GCR1988/01

CARBON CONSULTING INTERNATIONAL PTY. LTD.

CCI/5598/88

ANALYSIS OF COAL SEAMS FROM BLACKWOOD WEST

July 1988

CARBON CONSULTING INTERNATIONAL PTY. LTD.
HEAD OFFICE:
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INCORPORATED IN NEW SOUTH WALES

This Laboratory is registered by the National Association of Testing Authorities Australia. The test(s) herein have been performed in accordance with its terms of registration and in accordance with the following standards:-

Methods for the Sampling of Hard Coal	AS2646 - 2 AS2646 - 4 AS2646 - 6 AS2646 - 8	(1984) (1984) (1984) (1984)
Float & Sink Testing of Hard Coal	AS1661	(1979)
Size Analysis of Coal	ASDR84043	
Total Moisture in Hard Coal	AS1038 - 1	(1980)
Proximate Analysis of Hard Coal	AS1038 - 3	(1979)
Gross Specific Energy of Coal	AS1038 - 5	(1979)
Ultimate Analysis of Higher Rank Coal		
- Carbon and Hydrogen	AS1038 - 6.1	(1986)
- Nitrogen	AS1038 - 6.2	(1986)
- Total Sulphur (High Temp. Combustion) (designated (A) on test report)	AS1038 - 6.3.2	(1986)
- Total Sulphur (Leco Infra Red) (designated (B) on test report)	AS1038 - 6.3.3	(1986)
Chlorine in Coal	AS1038 - 8	(1980)
Forms of Sulphur in Coal	AS1038 - 11	(1982)
Crucible Swelling Number	AS1038 - 12.1	(1979)
Gray King Coke Type	AS1038 - 12.2	(1979)
Dilatometer (Air - Core Furnace)	AS1038 - 12.3 ISO 349	(1984) (1975)
Analysis of Coal Ash and Coke Ash (Acid Digestion - Flame AAS Method)	AS1038 - 14.2	(1985)
Gieseler Plastometer	AS2137	(1981)
Fusibility of Coal & Coke Ash	AS1038 - 15	(1972)
Hardgrove Grindability Index of Hard Coal ( ) Represents Mass% -1.18 + 0.600mm material	AS1038 - 20	(1981)
Apparent Relative Density of Hard Coal	AS1038 - 21	(1983)
Relative Density of Hard Coal (Density Bottle Method)	AS1038 - 21	(1983)
Carbonate Carbon of Higher Rank Coal	AS1038 - 23	(1984)
Total Fluorine in Coal (Oxygen Bomb Combustion/Ion Selective Electrode)	D3761	(1984)

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ORIGIN: Department of Mines Tasmania JOB NO. 5998

DESCRIPTION: Analysis of coal samples from DATE REC'D 22/4/88

Blackwood West DATE TESTED 29/4/88

REPORTED TO: Ms. C. Bacon c.c.

Sample Number	Mass (g)	Ash % (ad)	Boron (ppm)
1	2276.6	15.8	
2	526.1	81.4	
3	1604.0	23.0	
4	408.7	80.1	
5	1679.4	18.5	
6	401.7	81.2	
7	1371.9	19.2	
8	115.8	65.2	
9	3132.6	16.2	
10	489.2	88.8	
11	651.8	26.2	
12	111.1	76.1	
13	852.9	23.9	
14	254.6	88.4	
15	3588.0	21.2	35
16	3471.1	81.2	
16A	1449.7	39.9	
17	3452.8	11.7	
18	640.1	80.0	
19	9646.2	13.6	

Note: Boron determined at AMDEL laboratory using ICP technique

Reported By

Date 30/6/88

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ANALYSIS OF ASH

Sample No.:		1	9
ANALYSIS OF ASH:—		(db)	(db)
SiO_2	%	69.4	64.5
Al_2O_3	%	19.7	29.4
Fe_2O_3	%	8.6	4.23
CaO	%	0.46	0.41
MgO	%	1.97	1.03
TiO_2	%	0.79	1.50
Na_2O	%	0.10	0.08
K_2O	%	0.66	0.68
Mn_3O_4	%	0.020	0.017
SO_3	%	0.15	0.06
P_2O_5	%	0.066	0.053

'The results of an ash constituent analysis do not necessarily total 100.0 percent. See AS1038.14.2.'

REPORTED BY D Gallagher

DATE 30/6/88

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ANALYSIS OF ASH

Sample No.:		15	19
ANALYSIS OF ASH:—		(db)	(db)
SiO_2	%	60.9	63.7
Al_2O_3	%	32.2	30.2
Fe_2O_3	%	3.60	4.65
CaO	%	0.50	0.38
MgO	%	0.86	0.86
TiO_2	%	1.02	0.87
Na_2O	%	0.09	0.07
K_2O	%	0.50	0.24
Mn_3O_4	%	0.024	0.014
SO_3	%	0.03	0.11
P_2O_5	%	0.044	0.061

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REPORTED BY O'Gallagher

DATE 30/6/88

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ORIGIN: Department of Mines Tasmania

DESCRIPTION: Analysis of coal samples from Blackwood West

REPORTED TO: Ms. C. Bacon

JOB NO. 5998

DATE REC'D 22/4/88

DATE TESTED 12/5/88

C.C.

ANALYSIS REPORT

Description.		Top Seam Comp (Plies 1-13)	Bottom Seam Comp (Plies 15-19)
SAMPLE NO.		33437	33438
Relative Density			
Total Moisture (as)	%		
Moisture (ad)	%	3.1	3.0
ANALYSIS BASIS		ad	ad
Ash	%	25.6	26.6
Volatile Matter	%	27.7	25.0
Fixed Carbon	%	43.6	45.4
Total Sulphur B	%	0.50	0.44
Chlorine	%		
Phosphorus	%		
Specific Energy MJ/kg		23.64	23.06
Carbon	%		
Hydrogen	%		
Nitrogen	%		
Carbon Dioxide	%		
DRY, ASH-FREE BASIS			
Volatile Matter	%	38.8	35.5
Specific Energy MJ/kg	%	33.16	32.76
Carbon	%		
Hydrogen	%		
Nitrogen	%		
Sulphur	%		
Oxygen (diff.)	%		
Crucible Swelling Number			
Gray-King Coke Type			
Hardgrove Grindability Index			
ASH FUSION TEMPERATURES (reducing atmosphere)			
Deformation	°C	+1500	+1500
Spherical	°C	+1500	+1500
Hemisphere	°C	+1500	+1500
Flow	°C	+1500	+1500

REPORTED BY [signature]

DATE 30/6/88

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ORIGIN: Department of Mines Tasmania JOB NO. 5998

DESCRIPTION: Analysis of coal samples from Blackwood West DATE REC'D 22/4/88

REPORTED TO: Ms. C. Bacon c.c.

ANALYSIS OF ASH

Sample No.:		33437	33438
Description:		Top Seam Comp (Plies 1-13)	Bottom Seam Comp (Plies 15-19)
ANALYSIS OF ASH:—		(db)	(db)
SiO_2	%	61.4	62.5
Al_2O_3	%	27.9	26.6
Fe_2O_3	%	5.6	3.68
CaO	%	0.50	1.32
MgO	%	1.48	0.96
TiO_2	%	1.21	0.96
Na_2O	%	0.07	0.08
K_2O	%	1.22	1.45
Mn_3O_4	%	0.028	0.41
SO_3	%	0.03	0.80
P_2O_5	%	0.050	0.036

'The results of an ash constituent analysis do not necessarily total 100.0 percent. See AS1038.14.2.'

REPORTED BY D.S. Gallagher

DATE 30/6/88

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DESCRIPTION: Analysis of coal samples from Blackwood West DATE REC'D: 22/4/88

REPORTED TO: Ms. C. Bacon CC:

PETROGRAPHIC RESULTS

Sample No: 33437

Description: Top Seam Comp (Plies 1-13)

n Macerals (AS 2856-1986) : 610
n Reflectance (AS 2486-1981) : N/A

Telovitrinite	14		
Detrovitrinite	11	25	VITRINITE
Sporinite	4		
Cutinite	6		
Resinite	2	13	LIPTINITE
Liptodetrinite	1		
Micrinite	Trace		
Macrinite	3		
Semi-Fusinite	32		
Fusinite	2		
Inertodetrinite	17	54	INERTINITE
Minerals	8	8	MINERALS

Analysed By: H. Read

Reported By: D. Gallagher

Date: 30/6/88

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DESCRIPTION: Analysis of coal samples from Blackwood West DATE REC'D: 22/4/88

REPORTED TO: Ms. C. Bacon CC:

PETROGRAPHIC RESULTS

Sample No: 33438

Description: Bottom Seam Comp (Plies 15-19)

n Macerals (AS 2856-1986) : 710
n Reflectance (AS 2486-1981) : N/A

Telovitrinite	9		
Detrovitrinite	11	20	VITRINITE
Sporinite	2		
Cutinite	3		
Resinite	2	8	LIPTINITE
Liptodetrinite	1		
Micrinite	1		
Macrinite	3		
Semi-Fusinite	38		
Fusinite	3		
Inertodetrinite	16	61	INERTINITE
Minerals	11	11	MINERALS

Analysed By: H. Read

Reported By: D Gallagher

Date: 30/6/88