



HardRock Coal Mining Pty Ltd
ACN: 150 741 094

ANNUAL REPORT FOR

EXPLORATION LICENCE EL16/2010

Period covered: 1st November 2016 to 31st October 2017

Licensee: Hardrock Investments Pty Ltd
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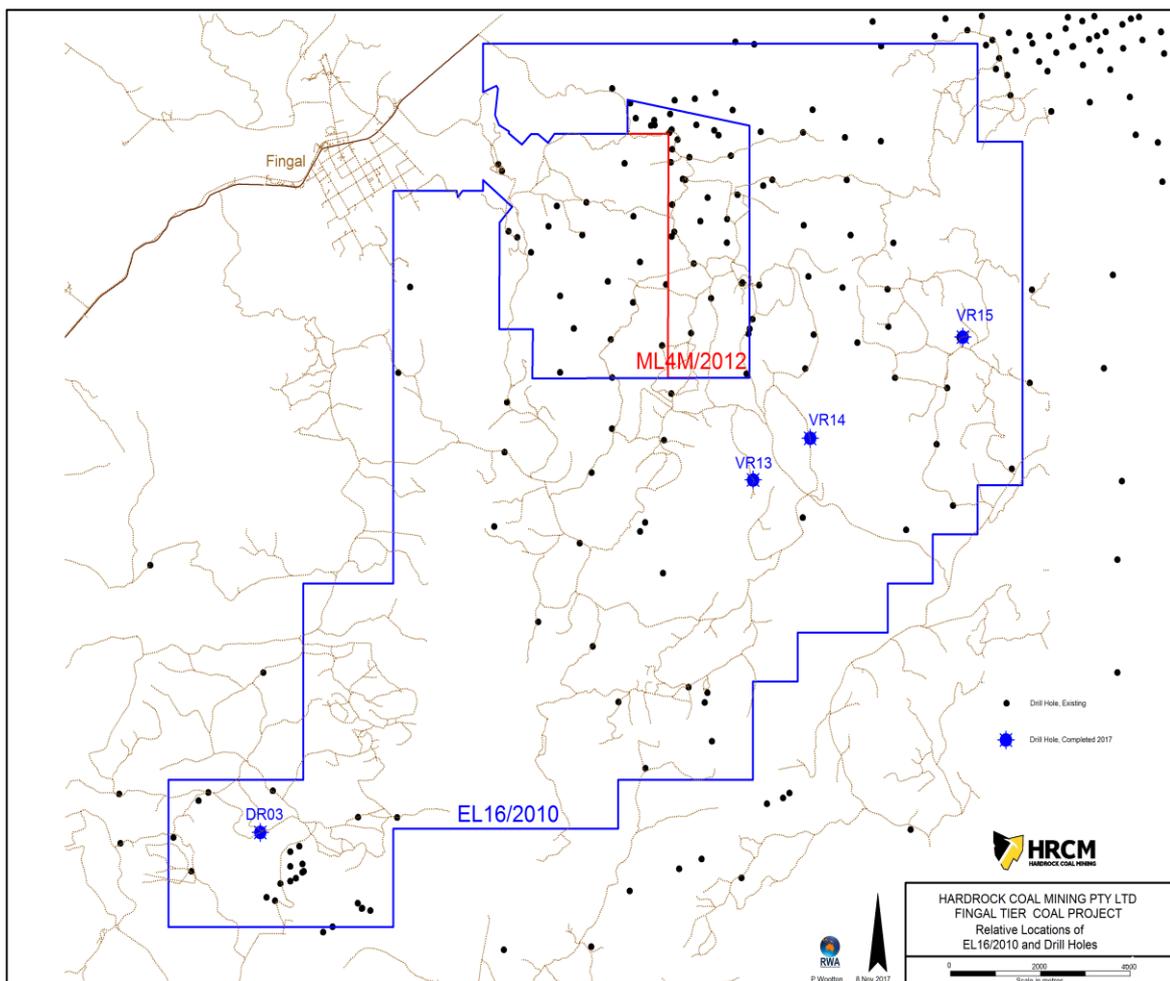
Publication date: 8th November 2017

ABSTRACT

The boundary of Exploration Licence EL16/2010 is shown on the plan below. It almost encircles Mining Lease 1653P/M and excised from it was Mining Lease 4M/2012. In October 2016, the remaining part of EL17/2010 was consolidated into EL16/2010 and the term of the consolidated licence extended to 7th November 2017. This was to allow completion of the drilling program. A further extension has been requested allow the finalisation of geological evaluation and feasibility work. This report then is an annual progress report not a completion report.

There has been considerable exploration drilling in the consolidated licence area, firstly by the Tasmanian Department of Mines in the 1970's & 1980's and recently by HardRock Coal Mining (HRCM). Hardrock Investments is also the holder of EL16/2016 (Mt Punter), which lies immediately to the south of EL16/2010, so HRCM has a single geological model which covers 4M/2012, EL16/2010 and EL16/2016.

The boundary of EL16/2010 as of October 2016 is shown below and is outlined in blue. The blue stars represent drillholes that were completed in the 2016-17 exploration program and black dots represent the drillholes that were completed prior to this. There are 223 drillholes contained within the HRCM database.



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1 Introduction

1.1 Licence Area, Report Datum, Reporting Period

EL16/2010 originally covered an area of 166 km² which was reduced to 156 km² following granting of the mining lease in 2013. It subsequently increased to 179 km² in October 2016 when EL16/2010 and EL17/2010 were consolidated. The boundary created in October 2016 is shown on the appended **Figure 1**, which is the plan contained in the licence document. The licence area is located immediately south east of Fingal township, the Report Datum is GDA94 (MGA Zone 55) and the reporting period is from 1st November 2015 to 31st October 2016.

1.2 Exploration Rationale

The aim of exploration on EL16/2010 is to evaluate the coal resource within the licence area, particularly the resources adjacent to Mining Lease 4M/2012.

1.3 Geological Setting

The coal seams of interest lie within the Triassic Upper Parmeener Super Group. The upper limit is defined by outcrop or the overlying Jurassic Dolerite which forms a discordant upper limit to the coal measures. The base of coal bearing strata is defined by a formation highlighted by the presence of white quartz rich sandstone beds.

Large volumes of Jurassic dolerite have intruded the Parmeener Super-Group stratigraphy, and in the project area dolerite outcrop up to >400metres thickness covers most of the coal measures. Cainozoic tectonic rifting and periglacial landscape development processes through the Fingal Valley have produced the escarpment and benched dolerite talus slope morphology which characterizes the landscape of the project area.

1.4 Coal Measures Geology

The coal seams are hosted within an approximate thickness of 250 metres of fluvial lithic sandstones and minor siltstones, argillic and carbonaceous mudstones, and minor air fall volcanoclastics.

There are 8 coal horizons which are identified simply "A" to "H" Seams in descending order. There are areas where the full series of coal horizons are present, areas where some of the upper coal horizons have eroded by dolerite and areas where all coal horizons have been eroded. At the regional scale the coal measures show a south easterly dip of 1-2°. Seams F and G have significant areas of economic thickness and coal quality in EL16/2010 and the D seam is highly prospective.

The F Seam has been mined at the Valley No1 and No2 Mines and is equivalent to the Duncan Seam worked in Duncan Colliery. The G Seam has been identified as the East Fingal Seam from drilling carried out in the early 1980s and there is a short entry into the seam at the old Valley No2 mine.

1.5 Other Information

The tenement holder and licence owner is HardRock Investments Pty Ltd of P.O. Box 3051, Prahan East, VIC 3181. There is no joint venture structure and there have been no title transfers during the reporting period.

2 Exploration During Reporting Period

2.1 Desktop Studies

Additional data was added to the geological model database but the model was not rerun.

2.2 Regional Exploration Activities

No regional exploration was conducted during the reporting period.

2.3 Prospect-based Exploration Activities

2.3.1 Drilling

In the reporting period:

- One (1) pre-collared drill hole, VR13, was completed, and three (3) additional drill holes, DR03, VR14 and VR15 were completed from the surface.
- DR03 and VR14 were completely in dolerite to a level equivalent to the base of coal bearing strata whilst VR13 and VR15 intersected coal measures below dolerite cover and reached the base of coal bearing strata.

2.3.2 Geophysical Logging

Geophysical logging has been done on VR13 and VR15.

2.3.3 Assay of Samples

Coal samples that were generated during the reporting period were analysed and the results have been added into the geological model database.

3 Results

3.1 Assay Results

The assay results which included washability testing, coal utilization parameters and trace elements were regionally consistent. Petrographic analysis was also carried out on D, F and G seam samples from drill hole VR15.

3.2 Resource Modelling

Preliminary modelling indicates the following coal resources with EL16/2010, shown in millions of tonnes and based on a seam section of >1.5m with a run-of-mine ash content of <45%

| Seam | Measured and Indicated | Inferred | Total |
|--------------|------------------------|--------------|--------------|
| D | 67.7 | 83.9 | 151.6 |
| F | 18.8 | 9.8 | 28.6 |
| G | 46.0 | 125.7 | 171.7 |
| Total | 132.5 | 219.4 | 351.9 |

If the seam section is increased to >1.8m then the resource, shown in millions of tonnes, becomes:

| Seam | Measured and Indicated | Inferred | Total |
|--------------|------------------------|--------------|--------------|
| D | 62.7 | 78.4 | 141.1 |
| F | 13.3 | 5.3 | 18.6 |
| G | 42.7 | 70.7 | 113.4 |
| Total | 118.7 | 154.4 | 273.1 |

4 Conclusions

Drilling and modelling have identified that there are additional coal resources adjacent to the eastern and southern boundaries of ML4M/2012, in the D Seam, F Seam and G seam. The ongoing work will determine how much of the resource can be considered to be a recoverable reserve and how much of this recoverable reserve is logically incorporated into an extended mining lease.

5 Environment

All drill holes and their associated sumps have been rehabilitated with the exception of VR10 site which are required for a water monitoring installation.

6 Expenditure

Expenditure, being the total of four quarterly reports spanning 1 Oct 2016 to 30 Sept 2017, is shown below. Note that in some categories notably geology and feasibility, there have been expenses incurred prior to 30th September 2017 that have yet to be billed.

| Expenditure EL16/2010 | |
|-----------------------|------------------|
| 1/10/16 to 30/09/17 | |
| Expense Category | Value |
| Geoscientific | |
| Geology | \$ 53,431 |
| Geochemistry | \$ 21,507 |
| Gephysics | \$ 33,185 |
| Remote Sensing | \$ - |
| Drilling & Gridding | |
| Gridding | \$ - |
| Meters Drilled | 1510m |
| Drilling | \$ 365,141 |
| Land Access | \$ 4,500 |
| Rehabilitation | \$ 7,783 |
| Feasibility | \$ 19,090 |
| Other | \$ 13,000 |
| Admin | \$ 37,209 |
| Total | \$554,845 |

7 References

Bacon, C.A. 1991. The Coal Resources of Tasmania. *Bull. Geol. Surv. Tasm.* 64.

8 List of Appended Figures

Figure 1 - Plan of Licence boundary from MRT Approval Document

9 Listing of Files on Attached CD

| Exploration Work Type | Filename | File format |
|---|--|-------------|
| Report | EL162010_201711_01_ANNUAL_REPORT.pdf | pdf |
| Drilling | | |
| | EL162010_201711_02_SL_1.xls | xls |
| | EL162010_201711_03_DL_1.xls | xls |
| | EL162010_201711_04_QAQC_1.xls | xls |
| | EL162010_201711_06_lithologycodes.xls | xls |
| Drill Hole Location Map | EL162010_201711_07_DH_loc.png | png |
| Graphic Log Legend | EL162010_201711_08_BHG_SYMB.png | png |
| Graphic log | EL162010_201711_09_BHG_DR03.pdf | pdf |
| Graphic log | EL162010_201711_10_BHG_VR13.pdf | pdf |
| Graphic Log | EL162010_201711_11_BHG_VR14.pdf | pdf |
| Graphic Log | EL162010_201711_12_BHG_VR15.pdf | pdf |
| Core Photos | EL162010_201711_13_DR03_Core_Photos.pdf | pdf |
| Core Photos | EL162010_201711_14_VR13_Core_Photos.pdf | pdf |
| Core Photos | EL162010_201711_15_VR14_Core_Photos.pdf | pdf |
| Core Photos | EL162010_201711_16_VR15_Core_Photos.pdf | pdf |
| Geophysical log data | EL162010_201711_17_VR013_FDS.las | las |
| Geophysical log report | EL162010_201711_18_VR013_FDS_SHEET.pdf | pdf |
| Geophysical log report | EL162010_201711_19_VR013_FWS.las | las |
| Geophysical log report | EL162010_201711_20_VR013_FWS_SHEET.pdf | pdf |
| Geophysical log report | EL162010_201711_21_VR015_FDS.las | las |
| Geophysical log report | EL162010_201711_22_VR015_FDS_SHEET.pdf | pdf |
| Geophysical log data | EL162010_201711_23_VR015_FWS.las | las |
| Geophysical log report | EL162010_201711_24_VR015_FWS_SHEET.pdf | pdf |
| Coal Analysis | EL162010_201711_25_VR013_Prelim_Report_20170913.xlsx | xlsx |
| Coal Analysis | EL162010_201711_26_VR015_Prelim_Report_20170920.xlsx | xlsx |
| Coal Petrography | EL162010_201711_27_VR015_Petro_Reports.xlsx | xlsx |
| | | |
| Surface sampling | | |
| | | |
| | | |
| Other - Coal Geology, Quality and Resources Assessment | | |
| | | |
| Topography | EL162010_201711_28_170911_01.png | png |
| Surface Geology | EL162010_201711_29_170911_02.png | png |

| | | |
|--------------------------------------|------------------------------------|-----|
| Drill Hole& Mine Workings | EL162010_201711_30_170911_03.png | png |
| Jurassic Dolerite Thickness | EL162010_201711_31_170911_04.png | png |
| D, F & G Resources Map | EL162010_201711_32_170911_05.png | png |
| SE Cross section | EL162010_201711_33_170911_06.png | png |
| Fence/Section Line Locations | EL162010_201711_34_170911_07.png | png |
| Fence/Section 1 | EL162010_201711_35_170911_08.png | png |
| Fence/Section 2 | EL162010_201711_36_170911_09.png | png |
| D Seam Geology,DHs, Sections | EL162010_201711_37_170911_D01.png | png |
| D Seam Cover Contours | EL162010_201711_38_170911_D02.png | png |
| D Seam Int to JDL Contours | EL162010_201711_39_170911_D02A.png | png |
| D Seam Thickness Contours | EL162010_201711_40_170911_D03.png | png |
| D Seam Structure Contours | EL162010_201711_41_170911_D04.png | png |
| D Seam Ash Contours | EL162010_201711_42_170911_D05.png | png |
| D Seam Sulfur Contours | EL162010_201711_43_170911_D06.png | png |
| D Seam Moisture Contours | EL162010_201711_44_170911_D07.png | png |
| D Seam Yield Contours | EL162010_201711_45_170911_D08.png | png |
| D Seam Resources | EL162010_201711_46_170911_D09.png | png |
| D Seam Section 1 | EL162010_201711_47_170911_D10.jpg | jpg |
| D Seam Section 2 | EL162010_201711_48_170911_D11.jpg | jpg |
| F Seam Geology,DHs, Sections | EL162010_201711_49_170911_F01.png | png |
| F Seam Cover Contours | EL162010_201711_50_170911_F02.png | png |
| F Seam Int to D Seam | EL162010_201711_51_170911_F02A.png | png |
| F Seam Thickness Contours | EL162010_201711_52_170911_F03.png | png |
| F Seam Structure Contours | EL162010_201711_53_170911_F04.png | png |
| F Seam Ash Contours | EL162010_201711_54_170911_F05.png | png |
| F Seam Sulfur Contours | EL162010_201711_55_170911_F06.png | png |
| F Seam Moisture Contours | EL162010_201711_56_170911_F07.png | png |
| F Seam Yield Contours | EL162010_201711_57_170911_F08.png | png |
| F Seam Resources | EL162010_201711_58_170911_F09.png | png |
| F Seam Section 1 | EL162010_201711_59_170911_F10.jpg | jpg |
| F Seam Section 2 | EL162010_201711_60_170911_F11.jpg | jpg |
| G Seam Geology,DHs, Sections | EL162010_201711_61_170911_G01.png | png |
| G Seam Cover Contours | EL162010_201711_62_170911_G02.png | png |
| G Seam Int to D Seam | EL162010_201711_63_170911_G02A.png | png |
| G Seam Int to F Seam | EL162010_201711_64_170911_G02B.png | png |
| G Seam Thickness Contours | EL162010_201711_65_170911_G03.png | png |
| G Seam Structure Contours | EL162010_201711_66_170911_G04.png | png |
| G Seam Ash Contours | EL162010_201711_66_170911_G06.png | png |
| G Seam Sulfur Contours | EL162010_201711_67_170911_G05.png | png |
| G Seam Moisture Contours | EL162010_201711_69_170911_G07.png | png |

| | | |
|---|---|------|
| G Seam Yield Contours | EL162010_201711_70_170911_G08.png | png |
| G Seam Resources | EL162010_201711_71_170911_G09.png | png |
| G Seam Section 1 | EL162010_201711_72_170911_G10.jpg | jpg |
| G Seam Section 2 | EL162010_201711_73_170911_G11.jpg | jpg |
| G Seam Section 3 | EL162010_201711_74_170911_G12.jpg | jpg |
| REPORT | EL162010_201711_75_FINGAL_TIER_Sept_2017.pdf | pdf |
| Drill Hole Database | EL162010_201711_76_FINGAL_TIER_DH_170911.xlsx | xlsx |
| Seam Intersection List | EL162010_201711_77_tas_d_map_170911.pdf | pdf |
| Seam Intersection List | EL162010_201711_78_tas_f_map_170911.pdf | pdf |
| Seam Intersection List | EL162010_201711_79_tas_g_map_170911.pdf | pdf |
| Vulcan Model | EL162010_201711_80_MODEL.dwg | dwg |
| | | |
| | | |
| | | |
| File Verification Listing (<i>this file</i>) | EL162010_201711_05_FILELIST.xls | xls |

END OF REPORT

Appended Figures

