632001

VICTOR PETROLEUM & RESOURCES LTD.

&

NORTH WEST BAY COMPANY PTY. LTD.

THE WOODBURY COAL DEPOSIT

(Revised Report)

EXPLORATION LICENCE 31/80

E. ESHUYS, Exploration Manager,

T. G. SUMMONS, Supervising Geologist, Tasmania

328 Flinders Street,
MELBOURNE, VIC. 3000

JUNE, 1982

TABLE OF CONTENTS

TABLES

FIGURES

PLANS NOT INCLUDED WITH THIS REPORT: — Now Present.

REFERENCES:

1. EL 31/80 Renewal & Progress Report 21 May, 1981

2. EL 31/80 Progress Report 21 August, 1981
   Woodbury Diamond Drill Logs & Graphic Logs
   Woodbury Coal Seam Geology & Analyses
   Woodbury Open Hole Lithological Logs

3. EL 31/80 Renewal & Progress Report 21 November, 1981

4. EL 31/80 Renewal & Progress Report 21 May, 1982

5. Dames & Moore Prefeasibility Study Report 30 June, 1981

6. Hannes Walpole Export Marketing Study Report October, 1981

7. Woodbury Coal Project, Detailed Gravity Survey by Dr. D. Leaman. December, 1981

THE WOODBURY COAL DEPOSIT

SUMMARY

Black coal was discovered by Victor Petroleum & Resources Ltd., at Woodbury in the Central Midlands of Tasmania in February, 1981. Since the discovery follow up core drilling and associated analytical, geological, geophysical and engineering studies have resulted in the definition of 24.8 million tonnes of insitu measured and first class indicated reserves amenable to open cut mining. Insitu inferred reserves adjacent to and resulting from the interpreted extension of the coal seams outside the insitu measured and first class indicated reserves boundary are estimated to be in the order of 100 million tonnes. The Woodbury coal is similar to other high ash Tasmanian Triassic coals which have been mined almost continuously for the past 100 years in the Fingal Valley 65 km. to the N.E.

The Woodbury Deposit occurs within Exploration Licence 31/80 in which the licence holder, North West Bay Co. Pty. Ltd., has a 25% equity and Victor 75%. An adjoining Exploration Licence 16/81 is subject to the same agreement. The total area covered by Exploration Licences 31/80 and 16/81 is 6,656 sq. kms.

The Woodbury area consists of undulating pastoral lands which are principally used for the grazing of sheep. The coal deposit is favourably located adjacent to the main north-south railway line and highway connecting the main population centres and ports of Hobart and Launceston (Bell Bay) which are approximately 85 kilometres to the north and south respectively. The towns of Oatlands, Ross and Campbell Town are within 20 kilometres of the Woodbury Deposit.

The Woodbury coal seams occur in middle to late Triassic sedimentary rocks and are typically associated with a characteristic lithic sandstone sequence which has been preserved from erosion by the dolerite capped Black Tier Range immediately to the south. Continuity of the coal seams has been established, as a result of lithogical, geophysical and analytical correlation, although displacement of the seams by faulting has been recognized. Interpretation of photo lineaments and the results of a detailed gravity survey indicates that the distribution of the coal seams is controlled by the existence of two relatively prominent graben structures. The Woodbury Trough trending 112° extends for a minimum of 9 kms. and is 1 km. wide. The cross cutting Kuranda Graben trending 62° is approximately 4 km. long and 0.7 km. wide. Coal seam distribution however, is not restricted to the graben structures.

Drilling in the Woodbury area has identified at least five separate seams, although the stratigraphic relationship of the five seams in the western area to the five seams in the eastern portion of the deposit remains to be resolved. The five seams in the eastern portion occur over a stratigraphic interval of 160 metres while the five seams in the western section of the deposit occur over 75 metres.

The open cut reserves of the Woodbury Deposit are based on only three seams, B, C, and D in the eastern portion and seams M. N, O and P in the western portion.

...../2.

Reserve calculations are based on a minimum composite seam thickness of 1.28 metres and maximum seam thickness of 3.7 metres, an oxidation depth of generally 10 metres, and a maximum overburden stripping ratio of 10:1. The maximum depth of overburden involved as a consequence of this ratio is approximately 50 metres. The average overburden stripping ratio, using the 10:1 maximum ratio is estimated to be between 6.5 and 7.7 dependent on batter slop stabilities.

The reserve estimate for a maximum overburden ratio of 7:1 (average 5.0 - 5.1:1) resulted in the definition of 15.1 million tonnes of insitu measured and first class indicated reserves.

Mining engineering studies by international mining consultants, Dames & Moore, and subsequent inhouse studies in consultation with Dames & Moore, and equipment manufacturers and suppliers, have established the capital and operating costs of a mining operation to produce one million tonnes of beneficiated saleable coal per annum. The studies took into account the need for the selective mining of coal plies and stone bands to a minimum thickness of 300mm. to produce an average run of mine coal grade of less than 40% Ash. Furthermore, the studies indicated that the Woodbury coal seams are feasible to mine by open cut methods within the scope of the constraints of the reserves as outlined.

A comparitive study of the composite ash values determined from analyses with those values either calculated or estimated graphically when analyses werè not available, indicates that the average ash content of the reserves of 40.8% is estimated to be OVER STATED by 4 - 8%. In some instances the composite ash content of individual reserve blocks are estimated to be over stated by 20%.

Preliminary washability tests by S.G.S. Australia suggests that a washery yield of 60% for a 19-20% Ash product, from a 41% Ash run of mine coal is likely to be achieved. Although the historical washery yield figures for the Fingal Valley operations are reported to be 70%, recent evidence suggests that this is rarely achieved, and more commonly is in the range of 40-60%. The low washery yields for the Fingal Valley operations are considered to be in part, a function of the lack of exploration, and resultant uncertainties related to the quality of the coal and seam thickness prior to underground mining. Exploration prior to mining activities in the Fingal Valley is restricted by the need to drill through approximately 300 metres of dolerite ahead of intersecting the coal bearing sedimentary sequence. Proximate analysis of washed coal from the Woodbury Deposit suggest that it is technically feasible to produce a beneficiated coal with the following indicative specifications:

Total moisute	8-10%	(as received)
Inherent moisture	3-4%	(air dried)
Ash content	19-20%	(air dried)
Volatile matter	23-30%	(air dried)
Sulphur content	0.5%	max. (air dried)
Heating value	26-28	Megajoules/kilogram
Ash fusion	1250°C	Minimum
Grindability	50	Min.

...../3.

Drilling and geological mapping in the Bells Lagoon area approximately 10 kms. to the north west of Woodbury, has established the existence of four separate seams with a mimimum thickness of 1m. within a sequence of lithic sandstones similar to the setting of the Woodbury Deposit. Insitu inferred reserves in the order of 60 million tonnes have been estimated. The area between Woodbury and Bells Lagoon contains similar prospective geology and graben structures favourable for the location of coal. Drilling remains to be conducted in this area.

Elsewhere in Exploration Licences 31/80 and 16/81 previous drilling by the Department of Mines, and recent geological mapping and compilation of published data by Victor has identified additional potential insitu inferred coal resources of 130 million tonnes.

In conclusion, exploration activities and detailed drilling has identified 25 million tonnes of insitu measured and first class indicated reserves amenable to open cut mining at Woodbury and a total in the order of 290 million tonnes of insitu inferred reserves, adjacent to Woodbury and elsewhere within the exploration licences. However, exploration activities to date have covered only a small portion of the total area of 6,656 sq. kms. On the basis of the number of target areas defined and the general size of the Triassic coal deposit in Tasmania, it is estimated that the exploration licences have the potential for the discovery of some 500 million tonnes of insitu coal. The 290 million tonnes of insitu inferred reserves is included within this overall potential assessment. The demonstration of the existence of potential reserves and definition of commercially extractable reserves will require considerable expenditure, on exploration, feasibility and marketing studies.

SUMMARY OF WOODBURY COAL SEAM CHARACTERISTICS USED IN RESERVE CALCULATIONS
(with a maximum overburden stripping ratio of 10:1, average stripping ratio 6.5 - 6.7)

SEAM	COMPOSITE THICKNESS in Metres	ASH CONTENT %	COAL SEAM CHARACTERISTICS ESTIMATED for a 19-20% Ash Coal			TOTAL RESERVES in Million Tonnes	
			V.M.%	S.E. MJ/kg	S %	MEASURED	INDICATED
P, O, N	3.0	40.5	-	-	-	-	0.990
O, N, M	2.37	34.5	12.3	25.6	0.29	0.720	1.100
N, M,	2.02	33.2	11.9	25.8	0.30	1.103	0.693
B	2.04 - 3.70	34.7 - 37.2	8.8 - 14.7	24.1 - 25.2	0.34 - 0.36	2.011	3.148
C	1.28 - 2.11	37.6 - 44.0	11.4 - 25.2	22.1 - 27.2	0.34 - 0.37	2.544	6.593
D	2.40 - 2.93	40.5 - 48.5	26.6	22.9	0.37	3.643	2.264
					TOTAL:	10.021	14.788
						24.8 MILLION TONNES	

SUMMARY OF WOODBURY INSITU RESERVE ESTIMATES

RESERVES in Million Tonnes			ASH CONTENT % (average)	ASH CUT OFF %	MAXIMUM OVERBURDEN RATIO	AVERAGE OVERBURDEN RATIO
TOTAL	MEASURED	INDICATED				
24.8	10.2	14.79	40.8	50	10:1	6.5 - 6.7
15.2	5.51	9.64	41.6	50	7:1	5.1 - 5.3
15.3	6.10	9.17	35.6	40.5	10:1	7.4 - 7.7

1.0 INTRODUCTION

The Woodbury Coal Deposit is located 80 km. north of Hobart and 85 km. S.S.E. of Launceston and extends from 1 km. to 10 km. east of the connecting Midland Highway. The area consists of undulating pastoral lands, interspersed with low ranges which are capped by dolerite.

Investigations by Victor Petroleum and Resources Ltd., commenced in January, 1981, and to date, consist of both open drill holes (1732m) and cored drill holes (1388m.), totalling 3120m. of drilling.

2.0 GEOLOGY

2.1 LITHOLOGY & STRATIGRAPHY

The middle to late Triassic stratigraphy of the Woodbury area consists of a coal measures sequence overlying a tuff and siltstone sequence. The coal measures sequence consists of lithic sandstone, mudstone (grey, brown and carbonaceous), coal, minor siltstone and rare tuffs. The tuff-siltstone sequence consists of lithic and sub-lithic sandstone, siltstone and mudstone (cream, grey, green) with numerous tuff (and volcanic) bands, and is apparently devoid of coal.

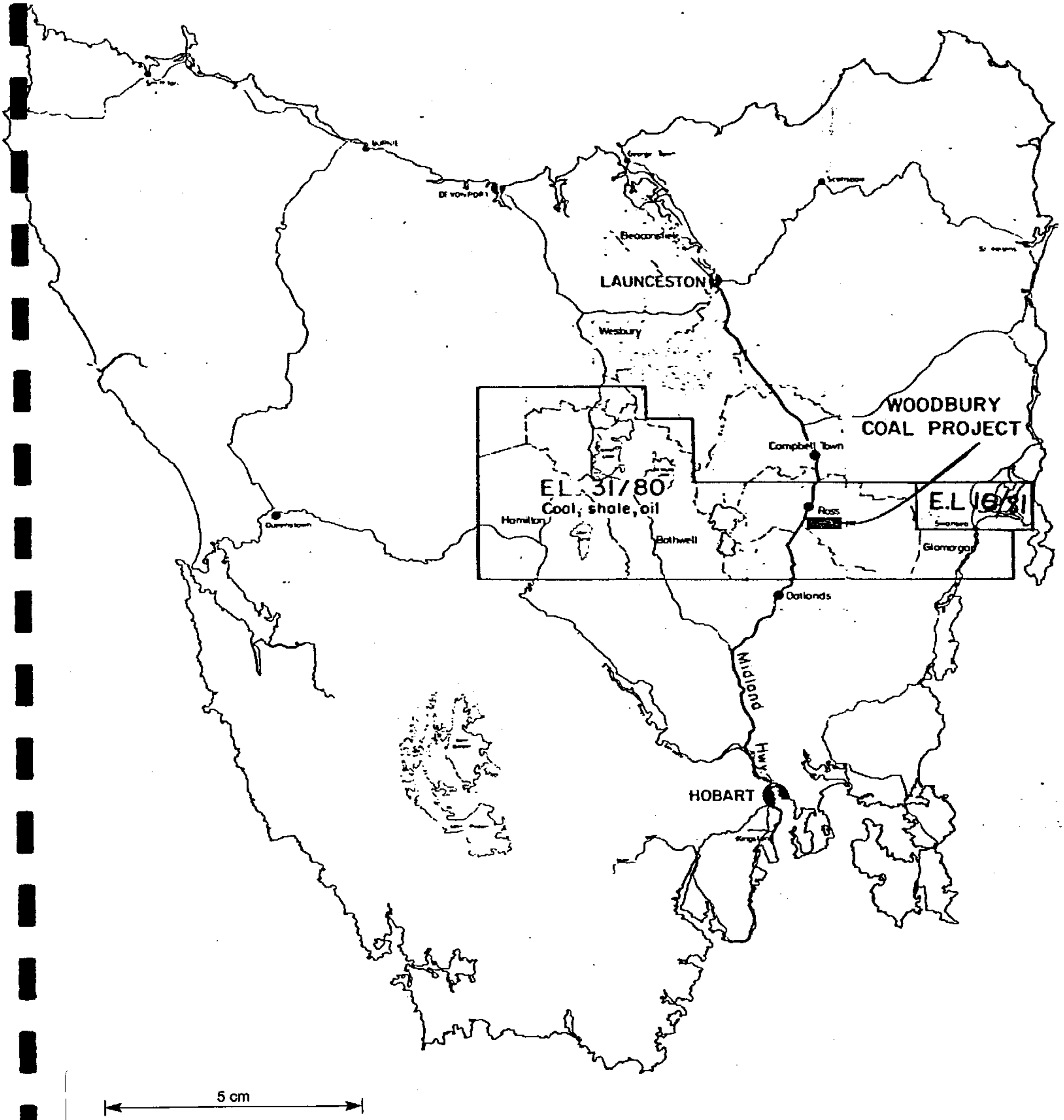
Consideration of coal seam and general stratigraphic correlations indicates two components to the Woodbury Coal Deposit, namely the Western Area and the Eastern Area. The boundary between the areas is located approximately 5 km. east of the Midland Highway. The Western Area contains five coal seams named, L, M, N, O and P, while the Eastern Area contains five coal seams, defined as A, B, C, D and E.

Stratigraphic evidence suggests the Western Area is younger than the Eastern Area, with Seam E being the apparent correlate of seam L.

2.2 STRUCTURE

The orientation of the lithic arenite (Coal Measures) sequence is variable according to the effects of both primary depositional features, and subsequent modification by dolerite intrusions during the Jurassic, and faulting in mid to late Mesozoic and the Tertiary.

632010



VICTOR PETROLEUM & RESOURCES LTD.

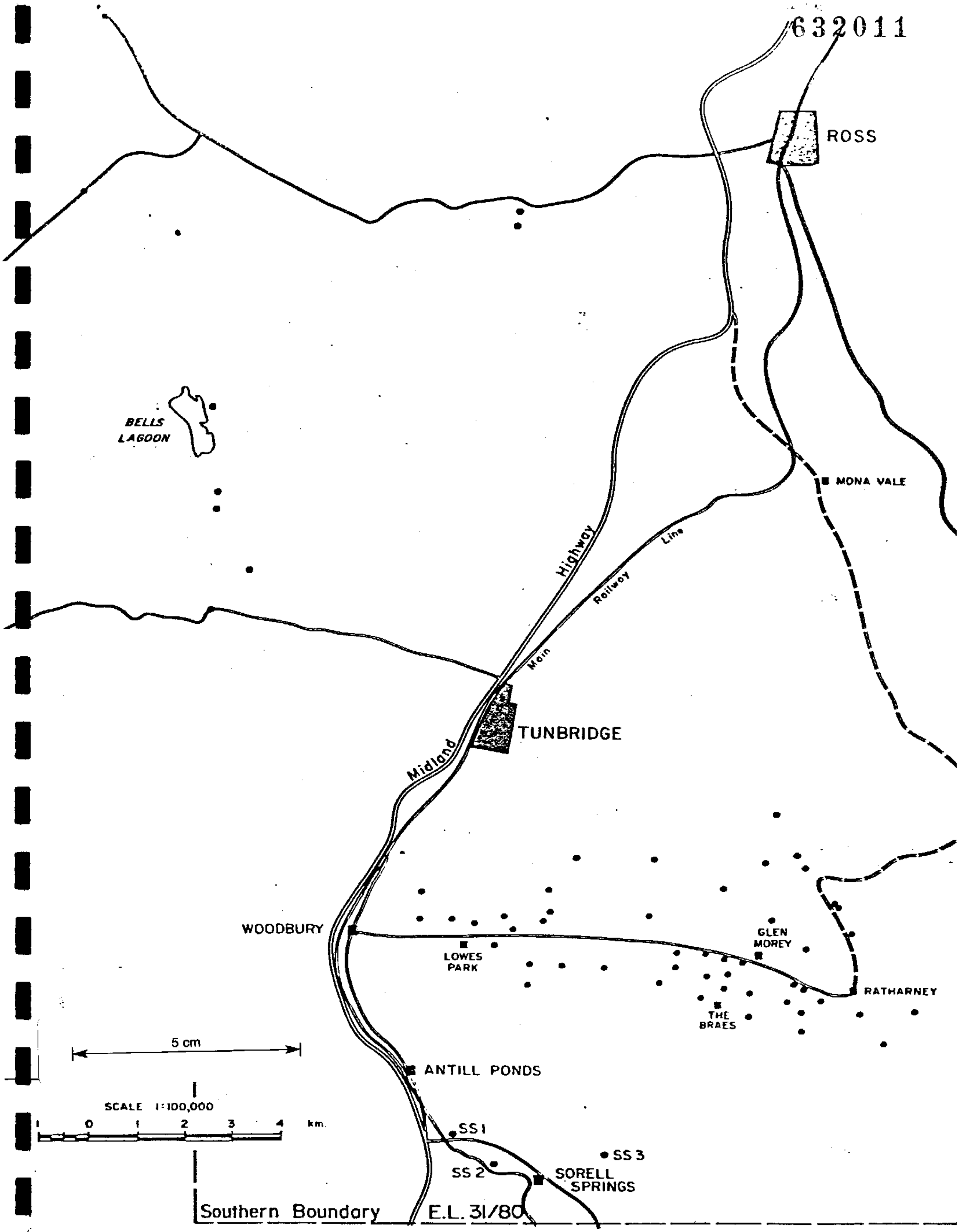
LOCALITY PLAN OF E.L. 31/80 & E.L. 6/81

20 10 0 20 40 60 km

MARCH 1981

FIG 1

632011



VICTOR PETROLEUM & RESOURCES LTD.

TASMANIA E.L. 31/80

FIG 2

The combination of a gravity survey (Leaman 1981) and photo linear studies, reveals several graben and horst structures in the Woodbury area. The most significant of these structures are the NE (062^o) trending Kuranda Graben, the ESE (112^o) trending Woodbury Trough, and the ESE trending Black Tier - Bellevue Hill and Glen Morey Horsts. The Kuranda Graben is approximately 4 km. long and 0.7 km. wide, while the Woodbury Trough is at least 9 km. in length, and approximately 1 km. wide.

Major faults in the area are the Woodbury Faults South and North defining the Woodbury Trough, the Kuranda Faults 1 and 2 defining the Kuranda Graben, the Woodbury Fault North and the Ratharney Fault (112^o) defining the Glen Morey Horst and the Glen Morey Fault (145^o).

Displacement across these faults ranges from approximately 15 m. (Kuranda Fault 1), to 25m. (Kuranda Fault 2), to 35-100m. (Woodbury Fault South); throws across the Woodbury Fault North decrease toward the east, from 45m. (536 000E - 538 000E), to 30m. (539 000E), to 25 m. (540 000E) to 15m.(541 000E).

The Kuranda Graben is thought to predate the Woodbury Trough because the latter is not offset across the former, but the Woodbury Trough margins are diffracted from approximately 112^o to approximately 102^o in strike within the Kuranda Graben. Likely ages for these structures are Jurassic and Tertiary respectively.

The Coal Measures Sequence ranges in attitude from 3^o NW (310^o) from 535 000E - 539 000E, (north of the Kuranda Graben and the Woodbury Trough), to flat within the Kuranda Graben; dips within the Woodbury Trough in the Western Section are approximately 1^o NW (310^o) from 534 000E - 537 500E, and in the eastern section consists of variable 2^oN to 2^oS dips superimposed on a general 1^o WNW attitude from 537 500E - 541 000E. The Glen Morey Horst apparently dips at approximately 1^o to the south.

The nett effect of the fualting has been to produce both parallel sided and polygonal shaped blocks, containing different coal seams placed in juxtaposition.

2.3 INSITU COAL SEAM CHARACTERISTICS

The coal seams of the Woodbury Deposit have been correlated using lithological, analytical, general stratigraphic and geophysical parameters. Table 1 summarizes the characteristics, while Table 2 presents the detailed data. The lower four seams show a trend from Seam A to Seam D of decreasing ash, associated with increasing volatile matter and specific energy characteristics of the coal.

In the western area the characteristics of coal seams L, M, N, O and P of the Woodbury Coal Deposit are not as clearly defined, and further core drilling is required to enable reliable comments to be made in this regard.

3.0 PARAMETERS & METHOD USED IN CALCULATION OF OPEN CUT COAL RESERVES

3.1 INTRODUCTION

The terminology employed in the determination of the coal reserves at Woodbury is based on the procedures defined by the Geological Survey of Queensland and the Standing Committee on Coal Field Geology of New South Wales (Code for Calculating and Reporting Coal Reserves - Third Edition ratified since 1977 - as shown in SAA DR 81033, January, 1981).

The calculation of the open cut reserves at Woodbury was based on all relevant factors as discussed below. All drill holes were logged according to lithology, geophysical properties (with some exceptions) and observable coal seam characteristics. Proximate analysis, ash analysis, ash fusion temperatures and sink float testing were conducted by S.G.S. Australia Pty. Ltd. in Sydney, on the total coal seam obtained from HQ drilling.

Reserve calculations were made using a composite ash cut off of 50% and 40.5% respectively and are discussed below.

3.2 INSITU RESERVE CALCULATIONS

Reserve calculations based on a composite 50% Ash cut off were determined by:

- excluding individual coal sub-seams with an ash content greater than 50%.
- including individual coal sub-seams with ash content greater than 50% Ash if the composite ash content of the seam was less than 50%.

TABLE 1

SUMMARY OF WOODBURY COAL SEAM CHARACTERISTICS

SEAM	AVERAGE THICKNESS	NO OF SUB-SEAMS	AVERAGE INSITU CHARACTERISTICS (AIR DRIED BASIS)			
			MOISTURE %	ASH %	V.M. %	S.E. MJ/kg.
A	0.48	2	46	43.5	7.7	17.0
B	0.83	4	3.4	38.5	10.7	18.8
C	1.87	3	4.3	31.5	15.5	21.1
D	2.10	-	4.8	32.7	19.9	22.4
E	2.0	3	-	-	-	-

[redacted]LE [redacted] AL [redacted] CH[redacted]CTE[redacted]ICS [redacted]

Hole	Seam	Seam Thick-ness (m)	Sub Seam	Sub Seam Thickness (m)	No. of Stone Bands	Type of Stone Bands	Roof	Floor	m(%)	a(%)	VM (%)	Fixed C (%)	SE MJ/kg	S (%)	Cl (%)
N38	D	1.05	-	-	-	-	ms/gry	ms/brn	5.6	26.0	20.0	48.3	22.8	.45	.01
N39	D	2.86	-	-	2	ms,c	ss	ms/c/brn	4.1	27.8	19.8	48.3	22.1	.46	.04
N46	D	2.40	-	-	3	ms,c(2) (ms/brn(1) (	ss	ms,gry	-	44.4	-	-	-	-	-
N25	C	1.61	C4	0.20	-	-	ss	ms/gry	-	-	-	-	-	-	-
			C3	0.33	2	ms/c/gry	ms/gry	ms/gry	-	-	-	-	-	-	-
			C2	0.57	1	ms/brn	ms/gry	ms/gry	5.1	39.5	18.1	37.3	17.6	.43	.03
			C1	0.51	-	-	ms/c	ms/gry	4.3	27.9	21.2	46.6	22.4	.47	.04
N32	C	1.97	C3	0.97	2	ms/brn	ms/gry	ms/gry	6.1	29.1	18.9	45.9	21.5	.43	.01
			C2	1.00	1	silt/gry	ms/gry	ms/c	5.8	31.5	16.6	46.1	21.1	.47	.01
N38	C	2.16	C3	1.06	2	ms/c	ss	ms/c	3.7	29.7	16.1	50.5	22.1	.37	.02
			C2	1.10	2	ms/brn	ms/gry	ms/gry	4.5	28.4	16.7	50.4	22.5	.43	.01
N39	C	2.07	C3	0.49	1	ms/brn	ms/gry	ms/gry	4.3	36.0	15.2	44.5	20.4	.43	.01
			C2	0.91	2	ms/brn	ms/gry	ms/gry	5.4	29.3	16.5	48.8	22.1	.45	.01
			C1	0.67	-	-	ms/gry	ms/gry	4.3	28.6	15.3	51.8	22.7	.47	.02
N46	C	2.08	C3	0.50	1	ms/brn			-	-	-	-	-	-	-
			C1, 2	1.58	2	ms/c/brn	ms/gry	ms/c	-	31.8	-	-	-	-	-
N47	C	1.28	C1, 2	-	1	ms/brn	ms/c	ms/c	2.3	34.6	7.9	55.2	20.3	.38	.03
N48	C	1.91	C3	0.89	?	-	ss	ms/brn	-	-	-	-	-	-	-
			C1, 2	1.02	1	ms/gry	ms/gry	silt/gry	-	28.6	-	-	-	-	-
32	B	1.00	B4	-	-	-	ms/gry	ms/c	3.8	33.7	13.1	49.4	21.1	.36	.01
39	B	0.51	B4	-	-	-	ms/gry	ms/c	4.2	45.9	4.8	45.1	16.6	.49	.03
40	B	0.65	B4	-	-	-	ss	ms/gry	2.6	29.9	15.6	51.9	23.0	.44	.04
41	B	2.79	B4	0.75	-	-	ms/gry	ms/c	2.7	32.1	8.0	57.2	21.6	.36	.03
			B2,3	1.49	-	-	ss		2.2	40.7	6.1	51.0	18.2	.25	.04
			B1	0.55	-	-	ms/c		2.2	34.5	8.3	55.0	19.9	.66	.05

cont'd...

632015

[redacted]E [redacted]. [redacted]2 [redacted] L [redacted] CH[redacted]TE[redacted]CS[redacted]

le	Seam	Seam Thickness (m)	Sub Seam	Sub Seam Thickness (m)	No. of Stone Bands	Type of Stone Bands	Roof	Floor	m(%)	a(%)	VM (%)	Fixed C (%)	SE MJ/kg	S (%)	Cl (%)
46	B	0.60	B4	-	-	-	ss	ms/c	1.8	46.0	7.6	44.6	17.4	.24	.04
47	B	0.59	B4	-	-	-	ms/gry	ms/c	2.7	43.1	6.6	47.6	16.2	.55	.03
48	B	0.75	B4	-	1	ms/c	ms/gry	ms/gry	-	35.8	-	-	-	-	-
61	B	2.43	B4	0.83	-	-	ms/gry	ms/gry	3.2	28.0	15.7	53.1	23.2	.51	.01
			B2,3	1.66	2	ms/carb.	ms/gry	ms/gry	3.8	34.8	10.8	50.6	20.1	.25	.03
63	B	1.20	-	-	3	ms/carb.	ms/gry	silt/gry	6.0	44.7	16.9	32.4	14.4	.25	.05
40	A	0.67	A2	0.26	-	-	ms/carb	ms/carb	3.8	39.2	4.7	52.3	17.0	.46	.03
			A1	0.41	-	-	ms/carb	ms/carb							
41	A	0.95	A2	0.45	-	-	ms/carb	ms/carb	5.1	52.5	-	-	-	-	-
			A1	0.40	-	-	ms/carb	ms/carb	4.2	56.4	-	-	-	-	-
61	A	0.77	A2	0.45	-	-	ms/carb	ms/carb	8.1	41.4	5.3	45.2	15.3	.79	.04
			A1	0.32	-	-	ms/carb	ms/carb							
36A	A	0.78	A1,2	-	-	-	ss	ms/carb	1.9	39.2	13.0	45.9	18.7	.25	.03

. Figure (3) depicts specific energy and relative density versus ash, and the line of best fit for the relative density - ash data was used to determine the ash contents of those blocks for which no direct ash data existed.

. excluding stone bands within the seams greater than 300m. in thickness if clearly distinguishable from coal from the cumulative coal thickness.

. including carbonaceous mudstone floors to coal seams if less than 300mm. in thickness.

. using a weighted average relative density for a composite seam calculated by weighting the relative density of each sub-seam by its thickness.

. calculating the maximum overburden thickness applicable dependent on the use of a maximum 10:1 or 7:1 stripping ratio.

. excluding coal seams above the base of oxidation or where direct information was not available above 10 metres below the surface.

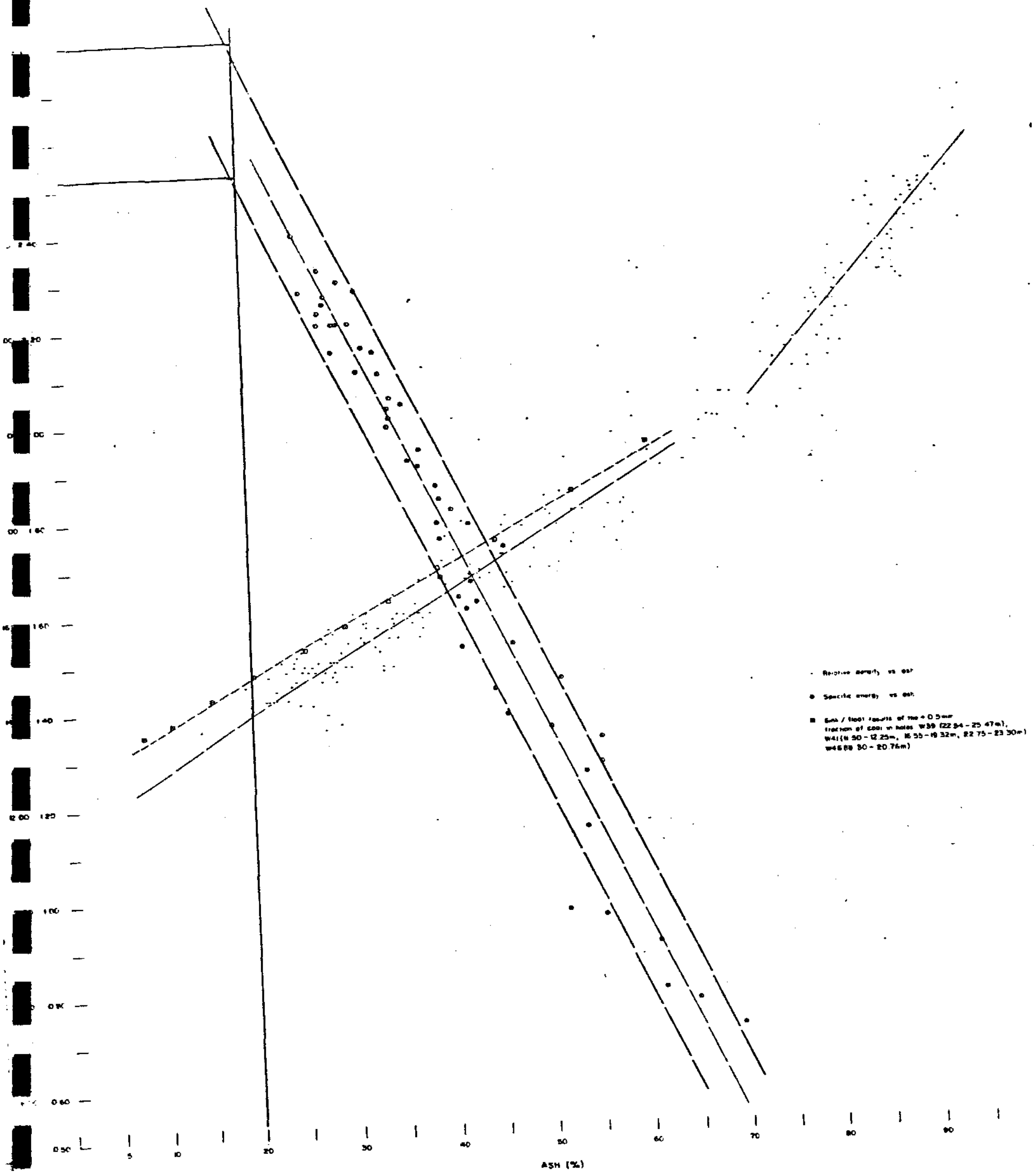
. the limits of reserve block boundaries as the mid point between drill holes, and or faults as interpreted from the detailed gravity survey or photo lineaments and or in the absence of drill holes in close proximity, the coal seams were assumed to continue for 0.5 km. (for measured reserves) or 1.0 km. (for first class indicated reserves).

The tonnage of coal in a given block was then calculated by multiplying the reserve block area, by the cumulative coal seam thickness and the average weighted density as applicable. Details of the reserve estimates are provided in Table 3 and 4 and parameters used in Appendix 1.

Reserve calculations based on a composite 40.5% cut off were determined as above except with the following modifications:

. separate coal seams with an ash content greater than 40.5% ash were excluded.

. coal seams with an ash content greater than 40.5% where accompanied by other lower ash coal seams such that the composite value was less than 40.5% Ash were included.



VICTOR PETROLEUM & RESOURCES LTD.

WOODBURY COAL PROJECT

SPECIFIC ENERGY / RELATIVE DENSITY

- stone bands within the coal seams greater than 0.15 m. in thickness were excluded from the calculation of the cumulative coal thickness.
- carbonaceous mudstone floors to coal seams were excluded.

3.3 INDICATIVE QUALITY OF THE WOODBURY COAL FOR A 19-20% ASH PRODUCT

Estimates for the volatile matter, specific energy and sulphur content were calculated to arrive at an indication of the quality for a 19-20% Ash coal as follows. Details of the results are provided in Table 3 and 4.

3.3.1 VOLATILE MATTER

The volatile matter (VM) as shown in Tables 2 and 3 was estimated using a slight modification to the formula quoted in AS 1038, Part 16, 1975.

$$\text{i.e.} \quad VM\ (d.a.f.) = VM \left(\frac{100}{100 - m - a}\right)$$

where the volatile matter (VM), the moisture (m) and ash(a) are air dried values. The formula quoted in AS 1038, Part 16, 1975, used VM (d.m.m.f.) i.e., dry mineral matter free as distinct from dry ash free.

This VM (d.a.f.) value was then used in the following expression to obtain the estimated volatile matter in the coal after washing to 20% ash.

$$VM\ (20\%\ ash) = VM\ (d.a.f.) \left(\frac{100 - m - a}{100}\right)$$

$$= 0.76 \times VM\ (d.a.f.) \text{ for 4\% moisture.}$$

3.3.2 SPECIFIC ENERGY

The specific energy (SE) as shown in Tables 2 and 3 was calculated for a 20% ash washed product by using the formula quoted in AS 1038, Part 16, 1975. Alternatively, extrapolation of the line of best fit as shown in Figure (3) indicated that specific energy for a 20% ash washed product is in the range of 25.2 - 28.0 MJ/kg.

Both volatile matter and specific energy values for individual coal seams were weighted by their respective thicknesses to obtain the values for the blocks shown in Tables 2 and 3.

3.4.3 SULPHUR

Sulphur values were also calculated by weighting individual coal seam values by their respective widths and all are less than 0.5%.

BLE[redacted]DBU[redacted]OAL[redacted]OS[redacted] ME[redacted]ED[redacted]ERV[redacted]ng[redacted] As[redacted]ut [redacted]

Block	Hole(s)	Composite Seam Inter-section in m.	Seam	Depth of Oxidation	Maximum Depth of Overburden	Density	Area (Km^2)	Tonnes x 10^6 10:1 7:1	AVERAGE ESTIMATED Ash (%)	VM (%)	SE (MJ/kg)	S (%)
1.	W30	2.37	O,N,M,	10.0	40.3 (28.9)	1.60	0.19 (NA)	0.720 (NA)	36.5	12.3	25.6	0.39
2.	W30	2.02	N, M,	10.0	33.5 (24.1)	1.56	0.35 (NA)	1.103 (NA)	33.2	11.9	25.8	0.30
3.	W32	1.97	C	7.3	37.2 (26.6)	1.79	0.40 (0.40)	1.410 (1.410)	44.0	24.0	27.2	0.40
4.	W25	1.61	C	11.2	28.7 (20.5)	1.68	0.29 (NA)	0.784 (NA)	43.0	25.0	22.1	0.37
5.	W1 (W39)	2.11	C	11.2	37.1 (26.6)	1.66	0.10 (0.06)	0.350 (0.210)	41.2	18.7	23.6	0.37
6.	W39	2.93	D	≃10.0	51.3 (36.8)	1.65	0.38 (0.31)	1.837 (1.499)	40.5	26.6	22.9	0.37
7.	W46	2.40	D	≃10.0	44.4 (31.8)	1.75	0.43 (0.31)	1.806 (1.302)	48.5	26.6	22.9	0.37
8.	W61	2.49	B	8.0	42.6 (30.5)	1.61	0.20 (0.09)	0.802 (0.361)	37.2	14.7	25.2	0.34
9.	W41	2.79	B	9.80	46.9 (33.6)	1.58	0.23 (0.12)	1.014 (0.529)	34.7	8.8	24.4	0.36
10.	W41	2.04	B	9.80	34.5 (24.7)	1.59	0.06 (0.06)	0.195 (0.195)	35.7	8.6	24.1	0.36
TOTAL USING OVERBURDEN : COAL RATIO OF 10:1								10.021	40.6	20.1	24.3	0.36
TOTAL USING OVERBURDEN : COAL RATIO OF 7:1								5.506	42.4	22.5	24.4	0.37

632021

TABLE 3: WOODBURY COAL DEPOSIT - INDICATED RESERVE using 50% Cut Off

lock	Hole(s)	Composite Seam Inter-section in m.	Seam	Depth of Oxidation	Maximum Depth of Overburden	Density	Area (Km^2)	Tonnes x 10^6 10:1 / 7:1	AVERAGE ESTIMATED Ash (%)	VM (%)	SE (MJ/kg)	S (%)
1.	W9	3.00	P, O, N,	10.0	52.5 (37.6)	1.65	0.20 (NA)	0.990 (NA)	40.5	-	-	-
2.	W30/23	2.37	O, N, M,	<10.0	40.3 (28.9)	1.60	0.29 (NA)	1.100 (NA)	36.5	12.3	25.6	0.29
3.	W30/23	2.02	N, M,	<10.0	33.5 (24.1)	1.56	0.22 (NA)	0.693 (NA)	33.2	11.9	25.8	0.30
4.	W10/7	1.90	C	≃10.0	37.2 (24.6)	1.71	0.96 (0.96)	3.119 (3.119)	42.7	-	-	-
5.	W32	1.97	C	7.3	37.2 (26.6)	1.79	0.49 (0.34)	1.728 (1.200)	44.0	24.0	27.2	0.40
6.	W25	1.61	C	11.2	28.7 (20.5)	1.68	0.16 (NA)	0.433 (NA)	43.0	25.0	22.1	0.37
7.	W39	2.93	D	≃ 10.0	51.3 (36.8)	1.65	0.06 (0.06)	0.290 (0.290)	40.5	26.6	22.9	0.37
8.	W47	1.28	C	10.2	22.3 (16.0)	1.64	0.09 (0.07)	0.189 (0.147)	37.6	11.4	24.6	0.39
9.	W41	2.79	B	9.8	46.9 (33.6)	1.58	0.11 (0.06)	0.485 (0.264)	34.7	8.8	24.4	0.36
10.	W41	2.04	B	9.8	34.5 (24.7)	1.59	0.01 (0.01)	0.032 (0.032)	35.7	8.6	24.1	0.36
11.	W49	3.70	B	12.4	62.2 (44.6)	1.58	0.45 (0.45)	2.631 (2.631)	34.7	-	-	-
12.	W63	1.20	B	13.2	23.9 (17.1)	1.89	0.16 (0.06)	0.363 (0.136)	46.0	28.1	21.9	0.25

Cont'd....

TABLE 3 : Page 2 WOODBURY COAL DEPOSIT - INDICATED RESERVE Using 50% Cut Off

lock	Hole(s)	Composite Seam Intersection in m.	Seam	Depth of Oxidation	Maximum Depth of Overburden	Density	Area (Km^2)	Tonnes x 10^6 10:1 7:1	AVERAGE ESTIMATED Ash (%)	VM (%)	SE (MJ/kg)	S (%)
13.	W4/48	1.91	C	8.2	33.6 (24.1)	1.66	0.24 (0.10)	0.761 (0.306)	41.2	-	-	-
14.	W13/15/46	2.40	D	≃ 10.0	44.4 (31.8)	1.75	0.47 (0.36)	1.974 (1.512)	48.5	-	-	-
TOTAL USING OVERBURDEN : COAL RATIO OF 10:1								14.788	40.8			
TOTAL USING OVERBURDEN : COAL RATIO OF 7:1								9.637	41.2			

GRAND TOTAL (MEASURED & FIRST CLASS INDICATED) FOR 10:1 RATIO = 24.8 X 10^6 TONNES CONTAINING 40.7% ASH.

GRAND TOTAL (MEASURED & FIRST CLASS INDICATED FOR 7:1 RATIO = 15.1 X 10^6 TONNES CONTAINING 41.6% ASH.

TABLE 4: WOODBURY COAL DEPOSIT - MEASURED RESERVE using 40.5% Ash Cut Off

ock	Hole(s)	Composite Seam Intersection in m.	Seam	Depth of Oxidation	Maximum Depth of Overburden	Density	Area (Km^2)	Tonnes x 10^6	AVERAGE ESTIMATED Ash (%)	VM (%)	SE (MJ/kg)	S (%)
1.	W30	2.37	O, N, M,	< 10.0	40.3	1.60	0.19	0.720	36.5	12.3	25.6	0.29
2.	W30	2.02	N, M,	< 10.0	33.5	1.56	0.35	1.103	33.2	11.9	25.8	0.30
3.	W32	1.36	C	7.3	23.5	1.63	0.28	0.621	38.7	>24.0	>27.2	≪0.40
4.	W39	2.12	D	≚ 10.0	34.8	1.54	0.29	0.947	31.7	>26.6	>22.9	≪0.37
5.	W46	1.51	D	≚ 10.0	26.4	1.65	0.28	0.698	40.5	>26.6	>22.9	≪0.37
6.	W61	2.49	B	8.0	42.6	1.61	0.20	0.802	37.2	14.7	25.2	0.34
7.	W41	2.79	B	9.8	46.9	1.58	0.23	1.014	34.7	8.8	24.4	0.36
8.	W41	2.04	B	9.8	34.5	1.59	0.06	0.195	35.7	8.6	24.1	0.36
						TOTAL:		6.100	35.61			

632024

[redacted]ABL[redacted]: [redacted] [redacted]BU[redacted]DAL[redacted]OSI[redacted]FI[redacted]CLA[redacted]NDI[redacted]ED [redacted]RVE[redacted]ng[redacted]5% [redacted]Cu[redacted]

lock	Hole(s)	Composite Seam Inter-section in m.	Seam	Depth of Oxidation	Maximum Depth of Overburden	Density	Area (Km²)	Tonnes x 10^6	AVERAGE ESTIMATED Ash (%)	VM (%)	SE (MJ/kg)	S (%)
1.	W9	3.00	P, O, N,	≥ 10.0	52.5	1.65	0.20	0.990	40.5	-	-	-
2.	W30/23	2.37	O, N, M,	< 10.0	40.3	1.60	0.29	1.100	36.5	12.3	25.6	0.29
3.	W30/23	2.02	N, M,	< 10.0	33.5	1.56	0.22	0.693	33.2	11.9	25.8	0.30
4.	W10/7	1.36	C	≥10.0	22.7	1.57	0.88	1.879	34.0	-	-	-
5.	W39	2.12	D	≥10.0	34.8	1.54	0.06	0.196	31.7	>26.6	>22.9	<0.37
6.	W47	0.98	C	10.2	15.9	1.52	0.07	0.104	30.0	>11.4	>24.6	<0.39
7.	W41	2.79	B	9.8	46.9	1.58	0.11	0.485	34.7	8.8	24.4	0.36
8.	W41	2.04	B	9.8	34.5	1.59	0.01	0.032	35.7	8.6	24.1	0.36
9.	W49	3.7	B	12.4	62.2	1.58	0.45	2.631	34.7	-	-	-
0.	W4/48	1.50	C	8.2	25.0	1.57	0.12	0.283	34.0	-	-	-
1.	W13/15/46	1.51	D	≥10.0	26.4	1.65	0.31	0.772	40.5	-	-	-
						TOTAL:		9.165	35.64			

GRAND TOTAL - MEASURED AND FIRST CLASS INDICATED 15.265 35.63

4.0 OPPORTUNITIES

4.1 THE MARKET FOR WOODBURY COAL

The main potential market for Woodbury coal is the non-utility market of Asia. At the moment, this industry is very depressed and is accepting only about 50% to 60% of coal contract quantities. Based on forecasts by New York consultants Zinder-Neris and Sydney consultants Hannes Walpole & Barlow, the size of the potential market in the three main countries is estimated to be as follows:

(m. tonnes)	1982	1984	1986	1988
Japan	9.0	12.0	12.5	14.0
Korea	1.5	3.0	3.0	3.0
Taiwan	1.5	2.0	4.5	4.5
	12.0	17.0	20.0	21.5

This forecast of course assumes recovery in the cement industry after 1981. If this does not occur, then growth will be delayed. Our enquiries suggest that 1982 (and probably 1983) requirements are well satisfied so the earliest market opportunities are likely to be for deliveries from 1984 onwards. On the assumption that a potential market for 5 m.t.p.a. will exist around 1984/85, the maximum amount likely to be captured by a single new producer would be about 20%, i.e. 1 m.t.p.a.

Because of proximity to Asia and Asian customers readiness to enter long term contracts, new Australian projects have invariably got off the ground with Asian rather than European sales. This is likely to change. The European acceptance of the long term contract is coming about slowly and because of its location, South Africa will retain most of the market.

4.2 COAL PRICE

An indication of the value of Woodbury coal will come from a comparison with prices achieved by other Australian exporters selling to Asian cement makers. All prices mentioned below are in April 1981 terms.

4.3 CONTRACT	BASE PRICE (A$/t)	WOODBURY EQUIV. VALUE CV = 6200kcal/kg g.a.r. (A$/t)	CV=6000 kca kg g.a.r. (A$/t)
Coal & Allied - Japan 1.6 mtpa at 6480 kcal/kg (g.a.r.)	47.40*	45.40	43.90
Bayswater - Japan 0.3 mtpa at 6430 kcal/kg (g.a.r.)	47.90	46.20	44.70
CSR - Taiwan 0.1 mtpa at 6300 kcal/kg (g.a.r.)	45.00	44.30	42.90

* Note published price is A$45/t but subsidy on C & F portion increases value to A$47.40.

These values are all quoted on FOB & T basis. Tasmanian loading might provide a demurrage saving but actual shipping freight would be a little higher than from Queensland or New South Wales. Some adjustments to value will need to be considered as specific opportunities are evaluated.

Contracts usually provide for cost escalation to be passed to buyers. Typical New South Wales contracts provide for increases in port and rail charges to be passed on directly. Then the ex-mine portion of

4.3 (ctd.)

price is escalated in line with indices such as mine labour index and materials index. Escalation may cover only 70% of the ex-mine cost. Government charges may or may not be singled out for escalation. Price review is typically on an annual or two yearly basis.

TYPICAL PREFERRED COAL QUALITIES

ATTACHMENT 1

	UTILITIES						CEMENT WORKS			
	JAPANESE	BELGIUM	SPANISH	AUSTRIAN	ISRAEL	EASTERN EUROPEAN	JAPANESE	SPANISH	NORWEGIAN	KOREAN
Calorific Value kcal/kg (gross air dried)	6200min	6500min pref.	6150min	6000min	6100min	6280min	6000min 6500min pref.	6000min 6500min pref.	6000min	5000min
Total Moisture	10% max		10% max	12% max	16% max	14% max	10% max	8% max	10% max	10% max
Proximate Analysis: (air dried basis)										
Ash	20% max 15% max pref.		20% max 16% max pref.	20% max	18% max	22% max	- 15% max pref.	15% max	15% max	20% max
Volatile Matter	-	20% min 30% max	25% min 35% max	20% min	21% min	-	-	-	20% min 30% max	-
Total Sulphur	1% max	1.5%max	1% max	1% max	3.0%max	2.0%max	1% max	2.5%max	1.5%max	3.0%max
Fuel Ratio = $\frac{\text{Fixed Carbon}}{\text{Volatile Matter}}$	2.2 max (indicates volatiles 26%min)						2.0 max			
Ultimate Analysis: (dry basis)										
Nitrogen	1.7%max				-		1.5%max			
Chlorine	-				0.15%max		0.05%max		0.2%max	
Hardgrove Index	45 min	50 min	55 min	40 min	40 min		45 min	55 min	50 min	50 min
Ash Fusion Temperatures:										
Deformation	1200°C min	1300°C min	1250°C min		-		1200°C min			1250°C min
Hemisphere	1300°C min				1200°C min		1300°C min			
Flow	-	1450°C					-			
Ash Composition:										
Sodium as Na_2O	2% max						1.2% max		2.0% max	0.8% max
Fouling Index: $\frac{CaO + MgO}{Fe_2O_3}$	1.0%max						-			

632029

ATT[redacted]ENT

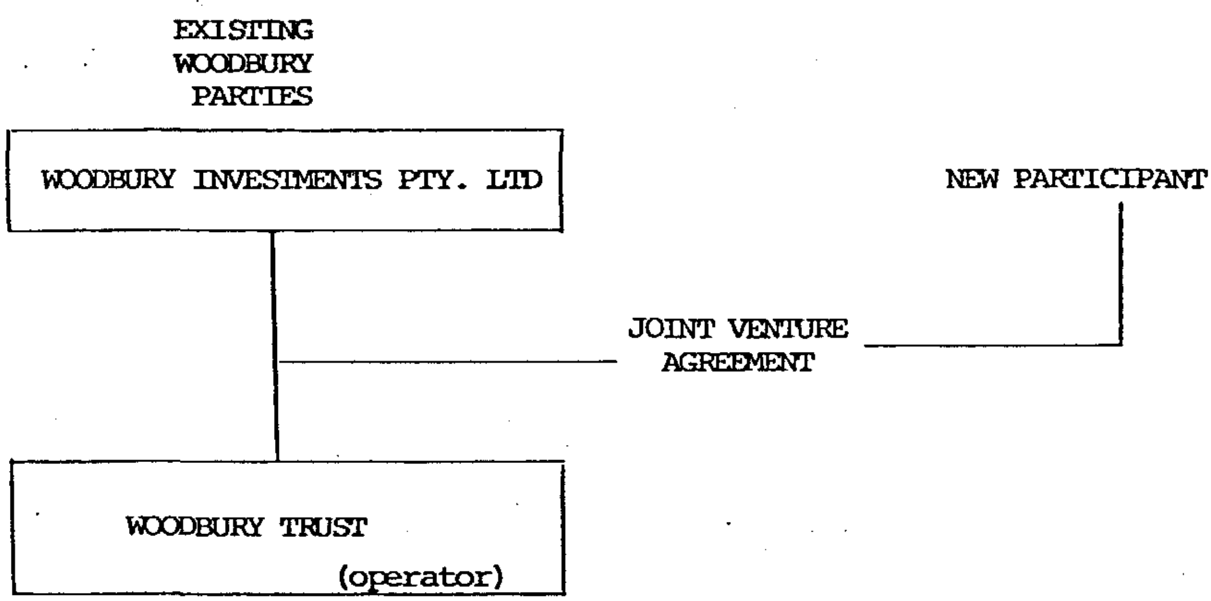
INDICATIVE ANALYSES OF TYPICAL EXPORT QUALITY STEAMING COALS

	HUNTER VALLEY N.S.W.	WESTERN DISTRICT N.S.W.	BLAIR ATHOL QLD.	NEWLANDS QLD.	STH AFRICA	POLAND	WINCHESTER SOUTH	WEST MORETON QLD.	WOODBURY W39	WOODBURY W41	WOODBURY W46
Total Moisture	8.0%	8.0%	16.0%	8.0%	8.0%	8.0%	8.0%~10.0%	11.0~12.5%	10%	10%	10%
Proximate Analysis: (air dried basis)											
Ash	11.2%~ 14.0%	14.0%~ 17.0%	8.2%	14.0%	12.0%~17.0%	13.0%~14.0%	12.0%~18.0%	16.0%~18.0%	19.9%	23.3%	21.4%
Volatile Matter	34.0%	28.0%	27.6%	25.8%	23.0%~32.0%	26.0%~31.0%	20.0%~22.0%	30.0%~35.0%	23.1%	8.9%	23.0%
Sulphur	0.6%	0.7%	0.35%	0.5%	0.35%~1.0%	0.8%~1.0%	0.4%	0.4%~0.6%	0.49%	0.47%	0.44%
Hardgrove Index	55	48	71	54	50	50~55	76	37~46	70	53	N.A.
Ash Fusion Temperatures:											
Deformation	1500°C	1560°C	1490°C	1550°C	1340°C	N.A.	1130°C ~ 1320°C	1400°C ~ 1500°C	1260°C	1300°C	1220°C
Hemisphere	+1560°C	+1560°C	1560°C	+1550°C	+1400°C	N.A.	1360°C~ 1450°C	-	1320°C	1380°C	1360°C
Flow	+1560°C	+1560°C	1670°C	+1600°C	+1440°C	N.A.	1440°C~ 1490°C	-	1370°C	1410°C	1380°C
Calorific Value (kcal/kg)											
Gross Air Dried	6700~ 6900	6500~ 6680	6540	6800	6200~6700	6600~6800	6900~7400	6100~6600	6047	5938	6888
Gross As Received	6400~ 6580	6180~ 6350	5920	6430	5820~6300	6200~6400	6400~6950	5600 6100	5690	5520	6417

5.0 CORPORATE STRUCTURE

It is expected that the corporate structure for the Woodbury deposit would be a joint venture between the existing Woodbury participants (combining into a single entity through their yet to be established company, Woodbury Investments Pty. Limited) and the new in-coming participant company.

Such an arrangement ought give flexibility to each party in respect of their own financing and taxation matters.



COMMENTS ON THE CALCULATIONS OF THE OPEN CUT COAL RESERVES

A. LOW GRADE RESERVE using a 50% Ash cut off.

1. MEASURED CATEGORY

BLOCK 1 : Seam O was assumed to have the same volatile matter and specific energy values as Seam N in hole W30.

BLOCK 3 : Due to sampling problems with the C2 seam in hole W32, the resultant analysis was not considered to be a reliable representation of the coal. The ash value of this block was therefore calculated by averaging the ash values (graphically determined) for the C2 seams in drill holes W25, 38, 39, 46, 47 and 48.

BLOCK 4 : Seams C3 and C4 were not subjected to a complete proximate analysis; Seam C3 was assumed to be the same as seam C3 in hole W32. The weighted average volatile matter and specific energy values for this block are based on the values for seams C1,C2 and C3.

BLOCK 5 : Seams C1, C2 and C3 in drill hole W1 were assumed to be identical with those in hole W39.

BLOCK 7 : A proximate analysis of D seam in W46 was not done; the volatile matter, specific energy, and sulphur values shown were assumed to be the same as those for Seam D in W39.

BLOCK 8 : Selective mining was assumed to allow removal of the grey mudstone (30.17 - 30.71m.), in W61, between seams B2 and B3; the analytical data presented is approximate, as the original SGS data was based on a sample which excluded two narrow (total 0.08m. thick) stone bands.

With the exception of Block 3, all blocks had ash values assigned from the graph of relative density versus ash.

2. FIRST CLASS INDICATED CATEGORY

BLOCK 1 : The thickness of seams N, O and P in holes W9 were determined from the gamma-gamma density log of W9, and the average weighted relative density value (i.e. tonneage factor) for the block was calculated by averaging the weighted relative density values for seams M and N in hole W67 with seams M, N and O in hole W30.

BLOCK 2 : Seam O was assumed to have the same volatile matter and specific energy values as seam N in hole W30.

BLOCK 4 : Seams C2 and C3 were interpreted in hole W10 partly on the basis of more rigorous gravity indicated controls on the structural setting of the area, and partly on the basis that the wireline logging was done at a rate which did not produce satisfactory resolution factors for the gamma-gamma density logging.

The cumulative thickness (W), the tonneage factor (T.F.), and the ash values for this block were taken as the arithmetic average of the adjoining blocks, namely Block 3 (W32), Block 4 (W25), and Block 5 (W1/39).

BLOCK 5 : The same comments apply to this block as for measured Block 3.

BLOCK 8 : This block is based on the intersection of Seam C1/2 (undifferentiated) in drill holes W13 and W47. The ash value for this block was determined by composite analysis of the coal plies.

BLOCK 11 : Selective mining was assumed to allow removal of the 0.5m. thick roof of brown shale with minor coal from 29.05 - 29.55m. in W49. Although part of this seam (B) was sink - float tested, the core recovery of 70% precludes definitive estimates of the overall ash content of this seam. Accordingl the interval from 30.05 - 33.25m. in W49 was assumed to have a relative density of 1.60.

BLOCK 12 : The ash value for this block was determined by composite analysis of the coal plies.

BLOCK 13 : Seams C1/2 (undifferentiated) and C3 in hole W4 were assumed to be the same as seams C1/2 (undifferentiated) and C3 in hole W48. The C3 seam in W48 (37.58 - 38.47m) was not fully recovered during core drilling and this seam was assigned a relative density of 1.60.

BLOCK 14 : Seam D in open holes W13 and W15 was detected from geophysical logs; the nearest cored section of Seam D occurs in hole W46, and accordingly, this block was assigned thickness, relative density, and ash values identical to Seam D in W46.

With the exception of Blocks 4,5, 8, and 12, the remaining blocks had ash values assigned from the graph of relative density versus ash. Blocks 4, 5, 8 and 12 had ash values determined as described above.

B. HIGH GRADE RESERVE using a 40.5% Ash Cut Off.

1. MEASURED CATEGORY

BLOCK 1 : The same comments apply to this block as for low grade measured Block 1.

BLOCK 5 : The same comments apply to this block as for low grade measured Block 7.

BLOCK 6 : The same comments apply to this block as for low grade measured Block 8.

2. FIRST CLASS INDICATED CATEGORY

BLOCK 1 : The same comments apply to this block as for low grade indicated Block 1.

BLOCK 2 : The same comments apply to this block as for low grade indicated Block 2.

BLOCK 4 : Similar comments apply to this block as for low grade indicated Block 4, except that the cumulative thickness and tonneage factor were determined from the average of the high grade values for the C2 and C3 seams in W32, the C1, C2, C3 and C4 seams in W25, and the C1, C2 and C3 seams in W39.

BLOCK 9 : The same comments apply to this block as for low grade indicated Block 11.

BLOCK 10 : The same comments apply to this block as for low grade indicated Block 13.

BLOCK 11 : The same comments apply to this block as for low grade indicated Block 14.

APPENDIX 2

632036

COAL ASH VALUES

Table 6 depicts a comparison of coal ash values as discussed subsequently;

TABLE 6

HOLE	SEAM	RD (T/M^3)	W (m)	ASH VALUE (%) 1	2	3
W30	N	1.59	0.80	36.40	35.61	35.70
W32	C3	1.70	0.97	46.70	45.83	44.50
W25	C2	1.75	0.57	51.80	52.98	48.50
	C1	1.51	0.51	27.90	28.43	29.20
W39	C3	1.94	0.53	55.60	60.39	63.70
	C2	1.64	0.91	39.20	41.34	39.70
	D	1.65	2.93	42.10	44.01	40.50
W41	B4	1.54	0.75	32.10	31.08	31.70
W47	C1/2	1.64	1.28	37.60	47.89	39.70
W63	C1/2	1.89	1.20	46.00	48.04	59.70

LEGEND:

RD - Weighted relative density of coal seam
W - Cummulative width of coal seam
ASH VALUE 1 - Composite analysis
2 - Ash weighted by RD x W
3 - Graph of ash versus RD

A sample of ten coal seams was taken as follows:

W 30 (N), W32 (C3), W25 (C1,C2), W39 (C2, C3), W39 (D), W41 (B4), W 47 (C1/2), W63 (C1/2).

HOLES W47 and W63 ILLUSTRATE THE PROBLEM:

W47 (1.28m) contains 37.6% Ash (1 above), or 47.9% Ash (2 above) or 39.7% Ash (3 above).

W63 (1.20m) contains 46.0% Ash (1 above), or 48.0% Ash (2 above) or 59.7% Ash (3 above).

Three methods were used to interpret the data:

(i) Weight averaging the three types of ash values by widths
(ii) Arithmetic averaging the three types of ash values
(iii) Calculating the % change on an individual sample basis

...../2.

Results are as follows:

METHOD (i)- Ash type 1. is 3.4% lower than Ash type 3., and 5.6% lower than Type 2.

" (ii)- Ash type 1. is 4.2% lower than Ash type 3, and 4.9% lower than Type 2.

" (iii)- Ash type 1. is 7.7% lower than Ash type 3, and 5.4% lower than Type 2.

Since the majority of reserve blocks in both the measured and indicated categories have graph (Type 3), determined Ash values, the quoted Ash values are probably on average 4-8% higher than actual, but with individual blocks ranging up to 20% higher than actual Ash values.

Consequently, the overall average exaggeration of the total reserve Ash value, (allowing for vastly different block tonnages), is difficult to estimate at present.

References:

Leaman, D. E. 1981 Gravity Survey of the Woodbury Region; Unpublished, Rep. Leaman Geophysics.

APPENDIX 3: PRELIMINARY WASHABILITY TEST RESULTS

SGS Australia Pty. Ltd.

Sydney

74 McEvoy Street,
Alexandria, N.S.W.,
P.O. Box 163, Redfern, 2016
Tel.: 699-7625
Telex: AA 22395
Cables: Supervise

Your ref.:

Our ref.:

Victor Petroleum and Resources
Suite 3, 1373 Burke Road
East Kew
Victoria 3102

Attention: Mr E Eschuys

Date: 7/8/81

Coal Washability Study

Three seam sections have been analysed as requested for sizing and washability. In each case a composite was prepared from plies within designated coal sections, utilising the maximum amount of available sample. These composites, comprising coal of nominal topsize 12.7mm were first sized at 0.5mm. The plus 0.5mm fraction was then float/sink separated at gravities of 1.35, 1.40, 1.45, 1.50, 1.55, 1.60, 1.65, 1.70, 1.80, 1.90 and 2.00. Ash was determined on each fraction. The minus 0.5mm fraction was further sized at 250, 125 and 75 microns. Ash was determined on each size fraction. The results of these analyses, determined on drillholes W39 (22.54-25.47 metres), W41 (11.50-12.25, 16.55-19.32, 22.75-23.30 metres) and W46 (18.30-20.76 metres) appear on the following three pages.

Yours faithfully

H. Read

Harold Read
Manager - Coal Exploration
Services

SGS Australia Pty. Ltd.

632039

DDH W39

22.54 - 25.47 metres

Initial sample Mass : 2.00 kg.

Table 1.

Sizing Analysis	Mass %	Ash %	
12.7 x 0.5mm	92.1	38.9	(by calculation)
0.5 x 0.25mm	4.4	49.3	
0.25 x 0.125mm	1.8	43.4	
0.125x 0.075mm	0.8	55.3	
Minus 0.075mm	0.9	55.4	

Table 2. Float/sink Analysis of +0.5mm Fraction

Relative Density	Fractional Mass %	Fractional Ash %	Cumulative Mass %	Cumulative Ash %
Floats 1.35	16.7	8.5	16.7	8.5
S1.35 - F1.40	8.0	12.8	24.7	9.9
S1.40 - F1.45	8.3	18.3	33.0	12.0
S1.45 - F1.50	8.6	22.1	41.6	14.1
S1.50 - F1.55	5.4	28.4	47.0	15.7
S1.55 - F1.60	3.8	33.4	50.8	17.1
S1.60 - F.165	3.1	37.5	53.9	18.2
S1.65 - F1.70	2.6	41.2	56.5	19.3
S1.70 - F1.80	6.4	46.9	62.9	22.1
S1.80 - F1.90	7.7	54.0	70.6	25.6
S1.90 - F2.00	5.1	60.3	75.7	27.9
Sinks 2.00	24.3	73.2	100.0	38.9
Plus 0.5mm (by calculation)	92.1	38.9	92.1	38.9
Minus 0.5mm (from table 1.)	7.9	49.3	100.0	39.7

THE RESULTS OF THIS TEST IS CONSIDERED
TO BE REPRESENTATIVE OF THE WASHING
CHARACTERISTICS OF THE WOODBURY COAL.

H. Read

Harold Read
Manager, - Coal Exploration
Services

632040

SGS Australia Pty. Ltd.

DDH W41

11.50 - 12.25, 16.55 - 19.32, 22.75 - 23.30 metres

Initial sample Mass : 2.00 kg.

Table 1.

Sizing Analysis	Mass %	Ash %	
12.7 x 0.5mm	93.2	53.8	(by calculation)
0.5 x 0.25mm	3.0	57.9	
0.25 x 0.125mm	1.8	58.4	
0.125x 0.075mm	1.2	60.0	
Minus 0.075mm	0.8	60.5	

Table 2. Float/sink Analysis of +0.5mm Fraction

Relative Density	Fractional Mass %	Fractional Ash %	Cumulative Mass %	Cumulative Ash %
Floats 1.35	0.2	7.4	0.2	7.4
S1.35 - F1.40	0.3	8.1	0.5	7.8
S1.40 - F1.45	3.8	10.7	4.3	10.4
S1.45 - F1.50	5.1	15.1	9.4	12.9
S1.50 - F1.55	6.4	19.9	15.8	15.8
S1.55 - F1.60	9.4	24.9	25.2	19.2
S1.60 - F.165	8,4	29.2	33.6	21.7
S1.65 - F1.70	6.3	35.1	39.9	23.8
S1.70 - F1.80	11.1	40.5	51.0	27.4
S1.80 - F1.90	3.8	50.5	54.8	29.0
S1.90 - F2.00	2.6	55.4	57.4	30.2
Sinks 2.00	42.6	85.6	100.0	53.8
Plus 0.5mm (by calculation)	93.2	53.8	93.2	53.8
Minus 0.5mm (from table 1.)	6.8	48.4	100.0	53.4

PLEASE NOTE THE VERY HIGN "RUN OF MINE" ASH VALUE 53.8% OF THE SAMPLE PRIOR TO TESTING. THIS VALUE RESULTS FROM THE INCLUSION OF TWO STONE BANDS WHICH ARE EXCLUDED FROM THE RESERVE CALCULATIONS.

H. Read

Harold Read
Manager - Coal Exploration Services

Report No:SL1095
Date : 8/8/81
632041

SGS Australia Pty. Ltd.

DDH W46

18.30 - 20.76 metres

Initial sample Mass : 0.60 kg.

Table 1.

Sizing Analysis	Mass %	Ash %	
12.7 x 0.5mm	95.5	49.3	(by calculation)
0.5 x 0.25mm	2.5	53.8	
0.25 x 0.125mm	0.9	60.1	
0.125x 0.075mm	0.5	61.0	
Minus 0.075mm	0.6	57.8	

Table 2. Float/sink Analysis of +0.5mm Fraction

Relative Density	Fractional		Cumulative	
	Mass %	Ash %	Mass %	Ash %
Floats 1.35	8.8	8.5	8.8	8.8
S1.35 - F1.40	4.8	12.5	13.6	9.9
S1.40 - F1.45	3.5	17.2	17.1	11.4
S1.45 - F1.50	3.7	23.2	20.8	13.5
S1.50 - F1.55	4.7	28.8	25.5	16.3
S1.55 - F1.60	3.0	30.8	28.5	17.8
S1.60 - F.165	5.7	35.7	34.2	20.8
S1.65 - F1.70	4.6	41.9	38.8	23.3
S1.70 - F1.80	8.9	48.2	47.7	28.0
S1.80 - F1.90	11.8	55.1	59.5	33.3
S1.90 - F2.00	14.0	67.3	73.5	39.8
Sinks 2.00	26.5	75.9	100.0	49.3
Plus 0.5mm (by calculation)	95.5	49.3	95.5	49.3
Minus 0.5mm (from table 1.)	4.5	56.4	100.0	49.3

PLEASE NOTE THE VERY HIGH ASH VALUE OF THE SAMPLE PRIOR TO WASHING.

H. Read

Harold Read
Manager - Coal Exploration Services

- 36 -

cc to T.G.S.
S.G.S file

632042

SGS Australia Pty. Ltd.

RECEIVED 17 SEP 1981

Laboratories Division

COAL ANALYSIS REPORT

REPORT No.: SL1161 DATE IN: 20/8/81 DATE OUT: 15/9/81

CLIENT: Victor Petroleum and Resources CLIENT REFERENCE:

ADDRESS: Suite 3, 1373 Burke Road
East Kew. VIC 3102

RESULTS TO: Mr E Eschuys COPY TO:

SAMPLE REFERENCE: PROXIMATE ANALYSES RESULTS OF THE APPROPRIATE FRACTIONS AFTER WASHING TESTS.

ANALYSIS		W39 22.54-25.47 CF 1.70		W41 11.50-12.25m 16.55-19.32m 22.75-23.30m CF 1.65		W46 18.30-20.76metres CF 1.65	
Total Moisture %							
Moisture %	*	4.4		3.2		3.4	
Ash %	*	19.9		23.3		21.4	
Volatile Matter %	*	23.1	20.5	8.9		23.0	
Fixed Carbon %	*	52.6		64.6		52.2	
Crucible Swelling No.	*	½		0		½	
Specific Energy Mj/kg	*	25.32		24.86		28.84	
	**	33.44		33.82		33.04	
Total Sulphur %	*	0.49		0.47		0.44	
Carbon %							
Hydrogen %							
Nitrogen %							
Oxygen %							
Carbon Dioxide %							
Hardgrove Grindability Index.	*	70		53		Insufficient sample	

DETERMINED IN ACCORDANCE WITH: AS1038

BASIS RESULTS REPORTED ON *Air dried ** Dry, ash-free

H. Read

Harold Read
Manager - Coal Exploration Services

NATA

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

APPENDIX 4

ASH CHARACTERISTICS OF WOODBURY COAL

632043

Hole No.	W39	W41	W46
Coal Seam Interval	22.54-25.47	11.50-12.25 16.55-19.32 22.75-23.30	18.30-20.76
C.F.	1.70	1.65	1.65
Ash Content	19.9	23.3	21.4
Ash Fusion (Reducing conditions)			
Initial Deformation	1260	1300	1220
Initial Spherical	1310	1350	1350
Initial Hemisphere	1320	1380	1360
Initial Flow	1370	1410	1380
Ash Mineral Analysis			
SLO_2	55.7	53.6	48.1
Al_2O_3	24.1	23.8	26.5
Fe_2O_3	3.65	2.42	3.45
CaO	10.03	13.95	14.83
MgO	2.83	1.61	2.58
Na_2O	0.21	0.65	0.37
K_2O	0.67	0.53	1.18
T_2O_2	0.93	0.96	1.04
Mn_3O_4	0.21	0.18	0.35
So_3	1.44	2.79	1.52
P_2O_5	0.045	0.028	0.046
BaO	0.02	0.05	0.03
	99.835	100.568	99.996
Hardgrove Grindability Index	70	53	Not Determined

632044

TO: E. Eshuys MEMO REF.: TGS:dca

FROM: T. G. Summons IN REPLY TO:

SUBJECT: WOODBURY COAL DEPOSIT - COAL RESERVES STRIPPING RATIOS DATE: 7th June, 1982.

INTRODUCTION

The estimation of average overburden volume to coal tonneage ratios (i.e. the stripping ratios) was performed to:

(i) Present the data for internal purposes;

(ii) Enable a quantitative comparison of the Woodbury coal reserves data with stripping ratios presently utilized in open cut coal mines in mainland Australia;

(iii) Clarify the apparent confusion within the Tasmanian Department of Mine regarding the use of the MAXIMUM stripping ratio.

The methods adopted are considered to portray a representative average stripping ratio; detailed topographic surveying will probably result in minor changed in the individual block volumes (and consequently the stripping ratios The determination of precise overburden volumes will require a more sophisticated approach, such as computer modelling.

METHOD OF ESTIMATION

1. The depth (D) of the coal reserve blocks was measured on all relevant sections traversing a given block;

   D min and D max are generally the depth values of a given block for the up dip and down dip margins respectively. All D min. and D max. values were arithmetically averaged to obtain Dave.

2. The average overburden thickness (Tave) was then calculated as follows:

   Tave = D ave - W, where W is the composite width of all coal seams in the block.

3. The average volume of overburden was calculated from the product of Tave and the block area (A).

4. The average stripping ratio, for the total coal reserve, was calculated by dividing the sum of the individual block overburden volumes by the total tonneage.

   This method presents a more representative value than an arithmetic average of all the individual stripping ratios.

5. The average overburden thickness (Tave) values shown at the base of Table 1, 2 and 3 were calculated by weighting individual Tave values by respective A values.

...../2.

RESULTS AND DISCUSSION

1. The Low Grade coal reserves, using MAXIMUM stripping ratios of 7:1 and 10:1, have AVERAGE stripping ratios of 5.04 and 6.39 respectively. (Refer Tables 1 and 2). These figures indicate a potential flexibility in the mining of Woodbury coal, should maximum stripping ratios of 5 and 7 prove desirable.

2. The High Grade coal reserve, using a MAXIMUM stripping ratio of 10:1, has an AVERAGE stripping ratio of 7.31. (Refer Table 3.). The reason for this average stripping ratio not being as low as the average ratio for the Low Grade reserve, lies in the decreased coal tonneage and the decreased overburden volume; i.e. the former decreases by $\lessapprox$ 55% and the latter by $\lessapprox$ 35% (for selected blocks), compared to the Low Grade reserve equivalent values.

3. The MAXIMUM overburden thickness (To) was incórporated (i.e. at least one block margin), in the coal reserve blocks as follows:

   (a) Low Grade (10:1, M + I) reserve : 71% of all blocks, with which 66% of the overburden volume, and 60% of the coal tonneage are associated.

   (b) Low Grade (7:1, M + I) reserve : 63% of all blocks, with which 63% of the overburden volume, and 60% of the coal tonneage are associated.

   (c) High Grade (10:1, M + I) reserve : 79% of all blocks, with which 81% of the overburden volume, and 76% of the coal tonneage are associated.

4. BATTER SLOPES

   Enquiries made to the Tasmanian Departments of Mines and Main Roads, revealed the broad parameters applicable to the anticipated batter slopes of the open cut excavations during mining of Woodbury Coal. Triassic age sandstone has a range of stable cut slopes, from a minimum of 45^{o} to a maximum of 90^{o}, Triassic age mudstone is generally cut at angles of 45^{o} to a maximum of 63^{o} (½ : 1 slope), while Jurassic dolerite is seen to be "stable" behind slopes of 75^{o} to 90^{o}.

   The term "stable" is relative, because the conditions of stability of excavations fringing public roads must have a considerably higher "safety factor" (i.e. a considerably lower chance of failure), than those excavations made during a mining operation.

   Triassic age sandstone may be classified into two end members, namely quartz arenites, and lithic members. Quartz arenites have a minimum of metastable minerals, and a minimum of clay minerals which lithic arenite (i.e. Coal Measures Sequence sandstone) contain appreciably more metastable and clay minerals. Clay minerals may be derived from the break down of the metastable minerals, or as original mud (stone) aggregates These factors are instrumental in determining the outcrop habit of the different sandstones - namely, that the lithic arenites do not occur as "cliff forming" sandstones (such as the quartz arenites), but have a subdued outcrop character.

...../3.

In addition, the lithic arenites (Coal Measures Sequence) frequently contain $\lessapprox$ 25% of mudstone and coal interbeds, which have an influence on the resultant stability of a given batter slope angle. (e.g. swelling clays may act as lubricants, and allow block slide failure on suitably oriented fractures).

An appropriate example of some of the problems likely to be encountered with excavations in non-quartz arenite can be seen on the Midland Highway south of Oatlands at Spring Hill. Here, the lithic arenite correlate, containing two coal seams, near the summit of Spring Hill is understood to have been cut at an angle of 63^o, and this slope is visibly stable approximately two years after excavation.

South of this locality, near the old Guard House, a feldspar quartz arenite containing carbonaceous mudstone was originally cut at 63^o, but after a slope failure involving the upper portion of the slope, it was cut back to 45^o. This failure is understood to have been a "circular failure" in the upper ($\simeq$ 5m.) deeply weathered portion of the cutting, and is therefore strictly a soil mechanics problem.

The batter slop angles referred to previously, relate mainly to hard rock conditions, and the Guard House failure is not a true reflection of rock slope failure in Triassic sandstone.

In the following discussion, a batter slope angle of 60^o has been used; this value was chosen because some of the coal reserve blocks at Woodbury require a depth of excavation of 50m., and as discussed subsequently it is possible to achieve an overall slope angle of 45^o with 60^o batter slopes

5. COAL RESERVE BLOCK - INCREMENTAL VOLUMES OF OVERBURDEN

Reference to Tables 1, 2 and 3 reveals the average overburden thickness (Tave) to range from $\simeq$ 20 - 25m. Perusal of the plan of the Woodbury Coal Deposit shows that the average "aggregated" coal reserve block (e.g. Woodbury Trough, Kuranda Graben), to be $\simeq$ 2,000 m. in length, and $\simeq$ 500m. in width.

As mining of the coal would presumably proceed along the length of these "aggregated" reserve blocks, the critical slope faces are those along the block lengths.

Assuming an average block width of 500 m, average overburden thicknesses of 20 and 25m., 60^o batter slopes, 10m. high benches, and 5 m. wide beams, the incremental overburden volume requiring extraction is approximately 5%.

Conversely, a maximum batter slope angle of 90^o, with other parameters similar to that above, would require an additional 2% by volume of overburden to be removed.

Details are shown in the following Table:

...../4.

[redacted]

WOODBURY COAL DEPOSIT - AVERAGE STRIPPING RATIOS

LOW GRADE RESERVE (MAXIMUM STRIPPING RATIO OF 10:1)

632047

A. MEASURED

BLOCK	D min. (m)	D max. (m)	D ave. (m)	W (m)	Tave (m)	A (Km^2)	V ($m^3 \times 10^6$)	T (Tonnes $\times 10^6$)	V/T
1.	33, 31, 37	37, 40, 40	36.3	2.37	33.9	0.19	6.441	0.720	8.95
2.	25, 28.	33, 31	29.2	2.02	27.2	0.35	9.520	1.103	8.63
3.	20, 20, 17	27, 25, 26	22.5	1.97	20.5	0.40	8.200	1.410	5.82
4.	25, 22, 23	27, 28, 27	25.3	1.61	23.7	0.29	6.873	0.784	8.77
5.	12	37	24.5	2.11	22.4	0.10	2.240	0.350	6.40
6.	11, 19	51, 32	28.2	2.93	25.3	0.38	9.614	1.837	5.23
7.	19, 8	27, 44	24.5	2.40	22.1	0.43	9.503	1.806	5.26
8.	17, 29	43, 34	30.7	2.49	28.2	0.20	5.640	0.802	7.03
9.	29, 22	32, 47	32.5	2.79	29.7	0.23	6.831	1.014	6.74
10.	19	22	20.5	2.04	18.5	0.06	1.110	0.195	5.69
					25.1	2.63	65.972	10.021	

B. INDICATED FIRST CLASS

BLOCK	D min. (m)	D max. (m)	D ave. (m)	W (m)	Tave (m)	A (Km^2)	V ($m^3 \times 10^6$)	T (Tonnes $\times 10^6$)	V/T
1.	36	53	44.5	3.00	41.5	0.20	8.300	0.990	8.38
2.	33, 31, 37	37, 40, 40	36.3	2.37	33.9	0.29	9.831	1.100	8.94
3.	25, 28	33, 31	29.2	2.02	27.2	0.22	5.984	0.693	8.63
4.	10, 10, 10	26, 19, 19	15.7	1.90	13.8	0.96	13.248	3.119	4.25
5.	25, 17, 23, 27, 26	26, 17, 30, 28, 32	25.1	1.97	23.1	0.49	11.319	1.728	6.55
6.	20, 29	27, 28	26.0	1.61	24.4	0.16	3.904	0.433	9.02
7.	32	35	33.5	2.93	30.6	0.06	1.836	0.290	6.33
8.	10	22	16.0	1.28	14.7	0.09	1.323	0.189	7.00
9.	29, 22	31, 47	32.2	2.79	29.4	0.11	3.234	0.485	6.67
10.	19	22	20.5	2.04	18.5	0.01	0.185	0.032	5.78
11.	30, 27	44, 38	34.7	3.70	31.0	0.45	13.950	2.631	5.30
12.	15	22	18.5	1.20	17.3	0.16	2.768	0.363	7.62
13.	19	34	26.5	1.91	24.6	0.24	5.904	0.761	7.76
14.	10, 11, 11, 12	28, 44, 44, 44	25.5	2.40	23.1	0.47	10.857	1.974	5.50
					23.7	3.91	92.643	14.788	

AVERAGE STRIPPING RATIO (Measured and Indicated Reserves combined) = 6.39

(Legend as for Table 2)

TABLE 2

WOODBURY COAL DEPOSIT - AVERAGE STRIPPING RATIOS

LOW GRADE RESERVE (MAXIMUM STRIPPING RATIO OF 7:1)

632048

A. MEASURED

BLOCK	D min. (m)	D max. (m)	D ave. (m)	W (m)	Tave (m)	A_2 (Km^2)	V ($m^3 \times 10^6$)	T (Tonnes x 10^6)	V/T
1.	20, 20, 17	27, 25, 26	22.5	1.97	20.5	0.40	8.200	1.410	5.82
2.	12	27	19.5	2.11	17.4	0.06	1.044	0.210	4.97
3.	11, 19	37, 32	24.7	2.93	21.8	0.31	6.758	1.499	4.51
4.	8, 19	32, 27	21.5	2.40	19.1	0.31	5.921	1.302	4.55
5.	17, 29	31, 31	27.0	2.49	24.5	0.09	2.205	0.361	6.11
6.	29, 22	32, 33	29.0	2.79	26.2	0.12	3.144	0.529	5.94
7.	19	22	20.5	2.04	18.5	0.06	1.110	0.195	5.69
					21.0	1.35	28.382	5.506	

B. INDICATED FIRST CLASS

BLOCK	D min. (m)	D max. (m)	D ave. (m)	W (m)	Tave (m)	A_2 (Km^2)	V ($m^3 \times 10^6$)	T (Tonnes x 10^6)	V/T
1.	10, 10, 10	26, 19, 19	15.7	1.90	13.8	0.96	13.248	3.119	4.25
2.	17, 23, 26, 27, 17	17, 27, 27, 29, 18	22.8	1.97	20.8	0.34	7.072	1.200	5.89
3.	32	35	33.5	2.93	30.6	0.06	1.836	0.290	6.33
4.	10	16	13.0	1.28	11.7	0.07	0.819	0.147	5.57
5.	29, 22	31, 33	28.7	2.79	25.9	0.06	1.554	0.264	5.89
6.	19	22	20.5	2.04	18.5	0.01	0.185	0.032	5.78
7.	30, 27	44, 38	34.7	3.70	31.0	0.45	13.950	2.631	5.30
8.	15	17	16.0	1.20	14.8	0.06	0.888	0.136	6.53
9.	19	24	21.5	1.91	19.6	0.10	1.960	0.306	6.40
10.	10, 11, 11	28, 31, 31	20.3	2.40	17.9	0.36	6.444	1.512	4.26
					19.4	2.47	47.956	9.637	

AVERAGE STRIPPING RATIO (Measured and Indicated Reserves combined) = 5.04

Legend

D min., D max. D ave	:	Minimum, maximum and average block depths
W	:	Composite width of all coal seams in a block
T	:	Average thickness of overburden (D ave - W - Tave)
A	:	Area of block
V	:	Average volume of overburden
V/T	:	Individual Stripping Ratio

TABLE 3

WOODBURY COAL DEPOSIT - AVERAGE STRIPPING RATIOS

HIGH GRADE RESERVE (MAXIMUM STRIPPING RATIO OF 10:1)

632049

A. MEASURED

BLOCK	D min. (m)	D max. (m)	D ave. (m)	W (m)	Tave (m)	A_2 (Km^2)	V ($m^3 \times 10^6$)	T (Tonnes x 10^6)	V/T
1.	33, 31, 37	37, 40, 40	36.3	2.37	33.9	0.19	6.441	0.720	8.95
2.	25, 28	33, 31	29.2	2.02	27.2	0.35	9.520	1.103	8.63
3.	17, 20, 20	24, 24, 24	21.5	1.36	20.1	0.28	5.628	0.621	9.06
4.	11, 19	35, 32	24.2	2.12	22.1	0.29	6.409	0.947	6.77
5.	8, 19	27, 27	20.2	1.51	18.7	0.28	5.236	0.698	7.50
6.	17, 29	43, 34	30.7	2.49	28.2	0.20	5.640	0.802	7.03
7.	29, 22	32, 47	32.5	2.79	29.7	0.23	6.831	1.014	6.74
8.	19	22	20.5	2.04	18.5	0.06	1.110	0.195	5.69
					24.9	1.88	46.815	6.100	

B. INDICATED FIRST CLASS

BLOCK	D min. (m)	D max. (m)	D ave. (m)	W (m)	Tave (m)	A_2 (Km^2)	V ($m^3 \times 10^6$)	T (Tonnes x 10^6)	V/T
1.	36	53	44.5	3.00	41.5	0.20	8.300	0.990	8.38
2.	33, 31, 37	37, 40, 40	36.3	2.37	33.9	0.29	9.831	1.100	8.94
3.	25, 28	33, 31	29.2	2.02	27.2	0.22	5.984	0.693	8.63
4.	10, 10, 10	19, 19, 23	15.2	1.36	13.8	0.88	12.144	1.879	6.46
5.	32	35	33.5	2.12	31.4	0.06	1.884	0.196	9.61
6.	10	16	13.0	0.98	12.0	0.07	0.840	0.104	8.08
7.	29, 22	31, 47	32.2	2.79	29.4	0.11	3.234	0.485	6.67
8.	19	22	20.5	2.04	18.5	0.01	0.185	0.032	5.78
9.	30, 27	44, 38	34.7	3.70	31.0	0.45	13.950	2.631	5.30
10.	19	25	22.0	1.50	20.5	0.12	2.460	0.283	8.69
11.	10, 11, 12, 27, 10	27, 26, 27, 31, 29	21.0	1.51	19.5	0.31	6.045	0.772	7.83
					26.9	2.41	64.857	9.165	

AVERAGE STRIPPING RATIO (Measured and Indicated Reserves combined) = 7.31

(Legend as for Table 2).

TABLE 4

COAL RESERVE	TAVE (m)	BLOCK WIDTH (m)	BATTER SLOPE (°)	BENCH HEIGHT (m)	BEAM WIDTH (°)	OVERALL SLOPE (°)	ΔV (%)
LG & HG (10:1 M + I)	25	500	60	10	5	45	+ 5.4
LG (7:1 M + I)	20	500	60	10	5	50	+ 6.6
LG & HG (10:1 M + I)	25	500	90	10	5	68	+ 1.6
LG (7:1 M + I)	20	500	90	10	5	75	+ 2.0

LG : Low Grade
HG : High Grade
10:1 : Stripping Ratio (Maximum)
M : Measured category
I : Indicated category
ΔV : Change in overburden volume

Thus the predicted average stripping ratios could be expected to increase by 2 - 5%, as shown in Table 5.

TABLE 5

COAL RESERVE	S.R. (1)	S.R. (2)	
		ΔV	
		+ 2%	+ 5%
LG (10:1 M + I)	6.4	6.5	6.7
LG (7:1 M + I)	5.0	5.1	5.3
HG (10:1 M + I)	7.3	7.4	7.7

S.R. (1) : Initial average strpping ratio

S.R. (2) : Average stripping ratio with incremental overburden volume included.

LEGEND

090°	Photolineament and bearing
	Photolineament, defining approximate position of fault
	Gravity lineament " " " "
10:1 7:1	
③	Open cut coal reserve - measured
③	Open cut coal reserve - indicated
●	Diamond drill hole
●	Open (R/P) drill hole

Low grade

Dolerite boundary

VICTOR PETROLEUM & RESOURCES LTD.

WOODBURY COAL PROJECT

PLAN OF DRILL HOLES & OPEN CUT COAL BLOCKS

500 0 500 1000 metres

GEOLOGY : T.G. SUMMONS , APRIL 1982.

5 cm

83-1914

KEMP DRAFTING & CARTOGRAPHY P/L

FIG. 44

632051

LEGEND

090° Photolineament and bearing

Photolineament, defining approximate position of fault

GRAVITY LINEAMENT, " " " " "

HIGH GRADE

Open cut coal reserve – measured

Open cut coal reserve – indicated

DIAMOND DRILL HOLE

OPEN (R/P) DRILL HOLE

Dolerite boundary

VICTOR PETROLEUM & RESOURCES LTD.

WOODBURY COAL PROJECT

PLAN OF DRILL HOLES & OPEN CUT COAL BLOCKS

500 0 500 1000 metres

GEOLOGY : T.G. SUMMONS , APRIL 1982

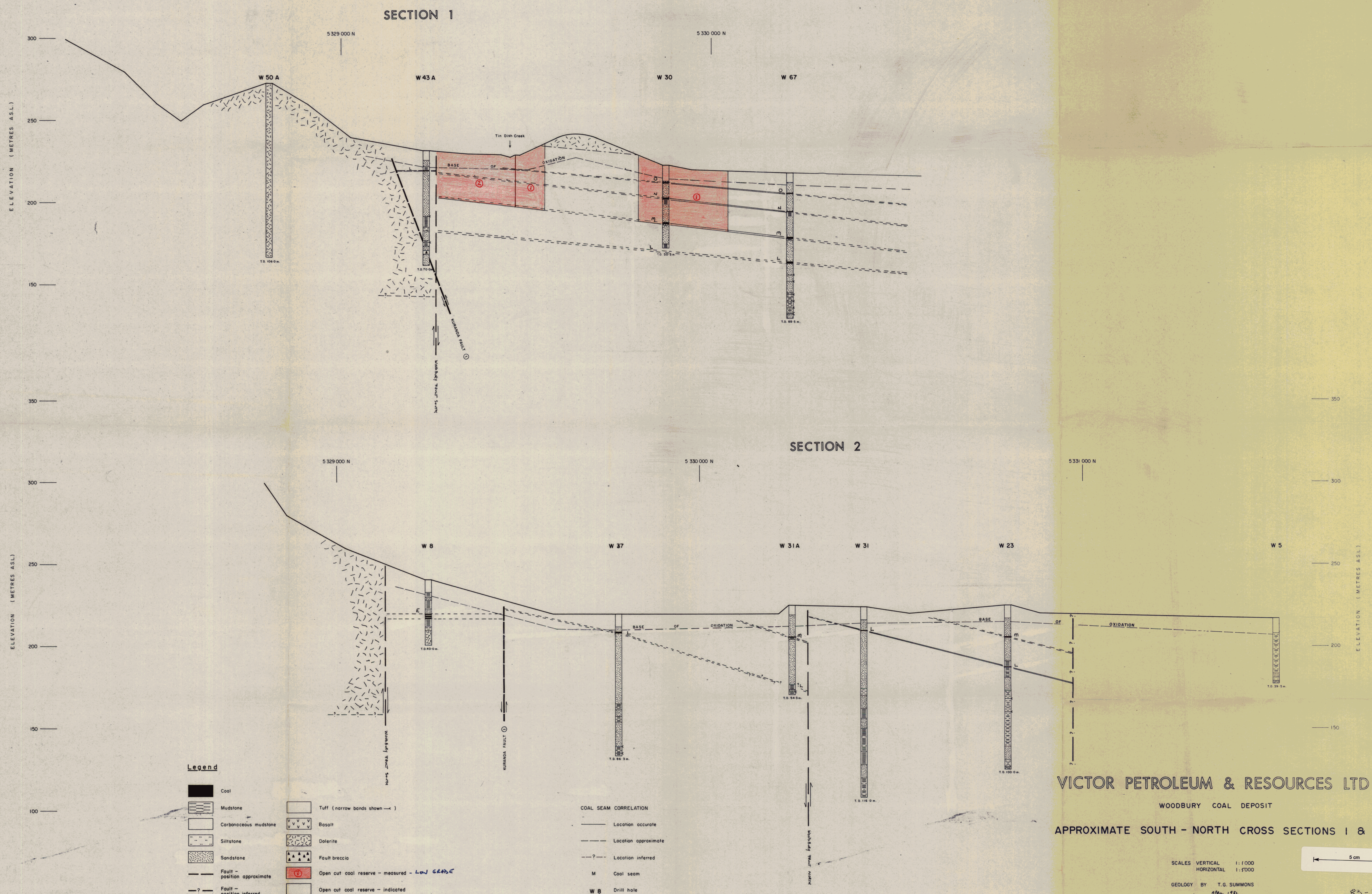
5 cm

83-1914

FIG. 4b

KEMP DRAFTING & CARTOGRAPHY P/L

632052



Legend

Coal
Mudstone
Carbonaceous mudstone
Siltstone
Sandstone
Fault – position approximate
Fault – position inferred
Tuff (narrow bands shown —‹)
Basalt
Dolerite
Fault breccia
Open cut coal reserve – measured - LOW GRADE
Open cut coal reserve – indicated

COAL SEAM CORRELATION
Location accurate
Location approximate
--?-- Location inferred
M Coal seam
W 8 Drill hole

VICTOR PETROLEUM & RESOURCES LTD.

WOODBURY COAL DEPOSIT

APPROXIMATE SOUTH - NORTH CROSS SECTIONS 1 & 2

5 cm

SCALES VERTICAL 1:1000
HORIZONTAL 1:5000

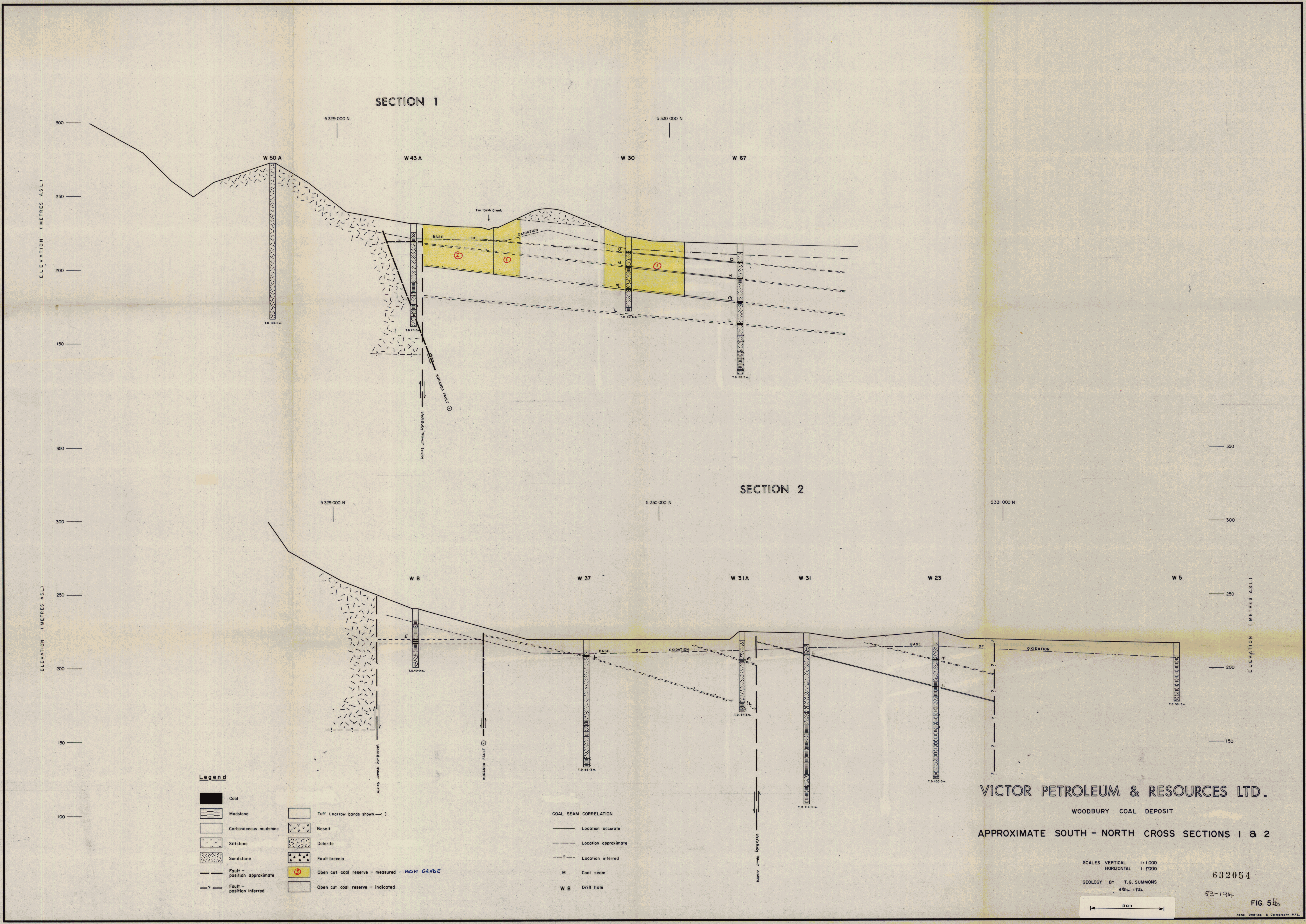
GEOLOGY BY T.G. SUMMONS
APRIL 1982

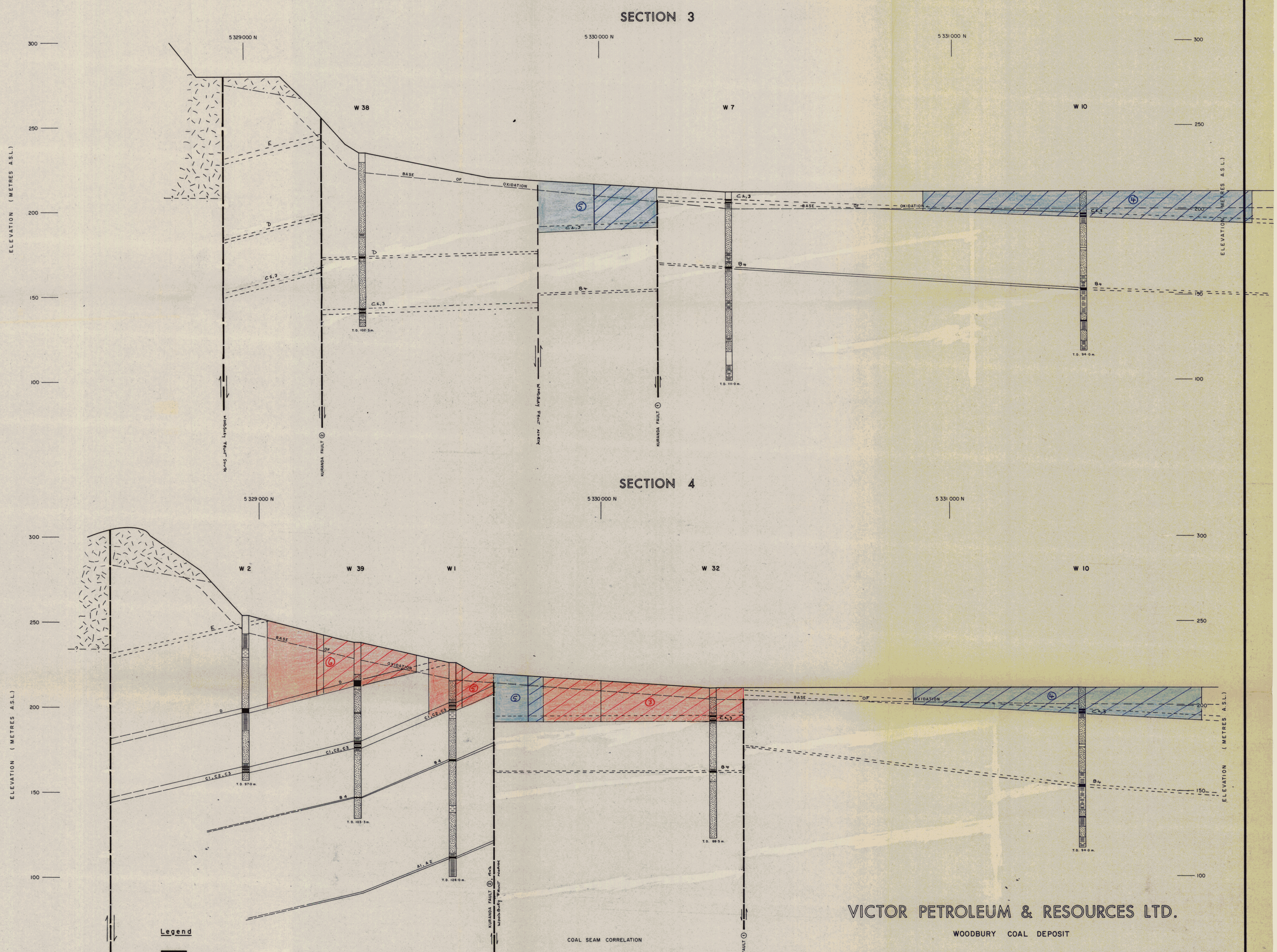
83-1914

632053 FIG. 5 a

Kemp Drafting & Cartography P/L.

83-1914


SECTION 1
5 329 000 N
5 330 000 N
W 50 A
W 43 A
W 30
W 67
Tin Dish Creek
BASE OF OXIDATION
KURANDA FAULT ①
ELEVATION (METRES ASL)
300
250
200
150
SECTION 2
5 329 000 N
5 330 000 N
5 331 000 N
W 8
W 37
W 31A
W 31
W 23
W 5
BASE OF OXIDATION
KURANDA FAULT ①
350
300
250
200
150
100
T.D. 86·3 m.
Legend
Coal
Mudstone
Carbonaceous mudstone
Siltstone
Sandstone
Fault - position approximate
Fault - position inferred
Tuff (narrow bands shown)
Basalt
Dolerite
Fault breccia
Open cut coal reserve - measured - HIGH GRADE
Open cut coal reserve - indicated
COAL SEAM CORRELATION
Location accurate
Location approximate
Location inferred
M Coal seam
W 8 Drill hole
VICTOR PETROLEUM & RESOURCES LTD.
WOODBURY COAL DEPOSIT
APPROXIMATE SOUTH - NORTH CROSS SECTIONS 1 & 2
SCALES VERTICAL 1:1000
HORIZONTAL 1:5000
GEOLOGY BY T.G. SUMMONS
APRIL 1982
632054
83-1914
5 cm
FIG. 5b
Kemp Drafting & Cartography P/L.



Legend

Coal	
Mudstone	Tuff (narrow bands shown)
Carbonaceous mudstone	Basalt
Siltstone	Dolerite
Sandstone	Fault breccia

10:1 7:1

LOW GRADE

Open cut coal reserve - measured

Open cut coal reserve - indicated

Fault - position approximate

Fault - position inferred

COAL SEAM CORRELATION

Location accurate

Location approximate

Location inferred

A Coal seam

W 30 Drill hole

VICTOR PETROLEUM & RESOURCES LTD.

WOODBURY COAL DEPOSIT

APPROXIMATE SOUTH - NORTH CROSS SECTIONS 3 & 4

5 cm

SCALES VERTICAL 1:1000
HORIZONTAL 1:5000

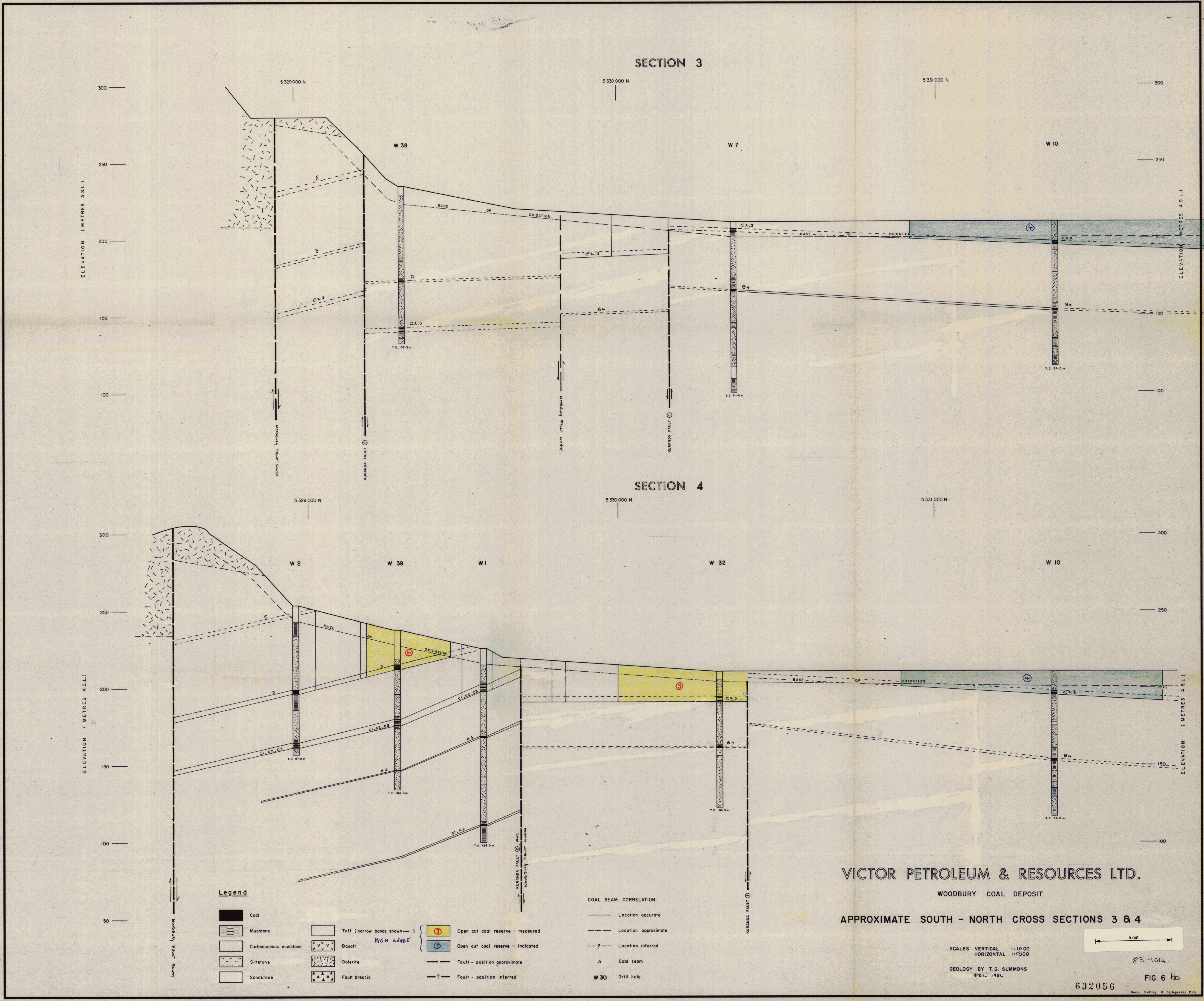
GEOLOGY BY T.G. SUMMONS
APRIL 1982

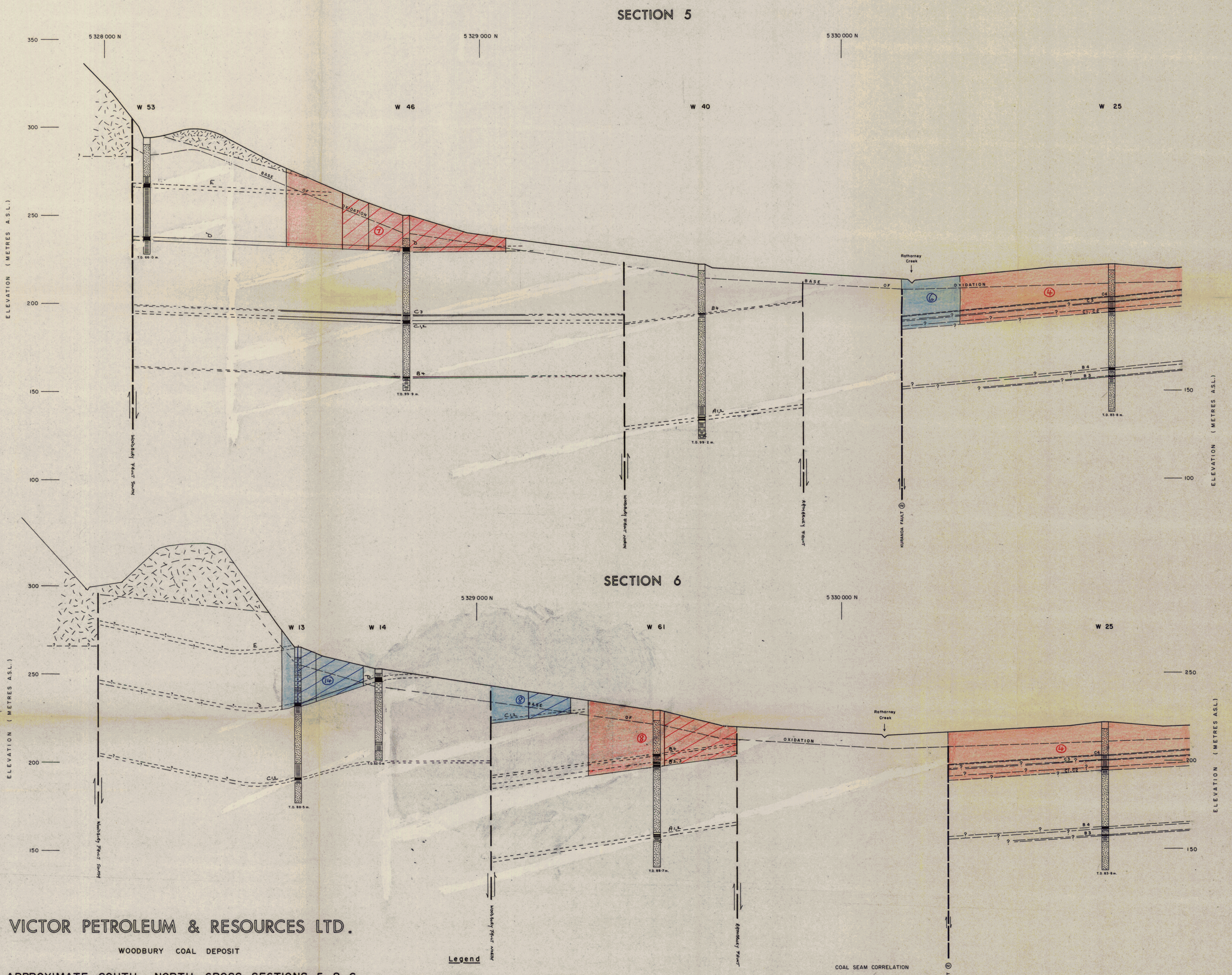
83-1914

632055

FIG. 6a

Kemp Drafting & Cartography P/L.


SECTION 3
5 329 000 N
5 330 000 N
5 331 000 N
ELEVATION (METRES A.S.L.)
W 38
W 7
W 10
BASE OF OXIDATION
E
D
C1,2,3
B4
T.D. 102·3 m.
T.D. 111·0 m.
T.D. 94·0 m.
Woodbury Fault South
Kuranda Fault ②
Woodbury Fault North
Kuranda Fault ①
SECTION 4
W 2
W 39
W 1
W 32
W 10
C1, C2, C3
A1, A2
T.D. 97·0 m.
T.D. 103·3 m.
T.D. 126·0 m.
T.D. 98·5 m.
T.D. 94·0 m.
Kuranda Fault ② and Woodbury Fault North
Kuranda Fault ①
Woodbury Fault South
Legend
Coal
Mudstone
Carbonaceous mudstone
Siltstone
Sandstone
Tuff (narrow bands shown)
Basalt
Dolerite
Fault breccia
HIGH GRADE
Open cut coal reserve - measured
Open cut coal reserve - indicated
Fault - position approximate
Fault - position inferred
COAL SEAM CORRELATION
Location accurate
Location approximate
Location inferred
A Coal seam
W 30 Drill hole
VICTOR PETROLEUM & RESOURCES LTD.
WOODBURY COAL DEPOSIT
APPROXIMATE SOUTH - NORTH CROSS SECTIONS 3 & 4
5 cm
SCALES VERTICAL 1:1000
HORIZONTAL 1:5000
GEOLOGY BY T.G. SUMMONS
APRIL 1982
83-1914
FIG. 6 b
632056
Kemp Drafting & Cartography P/L.



VICTOR PETROLEUM & RESOURCES LTD.

WOODBURY COAL DEPOSIT

APPROXIMATE SOUTH - NORTH CROSS SECTIONS 5 & 6

SCALES VERTICAL 1:1000
HORIZONTAL 1:5000

GEOLOGY BY T. G. SUMMONS
APRIL 1982.

FIG. 7a 83-1914

632057

5 cm

Kemp Drafting & Cartography P/L.

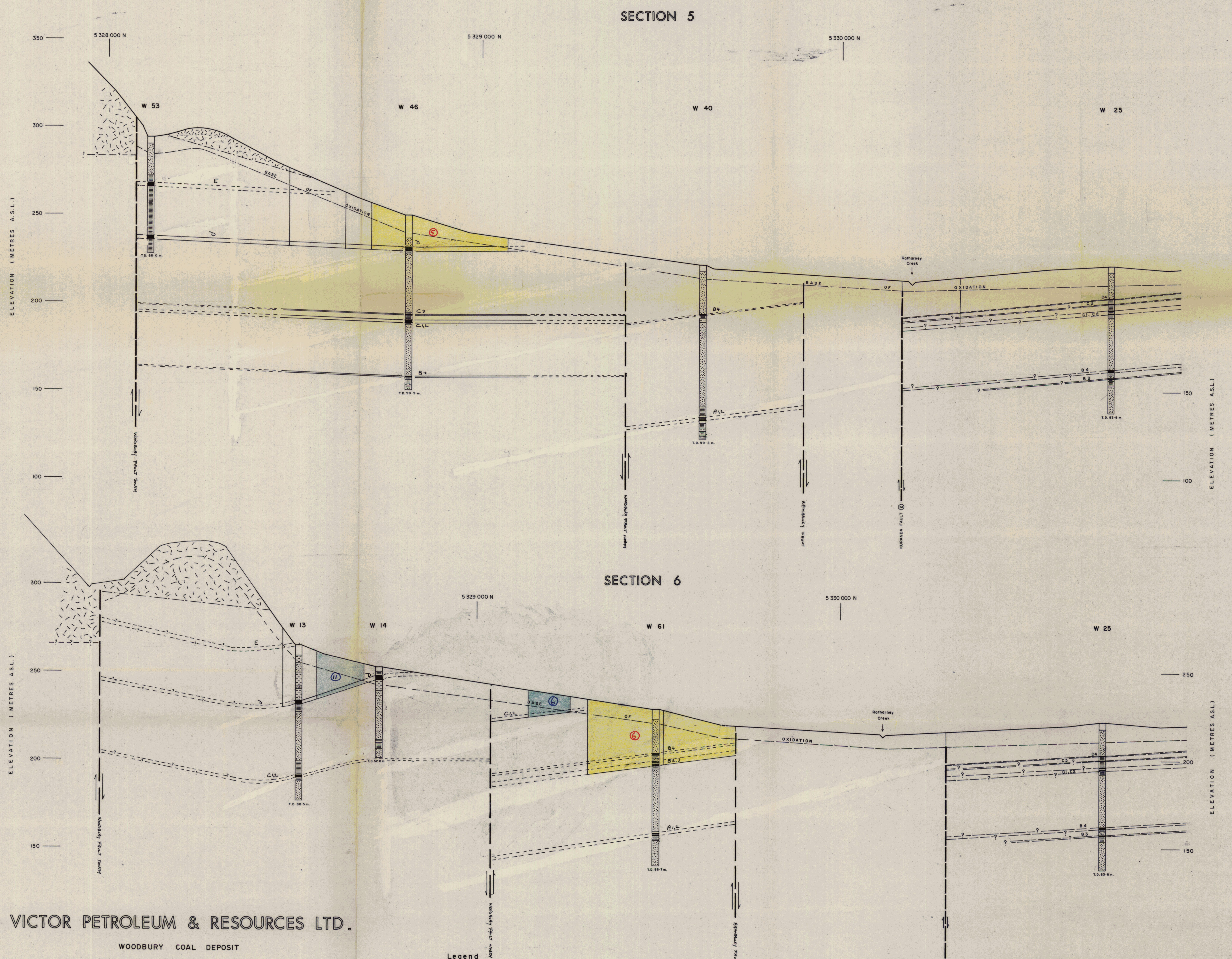
Legend

Coal	Tuff (narrow bands shown)
Mudstone	Basalt
Carbonaceous mudstone	Dolerite
Siltstone	Fault breccia
Sandstone	

LOW GRADE 10:1 7:1
- Open cut coal reserve – measured
- Open cut coal reserve – indicated
- Fault - position approximate
- Fault - position inferred

COAL SEAM CORRELATION

- Location accurate
- Location approximate
- Location inferred
- C 3 Coal seam
- W 61 Drill hole



VICTOR PETROLEUM & RESOURCES LTD.

WOODBURY COAL DEPOSIT

APPROXIMATE SOUTH - NORTH CROSS SECTIONS 5 & 6

SCALES VERTICAL 1:1000
HORIZONTAL 1:5000

GEOLOGY BY T. G. SUMMONS
April 1982.

5 cm

FIG. 7b 83-1914

632058

Kemp Drafting & Cartography P/L.

Legend

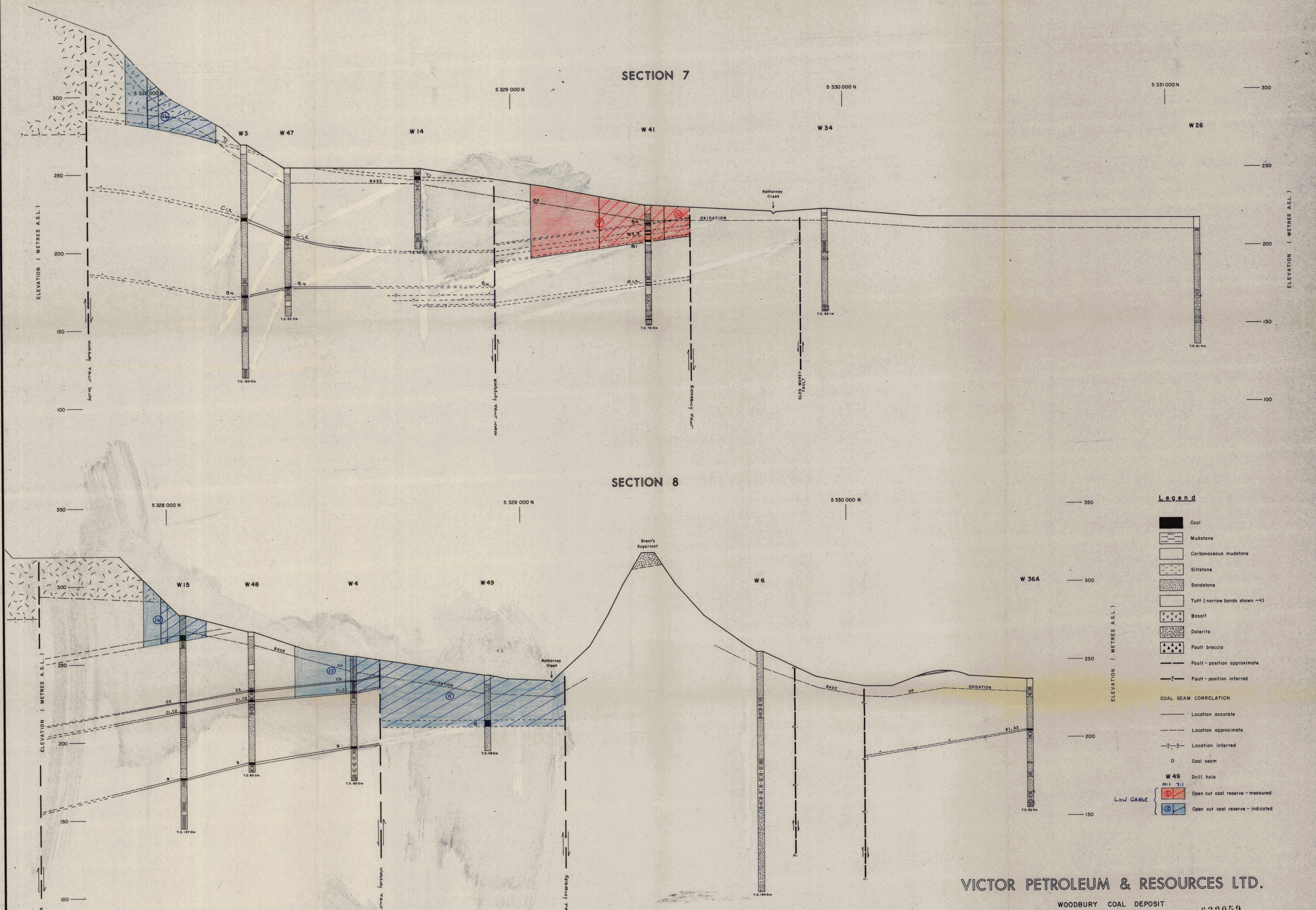
Coal	Tuff (narrow bands shown —‹)	Open cut coal reserve – measured
Mudstone	Basalt	Open cut coal reserve – indicated
Carbonaceous mudstone	Dolerite	Fault - position approximate
Siltstone	Fault breccia	Fault - position inferred
Sandstone		

HIGH GRADE

COAL SEAM CORRELATION

Location accurate
Location approximate
Location inferred
C 3 Coal seam
W 61 Drill hole

KURANDA FAULT (2)



VICTOR PETROLEUM & RESOURCES LTD.

WOODBURY COAL DEPOSIT

632059

APPROXIMATE SOUTH - NORTH CROSS SECTIONS 7 & 8

SCALES VERTICAL 1:1000
HORIZONTAL 1:5000

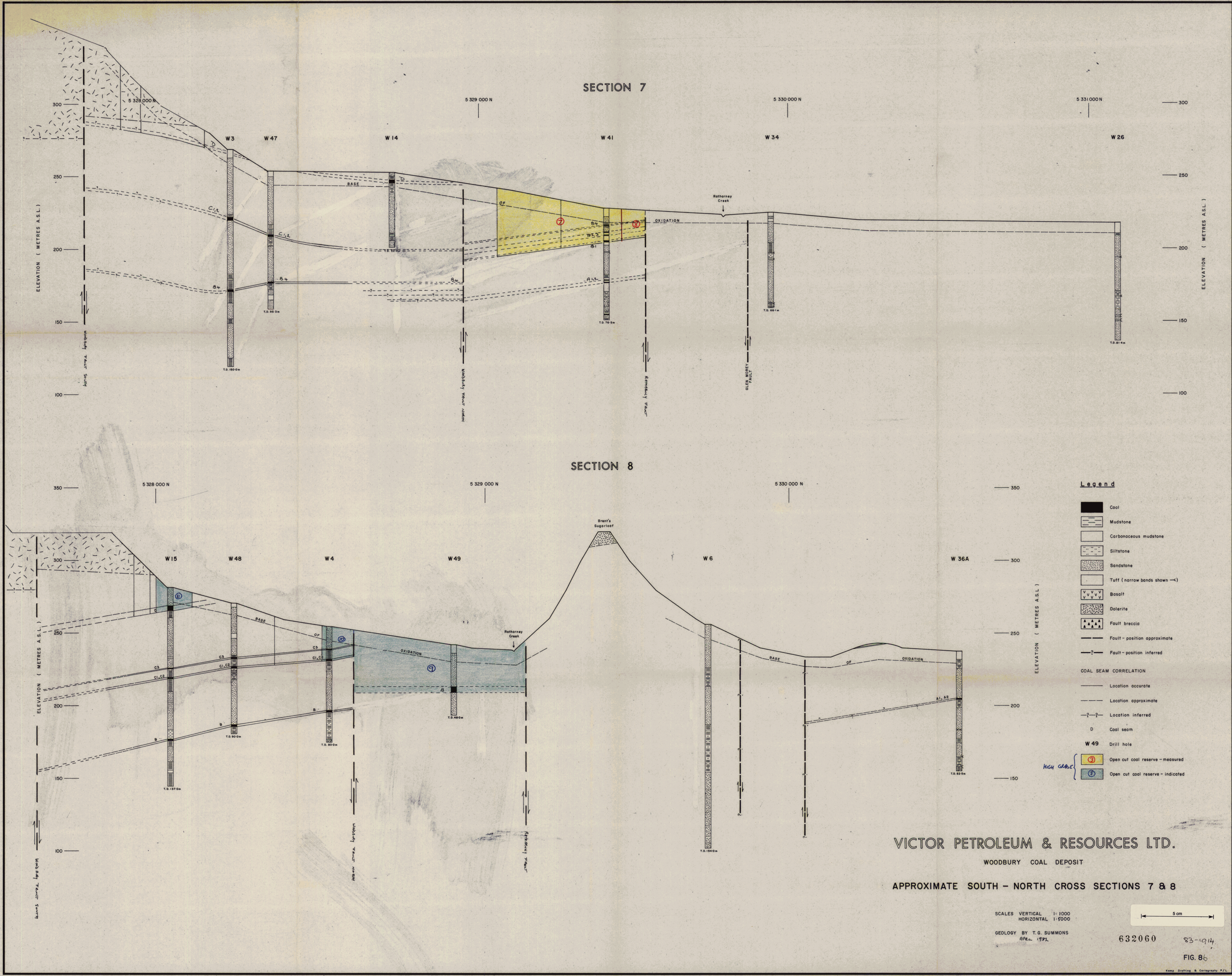
5 cm

GEOLOGY BY T.G. SUMMONS
APRIL 1982

83-1914

FIG. 8a

Kemp Drafting & Cartography P/L.


SECTION 7
5 328 000 N
5 329 000 N
5 330 000 N
5 331 000 N
W 3
W 47
W 14
W 41
W 34
W 26
ELEVATION (METRES A.S.L.)
BASE
OF
OXIDATION
Rathernay Creek
GLEN MOREY FAULT
SECTION 8
5 328 000 N
5 329 000 N
5 330 000 N
W 15
W 48
W 4
W 49
W 6
W 36A
Brent's Sugarloaf
Rathernay Creek
BASE
OF
OXIDATION
Legend
Coal
Mudstone
Carbonaceous mudstone
Siltstone
Sandstone
Tuff (narrow bands shown —<)
Basalt
Dolerite
Fault breccia
Fault – position approximate
Fault – position inferred
COAL SEAM CORRELATION
Location accurate
Location approximate
Location inferred
D Coal seam
W 49 Drill hole
HIGH GRADE
Open cut coal reserve – measured
Open cut coal reserve – indicated
VICTOR PETROLEUM & RESOURCES LTD.
WOODBURY COAL DEPOSIT
APPROXIMATE SOUTH – NORTH CROSS SECTIONS 7 & 8
SCALES VERTICAL 1:1000
HORIZONTAL 1:5000
5 cm
GEOLOGY BY T. G. SUMMONS
APRIL 1982
632060
83-1914
FIG. 8b
Kemp Drafting & Cartography P/L


83 1914
FIG. 9 a
5 cm
632061
VICTOR PETROLEUM & RESOURCES LTD.
WOODBURY COAL DEPOSIT
APPROXIMATE WEST - EAST CROSS SECTIONS A, B & C
SCALES VERTICAL 1:1000
HORIZONTAL 1:5000
GEOLOGY BY T. G. SUMMONS
APRIL 1982
KEMP DRAFTING & CARTOGRAPHY PTY. LTD.
Legend
Coal
Mudstone
Carbonaceous mudstone
Siltstone
Sandstone
Tuff (narrow bands shown)
Basalt
Dolerite
Fault breccia
Fault - position approximate
Fault - position inferred
10:1 7:1
LOW GRADE
Open cut coal reserve - measured
Open cut coal reserve - indicated
COAL SEAM CORRELATION
Location accurate
Location approximate
Location inferred
N Coal seam
W 30 Drill hole
SECTION C
W 32
W 25
W 26
W 27
SECTION B
W 31A
W 7
W 32
W 40
W 61
W 41
W 49
W 63
SECTION A
W 29
W 60
W 9
W 67
W 30
W 31A
W 37
W 38
W 39
W 46
W 13
W 47
W 48

83-1914

FIG. 9b

632062

VICTOR PETROLEUM & RESOURCES LTD.

WOODBURY COAL DEPOSIT

APPROXIMATE WEST - EAST CROSS SECTIONS A, B & C

SCALES VERTICAL 1:1000
HORIZONTAL 1:5000

GEOLOGY BY T. G. SUMMONS
APRIL 1982

KEMP DRAFTING & CARTOGRAPHY PTY. LTD.