



Ms. Mpho Nembilwi
Nkangala District Municipality

Address: PO Box 437
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1050

Date:
May 2021

Enquiries: Lesiba Kgobe
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Ref: *Kusile Power Station AEL (17/4/AEL/MP312/11/12)*

Dear Ms. Nembilwi

KUSILE POWER STATION'S ANNUAL EMISSIONS REPORT

This serves as annual report required in terms of Section 7.6 in Kusile Power Station's Atmospheric Emission License: 17/4/AEL/MP311/12/01. The report covers the time period from April 2020 until March 2021 for particulate emission, SO₂, NO_x as NO₂, and calculated figures for CO₂ and N₂O. Please note that, the emissions reported are for Unit 01, Unit 02 – 06 are still under construction or being commissioned.

Hoping the above will meet your satisfaction.

Yours sincerely

Justice Bore

GENERAL MANAGER: KUSILE POWER STATION

DATE: 2021/6/23

KUSILE POWER STATION'S ANNUAL EMISSIONS REPORT

1. Name, description and reference number of plant as specified in the Atmospheric Emission Licence

Name of facility	Kusile Power Station
Description of facility	Power Generation
Reference number of plant	17/4/AEL/MP312/11/12

2. Emission tonnages

The emissions in table 1 below are of the period April 2020 until March 2021. Fig 1 – 3 indicates the pollutant tonnage trends.

Month	PM (tons)	SO ₂ (tons)	NO ₂ (tons)
Apr 2020	0	89	314
May 2020	7	409	1467
June 2020	14	520	1832
July 2020	9	386	1343
Aug 2020	12	517	1650
Sep 2020	10	726	2340
Oct 2020	14	998	3107
Nov 2020	13	908	3102
Dec 2020	8	690	2204
Jan 2021	2	739	2529
Feb 2021	3	695	2344
Mar 2021	8	213	661
Total	99.00	6891	22802

Table 1: Unit 01 Emission tonnages

KUSILE POWER STATION'S ANNUAL EMISSIONS REPORT

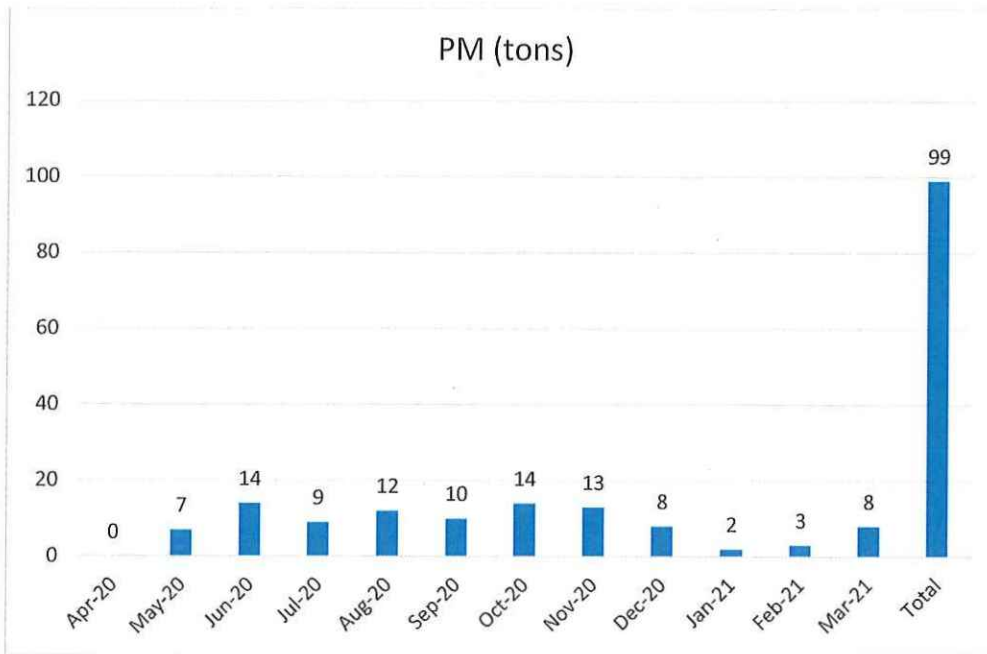


Fig 1: Unit 01 monthly particulate matter emission in tons from Apr 20 until March 2021

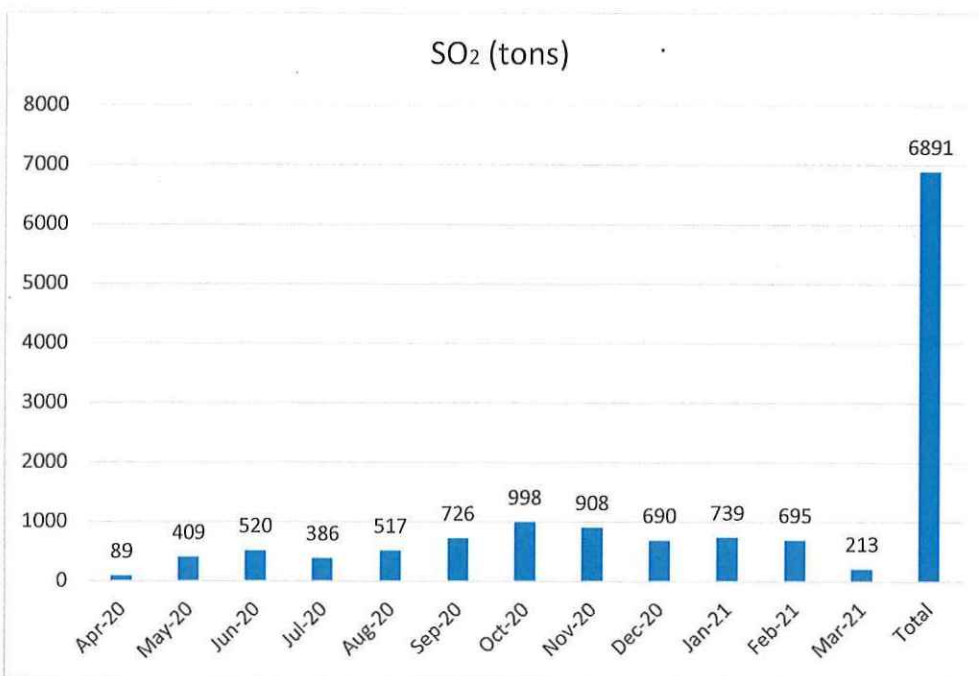


Fig 2: Unit 01 monthly SO₂ emission in tons from Apr 20 until March 2021

KUSILE POWER STATION'S ANNUAL EMISSIONS REPORT

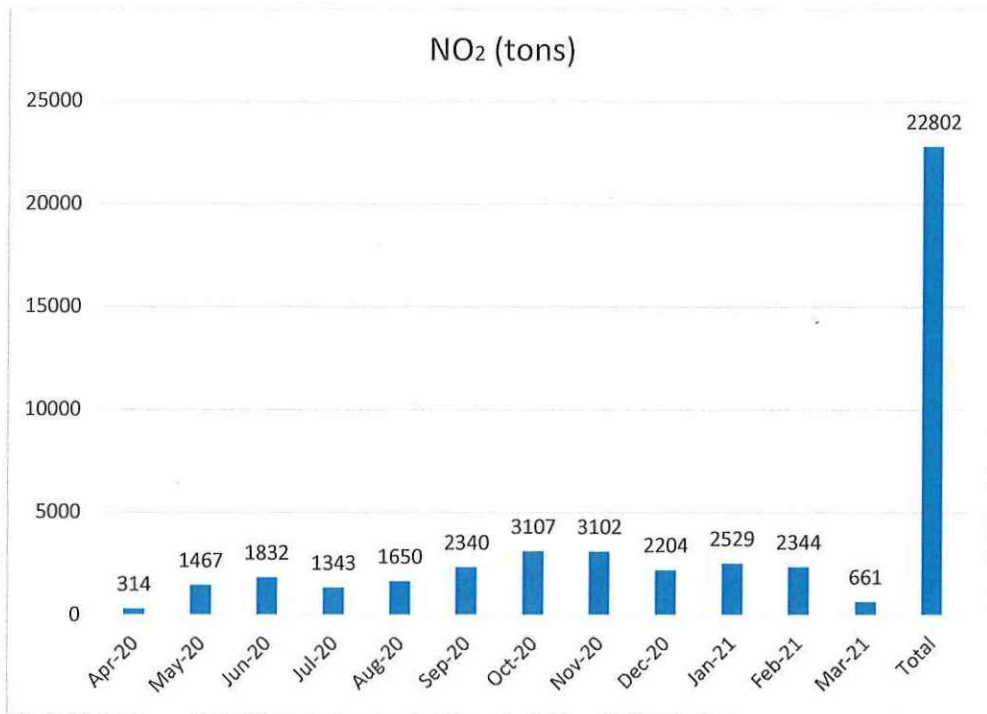


Fig 3: Unit 01 monthly NO₂ emission in tons from April 20 until March 2021

3. Monitoring reliability in %

Months	PM (%)	SO ₂ (%)	NO ₂ (%)	CO ₂ (%)
April 2020	99.8	98.9	88.9	
May 2020	100.0	99.9	88.8	
June 2020	100.0	99.9	100.0	
July 2020	99.9	99.9	100.0	
Aug 2020	99.7	99.9	100.0	
Sep 2020	100.0	99.9	94.5	
Oct 2020	100.0	99.9	100.0	
Nov 2020	99.2	99.9	94.1	
Dec 2020	100.0	99.9	95.5	
Jan 2021	100.0	99.9	99.2	
Feb 2021	88.5	99.9	99.9	
March 2021	55.6	99.9	100.0	

Table 2: Monitor availability in percentages

*55.6 The NO_x monitor reliability is affected by the FGD slurry carryover that kept on blocking the monitor probes due to the mist eliminators that are not properly functioning, the issue are being attended to during Unit 1 outages in June/July 2021.

KUSILE POWER STATION'S ANNUAL EMISSIONS REPORT

4. Raw Materials

The AEL limits the consumption of raw materials and allowable production capacity of products. Table 3 below indicated material consumption for April 2020 until March 2021 and fig 4 – 6 indicates the trends thereof.

Month	*Coal (tons)	*Fuel oil (tons)	Limestone (tons)
April 2020	134 746.65	1 409 977.00	6 758.11
May 2020	338 651.84	3 151 308.93	16 204.62
June 2020	415 717.53	2 208 030.00	21 394.80
July 2020	282 754.20	1 578 032.22	12 493.35
Aug 2020	387 441.75	2 247 788 .00	16 483.77
Sep 2020	541 971.63	1 974 140 .00	22 209.88
Oct 2020	659 530.91	864184.00	22 140.54
Nov 2020	617 784.06	2 525 521	20 954.71
Dec 2020	514 562.09	875 107.00	21 748.00
Jan 2021	453 924.56	2978564	19 269.00
Feb 2021	403 048.41	4640420	17 364.00
Mar 2021	378 759.76	3790200	16 395.00
Total	5 128 893.40	17 337 760	213 415.78

Table 3: Raw material consumption April 2020 until March 2021
*Consumption for Unit 01 only

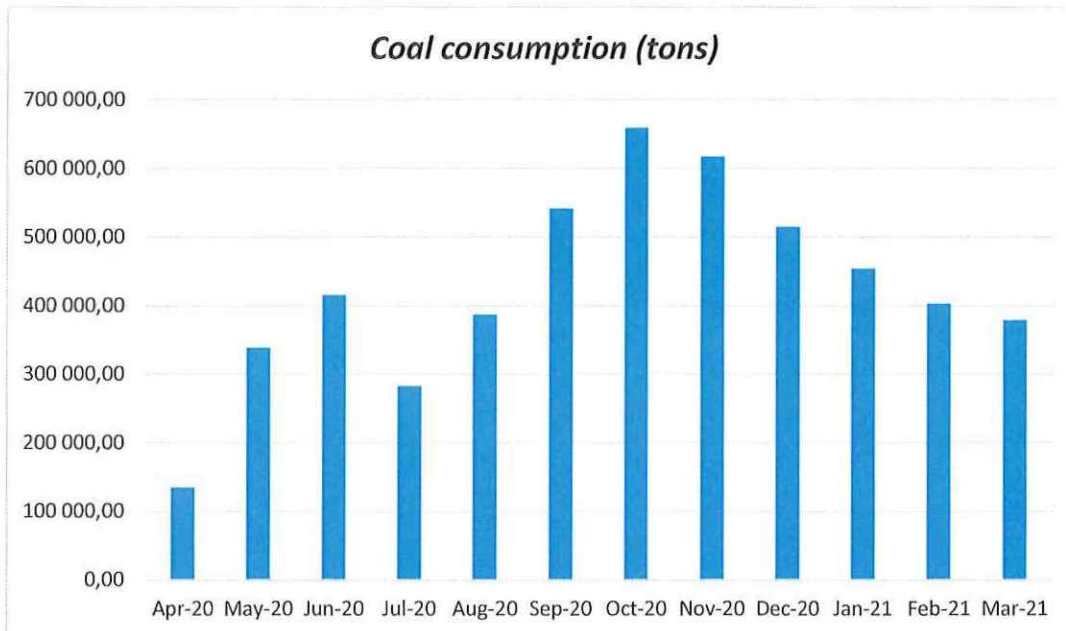


Fig 4: Unit 01 Coal consumption from April 2020 until March 2021

KUSILE POWER STATION'S ANNUAL EMISSIONS REPORT

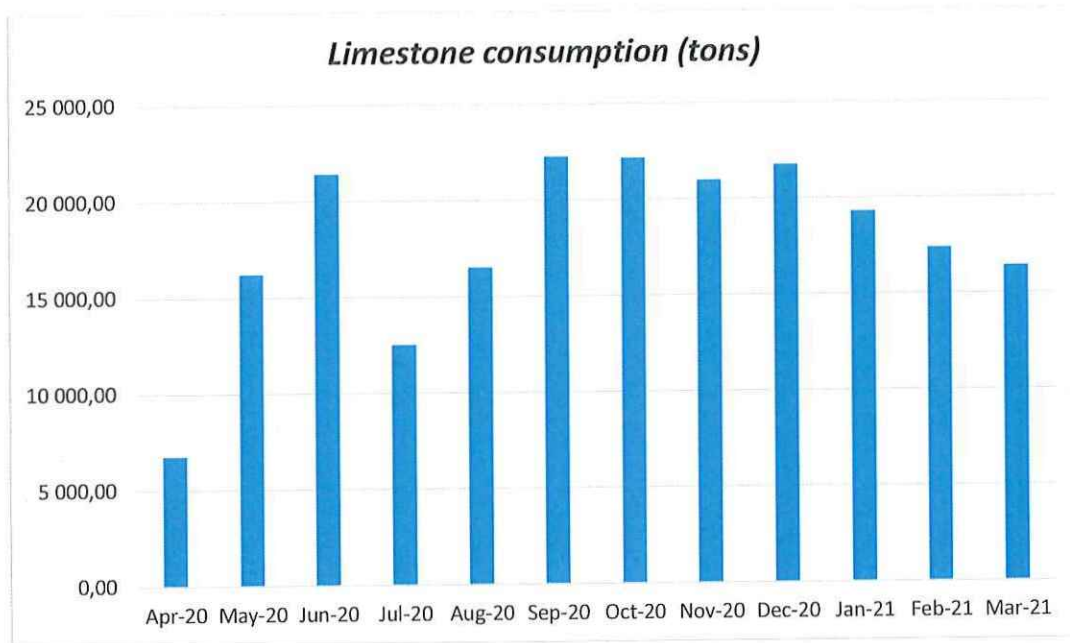


Fig 5: Unit 01 monthly fuel oil consumption from April 2020 until March 2021

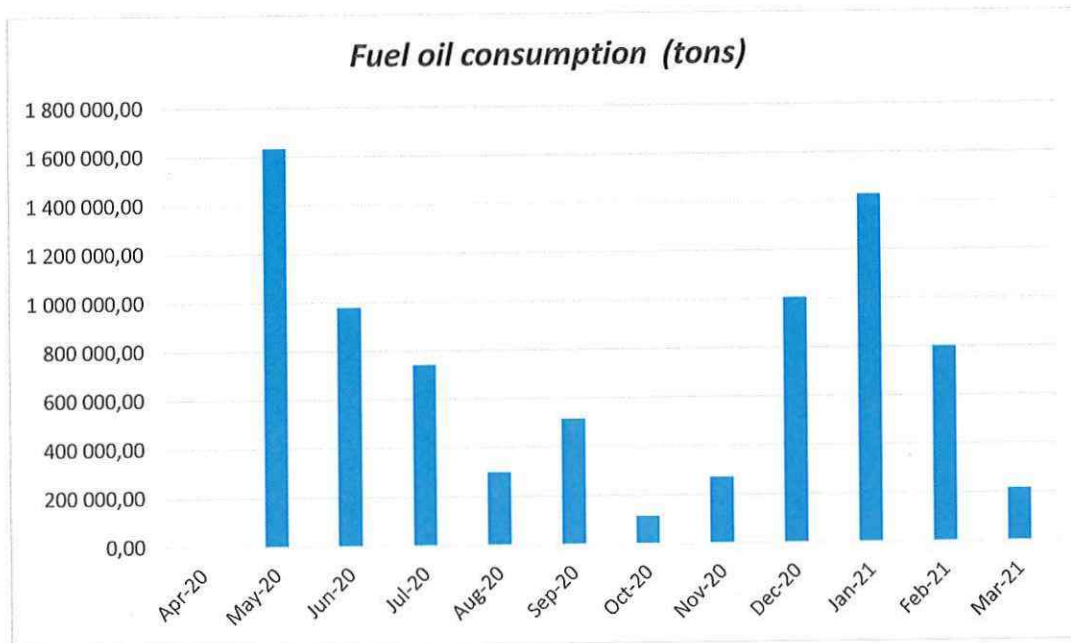


Fig 6: Monthly Limestone consumption from April 2020 until March 2021

5. Compliance Audit Report

No audit has taken place during this period.

KUSILE POWER STATION'S ANNUAL EMISSIONS REPORT

6. Major Upgrades project

No major projects have been undertaken at Kusile Power Station Unit 01 during this period, except the online replacement of Unit 01 PJFFP bags that forms part of daily maintenance activities.

7. Correlation Test

Particulate matter correlation tests, combustion gas stratification and parallel tests conducted on Unit 1 flue in west stack on 14 – 20 January 2018 and expired in January 2020. The test was delayed due to operational issues thus not able to achieve desired loads for the tests. Notification was send to your office to this effect on 12 March 2020. The tests were carried out on the 24th June 2020 and 26th June 2020. Test report is attached.

8. Greenhouse gas emission

The greenhouse gas emissions figures are reported in tables 4 below.

Month	CO ₂ (tons)	N ₂ O (tons)
Apr 2020	140930	1
May 2020	637329	3
June 2020	810346	4
July 2020	611186	3
Aug 2020	726721	4
Sep 2020	1026015	5
Oct 2020	1343685	7
Nov 2020	1301495	7
Dec 2020	937706	5
Jan 2021	1088141	6
Feb 2021	1004499	5
Mar 2021	283978	1
Total	9912032	50

Table 4: Monthly greenhouse gas emissions figures from April 2020 until March 2021 (inclusive of unit 2 & 3 based on total coal burnt)

KUSILE POWER STATION'S ANNUAL EMISSIONS REPORT

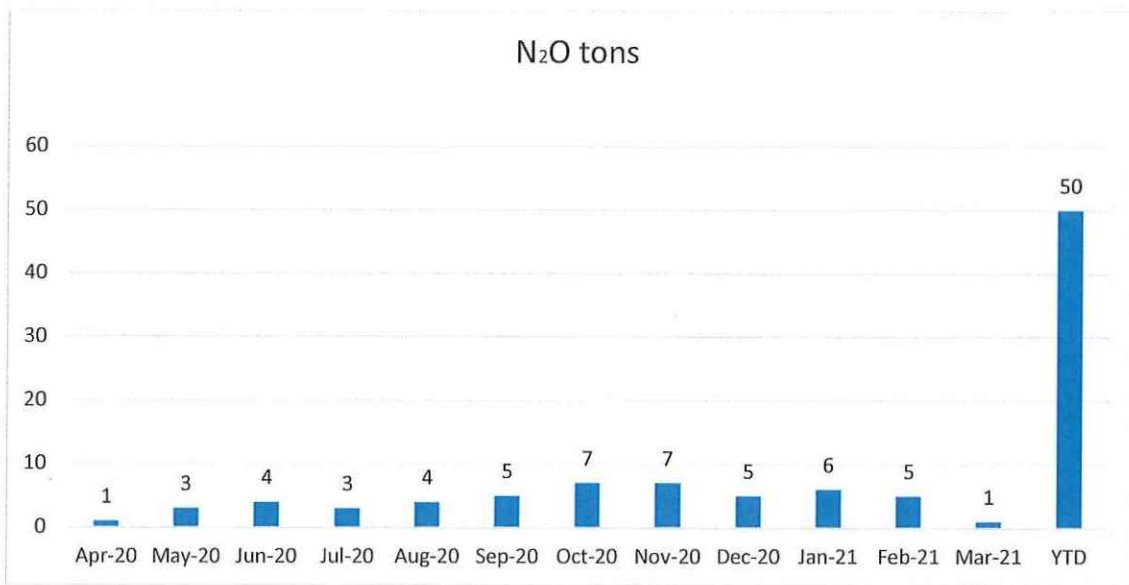


Fig 5: Monthly N₂O emission in tons from Apr 20 until March 2021

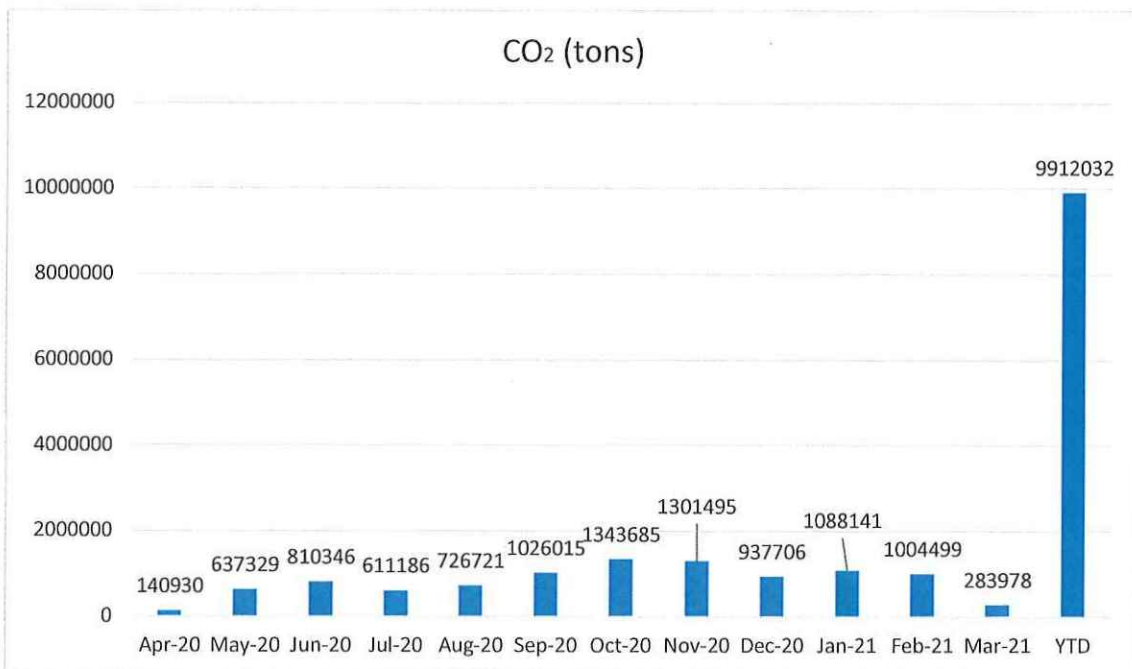


Fig 6: Monthly CO₂ emission in tons from Apr 20 until March 2021

9. NAEIS reporting:

Kusile Power Station submitted its annual report on the NAEIS system by the 31 March 2021.

10. Complaints

No complaints received during this period.

KUSILE POWER STATION'S ANNUAL EMISSIONS REPORT

11. Conclusion

The rest of the information demonstrating compliance with the emission license conditions is supplied in the month emission reports sent to your office. This includes daily average emissions and monthly monitor reliability.