	Medupi Power Station Monthly Emissions Report	Template Identifier	240-43921804	Rev	6
		Document Identifier	240-88543153	Rev	1
		Effective Date	June 2018		
		Review Date	June 2021		

Phumudzo Thivhafuni

Date: 2019/07/15

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Ref: 12/4/12L-W2/A3 – June 2019

Dear Phumudzo

MEDUPI POWER STATION MONTHLY EMISSIONS REPORT FOR THE MONTH OF JUNE 2019

This document serves as the monthly report required in terms of Section 7.7.1 of Medupi Power Station Provisional Atmospheric Emission License (AEL), 12/4/12L-W2/A3.

This report is a reflection of Unit 4, 5 and 6 gaseous and particulate emissions performance against the AEL limit for the month of June 2019 only.

1. Raw Materials and Products

Table 1: Quantity of raw materials and products for Unit 4, 5 and 6 in June 2019

Raw Materials and Products used	Raw Material Type	Unit	Maximum Permitted Consumption/ Rate (Quantity)	Unit 4, 5 and 6 consumption June 2019
	Coal	Tons/month	1 875 000	482492
	Fuel Oil	Tons/month	40 000	3119
Production Rates	Product/ By-Product Name	Unit	Maximum Production Capacity Permitted (Quantity)	Unit 4, 5 and 6 Production Rate in Month of June 2019
	Energy	MW	4 800	1696
	Ash Emitted	Tons/month	not specified	147.4

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Table 2: Daily consumption and production rates


Date	Reportable hours of Operation			Fuel Consumption (tons)				Production rate (MW)		
	Unit 4	Unit 5	Unit 6	Oil			Coal	U4	U5	U6
				Aux Boiler	Units	Total	Units			
01-June-19	24.0	24.0	24.0	0.0	59	59	15052	486	454	455
02-June-19	24.0	24.0	4.2	0.0	107	107	10315	471	480	337
03-June-19	24.0	24.0	0.0	0.0	408	408	15857	505	488	557
04-June-19	24.0	24.0	11.3	0.0	118	118	16793	625	507	485
05-June-19	24.0	24.0	24.0	0.0	133	133	16536	588	491	502
06-June-19	24.0	8.3	24.0	0.0	2	2	15770	689	462	526
07-June-19	24.0	10.4	24.0	0.0	252	252	18500	749	528	529
08-June-19	24.0	24.0	24.0	0.0	50	50	16162	514	522	510
09-June-19	24.0	24.0	24.0	0.0	132	132	17639	608	570	534
10-June-19	24.0	24.0	24.0	0.0	10	10	20049	725	616	598
11-June-19	24.0	24.0	24.0	0.0	11	11	16873	604	501	571
12-June-19	24.0	24.0	24.0	0.0	87	87	18008	616	586	551
13-June-19	11.3	24.0	24.0	0.0	15	15	13301	542	502	457
14-June-19	0.0	24.0	24.0	0.0	263	263	11786	0	525	637
15-June-19	0.0	24.0	24.0	0.0	1	1	12226	0	601	612
16-June-19	0.0	24.0	24.0	0.0	6	6	10709	0	519	569
17-June-19	0.0	24.0	24.0	0.0	68	68	10904	0	539	584
18-June-19	0.0	24.0	24.0	0.0	36	36	13965	507	465	600
19-June-19	15.3	24.0	24.0	0.0	276	276	17241	632	485	619
20-June-19	24.0	24.0	24.0	0.0	113	113	18362	706	494	645
21-June-19	24.0	24.0	24.0	0.0	31	31	17566	702	504	571
22-June-19	24.0	24.0	24.0	0.0	71	71	18742	683	546	645
23-June-19	24.0	24.0	24.0	0.0	89	89	18867	743	541	595
24-June-19	24.0	24.0	24.0	0.0	109	109	17314	660	528	536
25-June-19	24.0	24.0	24.0	0.0	108	108	15886	534	523	521
26-June-19	24.0	24.0	24.0	0.0	147	147	17788	674	507	614
27-June-19	24.0	24.0	24.0	0.0	66	66	18174	759	511	566
28-June-19	24.0	24.0	24.0	0.0	87	87	18175	736	520	548
29-June-19	24.0	24.0	24.0	0.0	88	88	17546	617	489	581
30-June-19	24.0	24.0	24.0	0.0	176	176	16391	659	467	521

Note: Medupi Power Station Unit 4 was on outage from 14-18 June 2019 for PA ducting repairs.

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2. Abatement Technology

Table 3: Abatement Equipment Control Technology utilisation for month of June 2019

Associated Unit/Stack	Technology Type	Actual Utilisation (%) for the month of June 2019
Unit 4,5 and 6	Low NO _x Burners	100
	Pulse Jet Fabric Filter Plant	100

3. Energy Source Characteristics

Table 4: Energy Source Material Characteristics for the month of June 2019

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	1.45
Ash Content	35 - 39	33.29

Table 5: Energy Source Material Characteristics for the month of June 2019

Characteristic	Stipulated Range (%)	Monthly Average Content (%)
Oil		
Sulphur Content	0.5 - 3.5	2.25
Ash Content	0.02 - 0.1	0.013

4. Emissions Reporting

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

The daily emission limits are as follows:

SO₂= 3500 mg/Nm³

Dust= 50 mg/Nm³

NO₂= 750 mg/Nm³

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Table 6: Daily averages emissions for the month of June 2019

Days	PM (mg/Nm ³)			SO ₂ (mg/Nm ³)			NO _x (mg/Nm ³)			CO (mg/Nm ³)			Temp (°C)			Press (kPa)			Velocity (m/s)			O ₂ (%)			CO ₂ (mg/Nm ³)			
	Unit	4	5	6	4	5	6	4	5	6	4	5	6	4	5	6	4	5	6	4	5	6	4	5	6	4	5	6
1	5.9	47.5	12.5	3 306	2 358	3 248	478	395	366	6	3	11	112.9	118.5	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
2	5.0	34.0	6.1	3 198	2 368	3 233	477	362	402	6	5	10	110.0	116.5	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2
3	6.6	41.3		3 262	2 398	3 161	489	393	393	7	6	21	113.6	136.7	90.4	90.4	90.4	90.4	90.4	90.4	90.4	90.4	90.4	90.4	90.4	90.4	90.4	90.4
4	13.7	46.9	37.9	3 181	2 299	3 054	564	422	455	31	5	10	116.8	136.5	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3
5	10.2	37.9	41.3	3 393	2 643	3 260	569	441	415	6	5	14	116.8	136.0	90.1	90.0	90.1	90.1	90.1	90.1	90.1	90.1	90.1	90.1	90.1	90.1	90.1	90.1
6	17.5	19.2	44.2	3 455	2 691	3 445	549	424	402	47	7	19	112.7	135.5	89.9	89.9	89.9	89.9	89.9	89.9	89.9	89.9	89.9	89.9	89.9	89.9	89.9	89.9
7	32.4	23.0	49.1	3 480	2 645	3 324	571	380	415	15	5	15	114.9	133.8	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2
8	19.6	22.4	47.0	3 891	3 061	3 856	659	423	453	17	7	11	118.5	136.8	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5
9	14.5	29.0	41.2	3 612	2 815	3 753	603	428	423	10	5	16	120.5	134.1	90.8	90.8	90.8	90.8	90.8	90.8	90.8	90.8	90.8	90.8	90.8	90.8	90.8	90.8
10	28.7	26.8	53.0	3 624	2 755	3 690	565	406	435	27	10	20	124.4	133.1	90.5	90.6	90.6	90.6	90.6	90.6	90.6	90.6	90.6	90.6	90.6	90.6	90.6	90.6
11	18.1	18.9	36.7	3 172	2 470	3 258	551	394	445	12	5	22	115.0	131.2	90.4	90.4	90.4	90.4	90.4	90.4	90.4	90.4	90.4	90.4	90.4	90.4	90.4	90.4
12	13.8	35.3	43.0	3 090	2 435	3 150	535	382	436	12	153	13	121.1	133.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3
13	11.6	39.8	28.9	3 057	2 501	3 192	506	355	378	41	15	20	114.0	121.0	90.4	90.4	90.4	90.4	90.4	90.4	90.4	90.4	90.4	90.4	90.4	90.4	90.4	90.4
14	34.7	44.5			2 785	3 563		369	454		11	23	112.5	134.5														
15	44.2	45.6			2 692	3 710		379	489		113	14	116.6	130.4														
16	41.5	27.9			2 526	3 191		347	446		83	10	112.6	126.9														
17	47.2	33.0			2 539	3 286		339	503		71	7	113.5	127.9														
18	20.4	36.7	2 754	2 818	3 557	524	379	516	27	9	17	112.5	130.8	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5
19	20.6	28.6	38.1	3 301	2 678	3 409	498	370	428	11	18	69	113.9	133.0	90.7	90.7	90.7	90.7	90.7	90.7	90.7	90.7	90.7	90.7	90.7	90.7	90.7	90.7
20	11.1	42.2	35.3	3 236	2 523	3 244	454	338	399	53	38	90	112.5	132.6	90.7	90.6	90.6	90.6	90.6	90.6	90.6	90.6	90.6	90.6	90.6	90.6	90.6	90.6
21	11.0	40.7	29.3	3 290	2 528	3 261	454	338	397	38	19	51	112.4	128.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5
22	10.8	48.0	40.2	3 314	2 589	3 326	464	344	398	42	48	103	116.6	133.6	90.1	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2
23	27.1	39.0	51.4	3 441	2 601	3 460	506	395	444	208	233	81	119.3	138.2	89.9	89.9	89.9	89.9	89.9	89.9	89.9	89.9	89.9	89.9	89.9	89.9	89.9	89.9
24	26.5	40.2	42.0	3 512	2 717	3 559	532	364	404	47	67	33	116.4	132.1	89.9	89.9	89.9	89.9	89.9	89.9	89.9	89.9	89.9	89.9	89.9	89.9	89.9	89.9
25	30.1	32.8	37.6	3 344	2 566	3 282	488	343	377	9	40	74	114.7	127.8	90.1	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
26	31.9	44.2	41.5	3 422	2 588	3 356	492	335	392	19	5	296	112.3	131.2	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3
27	28.1	42.5	37.5	3 682	2 667	3 440	485	346	379	16	77	62	112.8	125.6	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3
28	23.2	37.5	32.9	3 742	2 612	3 499	521	373	384	15	126	46	116.2	122.6	90.1	90.1	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2
29	17.4	36.0	39.3	3 833	2 717	3 532	540	397	439	8	9	50	116.6	128.4	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2
30	16.1	26.3	28.8	3 516	2 503	3 332	467	340	377	35	5	32	114.5	121.3	90.1	90.1	90.1	90.1	90.1	90.1	90.1	90.1	90.1	90.1	90.1	90.1	90.1	90.1

Note:

- There is no reportable data on areas shaded black; this is a result of unit trip, outage and or grace period.
- Unit 4 temperature and velocity meters are faulty. The Power station maintenance team is awaiting spares for the repairs of the instrument to be conducted.
- Medupi Power Station is awaiting spares for unit 4, 5 and 6 CO₂ monitor.

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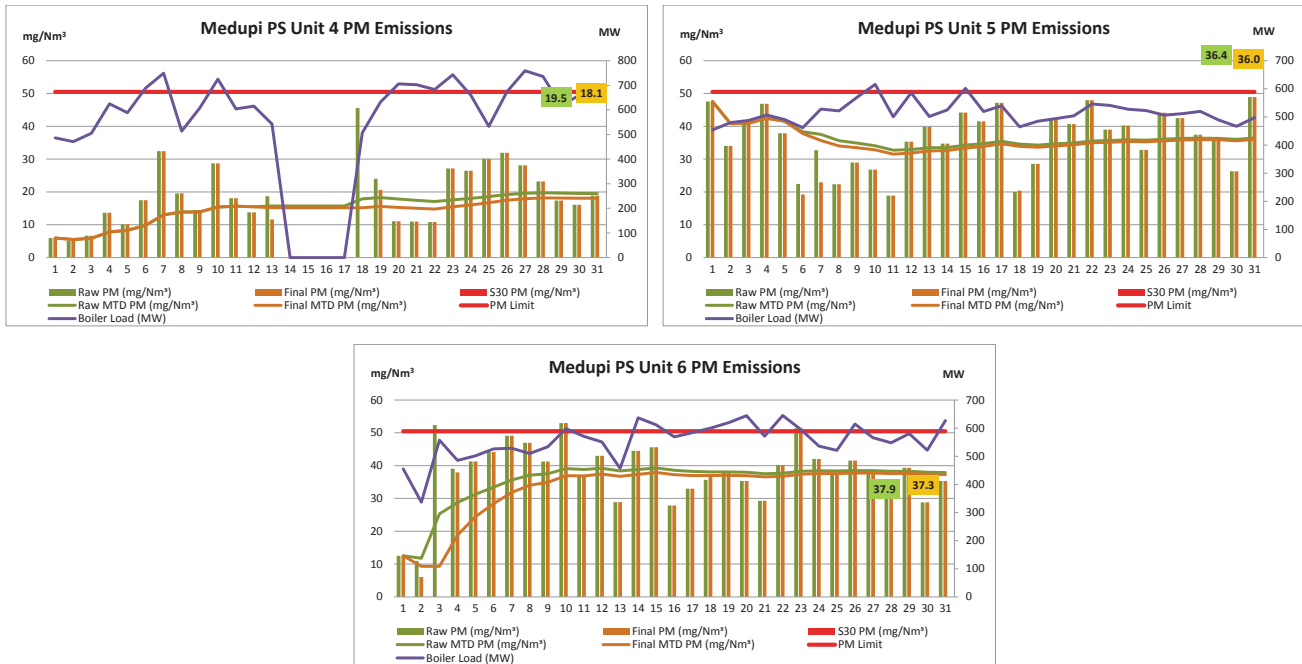
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Figure 1: Medupi Power Station graphical representation of the daily average emissions for particulates



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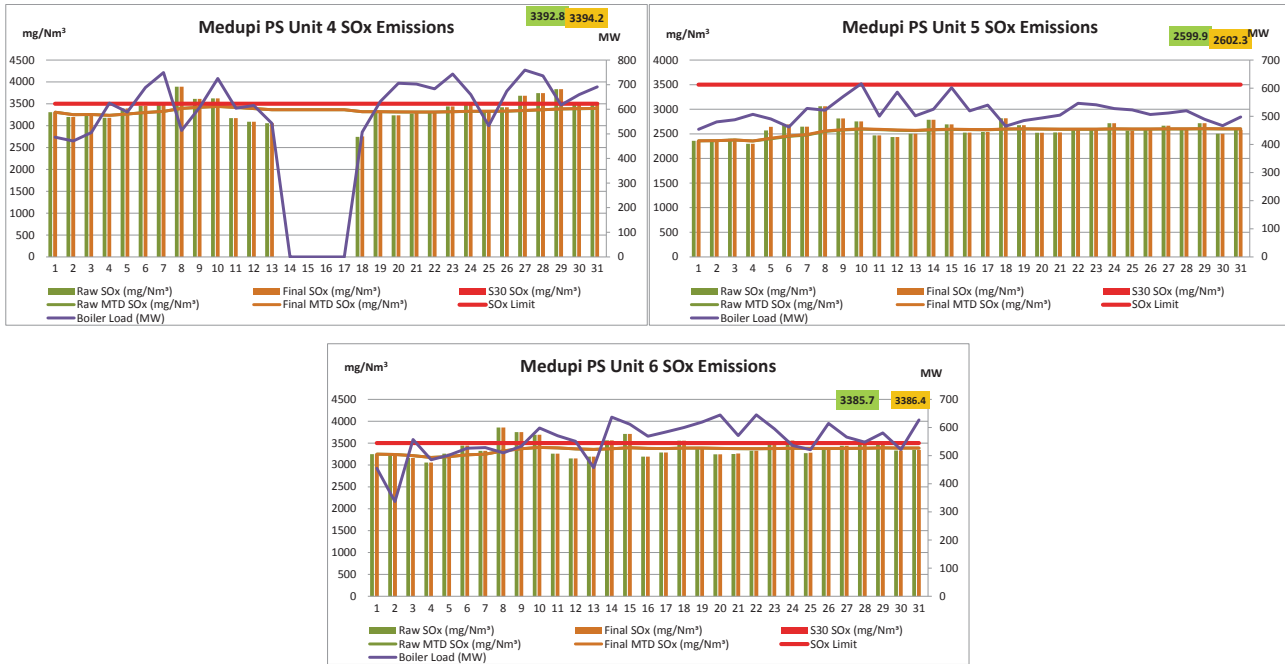
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Figure 2: Medupi Power Station graphical representation of the daily average emissions for SOx



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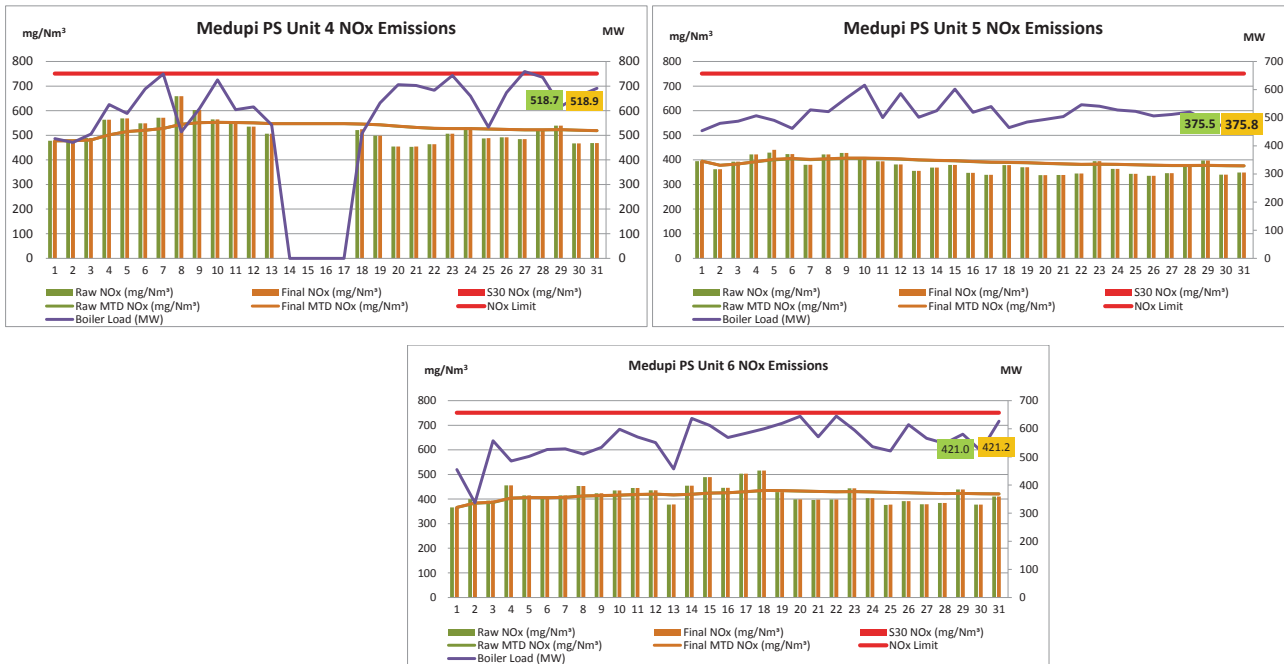
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Figure 3: Medupi Power Station graphical representation of the daily average emissions for NOx



Note: Point number 31 on all figures above represent the first day of July 2019.

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Table 7: Monthly tonnages for the month of June 2019

Unit	PM (tons)	SO ₂ (tons)	NO ₂ (tons)	CO (tons)	CO ₂ (tons)
1	0.0	0	0		
2	0.0	0	0		
3	0.0	0	0		
4	30.7	5 819	876		
5	59.2	4 355	627		
6	57.6	5 413	673		
SUM	147.4	15 588	2 175		

Unit 4, 5 and 6 CO₂ monitoring equipment is currently not functional, procurement process is undergoing to purchase the spare required to fix/repair the equipment. It is anticipated that, the spare will be onsite by end of August 2019.

5. Shutdown/start-up information

Table 8: Days operating under normal operation, days in grace period and section 30 days respectively

Unit	Operating Days (DD:HH:MM)			
	Normal operation	In grace period	Under S 30	Unit off load
1	00:00:00	00:00:00	00:00:00	30:00:00
2	00:00:00	00:00:00	00:00:00	30:00:00
3	00:00:00	00:00:00	00:00:00	30:00:00
4	25:07:55	00:00:00	00:00:00	04:16:05
5	29:18:45	00:00:00	00:00:00	00:05:15
6	29:05:50	00:00:00	00:00:00	00:18:10

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Table 9: Days operating in Emergency Level one (EL1)

Hours June EL1			
Date	EL1 Start	Date	EL1 Start
01-June-19	(07:45; 16:47) EL1 and MCR in force (09:47; 21:41) EL1 and MCR cancelled	16-June-19	None
02-June-19	None	17-June-19	20:15 EL1 & MCR cancelled
03-June-19	05h36: EL1 in force	18-June-19	(15:20) EL1 and MCR in force
04-June-19	None	19-June-19	(15:17) EL1 and MCR in force 21:24 EL1 cancelled.
05-June-19	None	20-June-19	(16:18) EL1 and MCR in force (21:23) EL1 cancelled.
06-June-19	None	21-June-19	(07:30) EL1 and MCR in force (13:00) EL1 and MCR cancelled (16:06) EL1 and MCR in force (21:31) EL1 and MCR cancelled
07-June-19	07:47 EL1 & MCR Inforce. 11:35 EL1 & MCR Cancelled.	22-June-19	(07:18) EL1 and MCR in force (21:41) EL1 and MCR cancelled
08-June-19	17:15 EL1 & MCR Inforce	23-June-19	15h35: EL1 in force(21h18 Cancelled)
09-June-19	16:57 EL1 & MCR Inforce. 19:10 EL1 & MCR Cancelled.	24-June-19	06h41: EL1 in force(22h00 Cancelled)
10-June-19	16:00 EL1 & MCR Inforce.	25-June-19	15h38: EL1 in force(21h02 Cancelled)
11-June-19	N/A	26-June-19	08h11: EL1 in force(21h26 Cancelled)
12-June-19	17:16 EL1 & MCR Inforce.	27-June-19	06:59 EL1 in force 21:00 EL1 cancelled
13-June-19	11:37 EL1 & MCR Inforce.	28-June-19	none
14-June-19	(07h56) EL1 in-force. 21:54 EL1 and MCR cancelled.	29-June-19	17:21 EL1 in force 18:58 EL1 cancelled
15-June-19	None	30-June-19	None


6. Comments on the performance and availability of each unit

Unit 4 was off for 4 days and 16 hours for PA ducting repairs. There were 8 exceedances for SO₂ at unit 4 and 6 respectively and zero NO_x exceedances during June 2019 reporting period for all the units. Unit 6 PM limit was exceeded on two occasions.

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7. Light up information

Table 10: PM Start-up information for the month of June

Event No.	Event 1	
Unit	Unit 4	
Fires in	2019/06/17	2019/06/17
Synchronisation with Grid	08:35 AM	2019/06/18
Emissions below limit from Sync (Date and Time)	did not go above limit	did not go above limit
Fires in to synchronization	00:16:25	Hrs (dd:hh:mm)
Synchronization to < limit (Duration	did not go above limit	Hrs (dd:hh:mm)

Table 11: Emission Average from Fires-in to Synchronisation

South Stack Emission Average from Fires-in to Synchronisation (Date and Time)							
Unit	Fires-In		Synchronisation		PM	SO ₂	NO _x
Unit 4	2019/06/17	04:10 PM	2019/06/18	08:35 AM	2.0	1158.8	296.4


Table 12: Point Source emissions released during Shut-down

South Stack Emission Average Breaker Open (BO) to Draft Group Shut Down (SD) (Date & Time)							
Unit	Breaker Open		DG SD		PM	SO ₂	NO _x
Unit 4	2019/06/13	11:20 AM	2019/06/13	11:20 AM	27.2	3353.6	0.0

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8. Continuous Emission Monitoring Systems (CEMS)

Unit 4, 5 and 6 Continuous Emission Monitoring Systems were in operation at all times when the unit was on load.

CEMS CO₂ monitor verification test not yet conducted as a result of challenges on the equipment, the Power Station is in the process of procuring spares to fix the equipment, and the Licencing Authority will be notified prior to conducting the test.

Table 13: Periods during which CEMS was inoperative

Date	Nature of Repair/Adjustment
None	Not Applicable

Table 14: CEMS Monitor Reliability

Variable	Unit 4	Unit 5	Unit 6
Dust	98.8	99.2	97.6
SO ₂	97.4	99.0	97.4
NO _x	97.4	99.0	97.4
CO	97.4	99.2	84.4
O ₂	96.8	99.0	94.0
Temperature	0.0	99.2	94.0
Pressure	97.4	99.2	94.0
Velocity	30.9	99.2	94.0
CO ₂	73.9	0.0	23.3

9. CEMS Calibration certificates and equipment used for calibration

See attached Appendix A


10. Ambient Air Quality Monitoring Report

The Ambient Air Quality Monitoring and Dust fall-out report are emailed to the Licensing authority on a monthly basis.

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11. Visual inspection of the exterior walls of the fuel oil tanks, fuel oil inventory data 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 15: Total Volatile Organic Compound (TVOC) for June 2019

		
CALCULATION OF EMISSIONS OF TOTAL VOLATILE COMPOUNDS FROM FUEL OIL STORAGE TANKS*		
Date:	30 June 2018	
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 <i>blue cells</i> below Choose from a dropdown menu in the <i>green cells</i> The total VOC emissions for the month are in the <i>red cells</i> IMPORTANT: Do not change <i>any</i> other cells without consulting the AQ CoE		
MONTH:	June	
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:	3119	tons/month
Molecular weight of the fuel oil:	166.00	Lb/lb-mole
METEROLOGICAL DATA FOR THE MONTH	Data	Unit
Daily average ambient temperature	23.43	°C
Daily maximum ambient temperature	31.06	°C
Daily minimum ambient temperature	16.52	°C
Daily ambient temperature range	14.54	°C
Daily total insolation factor	4.41	kWh/m ² /day
Tank paint colour	Aluminum/Specular	NA
Tank paint solar absorbance	0.39	NA
FINAL OUTPUT:	Result	Unit
Breathing losses:	0.69 kg/month	
Working losses:	0.06 kg/month	
TOTAL LOSSES (Total TVOC Emissions for the month):	0.75 kg/month	
<small>*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, Trittech 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.</small>		

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

There were no activities relating to community awareness campaign during the month of June 2019.

13. Complaints Register


Table 16: Complaints for the month of June 2019

Source Code/ Name	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
N/A	No complaints received	N/A	N/A	N/A	N/A

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Compiled by:

Verified by:

Supported by:

Supported by:

Supported by:


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

GENERAL MANAGER: MEDUPI POWER STATION

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APPENDIX 1

CEMS Calibration certificates



Elemental Analytics
Analyse Besluit

12 Angeler Street, Sandene,
Boksburg, SA, 1459
PO Box 328, Isando, SA, 1600
VAT REG #: 421 021 2248
www.e-analytica.co.za

Tel: 0861 000 032
Int. Tel: +27 11 918 6994
Fax: +27 11 894 1037
CO REG #: 2004/007607/07
info@e-analytica.co.za

CALIBRATION CERTIFICATE

CERTIFICATE NO: 312	
CUSTOMER:	Medupi Power Station
CONTACT NAME:	Christo Vorster
MODEL:	Dr Fodisch MGA 23
AUXILIARY EQUIPMENT:	Unit 4
JOB NO:	SC1437
PHONE:	014 762 2255
SERIAL NO:	13668

CHAN	PRIOR	FINAL	TEST GAS	TEST GAS VALUE	GAS CERTIFICATE NUMBER
1	ZERO	-5.0 ppm	0 ppm	Air	21 %
	SPAN	800 ppm	804 ppm	CO	803.9 ppm
2	ZERO	1.0 ppm	0 ppm	Air	21 %
	SPAN	911 ppm	910 ppm	NO	910 ppm
3	ZERO	-7.4 ppm	0 ppm	Air	21 %
	SPAN	2205 ppm	2173 ppm	SO2	2172.8 ppm
4	ZERO	-0.08 %	0.0 %	N2	99.99 %
	SPAN	21.13 %	20.95 %	O2	20.95 %

REPORT: Inspect sample lines and sample system, check diagnostics. Calibrate analyser with zero and span gas, calibration was done according to cylinder standards, analyser was responding to all test gas.

Date: 14 May 2019
 Calibration Due Date: Aug 2019
 Technician: J. Faber







Document Number: TH-PFC-002-F1 Rev 1

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12 Angeller Street, Bardene, Boksburg, SA, 1459
PO Box 328, Isando, SA, 1600
VAT REG #: 421 021 2248
www.e-analytics.co.za

Tel: 0861 000 032
Int. Tel: +27 11 918 6994
Fax: +27 11 854 1037
CO REG #: 2004/007607/07
info@e-analytics.co.za

1881, Unit 5, Conways

CALIBRATION CERTIFICATE

CERTIFICATE NO: 2013

CUSTOMER:	Medupi Power Station	JOB NO:	SC1437
CONTACT NAME:	Christo Vorster	PHONE:	014 763 2355
MODEL:	Dr Fodisch MGA 23	SERIAL NO:	13670
AUXILIARY EQUIPMENT:	Unit 5		

CHAN		PRIOR	FINAL	TEST GAS	TEST GAS VALUE	GAS CERTIFICATE NUMBER
1	ZERO	-7.0 ppm	0 ppm	Air	21 %	Air
	SPAN	796 ppm	804 ppm	O2	803.9 ppm	80A
2	ZERO	-12.0 ppm	0 ppm	Air	21 %	Air
	SPAN	891 ppm	910 ppm	NO	910.0 ppm	12608
3	ZERO	-15.1 ppm	0 ppm	Air	21 %	Air
	SPAN	1930 ppm	2173 ppm	SO2	2172.8 ppm	12664
4	ZERO	-0.06 %	0.0 %	N2	99.99 %	12608
	SPAN	21.2 %	20.95	O2	20.95 %	Air

REPORT: Inspect sample lines and sample system, check diagnostics, sample pump was change. Calibrate analyser with zero and span gas, analyser respond to all test gas.

Date: 14 May 2019
Calibration Due Date: Aug 2019
Technician: J. Faber



**SERVOMEX**
A FODISCH COMPANY

**GMI**

**TELEDYNE ANALYTICAL INSTRUMENTS**
A Teledyne Technologies Company

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CO REG #: 2004/007607/07
info@e-analitics.co.za

ISO 17025:2017

CALIBRATION CERTIFICATE

CERTIFICATE NO: 3964

CUSTOMER:	Medupi Power Station	JOB NO:	SC1437
CONTACT NAME:	Christo Vorster	PHONE:	014 762 2255
MODEL:	Foedisch MGA 23	SERIAL NO:	16339
AUXILIARY EQUIPMENT:	Unit 6		

CHAN		PRIOR	FINAL	TEST GAS	TEST GAS VALUE	GAS CERTIFICATE NUMBER
1	ZERO	-11.0 ppm	0 ppm	Air	21 %	Air
	SPAN	787 ppm	804 ppm	CO	803.9 ppm	80A
2	ZERO	-32.0 ppm	0 ppm	Air	21 %	Air
	SPAN	882 ppm	910 ppm	NO	910.0 ppm	12608
3	ZERO	-36.0 ppm	0 ppm	Air	21 %	Air
	SPAN	2278 ppm	2173 ppm	SO2	2172.8 ppm	12664
4	ZERO	0.05 %	0.0 %	N2	99.99 %	12608
	SPAN	20.89 %	20.95 %	O2	20.95 %	Air

REPORT: Inspect sample lines and sample system, check diagnostics. Calibrate analysers with zero and span gas, calibration was done according to cylinder standards, analysers were responding to all test gas.

Date: 14 May 2019
Calibration Due Date: Aug 2019
Technician: J. Faber



**SERVOMEX**
A METROLOGICAL COMPANY

**GMI**

**TELEDYNE ANALYTICAL INSTRUMENTS**
A Teledyne Technologies Company

Document Number: TH-PPC-002-P1 Rev 1

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