

## TASMANIAN EXPLORATION STATUS

### 1. INTRODUCTION.

Having reviewed much of the historical reporting of geological data acquired in what might be geographically described as the Midlands region of Tasmania, a strategy has been developed to move forward on the assessment of coal resources within the Tasmanian Exploration Licences held by Resource Generation Limited through its wholly owned subsidiaries Tiger Coal Pty Limited (Tiger) and Energy Investments Limited (EIL). These licences are:

- EL 64/2007 – Latrobe, in the vicinity of Bonneys Tier ;
- EL 65/2007 – Woodbury, in the vicinity of Tunbridge ;
- EL 25/2008 – Jericho West, in the vicinity of Melton Mowbray ;
- EL 26/2008 – Jericho East, in the vicinity of Lake Tiberius ; and
- EL 41/2008 – Jericho North, in the vicinity of Oatlands.

These ELs are at differing stages of exploration and are considered at this time to have varying degrees of prospectivity for coal.

The Woodbury area has an extensive, if in part somewhat unreliable, coverage of borehole data, and needs to be subject to a process of data validation in several tightly controlled areas before progressing to further regional drilling. It is believed that further regional drilling may extend the viable limits of the deposit. Following this stage in the proving of the resource, and assuming results continue to be encouraging, a significant grid-infill drilling program would be undertaken. Coal quality of the deposit will also be addressed as part of these drilling and sample analysis activities; it must be recognised at all times that coal occurrences in this coalfield are predominantly poorer-quality high-ash steaming coals. Finally, a bulk sampling exercise would need to be carried out – the most appropriate sampling method remains undecided at this time.

The Jericho areas have sparse borehole data coverage inferring the occurrence of coal within this elongate regional structural element. A strategy for targeting additional bore holes in this vicinity has been developed based on existing surface mapping, geophysics, and historical drill hole data. New drilling will establish the reliability of

previously predicted coal occurrences (circa 1984). Results should either provide pointers to economic deposits or alternatively allow the relinquishment of zones which have low prospectivity. Any encouraging coal intersections will be the subject of more intensive drill hole exploration. Several similar but less extensive structures, known to occur in the vicinity of Kempton and Melton Mowbray, will be subject to exploration utilising the same strategy as employed in the Jericho area. Exploration in these areas will be predominantly by way of chip-sampled open holes at this time and any significant intersection will be supported by core drilling and relevant coal-quality analysis.

A literature review of the separate EL in the Latrobe area has not indicated any particularly economically prospective coal occurrences and no immediate exploration strategy has been developed for this area at this time. Historically the area has been exploited by numerous small mines where variability in both seam profile and tectonic structure appeared to be the major parameters limiting or leading to abandonment of underground workings. The intention in the longer term is to define further drilling targets in this title area.

## **2. EXPLORATION PROGRAM.**

### **2.1 Woodbury.**

It is considered that two major issues need to be addressed in the next stage of proving the coal resources and potential open cut reserves in the Woodbury area. Firstly, there needs to be a quantification of the variations in the geological factors related to sedimentology and structure which affect the determination of volumes (ie, seam continuity and thickness). Secondly, the variations in the coal quality characteristics, as they affect the prediction of washing yield and product characteristics, need to be defined.

At this point it appears that the major deficiency in the Woodbury deposit data is due to either un-defined or un-explained variability of the various geological parameters that affect assessment of the deposit. While there are in the order of 140 exploration boreholes, irregularly spaced across the deposit, very few of these holes have a complete data set for the proving of a steaming coal deposit such as the Woodbury area is implied to contain. Because of the amount of historical data which is missing, or in part illegible, it has proven almost impossible to validate much of the present exploration information.

A strategy has been evolved in an attempt to quantify variability of the various geological parameters of the deposit by the drilling of two detailed borehole profiles along section lines transecting key areas of the deposit. This will result in a scattering of existing bores virtually concurrent (+/- 15 metres) with new bores, plus new bores

sunk on 100 metre spacings along the straight section lines. Thus a reference section will be generated to compare these new holes with existing adjacent holes. Cross section lines at the same locations will be generated from the recently developed Minescape model to verify (or otherwise) the present model interpretation including seam splitting and component ply continuity. The current computer model demonstrates that major quantity variations can result from altering seam correlations in a few open holes.

The two recommended drill hole lines will run N-S on Eastings of 538,380mE and 539,900mE. The first of these profiles, designated Section N3-N3', will extend from WDC130 northward to a point approximately 300m northwest of WDC135. The second profile, designated N2-N2', will extend northward from WDV-13 in the south to a point adjacent to WDV-61 in the north; bore types will be flexible but conceptually will alternate between core and open hole and entail a total of 24 holes in this stage of exploration. Planning is for holes to generally be spaced at 100 metre intervals along the section lines but with 200 metre intervals in the northern part of line N3-N3'. High quality downhole geophysical logging will be mandatory for maximising confidence in results – be it seam profiles, structure or coal quality.

- Proposed drill hole locations are as shown on the attached “... / *Woodbury Borehole Plan \_ April 2009.pdf* ” ;
- the locations of geological cross sections along the proposed drill hole profiles is shown on “... / *Woodbury Section Locns \_ April 2009.pdf* ” ,
- and the profiles of the stratigraphic sections are shown on “ ... / *Woodbury N2 Cross Section\_ April 2009.pdf* “ and “ ... / *Woodbury N3 Cross Section\_ April 2009.pdf* “.
- Detailed drill site locations and predicted intersections are tabulated in the attached “... / *Woodbury Exploration Boreholes \_ April 2009.xlsx* ” (TABLE 1).
- Estimated costs for these exploration activities are presented in “... / *Tasmanian Exploration Budget \_ April 2009.xlsx* “ .

The second issue of product quality and yield appeared, at first inspection, to have been addressed by three 100mm diameter bores already drilled in the Woodbury area with an apparent objective of obtaining larger mass samples for coal washability analysis. Regrettably, the record of plies sampled is incomplete and so seam components cannot be recombined to give overall seam results, so this issue will need to be addressed by some future larger mass sampling exercise. No particularly shallow occurrence of fresh coal that might be amenable to ‘digging a hole’ has been located at this stage. The reporting of test data for the existing 100mm bores WDC

117, 119, and 125, is included within the available MRT archive report, referenced below.

“Woodbury Coal Project; Six Monthly Report for Exploration Licence 31/80

by C.K.Baker, Costain Australia – January 1985.

This report is held by MRT archives under the reference :

CD2 / Woodbury / Historical Reports / 85 – 2331 (164p.).

What can be derived from this report and other geological data is that all three holes appear to have intersected a ‘D’ seam horizon in the general south-south-east portion of the (Costain) resource area. The intersection / sampling horizons are all broadly in the order of 2 metres thick at a depth of about 17 – 21 metres; they are spaced a little more than a kilometre apart. Regrettably, while the analysis describes the samples by selections of plies (eg. Ply 6-10) the lack of a geological log or listing of ply thickness and/or depths make the results useless for anything other than the broadest appraisal of ‘D’ seam coal quality; there is no equivalent data for the ‘C’ or ‘B’ horizons.

## **2.2 Jericho Trough.**

Significant coal occurrences have been inferred (CRAE, 1984) to exist within the Jericho graben structure which extends some 50 kilometres N-S through the Midlands region –Resource Generation Limited titles do not include the most southerly extent of this geological feature. The graben is usually between 1 and 5 kilometres wide and bounded by sub-vertical flanking faults. Additionally the region is intersected by a number of secondary faults; they are generally vertical or normal and trend NE-SW.

Previous exploration has been by way of both core and non-core drilling (predominantly circa 1982 – 1985) plus water bores which may be anything up to a century old. This data has been the subject of some rather speculative interpretation, (by previous title holders) leading ultimately to statements of ‘hypothetical reserves’. Under the present JORC Code these results would constitute, at best, exploration results and would not support any quantification or public statement of coal resources. The second major source of geological data to support sub-surface exploration in the area is the State geological mapping; there is good 1:50,000 coverage plus some 1:25,000 areas in digital format; mapping and publishing is circa 1976. If the data presented is accurate (spot verification field mapping required) then these maps should prove invaluable in identifying coal deposits. There are some structural and remote sensing geophysical data available for the area but difficulties have been experienced in loading and locating (map gridding and scaling, large data file handling) this data and it has proven to be of minimal use. There is good magnetometer data in the far north of the area (Woodbury) but sparse airborne survey data over the balance of the area (Jericho).

Sixteen prospective drilling sites have been selected based on the interpretation of the above data. All of these sites will be drilled as chip-sampled open holes in the first instance. As far as possible these sites have been selected to potentially provide an intersection of the “Sequence 1” strata of previous workers – this is the uppermost member of the Triassic stratum of the region and has been inferred to be the most prospective section for economic coal seam occurrence. These new bore sites are generally some 2 – 3 kilometres apart but it is believed that if there is continuity of seams over significant areas, then this additional drilling in combination with what may be gleaned from past work, has the potential to define some economic coal occurrences. Should there be a potentially interesting intersection in any one of these bores then some step-off drilling will be undertaken in the immediate vicinity as part of this stage of the Jericho graben assessment – at this time allowance is made for 2 target areas to be assessed with 5 holes, including one core hole, in each of the prospective targets. Jericho graben exploration drilling is detailed in the following attachments.

- Proposed drill hole locations are as shown on the attached plan “... / *Jericho Borehole Plan \_ April 2009.pdf*” .
- Detailed drill site locations and predicted intersections are detailed in the attached “... / *Jericho Exploration Boreholes \_ April 2009.xlsx*” (TABLE 2).
- Estimated costs for these exploration activities are included in “... / *Tasmanian Exploration Budget \_ April 2009.xlsx*” .

### **2.3 Latrobe Region.**

The Latrobe / Railton area in northern Tasmania has a long history of coal and oil shale exploration and mining. Earliest workings were known in the mid-1850’s and the earliest reporting goes back to 1901, and amongst other information notes that ‘the name Spreyton had been used for at least six, probably seven, workings’. Reporting in 1922 states that ‘coal has been worked at shallow depth in ten distinct areas’. It is believed that very small coal mining activities continued through to about 1960.

In 1982 CRA was granted EL 45/82 to explore for coal; it carried out significant data collection and field mapping activities over the next 2 years but reporting in 1984 concludes there were very limited prospects for a resource of significant (50 Mt) size. Both EL 4/74 and EL 45/82 covered significantly larger areas than this present EL 64/2007, which covers an area of 161 square kilometres south of Spreyton and west of Railton.

Projected exploration activities include a review and catalogue off all existing documents, creation of a prior exploration and mining database for every coal mining

and oil shale mining operation that can be identified in the area and, if considered warranted and feasible, building of a computer deposit model. The likelihood of undertaking exploration by way of drilling cannot be assessed at this time.

The longer term objective will be to carry out a sufficient exploration drilling program that will allow a comprehensive economic mining assessment of this deposit and direct comparison with any other deposits we may locate within other Tasmanian EL areas.

### **3. EXPLORATION DRILLING.**

The Woodbury validation program is based on drilling activities including:

- Twelve (12) HQ cored holes with cumulative depth of 880 metres, plus
- Twelve (12) open holes with cumulative depth of 785 metres.

The Jericho Trough investigation is based on drilling activities including;

- Sixteen (16) regional appraisal open holes with a cumulative depth of 1,120 metres  
plus, allowance for further target assessment drilling of;
- Eight (8) open holes with a cumulative depth of 560 metres, and
- Two (2) cored holes with a cumulative depth of 140 metres.

In total fifty (50) boreholes entailing 3,485 of drilling are planned.

Preliminary costing of exploration is attached by way of the spreadsheet "... / *Tasmanian Exploration Budget \_ April 2009.xlsx*". Budgeting shown in Sheet 1 uses a quotation from Tasmanian drilling company Gerald Spalding Drillers Pty Ltd, while Sheet 2 is based on a quotation from McDermott Drilling Pty Ltd.

A summary of preliminary costing follows:

Establishment	-	\$ 42,800
Drilling, core & O/H	-	\$ 446,150
Geological / Geotechnical	-	\$ 61,120
Coal Analysis	-	\$ 71,092
<b>TOTAL</b>	<b>-</b>	<b>\$ 621,162</b>

Plus Contingency and GST

#### **4. ATTACHMENTS.**

- 4.1 “... / Woodbury Boresite Plan \_ April 2009.pdf ” ;
- 4.2 “... / Woodbury Section Locns \_ April 2009.pdf ”,
- 4.3 “... / Woodbury N2 Cross Section \_ April 2009.pdf “
- 4.4 “... / Woodbury N3 Cross Section \_ April 2009.pdf “.
- 4.5 “... / Woodbury Exploration Boreholes \_ April 2009.xlsx ”.
- 4.6 “... / Jericho Boresite Plan \_ April 2009.pdf ” .
- 4.7 “... / Jericho Trough Boresites \_ April 2009.xlsx ”.
- 4.8 “... / Tasmanian Exploration Budget \_ April 2009.xlsx “ .

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