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Date:  
 13 October 2021

Enquiries:  
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Ref: GOU/2021/09

Dear Dr Schoeman

### GOURIKWA POWER STATION'S MONTHLY EMISSIONS REPORT FOR THE MONTH OF SEPTEMBER 2021

This serves as the monthly report required in terms of Section 9 in Gourikwa Power Station's Atmospheric Emission License (WCED013). The report addresses the period from 1-30 September 2021 and covers Particulate Matter, CO SO<sub>2</sub> and NO<sub>x</sub> (as NO<sub>2</sub>) emissions.

#### 1. Raw Materials and Products

Table 1: Quantity of Raw Materials and Products used/produced in Normal Operation

Raw Materials and Products used	Raw Material Type	Unit	Maximum Permitted Consumption/ Rate (Quantity)	Total consumption for the Month in litres
	Fuel Oil/diesel	Tons/hour/unit	40	8 977 305.52
Production Rates	Product/ By-Product Name	Unit	Maximum Production Capacity Permitted (Quantity)	Total Production/Power sent out for the Month (MWh)
	Energy	MWh/unit	170	29173.31
	Fuel use per hour per unit (L)	Fuel Efficiency: Litre per MWh		
	Unit 11: 32 010.33 Unit 12: 32 532.81 Unit 13: 29 967.92 Unit 21: 32 556.96 Unit 22: 30 500.58		Unit 11:314.67 Unit 12:306.67 Unit 13:294.83 Unit 21:310.51 Unit 22:309.13	

**Generation Division**  
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## 2. Abatement Technology

Table 2: Abatement Equipment Control Technology utilisation for the month September

Associated Unit/Stack	Technology Type	Actual Utilisation (%) for the month
Unit 11	Low NOx burners	100%
Unit 12	Low NOx burners	100%
Unit 13	Low NOx burners	100%
Unit 21	Low NOx burners	100%
Unit 22	Low NOx burners	100%

## 3. Emissions Reporting

Table 3: Total monthly emission rates and Licence limits

	Date & time	CO (mg/N m <sup>3</sup> )	NO <sub>x</sub> (mg/Nm <sup>3</sup> )	PM (mg/Nm <sup>3</sup> )	SO <sub>2</sub> (mg/Nm <sup>3</sup> )
<b>Hourly Licence Limit mg/Nm<sup>3</sup></b>			<b>250</b>	<b>50</b>	<b>500</b>
<b>Unit 11</b>	2021/09/07 11:00	2.9	152	0.1	6.3
	2021/09/07 12:00	0.6	130	0.1	0.3
	2021/09/07 13:00	1.1	113	0.1	1.7
	2021/09/07 14:00	1.5	113	0.1	3.1
	2021/09/07 15:00	1.3	116	0.1	3
	2021/09/07 16:00	0.4	127	0.1	0.2
	2021/09/07 17:00	0.2	126	0.1	0.1
	2021/09/07 18:00	0.2	125	0.1	0.1
	2021/09/07 19:00	0.2	123	0.1	0.1
	2021/09/07 20:00	0.6	116	0.1	0.1
	2021/09/07 21:00	0.5	106	0.1	0.1
	2021/09/07 22:00	0.4	102	0.1	0
	2021/09/08 18:00	0	135	0.1	0
	2021/09/08 19:00	0.5	137	0.1	0.4
	2021/09/08 20:00	1.1	139	0.1	0.7
	2021/09/08 21:00	1.3	118	0.1	0.8
	2021/09/08 22:00	1.1	115	0.1	0.2
	2021/09/09 20:00	0.1	124	0.1	0.1
	2021/09/11 19:00	0.9	141	0.1	0.3
	2021/09/15 19:00	0.2	145	0.1	0.1
	2021/09/15 20:00	0.7	138	0.1	0.1
	2021/09/16 19:00	1	140	0.1	1.3

	2021/09/21 18:00	0.8	147	0.1	0
	2021/09/21 19:00	0	125	0.1	0
	2021/09/21 20:00	0.1	124	0.1	0
	2021/09/22 18:00	0.8	145	0.1	0
	2021/09/22 19:00	0.3	130	0.1	0.2
	2021/09/22 20:00	0.4	130	0.1	0.6
	2021/09/28 18:00	0.9	133	0.1	0.1
	2021/09/28 19:00	1.3	126	0.1	0.2
	2021/09/28 20:00	0.9	108	0.1	0.4
<b>Unit 12</b>	2021/09/07 12:00	1.6	136	0.1	1.1
	2021/09/07 13:00	1.7	124	0.1	1.2
	2021/09/07 14:00	2	124	0.1	1.9
	2021/09/07 15:00	2	111	0.1	1.9
	2021/09/07 16:00	1.6	127	0.1	1.7
	2021/09/07 17:00	0.9	126	0.1	0.1
	2021/09/07 18:00	1.1	127	0.1	0.2
	2021/09/07 19:00	1	124	0.1	0
	2021/09/07 20:00	0.9	120	0.1	0.2
	2021/09/07 21:00	0.4	108	0.1	0.2
	2021/09/07 22:00	0.2	103	0.1	0.1
	2021/09/08 18:00	0.6	134	0.1	0
	2021/09/08 19:00	0.8	136	0.1	0
	2021/09/08 20:00	1.2	133	0.1	0.4
	2021/09/08 21:00	1.5	115	0.1	0.2
	2021/09/08 22:00	1.2	113	0.1	0.2
	2021/09/09 20:00	1.2	122	0.1	0.6
	2021/09/11 19:00	0.9	133	0.1	0.3
	2021/09/15 19:00	0.5	140	0.1	0.3
	2021/09/15 20:00	1	125	0.1	0.8
	2021/09/16 19:00	1.1	130	0.1	0.6
	2021/09/21 19:00	0.5	130	0.1	0.1
	2021/09/21 20:00	0.7	122	0.1	0.9
	2021/09/28 18:00	0.8	130	0.1	0.5
	2021/09/28 19:00	0.5	115	0.1	0.2
	2021/09/28 20:00	0.7	106	0.1	0.4

<b>Unit 13</b>	2021/09/06 19:00	1.8	153	0.1	1.2
	2021/09/06 20:00	1.2	145	0.2	1.1
	2021/09/06 21:00	1.4	147	0.1	1.4
	2021/09/07 12:00	0.9	140	0.1	0
	2021/09/07 13:00	1.3	132	0.1	0
	2021/09/07 14:00	1.5	131	0.1	0
	2021/09/07 15:00	1.4	117	0.1	0.1
	2021/09/07 16:00	0.7	134	0.1	0
	2021/09/07 17:00	0.5	133	0.1	0
	2021/09/07 18:00	0.7	133	0.1	0
	2021/09/07 19:00	0.8	130	0.1	0
	2021/09/07 20:00	1.1	123	0.1	1.3
	2021/09/07 21:00	0.8	109	0.1	0.7
	2021/09/07 22:00	0.7	104	0.1	1
	2021/09/08 18:00	0.7	134	0.1	0.7
	2021/09/08 19:00	0.8	135	0.1	0.8
	2021/09/08 20:00	1.4	135	0.1	1
	2021/09/08 21:00	1.4	115	0.1	1.5
	2021/09/08 22:00	1.4	111	0.1	1.6
	2021/09/10 20:00	1.1	108	0.1	0.5
	2021/09/11 19:00	1	133	0.1	0.5
	2021/09/15 19:00	0.2	138	0.1	0.3
	2021/09/15 20:00	0.6	128	0.1	0.2
	2021/09/16 19:00	1.7	132	0.2	2.5
<b>Unit 21</b>	2021/09/06 20:00	2.3	147	0	0.9
	2021/09/06 21:00	2.7	148	0	0.9
	2021/09/06 22:00	3.5	140	0	1.9
	2021/09/07 11:00	4.1	151	0	1.7
	2021/09/07 12:00	0.9	136	0	1
	2021/09/07 13:00	0	133	0	0.4
	2021/09/07 14:00	0	130	0	0.7
	2021/09/07 15:00	0	105	0	0
	2021/09/07 16:00	3.5	138	0	0.6
	2021/09/07 17:00	7.7	143	0	4.7
	2021/09/07 18:00	3.6	143	0	6.7
	2021/09/07 19:00	0.3	130	0	3
	2021/09/07 20:00	3.5	133	0	0.9

	2021/09/07 21:00	6.7	125	0	1.1
	2021/09/07 22:00	9.3	124	0	2.6
	2021/09/08 18:00	9.2	154	0	4.2
	2021/09/08 19:00	4.1	148	0	5.2
	2021/09/08 20:00	2.5	136	0	1.6
	2021/09/08 21:00	6.5	123	0	0.3
	2021/09/08 22:00	10.9	122	0	3.2
	2021/09/09 19:00	12.6	160	0	4.8
	2021/09/09 20:00	2.7	128	0	2.2
	2021/09/11 19:00	6.9	152	0	5.8
	2021/09/15 19:00	1.9	144	0	0.6
	2021/09/15 20:00	1.9	131	0	1.1
	2021/09/16 19:00	2.5	134	0	0.6
	2021/09/21 18:00	1.6	138	0	1
	2021/09/21 19:00	1.1	126	0	0.8
	2021/09/21 20:00	1	123	0	0.9
	2021/09/22 18:00	1.5	139	0	0.8
	2021/09/22 19:00	1.2	129	0	1.1
	2021/09/22 20:00	2.1	137	0	1
	2021/09/28 18:00	30.7	131	0	0.3
	2021/09/28 19:00	29.8	122	0	0.2
	2021/09/28 20:00	31.3	121	0	0.5
	2021/09/28 21:00	31.7	131	0	0.7
<b>Unit 22</b>	2021/09/06 19:00	1.1	149	0	0.2
	2021/09/06 20:00	1.5	143	0	0.5
	2021/09/06 21:00	1.2	145	0	0
	2021/09/06 22:00	0.8	138	0	0.1
	2021/09/07 11:00	2.3	147	0	0.6
	2021/09/07 12:00	1.6	136	0	0
	2021/09/07 13:00	1.7	133	0	0.1
	2021/09/07 14:00	1.8	132	0	0.1
	2021/09/07 15:00	1.9	116	0	0.2
	2021/09/07 16:00	1.8	131	0	0.1
	2021/09/07 17:00	0.9	128	0	0.2
	2021/09/07 18:00	0.5	129	0	0.2
	2021/09/07 19:00	0.2	127	0	0.1

	2021/09/07 20:00	1.8	123	0	0
	2021/09/07 21:00	2.1	116	0	0.1
	2021/09/07 22:00	1.8	112	0	0.2
	2021/09/08 18:00	0.1	135	0	0
	2021/09/08 19:00	0	135	0	0
	2021/09/08 20:00	1.5	137	0	0
	2021/09/08 21:00	1.5	120	0	0.1
	2021/09/08 22:00	1.2	108	0	0
	2021/09/09 19:00	0.7	132	0	0.2
	2021/09/09 20:00	1.6	125	0	0.4
	2021/09/10 20:00	1.1	107	0	0
	2021/09/11 19:00	0.6	132	0	0
	2021/09/15 19:00	0	139	0	0
	2021/09/15 20:00	1.6	129	0	0.1
	2021/09/16 19:00	0.1	128	0	0.2
	2021/09/21 18:00	1.1	143	0	0.1
	2021/09/21 19:00	0	126	0	0
	2021/09/21 20:00	1.7	124	0	0.3
	2021/09/22 18:00	0.9	143	0	0
	2021/09/22 19:00	0	128	0	0
	2021/09/22 20:00	1.7	130	0	0.1
	2021/09/28 18:00	0	132	0	0
	2021/09/28 19:00	0	123	0	0
	2021/09/28 20:00	1.7	108	0	0.3
	2021/09/28 21:00	1.4	113	0	0.2
<b>Total Emission mass (tons)</b>					
		2.691	24.23	0	0.124

Table 4: Each unit and respective days operating under normal operation

Unit	Hours operating under normal operation	Hours of start-up and shut-down	Total
11	31	24	55

12	26	19	45
13	24	24	48
21	36	30	66
22	38	33	71
Total	155	130	285

Table 5: Monitoring Equipment-Continuous Emission Monitoring System (CEMS) availability

Associated Unit/Stack	Technology Type	Actual Utilisation (%) for the month
Unit 11	CEMS	100%
Unit 12	CEMS	100%
Unit 13	CEMS	100%
Unit 21	CEMS	100%
Unit 22	CEMS	100%

**Note:** Continuous Emission Monitoring System (CEMS) is always online unless a fault is reported. The system auto calibrates every four (4) hours and raises an alarm if auto calibration is out of spec. Onsite technicians calibrate the system with calibration gas annually.

Table 6: Average Point Source Emissions released during start-up, maintenance and shut-down for the month of September 2021 in mg/Nm<sup>3</sup>

Unit	NO <sub>x</sub>	SO <sub>2</sub>
11	113.54	3.65
12	149.26	3.56
13	114.21	4.06
21	104.4	2.34
22	97.97	0.95

#### 4. Comments on the performance and availability of each unit

- All 5 units were available to generate power for the month of September 2021
- **Leak Detection and Repair programme-** No leaks were reported during September 2021.

#### 5. Load Factor: 6.98%

#### 6. Complaints Register

Table 7: Complaints

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
None	N/A	N/A	N/A	N/A	N/A

The rest of the information demonstrating compliance with the emission license conditions is supplied in the annual emission reports sent to your office.

For any related queries, please do not hesitate to contact me on 021 573 6162

Yours sincerely



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*Pamela Mrubata*  
**GOURIKWA POWER STATION**