

GROOTVLEI POWER STATION MONTHLY EMISSIONS REPORT

Atmospheric Emission License GPS/0015/2015/F02


1 RAW MATERIALS AND PRODUCTS

Raw Materials and Products	Raw Material Type	Units	Maximum Permitted Consumption Rate	Consumption Rate Feb-2023
	Coal	Tons	650 000	86 570.5
	Fuel Oil	Tons	20 000	3928.34
Production Rates	Product / By-Product Name	Units	Maximum Production Capacity Permitted	Production Rate Feb-2023
	Energy	GWh	752.64	138.41
	Ash	Tons	300 000	23 374
	RE PM	kg/MWh	not specified	0.14

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
CV Content	MJ/kg	18-24	19.79
Sulphur Content	%	0.6 to < 1.2	0.85
Ash Content	%	27 to < 32	27.00

3 EMISSION LIMITS (mg/Nm³)

Associated Unit/Stack	PM	SO ₂	NO
North	100	3500	1100
South	50	3500	1100

4 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency
Unit 1	Fabric Filter Plant (FFP)	99.897%
Unit 2	Fabric Filter Plant (FFP)	99.884%
Unit 3	Fabric Filter Plant (FFP)	99.100%
Unit 4	Fabric Filter Plant (FFP)	Unit Off-line
Unit 5	Fabric Filter Plant (FFP)	Unit Off-line
Unit 6	Fabric Filter Plant (FFP)	Unit Off-line

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

5 MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO ₂	NO	O ₂
North	100.0	100.0	99.9	94.7
South				

Note: NO_x emissions is measured as NO in PPM. Final NO_x value is expressed as total NO₂

6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of February-2023

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO _x (tons)
Unit 1	10.83	621.7	240.1
Unit 2	6.62	515.3	211.9
Unit 3	1.27	47.6	16.7
Unit 4	0.00	0.0	0.0
Unit 5	0.00	0.0	0.0
Unit 6	0.00	0.0	0.0
SUM	18.71	1 184.7	468.7

Table 6.2: Operating days in compliance to PM AEL Limit - February 2023

Associated Unit/Stack	Normal	Grace	Section 30	Total Exceedance	Average PM (mg/Nm ³)
North	25	0	0	0	29.8
South	0	0	0	0	
SUM	25	0	0	0	

Table 6.3: Operating days in compliance to SO₂ AEL Limit - February 2023

Associated Unit/Stack	Normal	Grace	Section 30	Total Exceedance	Average SO ₂ (mg/Nm ³)
North	26	0	0	0	1 585.6
South	0	0	0	0	
SUM	26	0	0	0	

Table 6.4: Operating days in compliance to NO_x AEL Limit - February 2023

Associated Unit/Stack	Normal	Grace	Section 30	Total Exceedance	Average NO _x (mg/Nm ³)
North	26	0	0	0	613.0
South	0	0	0	0	
SUM	26	0	0	0	

Note: NO_x emissions is measured as NO in PPM. Final NO_x value is expressed as total NO₂

Table 6.5: Legend Description

Condition	Colour	Description
Normal		Emissions below Emission Limit Value (ELV)
Grace		Emissions above the ELV during grace period
Section 30		Emissions above ELV during a NEMA S30 incident
Contravention		

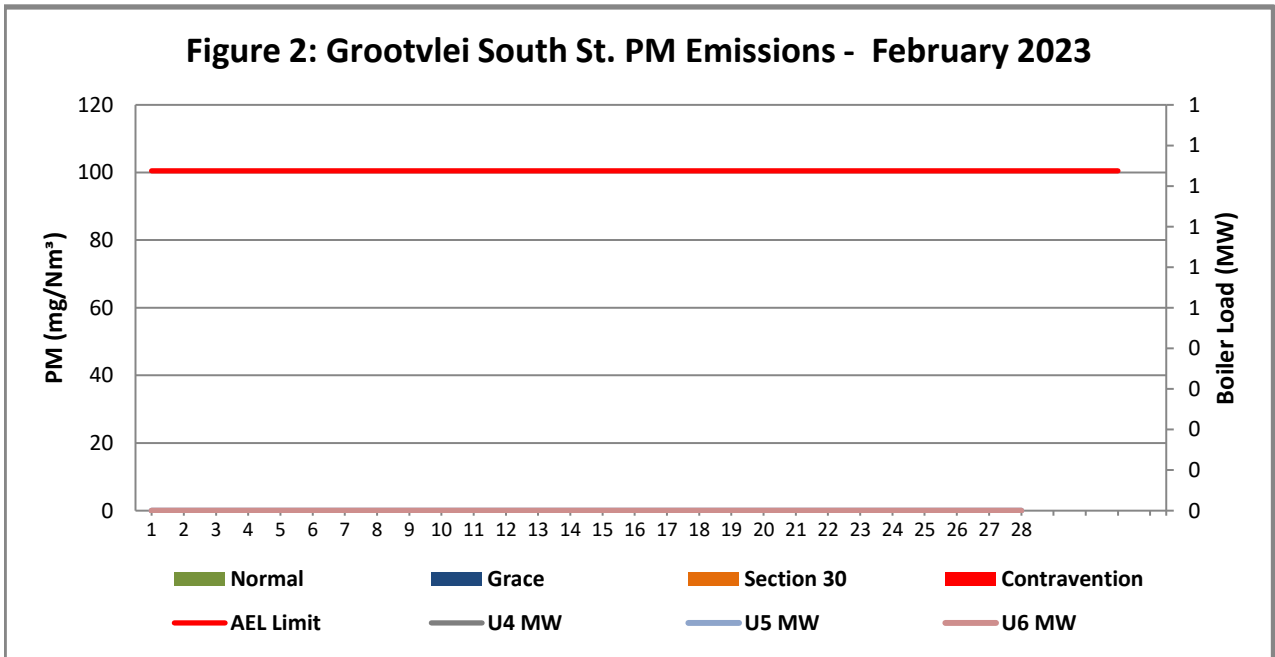
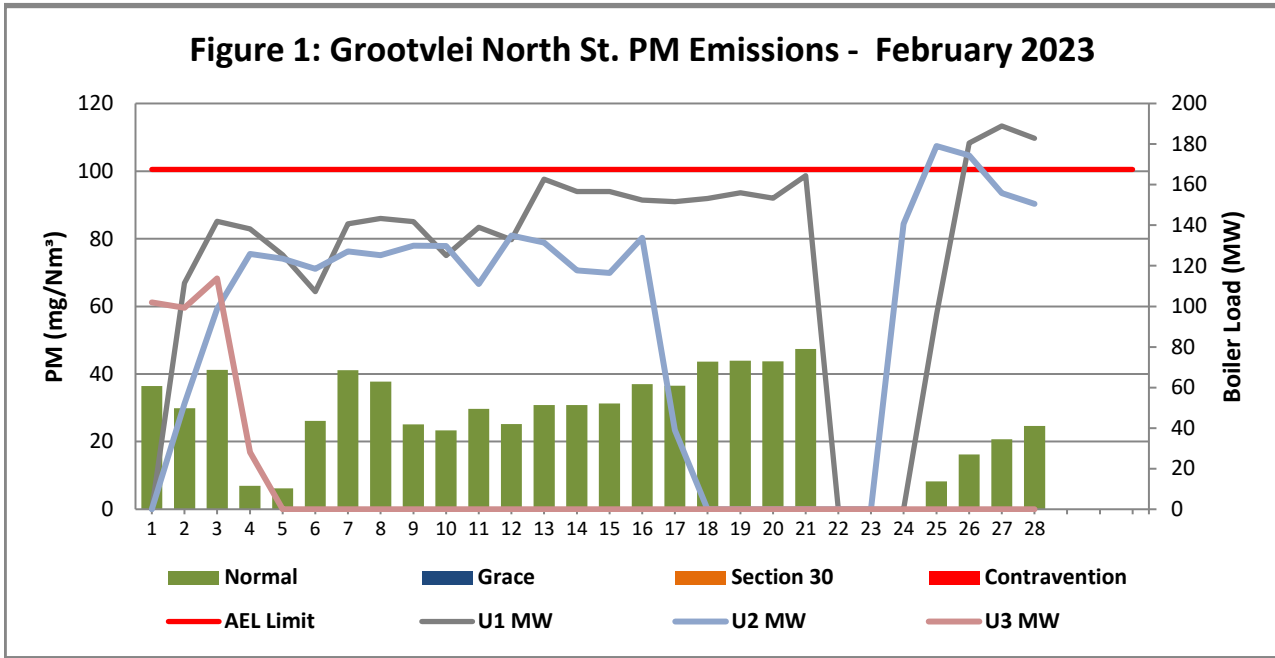


Figure 3: Grootvlei North St. SO₂ Emissions - February 2023

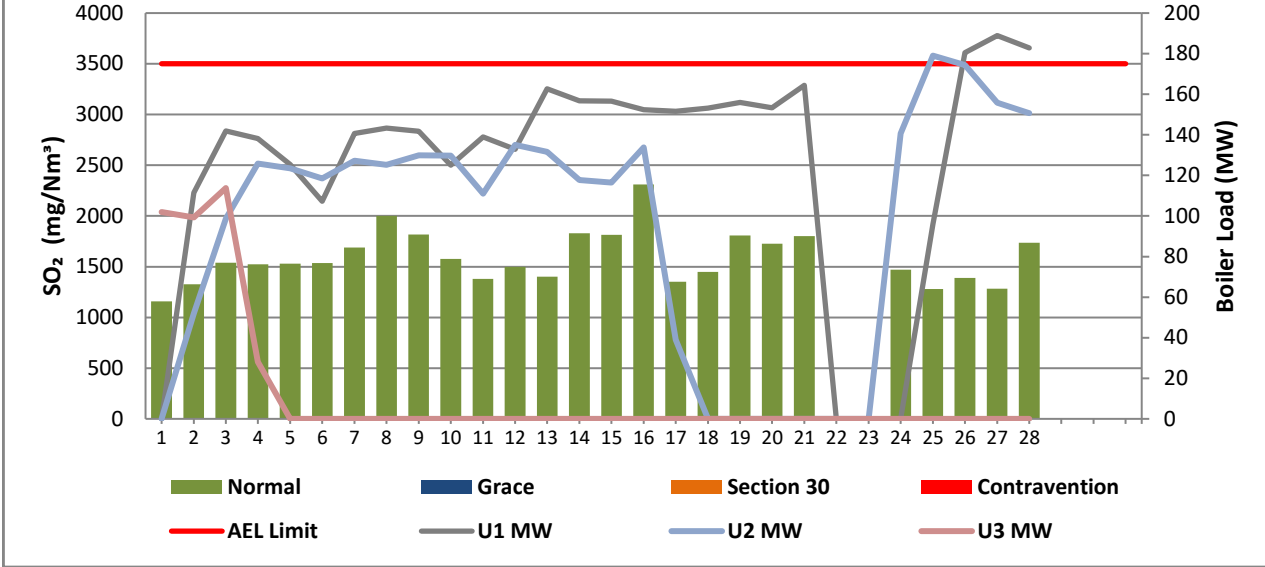


Figure 4: Grootvlei South St. SO₂ Emissions - February 2023

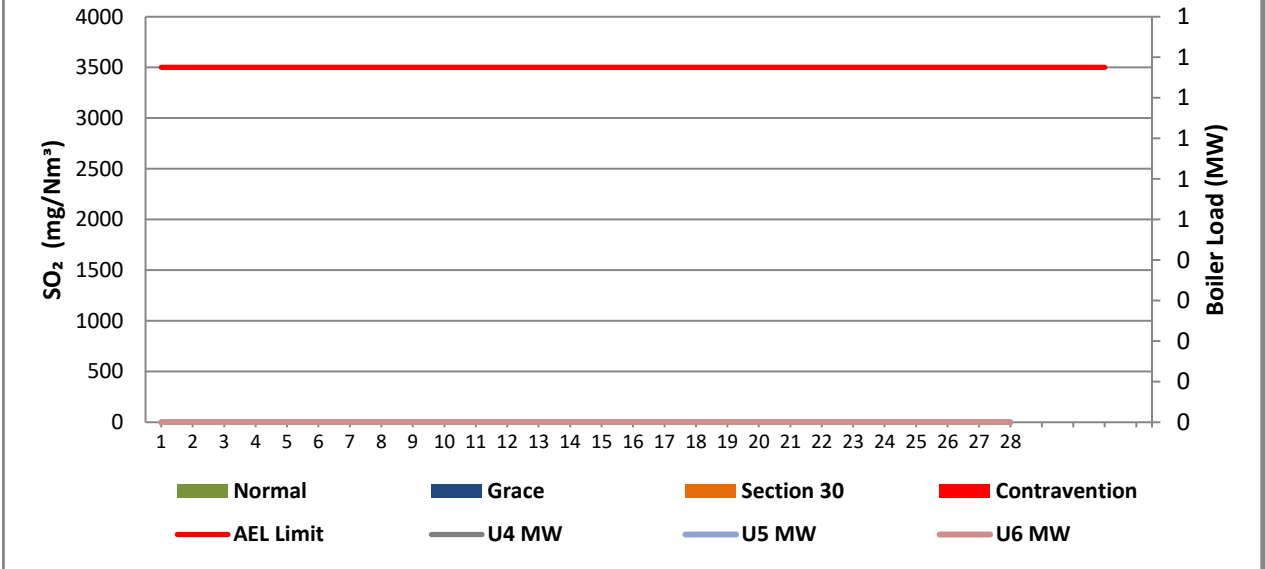


Figure 5: Grootvlei North St. NOx Emissions - February 2023

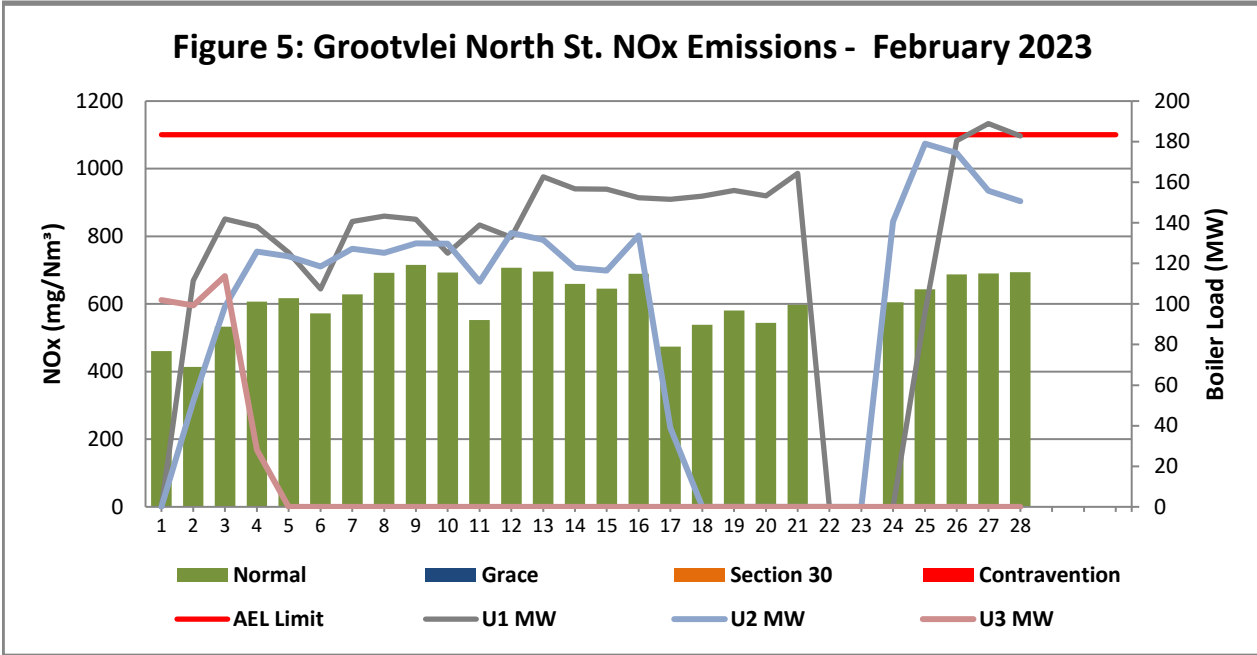
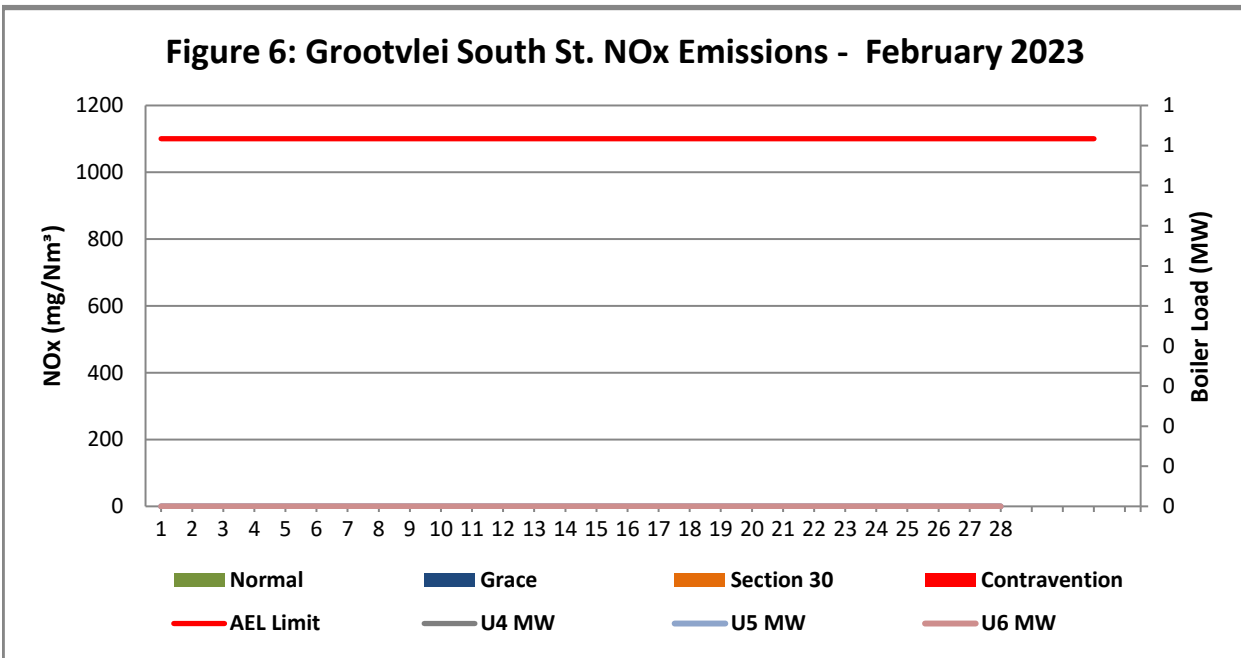


Figure 6: Grootvlei South St. NOx Emissions - February 2023



7 SHUT DOWN AND LIGHT UP INFORMATION

Table 7.1. PM Start-up information for the month of February-2023

North Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 1		Unit 1		Unit 2		Unit 2	
Breaker Open (BO)	<i>BO previously</i>	<i>BO previously</i>	<i>11:10 am</i>	<i>2023/02/21</i>	<i>BO previously</i>	<i>BO previously</i>	<i>3:35 am</i>	<i>2023/02/11</i>
Draught Group (DG) Shut Down (SD)	<i>n/a</i>	<i>n/a</i>	<i>10:55 pm</i>	<i>2023/02/21</i>	<i>n/a</i>	<i>n/a</i>	<i>3:40 am</i>	<i>2023/02/11</i>
BO to DG SD (duration)	<i>n/a</i>	DD:HH:MM	<i>00:11:45</i>	DD:HH:MM	<i>n/a</i>	DD:HH:MM	<i>00:00:05</i>	DD:HH:MM
Fires in time	<i>1:45 pm</i>	<i>2023/02/01</i>	<i>11:45 pm</i>	<i>2023/02/24</i>	<i>8:50 am</i>	<i>2023/02/02</i>	<i>2:15 pm</i>	<i>2023/02/11</i>
Synch. to Grid (or BC)	<i>6:25 am</i>	<i>2023/02/02</i>	<i>2:40 pm</i>	<i>2023/02/25</i>	<i>8:15 pm</i>	<i>2023/02/02</i>	<i>7:30 pm</i>	<i>2023/02/11</i>
Fires in to BC (duration)	<i>00:16:40</i>	DD:HH:MM	<i>00:14:55</i>	DD:HH:MM	<i>00:11:25</i>	DD:HH:MM	<i>00:05:15</i>	DD:HH:MM
Emissions below limit from BC (end date)	<i>not > limit</i>	<i>not > limit</i>	<i>not > limit</i>	<i>not > limit</i>	<i>not > limit</i>	<i>not > limit</i>	<i>not > limit</i>	<i>not > limit</i>
Emissions below limit from BC (duration)	<i>n/a</i>	DD:HH:MM	<i>n/a</i>	DD:HH:MM	<i>n/a</i>	DD:HH:MM	<i>n/a</i>	DD:HH:MM

North Stack ...Cont.	Event 5		Event 6		Event 7		Event 8	
Unit No.	Unit 2		Unit 3		no event		no event	
Breaker Open (BO)	<i>9:45 pm</i>	<i>2023/02/16</i>	<i>12:25 am</i>	<i>2023/02/04</i>				
Draught Group (DG) Shut Down (SD)	<i>12:05 pm</i>	<i>2023/02/17</i>	<i>1:10 pm</i>	<i>2023/02/04</i>				
BO to DG SD (duration)	<i>00:14:20</i>	DD:HH:MM	<i>00:12:45</i>	DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time	<i>8:35 am</i>	<i>2023/02/23</i>						
Synch. to Grid (or BC)	<i>3:10 am</i>	<i>2023/02/24</i>						
Fires in to BC (duration)	<i>00:18:35</i>	DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)	<i>not > limit</i>	<i>not > limit</i>						
Emissions below limit from BC (duration)	<i>n/a</i>	DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM

South Stack	<i>Event 1</i>		<i>Event 2</i>		<i>Event 3</i>		<i>Event 4</i>	
Unit No.	<i>no event</i>		<i>no event</i>		<i>no event</i>		<i>no event</i>	
Breaker Open (BO)								
Draught Group (DG) Shut Down (SD)								
BO to DG SD (duration)		DD:HH:MM M		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time								
Synch. to Grid (or BC)								
Fires in to BC (duration)		DD:HH:MM M		DD:HH:MM		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)								
Emissions below limit from BC (duration)		DD:HH:MM M		DD:HH:MM		DD:HH:MM		DD:HH:MM

South Stack ...Cont.	<i>Event 5</i>		<i>Event 6</i>		<i>Event 7</i>		<i>Event 8</i>	
Unit No.	<i>no event</i>		<i>no event</i>		<i>no event</i>		<i>no event</i>	
Breaker Open (BO)								
Draught Group (DG) Shut Down (SD)								
BO to DG SD (duration)		DD:HH:MM M		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time								
Synch. to Grid (or BC)								
Fires in to BC (duration)		DD:HH:MM M		DD:HH:MM		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)								
Emissions below limit from BC (duration)		DD:HH:MM M		DD:HH:MM		DD:HH:MM		DD:HH:MM

7.2: Point Source emissions released during start-up (fires-in) and Shut-down (SD) for the month of February-2023 in mg/Nm³


[Include reference to once off test showing typical emissions rates during fires in and SD]

Remember to add attachments here; see ReportAddendum Tab

Reserved for Addendum XXXX

11 General

South Stack off.

Environmental Department	Date		13/03/2023
		Boiler Engineering	Date
General Manager	Date		

Compiled by:	Boiler Engineering Department	FFP System Engineer
For:	Department of Environmental Affairs and Tourism	Chief Air Pollution Control Officer
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	Grootvlie Power Station:	Engineering Manager Operating Manager Maintenance Manager Unit Production Manager Boiler Engineering Manager System Engineer Environmental Officer Performance and Test Production Manager