

	Medupi Power Station Monthly Emissions Report	Template Identifier	240-43921804	Rev	7
		Document Identifier	240-88543153	Rev	2
		Effective Date	February 2025		
		Review Date	February 2027		

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Date: 2025/03/26

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Ref: H16/1/13-AEL/M1/R1 – February 2025

Dear Mr Koenaitse

MEDUPI POWER STATION MONTHLY EMISSIONS REPORT FOR THE MONTH OF FEBRUARY 2025

This document serves as the monthly emissions report required in terms of Section 7.7.1 of Medupi Power Station Provisional Atmospheric Emission License (AEL), H16/1/13-AEL/M1/R1.

This report reflects Unit 1, 2, 3, 5 and 6 gaseous and particulate emissions performance against the AEL limit for the month of February 2025 only.

1. Raw Materials and Products

TABLE 1: QUANTITY OF RAW MATERIALS AND PRODUCTS CONSUMPTION IN FEBRUARY 2025

Raw Materials and Products used	Raw Material Type	Unit	Maximum Permitted Consumption/ Rate (Quantity)	Consumption – February 2025
	Coal	Tons/month	1 875 000	951 659
	Fuel Oil	Tons/month	20 000	1179
Production Rates	Product/ By-Product Name	Unit	Maximum Production Capacity Permitted (Quantity)	Production Rate in Month of February 2025
	Energy	GWh	3 571.2	2 150.6
	Ash Emitted	Tons/month	not specified	367.2

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Date	Daily Reportable Hours of Operation						Coal usage	Production rate (MW)					
	U1	U2	U3	U4	U5	U6		U1	U2	U3	U4	U5	U6
01-Feb	24.0	24.0	24.0	0.0	24.0	24.0	36352	739	738	653	OFF	547	620
02-Feb	24.0	24.0	24.0	0.0	24.0	24.0	34127	649	698	642	OFF	550	600
03-Feb	24.0	24.0	24.0	0.0	24.0	24.0	36011	715	672	631	OFF	550	613
04-Feb	24.0	24.0	24.0	0.0	24.0	24.0	36603	794	733	659	OFF	550	585
05-Feb	24.0	24.0	24.0	0.0	24.0	24.0	35928	794	717	664	OFF	550	586
06-Feb	24.0	24.0	24.0	0.0	24.0	1.8	35239	794	626	654	OFF	567	560
07-Feb	24.0	24.0	24.0	0.0	24.0	21.8	34495	725	663	667	OFF	576	596
08-Feb	24.0	24.0	24.0	0.0	24.0	24.0	36137	695	734	622	OFF	580	612
09-Feb	24.0	24.0	24.0	0.0	24.0	24.0	32705	634	649	550	OFF	557	600
10-Feb	24.0	24.0	24.0	0.0	24.0	24.0	32630	641	643	617	OFF	561	627
11-Feb	24.0	24.0	24.0	0.0	24.0	24.0	33756	679	685	594	OFF	579	620
12-Feb	24.0	24.0	24.0	0.0	24.0	24.0	35017	712	710	670	OFF	600	596
13-Feb	24.0	24.0	24.0	0.0	24.0	24.0	36156	794	751	688	OFF	600	580
14-Feb	24.0	24.0	24.0	0.0	24.0	20.0	35385	774	683	686	OFF	584	527
15-Feb	24.0	24.0	24.0	0.0	24.0	0.0	35540	780	761	664	OFF	583	135
16-Feb	24.0	24.0	24.0	0.0	24.0	0.0	27147	645	656	556	OFF	581	405
17-Feb	24.0	24.0	24.0	0.0	24.0	3.4	35048	758	772	676	OFF	600	619
18-Feb	24.0	24.0	24.0	0.0	24.0	24.0	36886	792	787	714	OFF	600	659
19-Feb	24.0	24.0	24.0	0.0	24.0	24.0	34373	725	737	712	OFF	600	600
20-Feb	24.0	24.0	24.0	0.0	24.0	22.1	34330	766	788	680	OFF	568	646
21-Feb	24.0	24.0	24.0	0.0	24.0	0.0	33082	792	756	690	OFF	588	569
22-Feb	24.0	17.2	24.0	0.0	24.0	0.0	31305	793	708	689	OFF	600	567
23-Feb	24.0	1.4	24.0	0.0	24.0	14.8	34827	787	736	680	OFF	600	597
24-Feb	24.0	24.0	24.0	0.0	24.0	24.0	32226	773	543	657	OFF	573	580
25-Feb	24.0	24.0	24.0	0.0	24.0	24.0	34229	785	762	645	OFF	548	580
26-Feb	24.0	24.0	24.0	0.0	24.0	24.0	34657	794	666	693	OFF	570	580
27-Feb	24.0	24.0	24.0	0.0	20.4	24.0	33032	725	735	684	OFF	578	453
28-Feb	24.0	10.0	24.0	0.0	0.0	24.0	24436	716	591	666	OFF	OFF	452

NB: Operating hours less than 24 highlighted in pink.

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2. Abatement Technology

TABLE 2: ABATEMENT EQUIPMENT CONTROL TECHNOLOGY EFFICIENCY FOR MONTH OF FEBRUARY 2025

Associated Unit/Stack	Technology Type	Efficiency	FFP Utilization
Unit 1	Fabric Filter Plant (FFP)	99.908%	100%
Unit 2	Fabric Filter Plant (FFP)	99.879%	100%
Unit 3	Fabric Filter Plant (FFP)	99.907%	100%
Unit 4	Fabric Filter Plant (FFP)	Off	Off
Unit 5	Fabric Filter Plant (FFP)	99.847%	100%
Unit 6	Fabric Filter Plant (FFP)	99.843%	100%

Note: FFP does not have bypass mode operation, hence plant 100% Utilised.

3. Energy Source Characteristics

TABLE 3: ENERGY SOURCE MATERIAL CHARACTERISTICS FOR THE MONTH OF FEBRUARY 2025

Characteristic	Stipulated Range (% by weight on a dry basis)	Monthly Average Content (% by weight on a dry basis)
Coal		
Sulphur Content	1.3 - 2.2	1.44
Ash Content	35 - 39	35.78

TABLE 4: ENERGY SOURCE MATERIAL CHARACTERISTICS FOR THE MONTH OF FEBRUARY 2025

Characteristic	Stipulated Range (%)	Monthly Average Content (%)
Oil		
Sulphur Content	0.5 - 3.5	2.200
Ash Content	0.02 - 0.1	0.040

4. Emissions Reporting

Medupi Power Station uses Continuous Emission Monitoring System which uses the extractive method for analysis.

The emission limits are as follows:

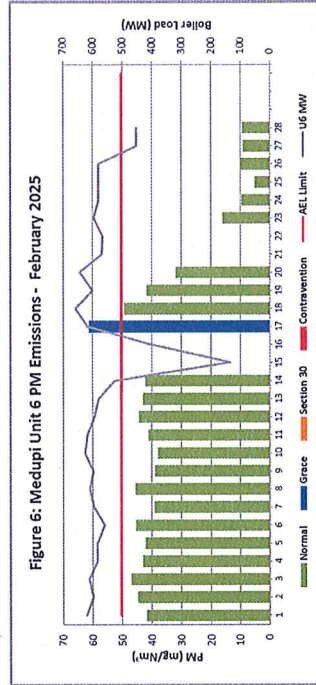
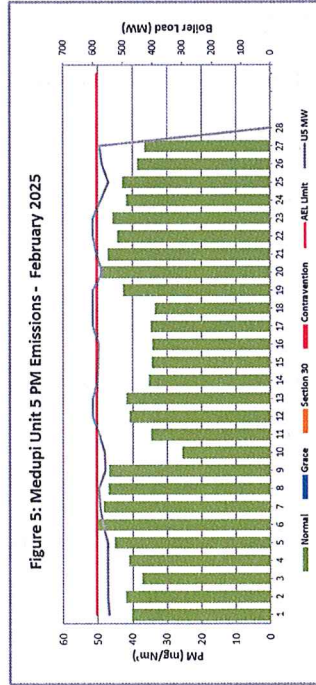
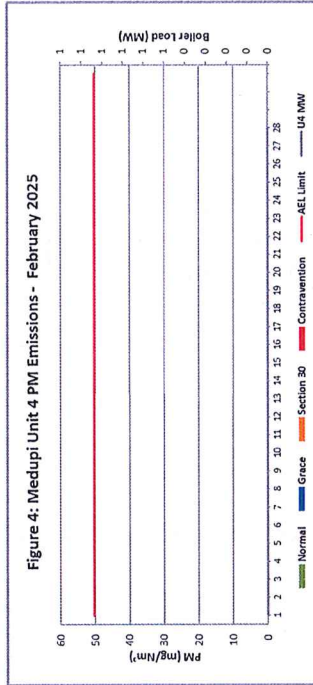
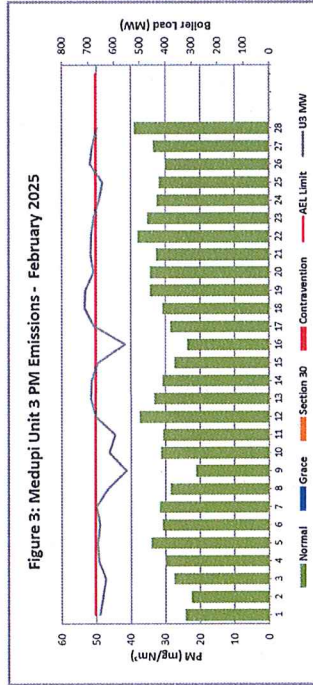
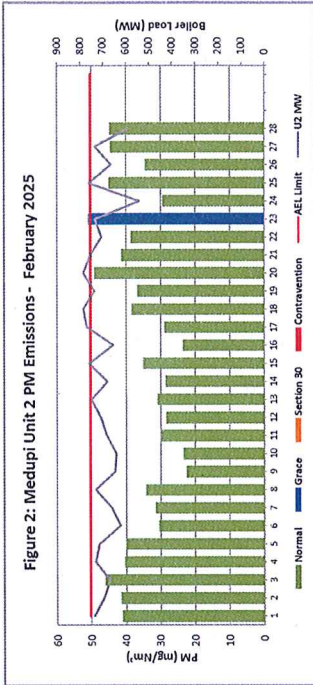
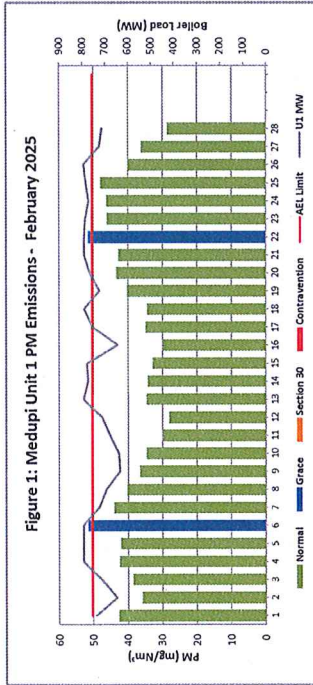
SO₂ Monthly = 3500 mg/Nm³

Dust Daily= 50 mg/Nm³

NO₂ Daily= 750 mg/Nm³

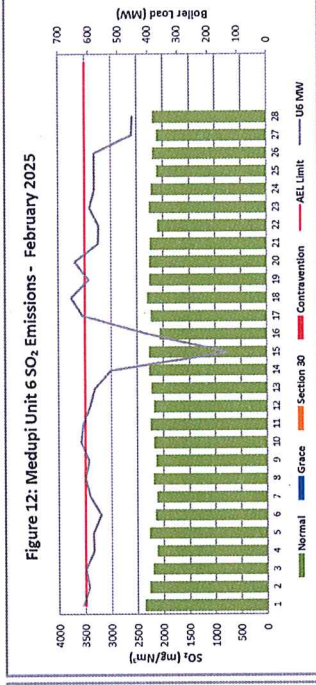
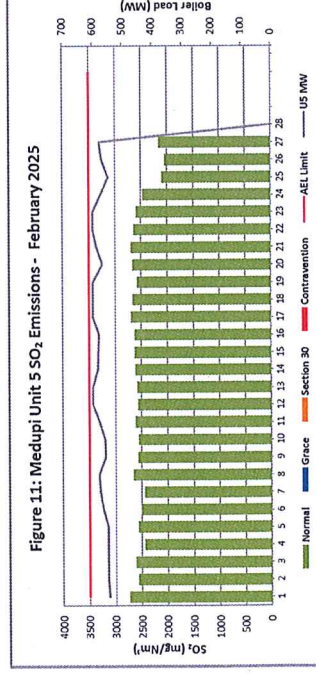
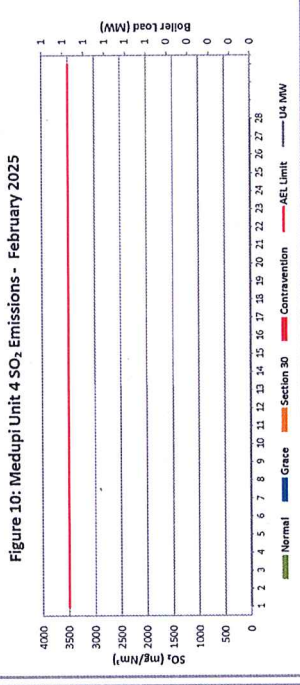
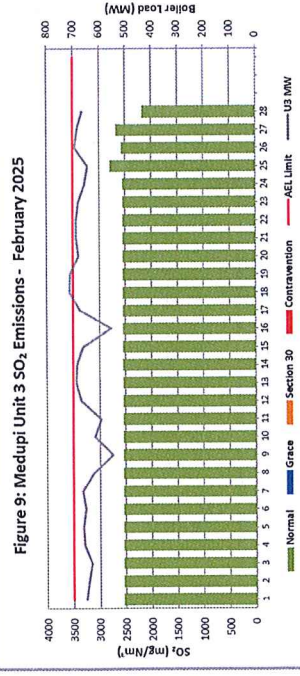
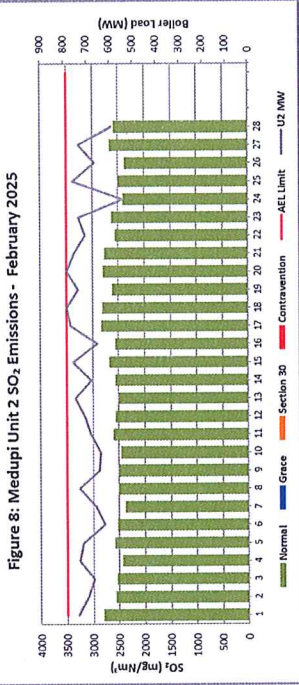
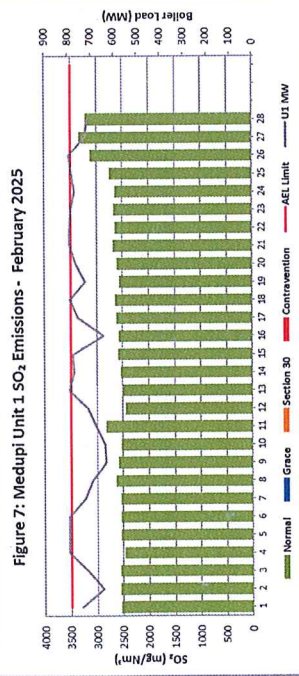
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4.1 PM Daily Averages



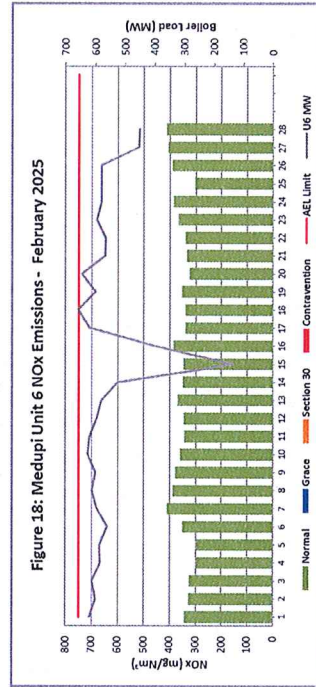
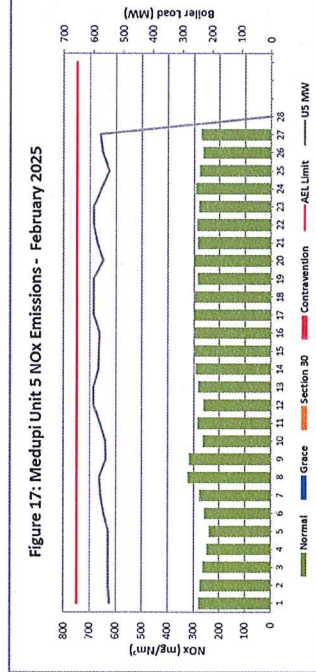
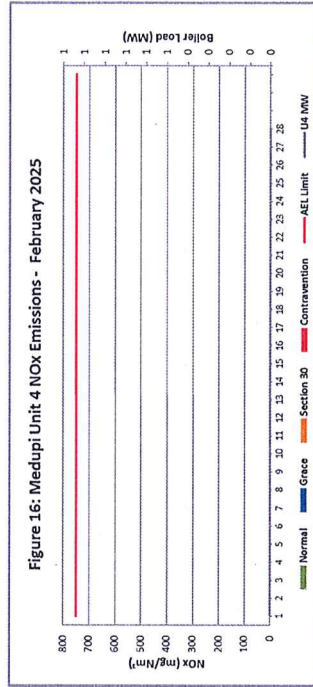
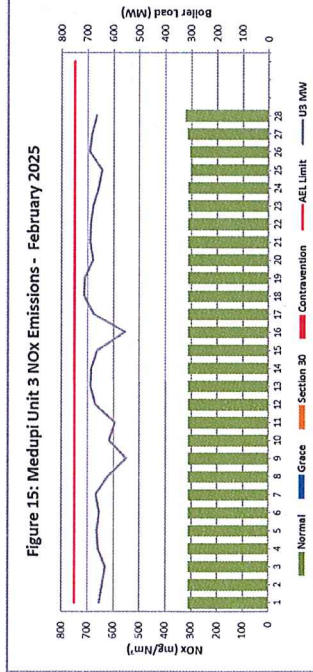
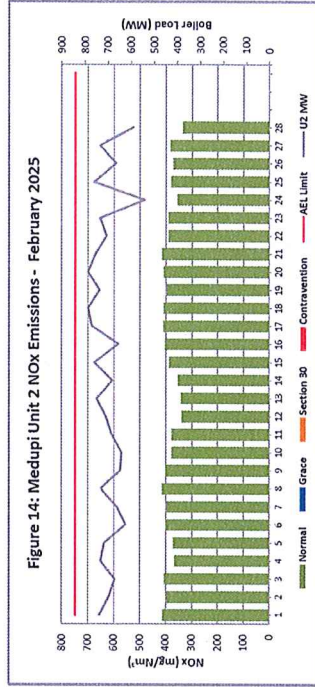
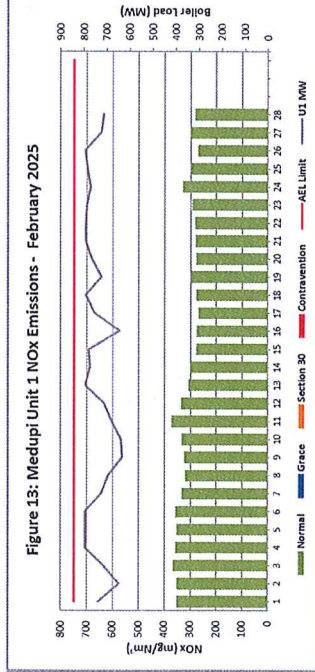
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4.2 SO₂ Daily Averages



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4.3 NOx Daily Averages



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TABLE 5: MONTHLY TONNAGES FOR THE MONTH OF FEBRUARY 2025

Associated Unit/Stack	PM	SO ₂	NO ₂
Unit 1	65.7	4 477.7	531.7
Unit 2	80.9	6 157.3	921.7
Unit 3	59.4	4 913.9	600.0
Unit 4	Off	Off	Off
Unit 5	78.9	4 915.2	545.2
Unit 6	82.2	6 859.3	1 092.7
SUM (Tons)	367.2	27 323.4	3 691.3

TABLE 6: MONTHLY AVERAGES FOR THE MONTH OF FEBRUARY 2025

Associated Unit/Stack	Average PM (mg/Nm ³)	Average SO ₂ (mg/Nm ³)	Average NO _x (mg/Nm ³)
Unit 1	38.9	2 656.1	313.8
Unit 2	36.1	2 581.5	386.2
Unit 3	31.0	2 554.2	312.1
Unit 4	Off	Off	Off
Unit 5	40.8	2 542.6	281.9
Unit 6	35.1	2 208.4	354.6

5. Continuous Emission Monitoring Systems (CEMS)

Unit 1, 2, 3, 5 and 6 Continuous Emission Monitoring Systems were always in operation when the unit was on load.

TABLE 7: PERIODS DURING WHICH CEMS WAS INOPERATIVE/MALFUNCTIONING

Date	CEMS status	Comments
01 – 24 Feb 2025	Unit 3 faulty Gases Monitor	Faulty monitor was restored on 25 Feb 2025

TABLE 8: CEMS MONITOR RELIABILITY PERCENTAGE (%)

Associated Unit/Stack	PM	SO ₂	NO ₂	O ₂
Unit 1	99.4	99.3	99.3	98.5
Unit 2	99.7	99.7	99.7	99.7
Unit 3	100.0	11.6	11.5	98.2
Unit 4	Off	Off	Off	Off
Unit 5	100.0	99.8	99.8	99.8
Unit 6	100.0	99.8	99.8	98.9

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6. CEMS Calibration certificates and equipment used for calibration.

A service provider was appointed to calibrate CEMS equipment at Medupi Power Station, calibration certificates are in place and may be made available upon request. Verification of the CEMS after calibration is conducted internally by Eskom.

7. Ambient Air Quality Monitoring Report

The Ambient Air Quality Monitoring report and Dust Fallout report for the month of February 2025 were submitted in March 2025.

8. Visual inspection of the exterior walls of the fuel oil tanks and TVOC Estimation

Visual inspection was conducted and there were no leaks observed on the exterior walls of the fuel oil tanks.

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TABLE 9: TOTAL VOLATILE ORGANIC COMPOUND (TVOC) FOR FEBRUARY 2025

		
CALCULATION OF EMISSIONS OF TOTAL VOLATILE COMPOUNDS FROM FUEL OIL STORAGE TANKS*		
Date:	Friday, 28 February 2025	
Station:	Medupi Power Station	
Province:	Limpopo Province	
Tank no.	1-2	
Description:	Outdoor fuel oil storage tank	
Tank Type:	Vertical fixed roof (vented to atmosphere)	
Material stored:	Fuel Oil 150	
MONTHLY INPUT DATA FOR THE STATION Please only insert relevant monthly data inputs into the blue cells below Choose from a dropdown menu in the green cells The total VOC emissions for the month are in the red cells IMPORTANT: Do not change any other cells without consulting the AQ CoE		
MONTH:	February	
GENERAL INFORMATION:		
	Data	Unit
Total number of fuel oil tanks:	2	NA
Height of tank:*	14.2	m
Diameter of tank:	12	m
Net fuel oil throughput for the month:	1179	tons/month
Molecular weight of the fuel oil:	166.00	Lb/lb-mole
METEROLOGICAL DATA FOR THE MONTH		
	Data	Unit
Daily average ambient temperature	26.20	°C
Daily maximum ambient temperature	32.94	°C
Daily minimum ambient temperature	20.71	°C
Daily ambient temperature range	12.24	°C
Daily total insolation factor	5.72	kWh/m ² /day
Tank paint colour	Aluminum/Specular	NA
Tank paint solar absorbance	0.39	NA
FINAL OUTPUT:		
	Result	Unit
Breathing losses:	0.70 kg/month	
Working losses:	0.03 kg/month	
TOTAL LOSSES (Total TVOC Emissions for the month):	0.73 kg/month	
*Calculations performed on this spreadsheet are taken from the USEPA AP-42- Section 7.1 Organic Liquid Storage Tanks - January 1996. This spreadsheet is derived from materials provided by Jimmy Peress, PE, Tritech Consulting Engineers, 85-93 Chevy Chase Street, Jamaica, NY 11432 USA, Tel - 718-454-3920, Fax - 718-454-6330, e-mail - PeressJ@nyc.rr.com.		

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9. Air quality improvements initiatives and public education and awareness campaigns

No awareness campaign was conducted for February 2025.

10. Complaints Register

TABLE 10: COMPLAINTS FOR THE MONTH OF FEBRUARY 2025

Name/ Source Code	Air pollution complaints received	Calculation of Impacts/ emissions associated with the incident	Date of complaint and date of response by the license holder	Results of investigation	Action taken to resolve the complaint
NA	NA	NA	NA	NA	NA

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Compiled By: **Thabo Khoza**
Senior Advisor
Environmental Management



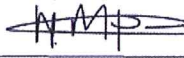
Date: 26/03/2025

Verified by: **Malose Langa**
System Engineer Boiler



Date: 2025/03/26

Verified by: **Shu Mpangase**
System Engineer C&I



Date: 2025/03/26

Supported by: **Mokgadi Dikgale**
Environmental Manager



Date: 2025/03/27

Supported by: **Sithokozile Hlongwa**
Engineering Group Manager



Date: 2025/03/27

I Thozama Gangi, declares that the information provided in this report is accurate and correct.

Yours sincerely



Thozama Gangi

GENERAL MANAGER (Acting): MEDUPI POWER STATION

Date: 2025/03/28

