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CRA EXPLORATION PTY.LIMITED.

LATROBE EL 45/82

EXPLORATION REPORT FOR YEAR ENDING 26TH JUNE 1984.

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Summons Geoservices P/L.

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Submitted to: T.W.Dickson

Copies: CRAE CANBERRA
CRAE HOBART
MINES DEPARTMENT, TASMANIA

CONTENTS

INTRODUCTION

EL 45/82 consists of two parts, part I of 352 sqr km extending from the Don River, east through Spreyton, to the Port Sorell estuary, and south through Sassafras East to Parkham. Part II covers 147 sqr km in the Paradise - Stoodley - Kimberley area.

Access to the EL is provided by numerous roads, the principal of which is the Bass Highway between Devonport and Elizabeth Town.

The physiography varies from a coastal surface (variably dissected) between Devonport and Port Sorell, changing southward to a dissected plateau comprised of dolerite and basalt. The southern boundary of Part II lies along the foot of the Great Western Tiers.

Flat lying Parmeener Super Group rocks infill topographic lows in the pre Permo - Carboniferous basement, and later dolerite sills have generally followed the bedding surfaces of the Parmeener rocks. These sedimentary rocks are preserved in EL 45/82 as down faulted blocks in the Mersey Graben, the base of the Port Sorell Graben, and the northern part of the Cressy Graben.

The actual mutual boundaries of these grabens are conjectural, but the overall graben structure has a western boundary extending from Tugrah, southeast through Railton, Weegena and Deloraine; the eastern margin extends along the Port Sorell estuary, after which the throw of the main fault has been accommodated by numerous similarly NNW trending faults which fade out northward against the Precambrian basement of the Asbestos Range, in the vicinity of Frankford.

The faults defining these grabens probably range in age from Jurassic to Tertiary, but in many cases can be seen to mirror the older NW oriented Devonian structures.

Part I of the EL is located in the Devonport, Beaconsfield and Frankford 1:63 360 scale geological sheets, and part II in the Sheffield 1:63 360 scale map, all published by the Geological Survey of Tasmania.

Field activities in the EL consist of reconnaissance traverses along public roads.

EXPLORATION OBJECTIVES

CRAE Pty. Ltd. require a black coal deposit with the following characteristics:

1. An in situ resource of 50 million tonnes
2. Individual coal seam widths of $\geq$ 1.0m
3. A depth of overburden sufficiently thin to allow extraction by open pit mining. In practise this effectively means a maximum thickness of overburden of $\leq$ 50m.

COAL POTENTIAL

A. LOWER FRESHWATER SEQUENCE OF THE PARMEENER SUPER GROUP

1. Distribution and Lithologies

The Lower Freshwater Sequence (LFW) is represented in EL 45/82 by the Mersey Coal Measures in the Devonport - Railton area, and by litho correlates of the Liffey Sandstone/Group elsewhere.

(a). Mersey Coal Measures

Outcrop of this unit in the Devonport area is limited to the Tugrah and Spreyton area, and consists of pebbly feldspathic quartz sandstone, and thin bedded feldspathic quartz sandstone.

The Mersey Coal Measures were the source of coal during mining operations last century, as described by Burns (1964), and most of the data on the coal measures arises from these early activities.

A crude tripartite subdivision can be recognized, (Burns 1964) - the upper sandstone, the coal/shale, and the lower sandstone horizons, but in detail both the upper and lower units include shale and conglomerate, and the coal/shale unit includes considerable sandstone, with lesser siltstone and claystone.

There is also some evidence (Racecourse Bore) that this subdivision is overly simplistic, and that misinterpretation of the coal measures succession has resulted.

The sandstones are typically thin bedded, micaceous/carbonaceous/feldspathic

quartz arenites, and are interbedded with carbonaceous siltstone and shale.

The shales are frequently sandy lutites, and both sandstones and shales host several thin coal seams.

In the vicinity of the old Alfred and Mersey collieries, part of the ? upper sandstone unit consists of thin bedded feldspathic micaceous quartz sandstone, with variable siltstone, carbonaceous debris, and pebble/granule content.

At the same locality, part of the ? coal/shale unit consists of thin, inter-bedded dark grey/carbonaceous shales and siltstones with minor very thin coal seams (10 - 20mm thick); pyrite is fairly common as evidenced by extensive yellow colouration of these rocks. Further details occur in Figure 1.

(b). Liffey Group Correlates

These are mapped in the Thompsons Hill, Rubicon Hills, Observatory Hill and Coates Hill areas, and in common with the Mersey Coal Measures, the LFW Sequence in the eastern and southern parts of the EL does not have a positive surface expression.

The best outcrops seen were near the Rubicon estuary, Observatory Hill and south east of Thompsons Hill.

The section near Observatory Hill consists of a feldspathic quartz sandstone (which is carbonaceous and contains granules), dark grey mudstone, and micaceous siltstone bearing plant fossils. The basal marine sequence appear to be either

very thin to absent, and the Liffey correlate lies either directly on basement rocks, or over a feldspathic quartz sandstone/mottled grey mudstone/ carbonaceous mudstone(with clasts of schist and shale) succession.

Although Wynyard Tillite has not been recorded in the area, the mudstone containing the schist/shale fragments may be a correlate of the tillite; no rocks of a conglomeratic nature were seen, although the usual basal Parmeener rocks in the area are conglomerates.

In the Rubicon River estuary., a previously unrecorded exposure of feldspathic quartz sandstone, interbedded with a grey mudstone is interpreted as a Liffey Group lithocorrelate.

Elsewhere, near Thompsons Hill in a road cutting on the Bass Highway at 460 600m E, 5420 800mN, the Liffey Group correlate consists of thin bedded micaceous feldspathic quartz sandstone/micaceous siltstone/carbonaceous shale, with a single coal seam 10 - 50mm thick, situated from 1 to 2m above the basal contact with aromatic marine siltstone.

The similarity of this section to that near the Alfred and Mersey collieries is notable.

The LFW Sequence is inferred to extend beneath the Tertiary basalt and sediments in the Wesley Vale, Northdown, Moriarty, Thirlstane, and East Sassafras areas, based on limited bore data and the outcrops south of Port Sorell.

The Northdown Foreshore bore (Fig. 2) was collared in alluvium overlying the

LFW Sequence, and indicated a thickness of > 30m for the unit, which is in accord with the estimated thickness to the south near Observatory Hill.

The Parmeener rocks have been extensively faulted at several scales, and Burns (1964) recognized internal horst and graben structures within the gross dimensions of the Mersey Graben; similar fault bounded blocks may be inferred in the Port Sorell and Cressy Grabens.

The central graben trend within these two grabens can be seen in Figure 1, as defined by the Wesley Vale, Thirlstane, East Sassafras , Wurra Wurra Hills, and Bradys Marsh blocks.

Peripheral half grabens/horsts to this main trend include the Spreyton, Dooleys Hill, Staggs Hill, Thompsons Hill, Rubicon Hills - Observatory Hill, and the Parkham blocks.

Deep bores sunk between 1922 and 1928 as part of petroleum exploration in the area provide information on the Tertiary section; in the Thirlstone block, and in the Hermitage, Parsons and Burgess bores bottomed in dolerite, and generally revealed a Tertiary sequence of basait and sediments which ranged from 100 to 350m in thickness. These bores, and others, are shown in Figure2 with their total depths.

The logs of the Windy Ridge and Northdown Beacon bores are unavailable, but the latter apparently intersected dolerite.

Water bore data (W.L. Matthews, pers. comm.), in the Staggs Hill block near Haines bore indicate < 45m of "shale and sandy shale", and bore No. 152

recorded 3.7m of "black clay" from 39 - 42.7m beneath basalt. However, the drillers log of this hole is confused, and contamination seems likely; in addition, Burns (1964) correlated a sandstone unit (above the Mersey Coal Measures) in Haines bore with Racecourse and Staggs bores, which indicate that the coal measures are $\geq$ 60m deep in the vicinity of Haines bore.

Water bore logs from the Wesley Vale, Moriarty and Thirlstone areas indicate a Tertiary section $\geq$ 100m thick, in the Sassafras district it is $\geq$ 90m thick, while a single hole near East Sassafras encountered 60m of clay (?Tertiary).

2. Coal Potential

(a). Introduction

The relevant features of the LFW Sequence are detailed in the Appendix, and the major factors influencing the coal potential are:

(i). Thickness of the LFW Sequence

(ii). Thickness of the contained lutites

(iii). The nature and size of the faunizone hiatus

(iv). The inferred palaeogeography.

The Mersey Coal Measures host sapropelic coal which is characterized by high volatiles and low ash; oil shale is also associated with the coal seams, CRAE Report No. 12767.

EL 45/82 lies within the prospective faunizone 1 - 8 hiatus, and the inferred environment of formation/deposition includes lagoons and embayments associated with a delta plain.

The following discussion is in terms of fault blocks, (actual or inferred),

with due regard for the pre fault and pre erosion distribution of the LFW Sequence. Details are also provided in Figures 1 and 2.

(b). Spreyton Block

This block encompasses the Tugrah - Spreyton - Quoiba - Railton - Merseylea area. The Mersey Coal Measures range 30 -40m in thickness, and enclose shale/mudstone units $\lesssim$ 5m thick.

Typically only one main seam occurs in the blocks, and which ranges up to 0.76m in width, although an unconfirmed water bore log (No. 244, W.L.Matthews pers. comm.), near Spreyton recorded 1.2m of coal.

Multiple seams are uncommon, with a second seam (0.15m) in Dennys Colliery, and two additional seams (0.27m and 0.15m thick) in the Sherwood Colliery. These examples coincide with local thickening of the Mersey Coal Measures as shown by the 40m isopach (Appendix), and near maximum widths of the main seam (Figure 2).

Other, minor coal seams occur in the Dennys, Don, and Illamatha Collieries, and in Smiths bore (near Spreyton) where Reid (1924) reported "thin bands of coal" in the roof sandstone, and"scaly bands of coal" in the sandy mudstone floor.

Significantly, the main seam in this hole has the greatest confirmed width of 0.76m, and is $\simeq$ 0.5 km from the water bore with the unconfirmed 1.2m value.

The bands of coal are presumably similar to the 10 - 20mm bands seen in the railway cutting near the Alfred and Mersey collieries.

Although Burns (1964) observed that multiple seams were confined to the western portion of the "coal basin", available evidence suggests a reasonable potential for the occurrence of further seams elsewhere in the basin.

Near Spreyton, Ayers bore (Matthews 1964) intersected 0.38m of coal, but which was included in a section with 30% core recovery above, and 68% recovery below the coal; below this coal seam, 0.3m of "carbonaceous shaly sandstone" was encountered. Further evidence for potential multiple seams can be seen in Racecourse and Staggs bores.

Resolution of the water bore logs in the Spreyton area is difficult, since Watlings bore (Fig. 2), which intersected the Mersey Coal Measures, apparently failed to locate any coal seams, and adjacent water bores (No's 62, 63, 166 and 293) to bore No 244, only met with 0.2 to 0.3m of coal in a similar shale/siltstone/sandstone section.

However, the 1.2m value assumes some credibility from the general direction of increase of the seam isopachs, and from cumulative seam widths which suggest a value $\geq$ 1.0m is not impossible.

In conclusion, the Spreyton block may contain a previously unrecognized, significantly thicker main coal seam, and the inferred extent is depicted within the 1.0m isopach in Figure 2. However, this extent is $\simeq$ 3 sqr km, and is much less than the objective area (38sqr km) for a 1m seam. Even if the area west of Spreyton, covering $\simeq$ 7 sqr km, were to contain an exceptionally big 5.5m seam, the cultural features (agricultural, urban) of the region render the Spreyton block unprospective for the objective coal deposit.

(c). Dooleys Hill Block

This block, immediately east of the Mersey River estuary, consists mainly of dolerite and Tertiary basalt/sediments.

Water bore data (W.L. Matthews pers. comm.), indicates $\leq$ 50m of dolerite, basalt etc. and this thickness, contained with a likely thickness of Upper Marine Sequence of $\geq$ 45m, make this block unprospective.

(d) Staggs Hill Block

This block is located east of the Bass Highway, and approximately half consists of dolerite. Drill hole logs in the northern portion (Haines bore, recent water bores) indicate $\geq$ 45m of Upper Marine Sequence, while the southern portion has $\leq$ 70m of this marine section (Staggs and Racecourse bores) overlying coal seams of 0.15 - 0.24m width.

However, the Racecourse bore was logged by Reid (1924) as having 22m of mudstone with "traces of coal" below the main seam, and Staggsbore was logged as having a floor to the main seam of "brown coaly shale", 0.46m in width.

Both these bores revealed the thickest known section of the coal/shale horizon in the Mersey Coal Measures.

The areas of this block free from dolerite cover is $\leq$7 sqr km, which would require a seam width of 5.5m; this value is unlikely to be attained, even if an optimistic seam width of 0.61m is used for Staggs bore and thereby dilating the isopachs eastward from that shown in Figure 2. In addition, the depth of the LFW Sequence is $\geq$ 45m, and accordingly the block would not

appear to possess the requisite parameters for the stated target.

(e). Wesley Vale Block

This block is located between Staggs Hill and Port Sorell, and is apparently uniformally covered by ⩾ 100m of Tertiary basalt and sediments. This overburden thickness is in excess of that considered acceptable, and the block has no black coal potential as previously defined.

(f). Port Sorell Block

This block includes the town of Port Sorell, and early oil exploration demonstrated the Tertiary section to be ⩾ 300m thick.

Similarly to the previous block, this one has a zero black coal potential as defined. The main interest in this block occurs north of the EL boundary in the Northdown Foreshore bore in which ⩾ 30m of LFW Sequence was met, and in which Nye (1928) described the sandstone as containing "mica.... and carbonaceous seams", with "thicker, friable seams of dark mudstone".

Burns (p90, 1964) considered this hole to have begun below the position of the main seam in the Devonport area of the LFW Sequence.

(g). Thirlstane Block

This block is situated between Thirlstane and Harford, and deep bores (oil wells) indicated 100 - 350m of Tertiary section overlying dolerite. Accordingly, this block has a zero black coal potential as defined.

(h). Sassafras East Block

This is located between Sassafras and the Rubicon River, and little is known of the subsurface distribution of rocks, except for a single bore near Sassafras

East with 60m of clay (?Tertiary). Although the block appears to be in the axial zone of the Port Sorell Graben, definitive comments on the black coal potential cannot be made from the available data.

(i). Thompsons Hill Block

Verification of the mapped Liffey Group rock was not achieved in this area, and in addition the rock units shown along the common boundary of the Sheffield and Frankford sheets are contradictory.

However, quartz sericite schist was found here, thereby suggesting the proximity of basement, and thus the Parmeener rocks in the area may be part of the Lower Marine Sequence. Conditional upon this interpretation being correct, the block would have a zero coal potential.

(j). Rubicon Hills - Observatory Hill Block

The northern portion of this block consists mainly of dolerite (15 sqr km), while the southern 12 sqr km consists of the LFW Sequence overlain by the Upper Marine Sequence and Tertiary sediments. The carbonaceous and argillaceous nature of the Liffey Group correlate east of Observatory Hill in conjunction with the data from the Northdown Foreshore bore (?along strike), combine to give this block a moderate coal potential.

(k). Wurra Wurra Hills Block

This block is ≒ 75% dolerite covered, with the southern portion of ≒ 10 sqr km interpreted as the LFW Sequence overlain by Tertiary sediments. The dolerite appears to have been emplaced either within, or immediately above the Liffey Group Correlate, and if so, deleterious thermal alteration effects may have been imposed on any coal in this unit.

However, this observation may only apply to the western side of the block, as the Rubicon River may define a half graben extension of the Parkham block.

Coal potential of the block is indeterminite on present data, except for its proximity to the occurrences of LFW rocks south east of both Thompsons and Observatory Hills.

(l). Bradys Plain Block

This graben is flanked by Upper Freshwater Sequence rocks, which may have been eroded in the southern and western portions of the block. Coal potential is indeterminate at present, but would be limited to the 8 sqr km of Bradys Plain (sensustricto).

(m). Parkham Block

This block encompasses several fault bounded structures between Parkham, Coates Hill, and Xmas Hill.

Coal potential is indeterminate on present data, but would be restricted to the linear Parkham - Coates Hill tract and the ground between Coates Hill and Xmas Hill, totalling $\simeq$ 18 sqr km.

(n). Mersey Lea - Kimberley Block(s)

The northern portion of this block is predominantly basalt covered and cut by the Mersey River in the east; it may be continuous with the Kimberley - Weegena tract which is entirely basalt covered.

Old oil exploration wells, and recent water bores failed to locate coal in the LFW Sequence, in the Mersey Lea - Native Plain area (see also Figure 2).

However, the EL (Part II) is situated along strike of the 40m isopachs (Rept. No. 12767) for the LFW Sequence, which may indicate a different coal potential than for the Mersey Lea area.

The most likely areas to have any coal potential may occur to the north west and south of Kimberley, both of which are covered by $\lesssim$ 50m of basalt. These area total $\simeq$ 13 sqr km, thus requiring a seam to be 3m thick.

In summary therefore, the coal potential of these blocks is indeterminate on present information, but given the constraints outlined previously it is probably low.

B. UPPER FRESHWATER SEQUENCE OF THE PARMEENER SUPER GROUP

1. PERMIAN

(a). Distribution and Lithologies

Upper Freshwater rocks in the EL are restricted to the Bradys Plain, Parkham and Xmas Hill blocks, (See Figure 3).

The local freshwater unit is a lithocorrelate of the Clog Tom Sandstone, described by Gulline (1973) as consisting of carbonaceous sandstone and shale.

This was not seen in outcrop, although the presence of Blackwood Conglomerate indicates its close proximity.

(b). Coal Potential

Although correlates of the Clog Tom Sandstone are coal bearing in the south west and north west of the state, the inferred extent of this unit in El 45/82 is only 5 sqr km, and accordingly is not of adequate size to warrant further attention.

2. TRIASSIC

Overlying the Clog Tom Sandstone correlate is a variously feldspathic quartz sandstone, which is interpreted as a litho correlate of the Ross Sandstone from the Midlands. Accordingly, this part of the Upper Freshwater Sequence has a zero coal potential.

C. TERTIARY BROWN COAL/LIGNITE

Brown coal or lignite is recorded over a large part of EL 45/82 mainly in comparatively recent waterbores (WL Matthews, pers. comm.), as follows:

Dooleys and Staggs Hill Blocks -	bore No 152:	3.7m of "black clay"
	" 281:	12.8m of " "
Wesley Vale Block -	bore No 201:	1.4m of "coal and clay"
	" 213:	27m of "green/carbonaceous clay"
Thirlstane Block -	" 57:	24.5m of "clay with wood"
	" 58:	4.6m of "black clay"
	" 59:	3.1m of " "
	" 63:	25.4m of " "
	" 64:	23.4m of " "

In addition, lignite seams were recorded by Burns (1964) in the Harford Beds in the Iles and Burgess bores.

East Sassafras Block -	bore No 22:	32m of "clay and lignite"
Paradise area -	bore No195:	2.4m of "coal"
East Sheffield area -	bore No181:	22.8m of "black clay"
	" 260:	4.6m of " "
	" 261:	3.1m of " "
Kimberley Block -	bore No 80:	3m of "coal"
	" 119:	10.9m of "black clay"
	" 179:	7.3m of " "

The descriptions of the lithologies are taken from the drillers logs, and no verification of the coal etc. was undertaken.

The bores reproduced above have been interpreted as being in the Tertiary

section, mainly from the descriptions of the associated sediments.

CONCLUSIONS AND RECOMMENDATIONS

1. Lower Freshwater Sequence rocks have a proven potential in the Devonport - Latrobe area, but the areal extent of the host Mersey Coal Measures, the type and thickness of possible overburden rocks, the likely coal seam widths, and variable non geologic factors combine to downgrade the coal potential in terms of the objective resource.

2. The remainder of EL 45/82 (Part I) has an untested coal potential, but which is also situated in the prospective faunizone 1 - 8 marine hiatus, although adjacent to the possibly less prospective 2 - 6 and 2 - 5 hiati.

3. Carbonaceous and argillaceous sediments in the Lower Freshwater Sequence between the Northdown Foreshore bore and east of Observatory Hill, in conjunction with the exposure of Liffey Group south east of Thompsons Hill, suggest a moderate coal potential for the eastern part of the EL.

4. Isopachs of the Lower Freshwater Sequence and the main coal seam are of necessity, only approximate, and if the likely size of the elongate coal basins is approximately 10x5 km, the eastern part of EL 45/82 may contain two or three such basins.

6. The southern and eastern portion of EL 45/82 have dolerite free areas of Upper Marine and/or Lower Freshwater Sequences as follows:

Observatory Hill block	≃ 12 sqr km
Wurra Wurra Hills block	≃ 10 sqr km
Bradys Plain Block	≃ 8 sqr km
Parkham block	≃ 18 sqr km

These blocks are contiguous, and the estimated total area of 48 sqr km represents a reasonable exploration target in terms of the ≥ 1m coal seam model.

7. Only the eastern portion of EL 45.82 (Part II) may have any coal potential but which if present is likely to be less than the stated objective.

8. The following recommendations are made:

(a). The northern portion of EL 45/82 Part I (north of 5 435 000N) be relinquished.

(b). The western portion of EL 45/82 Part II (west of 450 000E) be relinquished.

(c). The remaining retained areas should receive further investigation to allow a more definitive evaluation of their coal potential.

REFERENCES

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NYE, P.B., 1928: Report on the borehole at Northdown. Geol. Surv. Tas. Unpub. Rep.

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KEYWORDS

Coal- Sub-bituminous, Permian, Reconnaissance

LOCATION

SK55-3 Burnie, SK55-4 Launceston

LIST OF PLANS

1.	Latrobe EL 45/82 Distribution of Lower Freshwater Sequence of Parmeener Super Group	TASh 1783
2.	Latrobe EL 45/82 Lower Freshwater Sequence Parmeener Super Group Isopacks	TASh 1784
3.	Latrobe EL 45/82 Distribution of Upper Freshwater Sequence of Parmeener Super Group	TASh 1785

390024

BASS STRAIT

HAWLEY BEACH

PORT SORELL

PORT SORELL

DEVONPORT

NORTHDOWN

5 440 000 mN

WESLEY VALE

TUGRAH

THIRLSTANE

MORIARTY

Staggs Hill

Dooleys Hill

SPREYTON

River Forth

LATROBE

HARFORD

Rubicon Hills

BASS

SASSAFRAS EAST

Franklin

5 430 000 mN

Rivulet

HIGHWAY

Observatory Hill

LAKE PALOONA

Don River

Mersey

Thompsons Hill

River

Rubicon

River

RAILTON

MERSEYLEA

5 420 000 mN

LAKE BARRINGTON

SHEFFIELD

STOODLEY

KIMBERLEY

PARKHAM

Bradys Marsh

Coates Hill

Christmas Hill

5 410 000 mN

PARADISE

WEEGENA

ELIZABETH TOWN

440 000 mE

450 000 mE

460 000 mE

470 000 mE

LEGEND

TERTIARY BASALT / SAND / GRAVEL

JURASSIC DOLERITE

5 cm

PARMEENER SUPER GROUP

LOWER FRESHWATER SEQUENCE

BENEATH UPPERMARINE SEQUENCE (AND OUTCROP)

BENEATH UPPERMARINE SEQUENCE, AND JURASSIC DOLERITE AND/OR TERTIARY SEDIMENTS (AND? BENEATH UPPER FRESHWATER SEQUENCE IN BRADYS PLAIN AREA).

INFERRED BENEATH EITHER JURASSIC DOLERITE AND/OR TERTIARY SEDIMENTS.

LOWER MARINE SEQUENCE.

OUTCROP BOUNDARY - POSITION APPROXIMATE

SUBCROP BOUNDARY - POSITION INFERRED

FAULT - POSITION APPROXIMATE

FAULT - POSITION INFERRED

(Figure 1)

COMPILATION / INTERPRETATION : SUMMONS GEOSERVICES PTY. LTD., MAY 1984
BASED ON : DEVONPORT SHEET (K.L. BURNS et.al. 1963)
GEOLOGY SURVEY OF TASMANIA : SHEFFIELD SHEET (I.B. JENNINGS et.al. 1959)
1 : 63 360 SCALE : BEACONSFIELD SHEET (R.D. GEE & P.J. LEGGE 1971)
: FRANKFORD SHEET (A.B. GULLINE et.al. 1973)

CRA EXPLORATION PTY. LIMITED

LATROBE E.L. 45/82 023
DISTRIBUTION OF LOWER FRESHWATER SEQUENCE PARMEENER SUPER GROUP

Ref:	SK55 - 3		
Scale:	1 : 100 000	Drawn:	R.T.
Author:	T.G.S.	Report No.	12771
Date:	9 - 7 - 1984	Plan No.	TASh 1783

390025

BASS STRAIT

DEVONPORT

NORTHDOWN

HAWLEY BEACH

PORT SORELL

PORT

(306)

(335)

(381)

SORELL

WESLEY VALE

TUGRAH

THIRLSTANE

MORIARTY

(207)

Dooleys Hill

SPREYTON

Staggs Hill

LATROBE

BASS HIGHWAY

River Forth

HARFORD

(338)

(381)

(353)

(357)

Rubicon Hills

SASSAFRAS EAST

Franklin River

Rivulet

LAKE PALOONA

Don River

Mersey River

Observatory Hill

Thompsons Hill

RAILTON

Rubicon River

MERSEYLEA

LAKE BARRINGTON

SHEFFIELD

STOODLEY

KIMBERLEY

PARKHAM

Bradys Marsh

PARADISE

Coates Hill

Christmas Hill

ELIZABETH TOWN

5 440 000 mN

5 430 000 mN

5 420 000 mN

5 410 000 mN

440 000 mE

450 000 mE

460 000 mE

470 000 mE

REFERENCE

1. DENNYS COLLIERY
2. DON COLLIERY
3. ILLAMATHA COLLIERY
4. WATLINGS BORE
5. WATER BORE No.244
6. SMITHS BORE
7. AYERS BORE
8. DENISON BORE
9. ALFRED BORE & COLLIERY AVERAGE
10. SHERWOOD BORE
11. DULVERTON BORE (Ave. of 7 Bores)
12. HAINES BORE
13. RACECOURSE BORE
14. STAGGS BORE
15. NORTHDOWN BEACON BORE
16. NORTHDOWN FORESHORE BORE
17. WINDY RIDGE BORE
18. HERMITAGE BORE
19. PARSONS BORE
20. ILES BORE
21. BURGESS BORE
22. NATIVE PLAIN BORE No.15
23. MERSEY LEA BORE
24. OUTCROP OF LFW SEQUENCE - BASS HIGHWAY
25. OUTCROP OF LFW SEQUENCE - RUBICON RIVER ESTUARY
26. OUTCROP OF LFW SEQUENCE - OBSERVATORY HILL

LEGEND

- ⚒ ABANDONED COLLIERY (0.53 Average main seam width)
- ● BORE HOLE (0.61 : Average main seam width
  (353) : Total depth of Bore.)
- □ OUTCROP OF LFW SEQUENCE
- ISOPACH OF MAIN COAL SEAM - POSITION APPROXIMATE
- ISOPACH OF MAIN COAL SEAM - POSITION INFERRED

5 cm

(Figure 2)

Compilation / Interpretation
SUMMONS GEOSERVICES PTY. LTD.
MAY 1984

CRA EXPLORATION PTY. LIMITED

LATROBE E.L. 45/82
LOWER FRESHWATER SEQUENCE
PARMEENER SUPER GROUP
ISOPACHS

024

Ref:	SK55 - 3		
Scale:	1 : 100 000	Drawn:	R.T.
Author:	T.G.S.	Report No.	12771
Date:	9 - 7 - 1984	Plan No.	TASh 1784

390026

BASS STRAIT

HAWLEY BEACH

PORT SORELL

PORT SORELL

NORTHDOWN

WESLEY VALE

DEVONPORT

TUGRAH

SPREYTON

Dooleys Hill

Staggs Hills

THIRLSTANE

MORIARTY

HARFORD

LATROBE

Rubicon Hills

SASSAFRAS EAST

Franklin

Rivulet

HIGHWAY

Observatory Hill

Thompsons Hill

Rubicon River

River Forth

Don River

Mersey River

LAKE PALOONA

LAKE BARRINGTON

RAILTON

MERSEYLEA

SHEFFIELD

STOODLEY

KIMBERLEY

PARADISE

PARKHAM

Bradys Marsh

Coates Hill

Christmas Hill

WEEGENA

ELIZABETH TOWN

5 440 000 mN

5 430 000 mN

5 420 000 mN

5 410 000 mN

450 000 mE

460 000 mE

470 000 mE

LEGEND

- TERTIARY BASALT / SAND / GRAVEL
- JURASSIC DOLERITE
- UPPER FRESHWATER SEQUENCE BENEATH TRIASSIC SEDIMENTS
- UPPER FRESHWATER SEQUENCE BENEATH TRIASSIC SEDIMENTS AND JURASSIC DOLERITE.
- LOWER MARINE SEQUENCE
- OUTCROP BOUNDARY - POSITION APPROXIMATE
- SUBCROP BOUNDARY - POSITION INFERRED
- FAULT - POSITION APPROXIMATE
- FAULT - POSITION INFERRED

5 cm

(Figure 3)

COMPILATION / INTERPRETATION : SUMMONS GEOSERVICES PTY. LTD., MAY 1984
BASED ON : DEVONPORT SHEET (K.L. BURNS et.al. 1963)
GEOLOGY SURVEY OF TASMANIA : SHEFFIELD SHEET (I.B. JENNINGS et.al. 1959)
1 : 63360 SCALE : BEACONSFIELD SHEET (R.D. GEE & P.J. LEGGE 1971)
: FRANKFORD SHEET (A.B. GULLINE et.al. 1973)

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