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		Review Date	January 2024		

Phumudzo Thivhafuni

Date: 2021/07/31

Tel: 014 762 6375

Enquiries: TR. Rammutla

Limpopo Dept. of Economic Development, Environment and Tourism Private Bag 9484 POLOKWANE 0700 ThivhafuniPO@ledet.gov.za

Ref: 12/4/12L-W2/A3 - May 2020 Rev1

Dear Phumudzo

MEDUPI POWER STATION MONTHLY EMISSIONS REPORT FOR THE MONTH OF MAY 2020

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 2, 3, 4, 5 and 6 gaseous and particulate emissions performance against the AEL limit for the month of May 2020 only.

1. Raw Materials and Products

Table 1: Quantity of raw materials and products for Unit 2, 3, 4, 5 and 6 in May 2020

Raw Materials and	Raw Material Type	Unit	Maximum Permitted Consumption/ Rate (Quantity)	Unit 2,3, 4, 5 and 6 consumption May 2020
Products	Coal	Tons/month	1 875 000	731 029
used	Fuel Oil	Tons/month	40 000	659
Production Rates	Product/ By- Product Name	Unit	Maximum Production Capacity Permitted (Quantity)	Unit 2, 3, 4, 5 and 6 Production Rate in Month of May 2020
	Energy	MW	4 800	2140
	Ash Emitted	Tons/month	not specified	202.2

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Table 2: Daily consumption and production rates

	Repor	table ho	ours of C	Operatio	n	Fuel Consumption (tons)				Production (MW)
Date	2	m	4	S	6		Oil		Coal	Units
Date	Unit 2	Unit	Unit 4	Unit	Unit	Aux Boiler	Units	Total	Units	2,3,4,5 &6
01- May-20	24,0	21,3	9,4	24,0	0.0	0.0	0	0	22377	2041,582
02- May -20	24,0	0,0	24,0	24,0	0.0	0.0	17	17	18528	1717,672
03- May -20	24,0	19,4	24,0	24,0	0.0	0.0	0	0	20092	1842,572
04- May -20	24,0	24,0	24,0	24,0	0.0	0.0	20	20	24324	2150,465
05- May -20	24,0	24,0	22,3	24,0	0.0	0.0	53	53	26668	2383,206
06- May -20	24,0	24,0	0,0	24,0	0.0	0.0	59	59	19566	1705,909
07- May -19	24,0	24,0	0,0	24,0	0.0	0.0	7	7	20801	1811,841
08- May -20	24,0	24,0	0,0	24,0	0.0	0.0	5	5	19436	1743,218
09- May -20	24,0	24,0	0,0	24,0	0.0	0.0	9	9	16161	1426,251
10- May -20	24,0	24,0	0,0	24,0	0.0	0.0	0	0	18003	1577,46
11- May -20	24,0	24,0	0,0	24,0	0.0	0.0	0	0	20277	1936,557
12- May -20	24,0	24,0	13,8	24,0	0.0	0.0	15	15	24748	2218,605
13- May -20	24,0	24,0	24,0	24,0	0.0	0.0	3	3	25222	2284,062
14- May -20	24,0	24,0	24,0	24,0	0.0	0.0	21	21	26796	2407,065
15- May -20	24,0	24,0	24,0	24,0	0.0	0.0	17	17	26097	2352,791
16- May -20	24,0	24,0	24,0	24,0	0.0	0.0	6	6	26780	2359,456
17- May -20	24,0	24,0	24,0	24,0	0.0	0.0	0	0	26180	2326,764
18- May -20	24,0	24,0	24,0	24,0	0.0	0.0	13	13	24183	2135,114
19- May -20	24,0	24,0	24,0	24,0	0.0	0.0	0	0	23985	2275,698
20- May -20	24,0	24,0	24,0	24,0	0.0	0.0	0	0	25899	2330,681
21- May -20	24,0	24,0	24,0	24,0	0.0	0.0	23	23	24784	2193,212
22- May -20	24,0	24,0	24,0	24,0	0.0	0.0	26	26	24619	2217,189
23- May -20	24,0	24,0	24,0	24,0	0.0	0.0	33	33	24844	2290,183
24- May -20	24,0	24,0	24,0	24,0	0.0	0.0	13	13	25575	2277,016
25- May -20	24,0	24,0	23,0	24,0	0.0	0.0	45	45	26630	2367,501
26- May -20	24,0	24,0	0,0	24,0	0.0	0.0	0	0	21443	2215,722
27- May -20	24,0	24,0	7,9	24,0	0.0	0.0	142	142	27723	2468,446
28- May -20	24,0	24,0	24,0	24,0	0.0	0.0	11	11	26649	2433,717
29- May -20	24,0	24,0	1,0	24,0	0.0	0.0	2	2	24516	2395,86
30- May -20	24,0	24,0	13,8	24,0	0.0	0.0	94	94	25730	2380,216
31-May -20	24,0	24,0	24,0	24,0	0.0	0.0	0	0	22398	2089,61

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2. Abatement Technology

 Table 3: Abatement Equipment Control Technology utilisation for month of May 2020

Associated Unit/Stack	Technology Type	Efficiency
Unit 1	Fabric Filter Plant (FFP)	0
Unit 2	Fabric Filter Plant (FFP)	99.927%
Unit 3	Fabric Filter Plant (FFP)	99.968%
Unit 4	Fabric Filter Plant (FFP)	99.903%
Unit 5	Fabric Filter Plant (FFP)	99.842%
Unit 6	Fabric Filter Plant (FFP)	0

3. Energy Source Characteristics

Table 4: Energy Source Material Characteristics for the month of May 2020

Characteristic	Stipulated RangeMonthly Average Content(% by weight on a dry basis)(% by weight on a dry basis)			
	Coal			
Sulphur Content	1.3 - 2.2	1.53		
Ash Content	35 - 39	34.88		

4. Emissions Reporting

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

The emission limits are as follows:

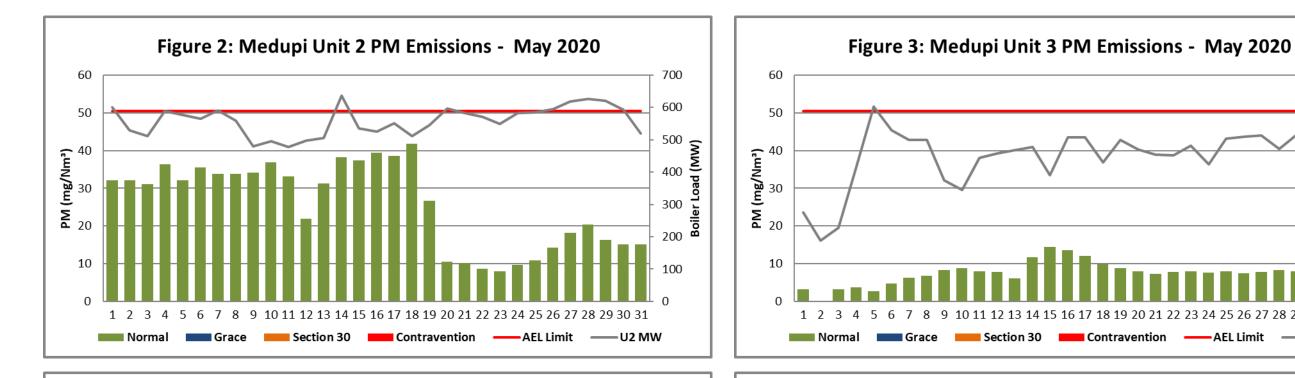
SO_2 Monthly = 3500 mg/Nm ³	Dust Daily= 50 mg/Nm ³	NO_2	Daily=	750	mg/Nm³
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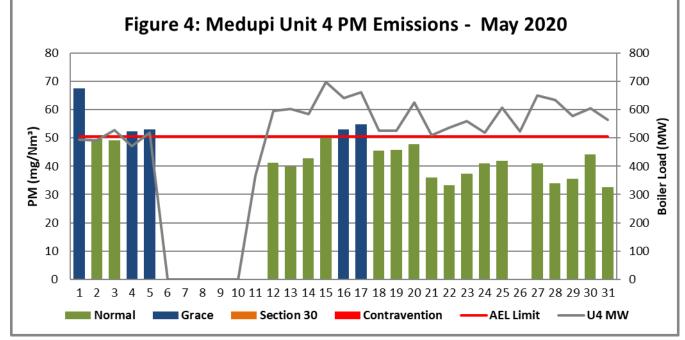
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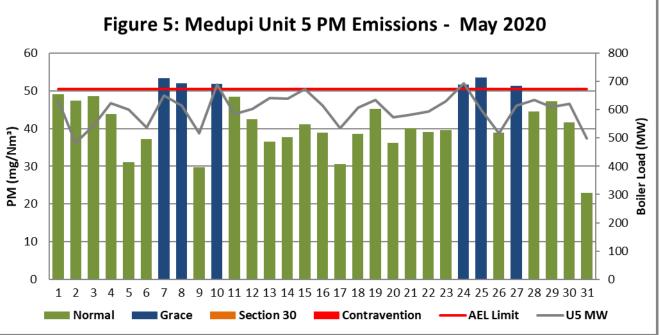
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Medupi Power Station graphical representation of emissions data

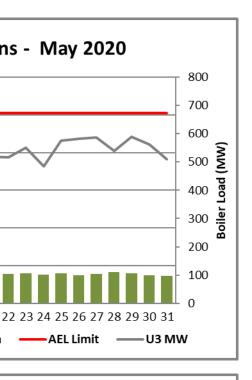




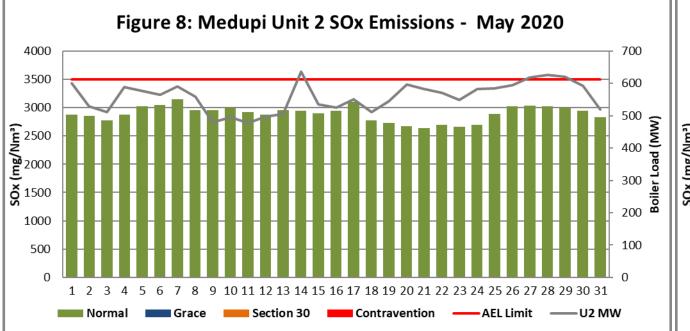


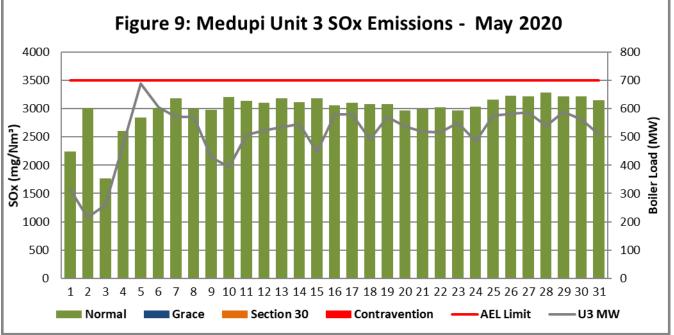
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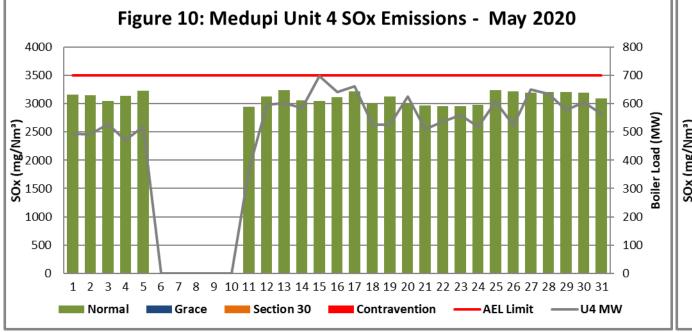
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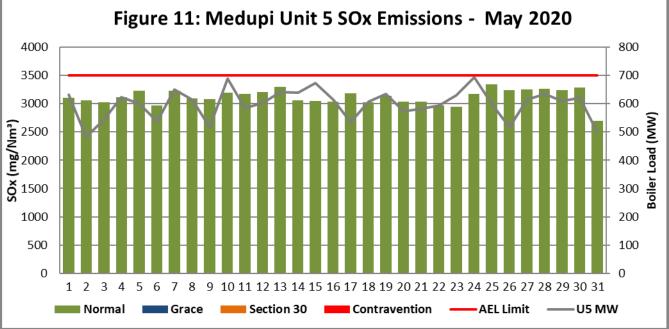


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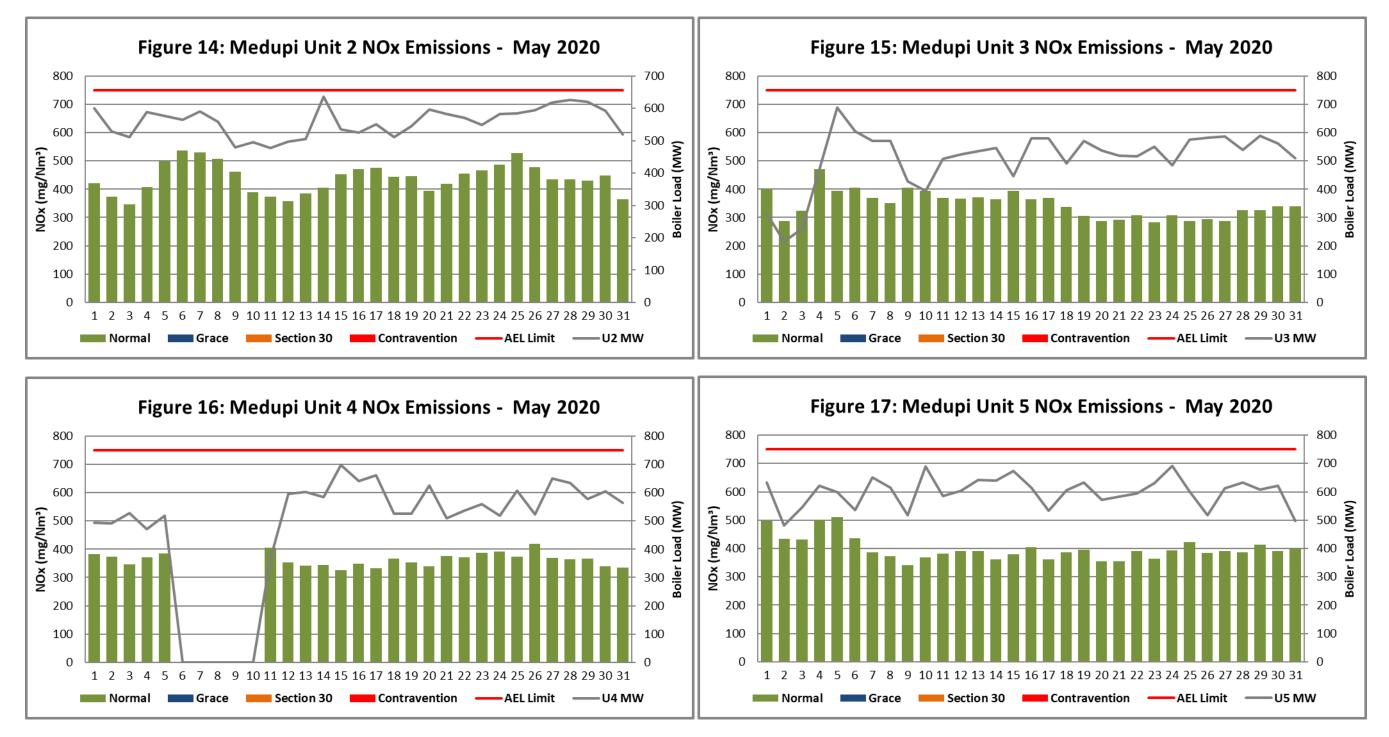




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Table 5: Monthly tonnages for the month of May 2020

Associated Unit/Stack	РМ	SO2	NO ₂	со
Unit 1	-	-	-	-
Unit 2	47,4	5 333	811	33
Unit 3	7,6	2 972	340	13
Unit 4	61,6	4 879	563	59
Unit 5	85,6	6 279	803	46
Unit 6	0,0	0	0	0
SUM	202,2	19 463	2 517	151

5. Comments on the performance and availability of each unit

Gaseous emissions on all units were within the limit for May reporting period. Unit 2 and 3 PM emissions were within the limit throughout the reporting period. Exceedances due to upset conditions were evident on unit 4 and 5. Unit 6 was on bag replacement outage during the month of May 2020.

6. Continuous Emission Monitoring Systems (CEMS)

Unit 2, 4, 5 and 6 Continuous Emission Monitoring Systems were in operation at all times when the unit was on load.

Table 6: Periods during which CEMS was inoperative

Date	Time	CEMS status	Comments
N/A	N/A	N/A	Data for the reporting period is available

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Table 7: CEMS Monitor Reliability

Associated Unit/Stack	РМ	SO₂	NOx	02
Unit 2	100,0	99,9	99,9	99,9
Unit 3	99,9	89,3	99,3	88,1
Unit 4	99,9	99,8	99,8	99,6
Unit 5	100,0	99,9	95,6	99,9

7. CEMS Calibration certificates and equipment used for calibration

See attached Appendix A

8. 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.

9. 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 8: Total Volatile Organic Compound (TVOC) for May 2020

CALCULATION	OF EMISSIONS OF TOTAL VOLATILE COMPOU	INDS FROM FUEL OIL ST	ORAGE TANKS	
Date:	31 May 2020			
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 TH			
	Please only insert relevant monthly data inputs			
	Choose from a dropdown menu in th	•		
	The total VOC emissions for the month a	are in the <u>red cells</u>		
	IMPORTANT: Do not change any other cells with	out consulting the AQ CoE		
MONTH:	Мау			
GENERAL INFO	RMATION:	Data	Unit	
Total number of	fuel oil tanks:	2	NA	
Height of tank:*		14.2	m	
Diameter of tank	:	12	m	
Net fuel oil throu	ughput for the month:	<u>659</u>	tons/month	
Molecular weigh	t of the fuel oil:	166.00	Lb/lb-mole	
METEROLOGIC	AL DATA FOR THE MONTH	Data	Unit	
Daily average an	nbient temperature	19.51	°C	
	mbient temperature	28.42	°C	
	mbient temperature	12.06	°C	
	mperature range	15.04	°C	
Daily total insola		3.91	kWh/m²/day	
		Aluminum/Specular	NA	
Tank paint colou		0.39	NA	
Tank paint colou Tank paint solar	absorbtance			
•		Result	Unit	
Tank paint solar FINAL OUTPUT:				
Tank paint solar		0.70	Unit kg/month kg/month	

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

No awareness campaign.

11. Complaints Register

Table 9: Complaints for the month of May 2020

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:	Lufuno Tshidzumba
Verified by:	Malose Langa System Engineer Boiler
Supported by:	Sithokozile Hlongwa_pp
Supported by:	Rosetta RammutlaR <i>Rammutla</i> Environmental Manager
Supported by:	Jabulani Mkhatshwa Engineering Group Manager

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

Yours sincerely

Dan Mashigo GENERAL MANAGER: MEDUPI POWER STATION (Acting)

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APPENDIX 1: CEMS Calibration certificates

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		C	ALIBRATIO	ON CE	RTIFI	CATE			
							CERT	IFICATE	NO:
								3416	
CUST	OMER:		Eskom Med	upi		JOB N	0:	SC1665	j
CONT	ACT NAM	F-	Lerato Sehu			PHON	F.	078 012	9038
MODE			Dr Fodisch M				-	13669	
		UIPMENT:	Unit 6	IGA 23		SERIA	LNU.	13003	
		PRIOR		TEST	TEST	GAS		AS	EXPIRY DATE
c	HAN		FINAL	GAS		LUE	CERTIFICATE NUMBER		
1	ZERO	1 ppm	0 ppm	Air	21.	0%		Air	N/A
· ·	SPAN	834 ppm	835 ppm	co		5 ppm		204	03-02-2021
2	ZERO	-2 ppm	0 ppm	Air		0%		Air	N/A
-	SPAN ZERO	908 ppm	877 ppm	NO		7 ppm		598	21-01-2021
3	SPAN	-47 ppm	0 ppm	Air		0%	Air 5905E		N/A 15-05-2020
	ZERO	2584 ppm 0.03 %	2584 ppm 0.0 %	802 N2		7 ppm 99 %		410	31-08-2020
4	SPAN	20.39 %	20.95 %	02		5%		Air	N/A
	competer C			man aac					e lines, filters
s <i>tanda</i> Date c Calibr	rds, analys of Calibrat ation Due	alibrate analys er was respon tion: 2 e Date: 1	er with zero and ding to all test go 25 Feb 2020 Nay 2020						
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						CEF	TIFICATE	NO:				
CU	STOMER:		Column Mard			B NO:	3415 SC1665					
	NTACT NAME	2	Eskom Med			HONE:	078 012		-			
	DEL:		Dr Fodisch M			RIAL NO:): 13670					
AU	XILIARYEQ	JIPMENT:	Unit 5				1					
	CHAN	PRIOR	FINAL	TEST TEST GAS GAS VALUE		GER	GAS TIFICATE JMBER	EXPIRY DAT	E			
1	ZERO SPAN	3 ppm 856 ppm	0 ppm 835 ppm	Air	21.0 % 834.6 ppm		Air 3204	N/A 03-02-2021				
2	ZERO	0 ppm	0 ppm	Air	21.0 %		Air	N/A				
<u> </u>	SPAN ZERO	944 ppm -19 ppm	877 ppm 0 ppm	NO Air	876.7 ppm 21.0 %		12598 Air	21-01-2021 N/A	_			
3	SPAN	2262 ppm	2262 ppm	802	21.0 % 2161.7 ppn	n i	5905E	15-05-2020				
4	ZERO	0.06 %	0.0 %	N2	99.99 %		82410	31-08-2020				
	SPAN	20.69 %	20.95 %	02	20.95 %		Air	N/A				
and	rotameter. Ca dards, analyse e of Calibrat	librate anal, r was respo ion:	cs is low and cell i yser with zero and nding to all test go 25 Feb 2020 May 2020	l span gas,								
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	CONTA	CT NAME:	:	Lerato Sehu	ime		PHONE: 078 012 9038						
	MODEL	:		Dr Fodisch M	/IGA 23	1	SERIAL NO	13668					
	AUXILI	ARYEQU	IPMENT:	Unit 4									
	сн	CHAN PRIOR		FINAL	TEST GAS	TEST GAS VALUE		GAS RTIFICATE IUMBER	EXPIRY DAT	E			
	1	ZERO SPAN	1 ppm 846 ppm	0 ppm 835 ppm	Air CO	21.0 9 834.6 p		Air 3204	N/A 03-02-2021				
	2	ZERO SPAN	-1 ppm	0 ppm	Air	21.0 9	%	Air 12598	N/A 21-01-2021				
	3	ZERO	920 ppm -31 ppm	877 ppm 0 ppm	NO Air	876.7 p 21.0 9	-	Ar	N/A				
		SPAN ZERO	2384 ppm 0.07 %	2384 ppm 0.0 %	802 N2	2161.7 (5905E 82410	15-05-2020 31-08-2020				
	4	SPAN	21.15 %	20.95 %	02	20.95		Air	N/A				
	and rota standard	meter. Cali	ibrate analys was respon	s is low and cell t ser with zero and ding to all test go 25 Feb 2020	l span gas,								
	Calibra	tion Due I	Date: N	May 2020									
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	CONTA	CT NAME:	:	Lerato Sehu		PHO	NE:	078 012					
	MODEL	MODEL:			MGA 23	SERI	SERIAL NO: 15711						
	AUXILI	ARYEQU	IPMENT:	Unit 2									
	CHAN PRIOR		FINAL	TEST GAS	TEST GAS VALUE		GAS TIFICATE UMBER	EXPIRY DAT	re				
	1	ZERO SPAN	-2 ppm 839 ppm	0 ppm 835 ppm	Air CO	21.0 % 834.6 ppm		Air 3204	N/A 03-02-2021				
	2	ZERO SPAN	-4 ppm	0 ppm	Air	21.0 %		Air 12598	N/A 21-01-2021				
		ZERO	856 ppm -38 ppm	877 ppm 0 ppm	Air	876.7 ppm 21.0 %		Ar	N/A				
	3	SPAN	2220 ppm	2220 ppm	802	2161.7 ppm		5905E	15-05-2020				
	4	ZERO SPAN	0.14 %	0.0 %	N2 02	99.99 % 20.95 %		82410 Air	31-08-2020 N/A				
	filters an standard	ıd rotamete	er. Calibrate was respon	s is low and cell : analyser with ze ading to all test g 25 Feb 2020	rro and spa								
	Calibrat	tion Due I	Date:	May 2020									
	Technic	ian:		J Faber									
	Æ)							•				
		er+Lang RVON	IEX				G	NE	RUMENTS				

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