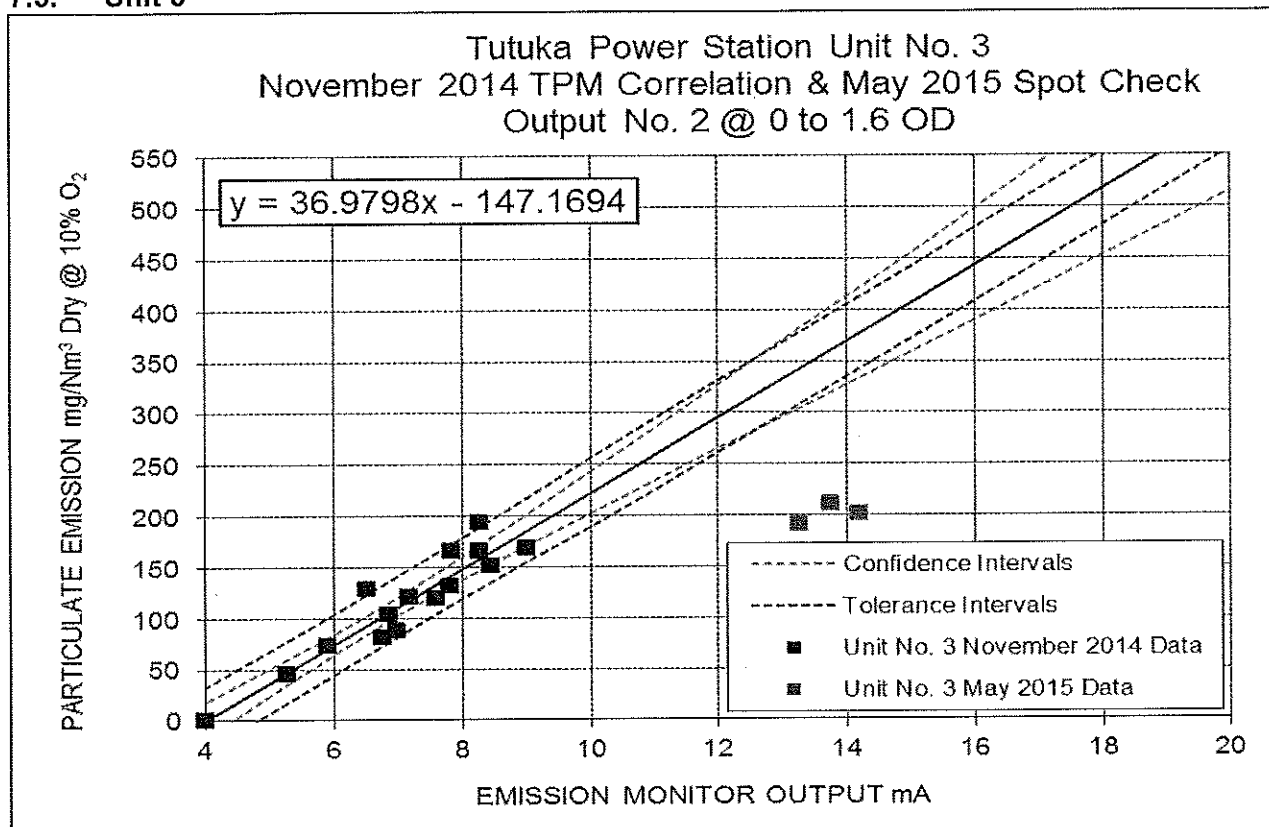
Graph U 1: Correlation Results – March 2015

7.2. Unit 2



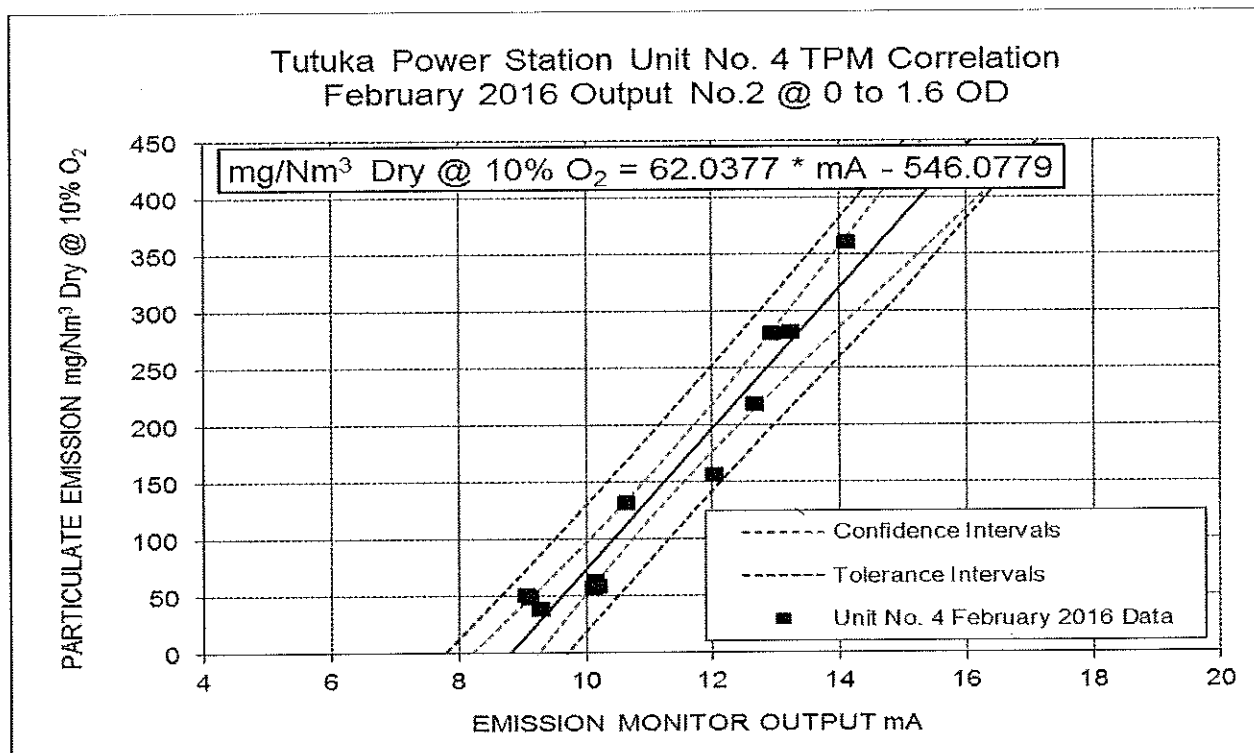
Graph 2: U 2 Correlation Results – March 2015

7.3. Unit 3



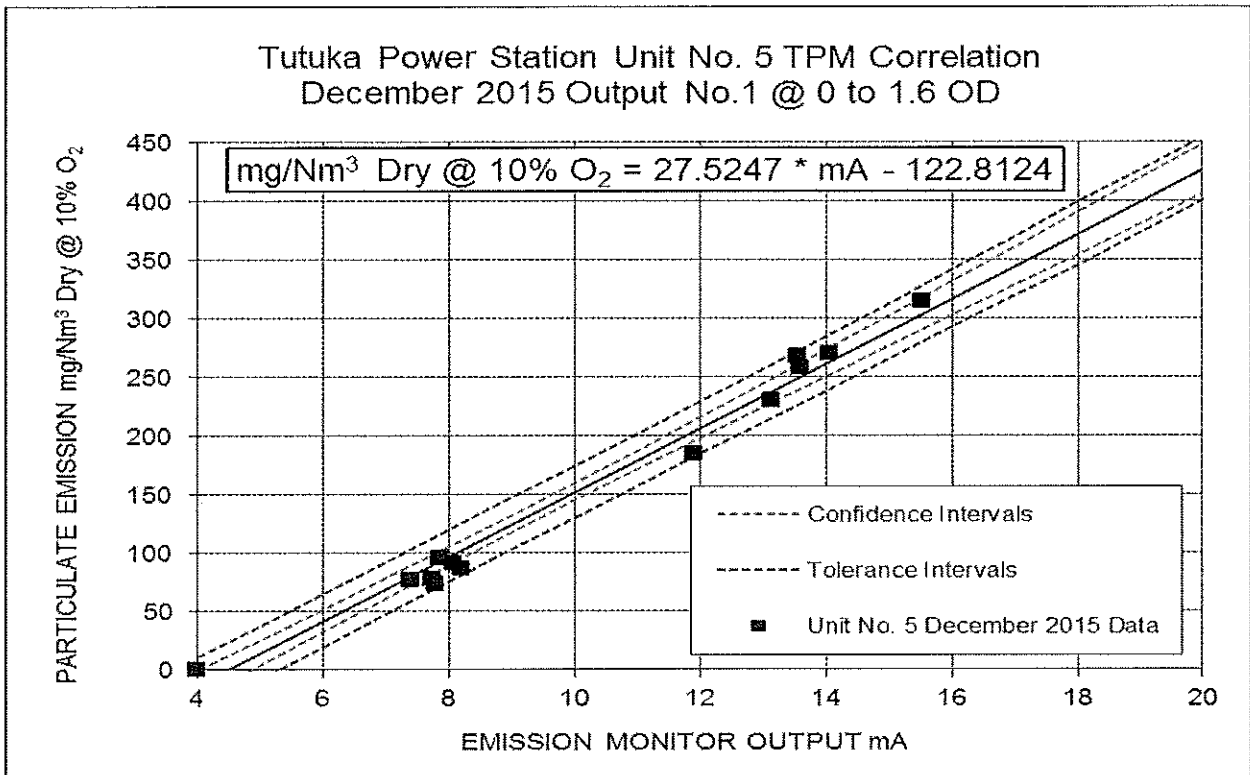
Graph 3: U 3 Correlation Results – May 2015

7.4. Unit 4



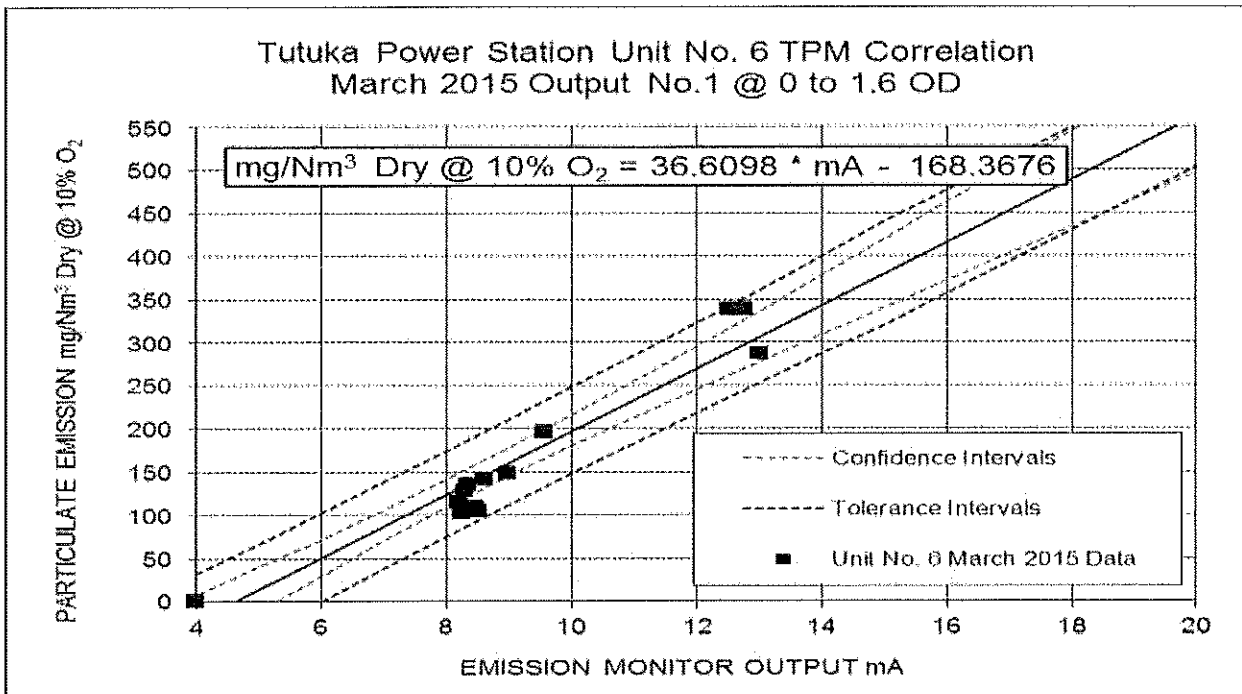
Graph 4: U 4 Correlation Results – February 2016

7.5. Unit 5



Graph 5: U 5 Correlation Results – December 2015

7.6. Unit 6



Graph 6: U 6 Correlation Results – March 2016

8. Greenhouse Gas Emissions:

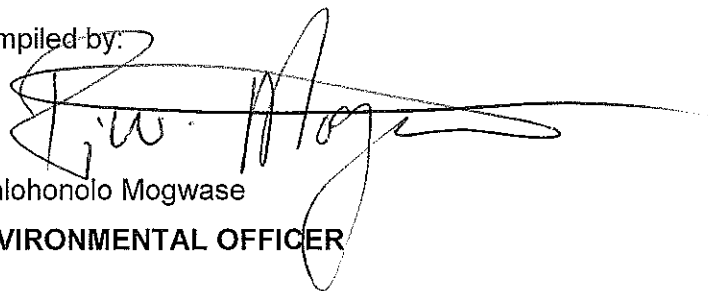
Figures for Greenhouse Gases (CO₂ and N₂O) are depicted in Tables 1 & 2 on page 1 of the report.

9. General

Additional information regarding compliance with the emission license conditions is included in the Monthly Emission Reports being submitted.

For any inquiries please contact Mrs. Ilse Coop, Environmental Manager (appointed as Tutuka PS Emissions Control Officer), Tel: 017 749 9410 / Cell: 060 414 9308 / E-mail: coop@eskom.co.za .

Compiled by:



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